

№ 534

Issued to:

with the compliments of

PHILIPS

World Leaders in Lighting.

PHILIPS ELECTRICAL INDUSTRIES PTY. LIMITED

A WORD about this book

The progress and development of lamp manifecture and lighting technique over the years has in his small measure been due to the skill and constant, escarch of Philips Technicians. Indicative of the skill part played by Philips in lighting the world nere are now well over 50,000 varying types of lamps bearing the Philips amblem.

This lamp catalogue has been produced to provide the lighting Engineer, the Architect, the Electrician and the lamp trade generally with a complete reference manual. With its comprehensive technical data and general lighting information, Philips believe that it will become the handbook of all those engaged in the vast and varied field of lighting.



SYDNEY • MELBOURNE • BRISBANE • ADELAIDE • BERTH • HOBANT

(For listing of Philips and Agents addresses, see viside back over

A

B

C

D

E

F

G

H

J

K

L

M

SECTIONAL INDEX

The various lamp types are compiled into separate sections (A to M), and printed in different colour combinations, as indicated on the opposite page.

Pages in each section are numbered from 1-up, each folio prefixed by the "keyletter" of the particular section—e.g. A1, A2, B1, B2, etc. On the next three pages, an alphabetical index, listing all lamp types contained in the catalogue, is provided for your reference.

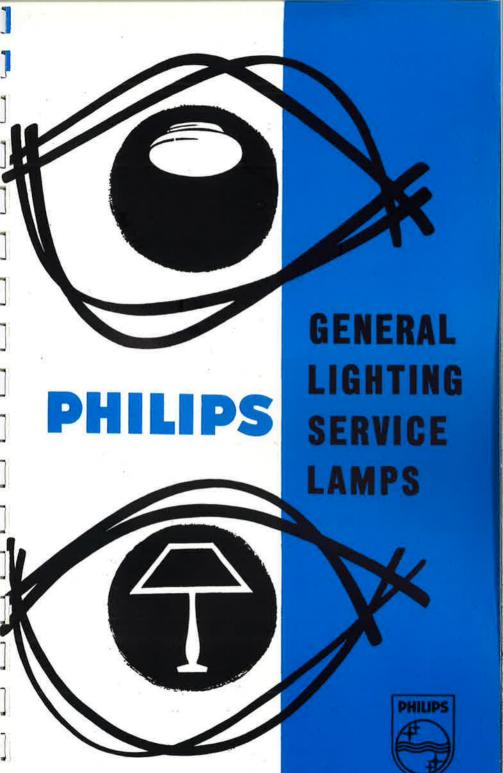
	ENERAL LIGHTING SERVICE	SECTION	A
PF	ROJECTION AND CINEMA AMPS	SECTION	В
] A	IRCRAFT LAMPS	SECTION	C
	GHTHOUSE AND AERODROME AMPS	SECTION	D
PI	HOTOGRAPHIC LAMPS	SECTION	E
] ^	EDICAL LAMPS	SECTION	F
1	EON GLOW LAMPS	SECTION	G
] 0	ECORATIVE LAMPS	SECTION	Н
] "	INIATURE LAMPS	SECTION	J
] ^	OTORCAR LAMPS	SECTION	K
P	HILORA LAMPS	SECTION	L
F	LUORESCENT LAMPS	SECTION	M

ALPHABETICAL INDEX

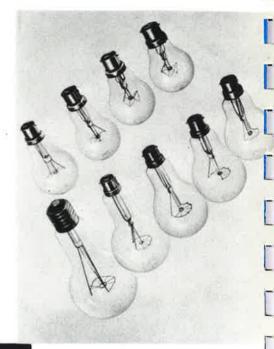
AIRCRAFT (Interior)	C2-C4
ALDIO GIOTALETTO	A10
ALTRILUX	A13
ARGAPHOTO (with and without mirror)	E5, E6
ARGASOL	E6
ARGENTA ROSE	A7
ARGENTA SUPER LUX	A15
ARGENTA WHITE	A8
ARGON GLOW	G5
ATTRALUX	A12
ATTRALUX (Pressed Glass)	A14
AUTOMOBILE (See Motor Car)	K2-K12
BATTERY AND ACCUMULATOR	J4
BICYCLE (Head and Tail)	J3
BLENDED LIGHT MLU (160W., 250W., 500W.)	L9
BLINKER (Flasher)	J5
ROWI PEFLECTOR	A20
BUS (Interior)	K10
CAMERA FLASHLAMPS (Photoflux)	E9-E13
CANDLE	Н3
CARBON FILAMENT	All
CINEMA (Tubular Projection)	БІУ
CLEAR (General Service)	A2, A3
COLORENTA	HZ
COLORENTINA	H2
COLOURED (Inside Flushed)	H5

	}
COMPTALUX (Pressed Glass) A14	1
CONTROL GEAR (Chokes and Leak Transformers) L3, L4, L12	
"CORNALUX"	,
DARKROOM E7	
DAYLIGHT BLUE	
ELECTRO-LUMINESCENT PANELS	
EMBLEM (Neon)	
ENLARGER (Photocrescenta) E8 EPISCOPE B11	
FANCY ROUND	
FANTASIE H6	
FESTIVE ILLUMINATION	
FILM STUDIO B12-B14	
FILM VIEWER	
FLASHLIGHT (Torch)	
FLOODLIGHTING A16, B15, B16	
FLUORESCENT CONTROL GEAR AND ACCESSORIES	
FLUORESCENT LAMPS:	
Actinic Blue "TL"/5	5
Black Light "TI"/8 M16	5
Germicidal TUV	,
Germicidal TUV 6W. M17	
High Output "TL" 105W, RS	
High Output Reflector M11	
Instant Start (A/C Operation) "TL" S	}
High Output Reflector	3
Instant Start (Flameproof Fittings) "TL" X	ļ
Rapid Start "TL" M8	3
Rapid Start "Double Flux" "TL" M)
Rapid Start Reflector "TL" MF)
"Reflectalite" (Made in Aust.) M5	
Slimline M10)
Slimline M10 Standard Types "TL" M6, M7	7
Sunlamps (Medical) "TL"/12 F7	,
Switch Start/Instant Start "TL" A	
Switch Start/Instant Start Reflector	!
Switch Start/Preheat Type MCF (Made in Aust.)	ļ
Switch Start/Rapid Start MCFE	
FLUORESCENT NIGHT (Neon) F5	•
FLUORESCENT SUNLAMPS (Medical) F7	,
FLOOKESCENT SOIVEAMES (Medical)	,
"GUIDE NUMBERS" E2	,
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4	2
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27	·
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9	1
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6	i ,
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6	i ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRA-RED (Industrial) F6 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME:	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRA-RED (Industrial) F6 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3	
"GUIDE NUMBERS" HIGH EFFICIENCY HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) INDICATING (Neon) INFRAPHIL (Medical) INFRA-RED (Industrial) INFRA-RED (Medical) INSIDE FROSTED (General Service) INTEGRAL SODIUM "K" LAMPS LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A44	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRA-RED (Industrial) F6 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRA-RED (Industrial) F6 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HP L3	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HP L3	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HP L3 MERCURY HPK (Laboratory Burner) L4 MERCURY HPL (Fluorescent) L4	
"GUIDE NUMBERS" HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) INFRA-RED (Industrial) INFRA-RED (Medical) INFRESHD FLASHLIGHT J2 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) LOW VOLTAGE (for use with Home Lighting Plants) MERCURY (Diazo Printing) MERCURY HPR (Laboratory Burner) MERCURY HPL (Fluorescent) MERCURY HPL (Fluorescent) MERCURY HPL (Colour Corrected Reflector) L7	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-B27 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HPK (Laboratory Burner) L8 MERCURY HPK (Laboratory Burner) L8 MERCURY HPL (Fluorescent) L4 MERCURY HPR (Repro-Mercury) L5	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HPK (Laboratory Burner) L8 MERCURY HPL (Fluorescent) L4 MERCURY HPLR (Colour Corrected Reflector) L7 MERCURY HPR (Repro-Mercury) L5 MERCURY HPR (Repro-Mercury) L5	
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INFRA-RED (Medical) F6 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HPK (Laboratory Burner) L8 MERCURY HPK (Laboratory Burner) L8 MERCURY HPK (Colour Corrected Reflector) L7 MERCURY HPR (Repro-Mercury) L5 MERCURY HPW (Ultra-Violet) L6 MERCURY HPW (Ultra-Violet) L6 MERCURY HPW (Ultra-Violet) L6	E
"GUIDE NUMBERS" E2 HIGH EFFICIENCY A4 HOME CINEMA B21-827 INDEPENDENT HOME LIGHTING (Low Voltage) A9 INDICATING (Neon) G6 INFRAPHIL (Medical) F6 INFRA-RED (Industrial) A22 INSIDE FROSTED (General Service) A2, A3 INTEGRAL SODIUM L12 "K" LAMPS A5 LENS-END FLASHLIGHT J2 LIGHTHOUSE AND AERODROME: Filament Arrangements D2, D3 "LINEA" A18 LOCOMOTIVE (Head) A17 LOW VOLTAGE (for use with Home Lighting Plants) A9 MERCURY (Diazo Printing) L10 MERCURY HPK (Laboratory Burner) L8 MERCURY HPL (Fluorescent) L4 MERCURY HPLR (Colour Corrected Reflector) L7 MERCURY HPR (Repro-Mercury) L5 MERCURY HPR (Repro-Mercury) L5	

Dashboard	MINERS' MIRRORED (Head and Ring) MOTOR CAR LAMPS:	A20
Dome	Dashboard	K10-K12
"Duplo" Head (Twin Filament with Metal Cup) K5 Foglamps K7 Head (Twin Filament without Metal Cup) K5 Head (Single filament) K6 Head (Special Single filament) K6 Head (Special Single filament) K7 Indicator K10, K11 Parking K10, K11 Speedometer (Indicator) K11 Spotlamps K7 Stop K8, K9 Stop and Tail K9 Turn Signal (Indicator) K11 MOTOR CYCLE (Head) K2 NEON Time (Malical) K8 Turn Signal (Indicator) K11 MCOTOR CYCLE (Head) K2 NEON INDICATING G6 MEON INDICATING G6 MEON NIGHT Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (High Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHOTOCRESCENTA (
Foglamps	"Duplo" Head (Twin Filament with Metal Cup)	K5
Head (Twin Filament without Metal Cup)	Foglamps	K7
Head (Single filament)		
Head (Special Single filament, spot and foglights) K.7 Indicator		
Indicator	Hand (Special Single filament and feelights)	
Parking		
Speedometer (Indicator)		
Spotlamps		
Stop and Tail		
Stop and Tail		
Trafficator (17	Stop	К8, К9
Turn Signal (Indicator) K11 MOTOR CYCLE (Head) K22 NEON ARROW G4 NEON INDICATING G6 NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX F9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5, B7 Vertical B10 RADIO DIAL (Miniature) B10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SIGN (Mocrotive) A11 SODIUM (Nacoum Jackets) L12 SODIUM (Vacuum Jackets) L13, L14 SODIUM (Integral Construction) G5 THEATR. SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) G5 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATR. SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR L16 ULTRA-VIOLET (Medical) L6 ULTRA-VIOLET (Medical) L6 ULTRA-VIOLET (Medical) L6 VACILIMA C15AMER (Pilot and Tubular) A44 ACULIMA C15AMER (PIlot and Tubular) A44	Stop and Tail	K9
Turn Signal (Indicator) K11 MOTOR CYCLE (Head) K2 NEON ARROW G4 NEON INDICATING G6 NEON INDICATING G6 NEON INGHT G3 NEON NIGHT G3 NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) B10 RADIO DIAL (Miniature) B10 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SODIUM (Vacuum Jackets) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 SODIUM (Integral Construction) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) B2, B2 TRAIN (Cab and Carriage) A17 TUBULAR L15ACHURAL L44 CULTRA-VIOLET (Medical) L16 ULTRA-VIOLET (Medical) L6		
MOTOR CYČLE (Head) K2 NEON ARROW G4 MEON INDICATING G6 NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX E9-E13 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8 B3 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MER		
NEON ARROW G4 NEON INDICATING G6 NEON NIGHT G3 NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOFLUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B81 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 REILECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE	Turn Signal (Indicator)	K11
NEON INDICATING G6 NEON NIGHT G3 NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHOTOCRESCENTA (Enlarger) E8 PHOTOCILUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8I and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 REPRO-MERCURY (HILL A14 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SIGN (Decorative) H5 SODIUM SO/H (455W., 60W., 85W., 140W.) L13, L		
NEON NIGHT (Medical) G3 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX E9-E13 PHOTOLIDA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21	NEON ARROW	G4
NEON NIGHT (Medical) G3 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX E9-E13 PHOTOLIDA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21	NEON INDICATING	G6
NEON NIGHT (Medical) F5 NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFLUX F9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6, E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINITING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8 and Howell B8 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) L5 VACUILINA CIEANER (Pilot and Tubular) A4 A4 A5 A4 A5 A6 A7 A7 A8 A8 A9 A7 A8 A8 A9 A9 A10 A10 A10 A10 A11 A12 A14 A15 A15 A16 A16 A17 A18 A18 A19 A19 A19 A10 A10 A11 A11 A12 A14 A15 A15 A16 A17 A18 A18 A19 A19 A10 A11 A11 A12 A13 A14 A15 A16 A17 A18 A18 A19 A19 A19 A17 A18 A19 A18 A19 A19 A19 A10 A11 A14 A15 A16 A17 A18 A18 A19 A19 A19 A19 A19 A10 A10 A11 A11 A12 A14 A15 A15 A16 A16 A17 A18 A19 A19 A19 A10 A1	NEON NIGHT	G3
NEON TENSION INDICATORS (High Tension) G8 NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFILUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B8 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (
NEON TENSION INDICATORS (Low Tension) G7 NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFILUX E9-E13 PHOTOFILY E9-E13 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B81 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) L13 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13	NEON TENSION INDICATORS (High Tension)	GB
NIGHT LAMPS (Neon) G3 PEARL (General Service) A2, A3 PHILINEA A4 PHOTOCRESCENTA (Enlarger) E8 PHOTOFILUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B81 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11	NEON TENSION INDICATORS (low Tension)	G7
PHILINEA	NIGHT LAMPS (Neer)	G3
PHILINEA	DEADL (Coursel Course)	A2 A2
PHOTOCRESCENTA (Enlarger) E8	PEAKL (General Service)	MZ, MS
PHOTOFLUX E9-E13 PHOTOLITA (with and without mirror) E3, E4 PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: B81 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 STREET SERIES A11 SULIAGIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SULTRAIN (Cab and Carriage) B17, B18 TORCH	PHILINEA	
PHOTOLITA (with and without mirror)	PHOTOCRESCENTA (Enlarger)	£8
PHOTOMIRENTA E6 PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Bell and Howell B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SURGICAL F3 TALKIE EXCITER B21-B27 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18	PHOTOFLUX	E9-E13
PILOT (Normal and Flush) A4 PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 SODIUM (Vacuum Jackets) L13, L14 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 ENDIUM (Miniature) G5	PHOTOLITA (with and without mirror)	ЕЗ, Е4
PREFOCUS FLASHLIGHT J2 PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Bell and Howell B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 STREET SERIES A11 SUBJUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2		
PRINTING (HOGK, HOQ, HOKI—Mercury) L10 PROJECTION: Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W, 60W, 85W, 140W.) L13, L14 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A11 ULTRA-VIOLET (Medical) F6 <td></td> <td></td>		
PROJECTION: Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W, 60W, 85W, 140W.) L13, L14 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A11 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6		
Bell and Howell B3 Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical	PRINTING (HOGK, HOQ, HOKI-Mercury)	L10
Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 B3 Tubular (Cinema) B19 Warious B5 Wertical B10 Warious B5 Wertical B10 RADIO DIAL (Miniature) J4 REINFORCED CONSTRUCTION A14 REINFORCED CONSTRUCTION A16 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) B15 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) L10 Macilian Cifeanger (Pilot and Tubular) A4 A40 A40 CACILIIM CIFEANGER (Pilot and Tubular) A44 A40 A40 CACILIIM CIFEANGER (Pilot and Tubular) A44 A40 A40	PROJECTION:	
Horizontal B8, B9 Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 B3 Tubular (Cinema) B19 Warious B5 Wertical B10 Warious B5 Wertical B10 RADIO DIAL (Miniature) J4 REINFORCED CONSTRUCTION A14 REINFORCED CONSTRUCTION A16 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) B15 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) L10 Macilian Cifeanger (Pilot and Tubular) A4 A40 A40 CACILIIM CIFEANGER (Pilot and Tubular) A44 A40 A40 CACILIIM CIFEANGER (Pilot and Tubular) A44 A40 A40	Bell and Howell	ВЗ
Narrow Gauge Film and Home Cinema B6, B7 Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) L14 A24 CACILIRA CIFANER (Pilot and Tubular) A44 A40 CACILIRA CIFANER (Pilot and Tubular) A44 A45 CACILIRA CIFANER (Pilot and Tubular) A44 CACILIRA CIFANER (Pilot and Tubular) A44 A45 CACILIRA CIFANER (Pilot and Tubular) A44 CACILIRA CIFANER (Pilot and Tubular) CACILIRA CIFANER (Pilot and Tubular) A44 CACILIRA CIFANER (Pilot and Tubular) CACILIRA C		
Pathe B3 Tubular (Cinema) B19 Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A11 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) Tby Jubular VACIIII M. CIFANER (Pilot and Tubular) A4	Narrow Gauge Film and Home Cinema	B6. B7
Tubular (Cinema) B19		
Various B5 Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) A1 VACIIIIAN (LEANER (Pilot and Tubular) A4		
Vertical B10 RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) A4		
RADIO DIAL (Miniature) J4 REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) Tby Lipit and Tubular) A4		
REFLECTOR (Altrilux, Comptalux) A14 REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W, 60W, 85W, 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A11 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) A4 VACILIER A4		
REINFORCED CONSTRUCTION A10 REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 VACILIEM CLEANER (Pilot and Tubular) A4	REFECTOR (Alaston Company)	Δ14
REPRO-MERCURY (HPR) L5 SEWING MACHINE A10 SHOW WINDOW A21 SIGN (Decorative) H5 SODIUM SO/H (45W, 60W, 85W, 140W.) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) L6 VACILIEAR A4 VACILIEAR A4	REFLECTOR (AITHUX, COMPTRION)	A10
SEWING MACHINE	REINFORCED CONSTRUCTION	A10
SHOW WINDOW	REPRO-MERCURY (HPR)	A10
SIGN (Decorative) H5 SODIUM SO/H (45W, 60W, 85W, 140W) L13, L14 SODIUM (Integral Construction) L12 SODIUM (Vacuum Jackets) L13, L14 STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Medical) F6 VACILIEM CLEANER (Pilot and Tubular) A4	SEWING MACHINE	A10
SODIUM SO/H (45W., 60W., 85W., 140W.) L13, L14		
SODIUM (Integral Construction)	SIGN (Decorative)	Нэ
SODIUM (Vacuum Jackets)	SODIUM SO/H (45W., 60W., 85W., 140W.)	L13, L14
STREET SERIES A11 SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CLEANER (Pilot and Tubular) A4	SODIUM (Integral Construction)	L12
SURGICAL F3 TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CIFANER (Pilot and Tubular) A4		
TALKIE EXCITER B21-B27 TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CLEANER (Pilot and Tubular) A4		
TELEPHONE A24 TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CLEANER (Pilot and Tubular) A4		
TENSION INDICATOR (Neon) G5 THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CIFANER (Pilot and Tubular) A4	TALKIE EXCITER	B21-B27
THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CIFANER (Pilot and Tubular) A4	TELEPHONE	A24
THEATRE, SPOT AND FLOODLIGHTING (Special) B17, B18 TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIEM CIFANER (Pilot and Tubular) A4	TENSION INDICATOR (Neon)	G5
TORCH (Miniature) J2 TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACIJIM CIFANER (Pilot and Tubular) A4	THEATRE, SPOT AND FLOODLIGHTING (Special)	. B17, B18
TRAIN (Cab and Carriage) A17 TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIAN CIFANER (Pilot and Tubular) A4	TORCH (Miniature)	J2
TUBULAR A10 ULTRAPHIL (Medical) F6 ULTRA-VIOLET (Medical) F6 ULTRA-VIOLET (Mercury HPW 125W.) L6 VACILIAM CIFANER (Pilot and Tubular) A4	TRAIN (Cab and Carriage)	A17
ULTRAPHIL (Medical) F6	TUBULAR	A10
ULTRA-VIOLET (Medical)	ULTRAPHIL (Medical)	F6
ULTRA-VIOLET (Mercury HPW 125W.) L6 VACHIMA CLEANER (Pilot and Tubular) A4	HITPA-VIOLET (Madical)	F6
VACIIIM CIFANER (Pilot and Tubular)	HITPA-VIOLET (Mercury HPW 125W.)	L6
WAVELENGTHG3	VACIIIM CIEANER (Pilot and Tubular)	A4
	WAVELENGTH	G3



Clear





Inside Frosted

Included in this group are those lamps from 15 watts to 1,500 watts, used for domestic, commercial and factory lighting. The lamps may be operated in any position but, from a light maintenance point of view, especially in lamps of 300 watts and upwards, best results are obtained when burned vertically cap up.

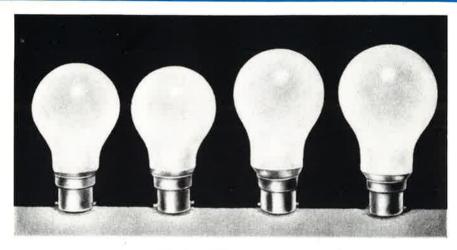
BULB FINISH: General Lighting Service Lamps 15 to 1,500 watts are made with either clear or inside frosted (pearl) bulbs. Clear bulb lamps should only be used in lighting units which are designed so that the lamp cannot be seen from normal angles of view, or in floodlighting and similar applications, where accurate control of the light from the lamps is essential.

The pearl bulb diffuses the light, reducing the glare and softening harsh shadows. There is no appreciable loss of light and pearl bulb lamps are recommended for most applications.

General Lighting Service Lamps have an average life of approximately 1,000 hours.

Volts	Watts	Сар	Nominal Lumens at 240V	Colour Temperature (Tolerance ± 50°K)
Gasfilled				
24/95	15	BC, ES	-	<u> </u>
32	20	BC, ES	===	_
24/95	25	BC, ES	<u>-</u>	 .
24/260	40	BC, ES	358	2600
24/260	60	BC, ES	612	2650
24/260	75	BC, ES	860	2700
24/260	100	BC, ES	1370	2750
25/260	150	BC, ES	2145	2800
30/260	200	BC, ES	2940	2875
30/260	300	GES	4740	2900
100/260	500	GES	8350	2925
100/260	750	GES	13125	2950
100/260	1000	GES	18600	2975
100/260	1500	GES	29700	3000
Vacuum				
100/260	15	BC, ES	129	
100/260	25	BC, ES	241	2450

The caps shown above are standard. 200 watt lamps can also be supplied with GES cap, 300 watt with BC or ES cap and 500 watt with ES cap.

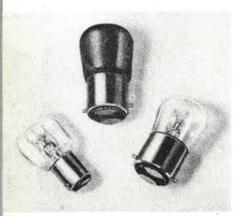


High Efficiency

The outstanding characteristic of this lamp is its special filament construction ensuring a minimum heat loss and consequent greater efficiency. High efficiency lamps give up to 20% more light than normal lamps of similar rating at no extra cost for current.

The average life is approximately 1,000 hours and the lamps are available with either clear or inside frosted finish.

Volts	Watts	Сар	Nominal Lumens at 240V	Colour Temperature (Tolerance ± 50°K)
200/250	40	BC, ES	430	2750
	60	BC, ES	720	2775
	75	BC, ES	950	2800
	100	BC, ES	1370	2825



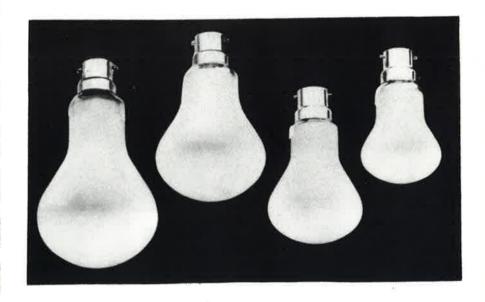
Pilot Lamps

Available with clear or inside frosted bulbs or in the following range of standard inside flushed colours—red, blue, green, yellow, orange, flame, ivory. The average life is approximately 1,000 hours.

-0.4	2/2/2					
Volts	Watts	Сар	Shape			
24/32, 50 65. 70 100/260	15	BC, ES, SBC, SES	Normal			
24/32, 50 65, 70 100/260	15	BC, ES, SBC, SES, Can. ES	Flush			

VACUUM CLEANER LAMPS

Volts	Watts	Сар	Shape
24/250	25	BC, ES, SBC	Pilot
170/250	25	SES	Tubular

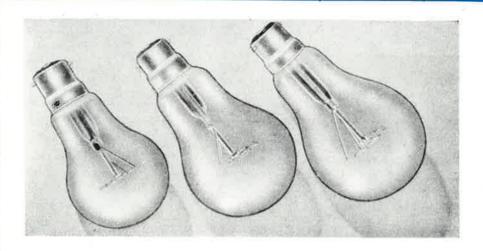


"K" Lamps

These lamps combine high light output with small physical dimensions. The peculiar, yet specially designed, "reduced" bulbs give them a very distinctive appearance, and with suitable ventilation enables them to be used in confined spaces.

Average Life is 1,000 hours.

Volts	Watts	Сар		Finish
100/250 100/250 100/250 100/250 100/250	40 60 100 150 200	BC, ES BC, ES BC, ES BC, ES BC, ES	}	White or Inside Frosted

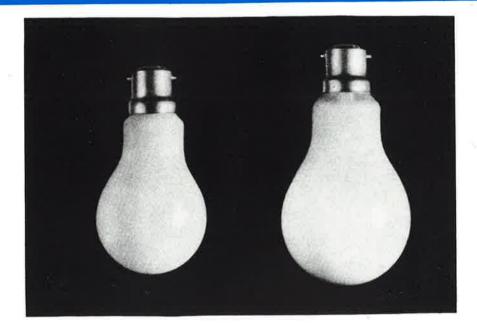


Daylight Blue

Philips Daylight Blue lamps are useful for the distinguishing and matching of colours by artificial light. Where conditions entail the constant use of artificial light they provide illumination similar to natural daylight conditions because a special blue glass bulb is used which reduces the emission of red and yellow rays.

The average life is approximately 1,000 hours.

Volts	Watts	Сар
100/260 100/260	60 100	BC, ES
100/260	200	BC, ES



Argenta Rose

Argenta Rose is a lamp inside coated with a special powder giving Pearl Pink light—soft and glare-free, yet remarkably efficient in light output. It is ideal for the home, cafes, lounges, hotels, restaurants and the like—It produces an atmosphere of cosiness by reason of its diffused pearl pink radiation. As a background light for TV viewing, it is ideal.

Argenta Rose Lamps have an average life of approximately 1,000 hours.

Volts	Watts	Сар
200/250	60	BC, ES
200/250	100	BC, ES
200/250	150	BC, ES
200/250	200	BC, ES, GES

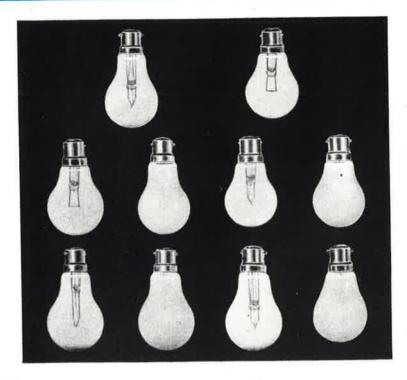


Argenta White

These lamps, inside coated with special powder, give superb light distribution and diffusion. They make seeing easier and reduce glare and harsh shadows. Brightness is uniform over the whole bulb surface.

Argenta Lamps have an average life of approximately 1,000 hours.

Volts	Watts	Сар
200/250	40	BC, ES
200/250	60	BC, ES
200/250	100	BC, ES
100/260	150	BC, ES
100/260	200	BC, ES, GES



Lamps for Independent Home Lighting Plants

For use with the many and varied types of generating plants, Philips low voltage lamps for home lighting are eminently suitable. They give the utmost light output for the current available, thus ensuring maximum return for every penny spent on the generating equipment. The "pearl" lamp is recommended for its soft, diffused light.

The average life is approximately 1,000 hours.

Volts	Watts	Сар	Finish
6.12.16	15	BC, ES	Clear/Pearl
6.12.16	25	BC, ES	Clear/Pearl
6.12.16	40	BC, ES	Clear/Pearl
12	60	BC, ES	Clear/Pearl

Reinforced Construction Lamps:

These Lamps are specially designed for use in locations subject to vibration, e.g., in lifts. The filament of this type is specially supported so as to make it mechanically stronger and thus better able to withstand shocks and vibrations.

Average life is approximately 2,000 hours.

Volts	Watts	Сар	Finish
100/260 32 100/260 32 100/260 170/260 170/260 140/260 140/260	25 40 40 60 100 150 200 200 300 300 500	BC or ES GES GES BC or ES	Clear or Pearl

Tubular Lamps:

Specially designed for general lighting purposes and for places where normal drop-shaped lamps cannot be fitted, e.g., small show-cases, signs, pulpits and lecture desks, show-windows, etc.

Average life is approximately 1,000 hours.

Volts	Watts	Сар	Overall Measurements
25/60	15	BC, ES	72 x 28 mm.
100/260	15	CES	63 x 18 mm.
24/260	25	SES, SBC	76 x 28 mm.
25/260	40	BC, ES, SBC	150 x 26 mm.

Sewing Machine Lamps:

Specially designed for use with sewing machines.

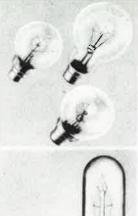
Average life is approximately 1,000 hours.

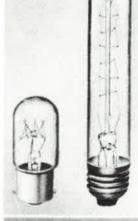
Volts	Watts	Сар	Finish	Overall M'ments
20/250	25	SBC	Clear or Pearl	67 x 22 mm.

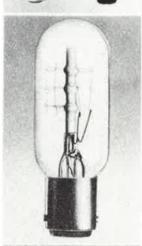
Aldis Signalling Lamps:

Volts		Watts	
ŧ/i	12	36 36	

For use in Aldis
Signalling
Equipment









Special Type Lamps



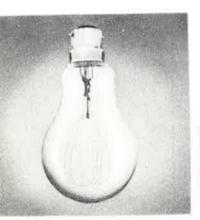
Street Series

Mainly used by Municipal and Shire Councils and Supply Undertakings for street lighting where series type constant current circuits are in use.

Average life is approximately 1,350 hours.

Amps.	Nominal Candle Power	Lumens	Сар
6.6 6.6 6.6 6.6 6.6 6.6 6.6 20 20 20	50 60 80 100 250 400 600 1,000 600 1,000 1,500 2,500	500 600 800 1,000 2,500 4,000 6,000 10,000 10,000 15,000 25,000	GES

Carbon Filament Lamps



Although replaced by tungsten filament lamps for ordinary lighting purposes, they can be used where extreme vibration is experienced. As resistances and for certain heating purposes, this lamp has a wide application.

Average life is approximately 1,000 hours.

Volts	Candlepower or Watts	Сар	Finish
25/95, 100/260 25/95, 100/260 25/95, 100/260 25/95, 100/260	16 c.p 65 Watts 25 c.p100 Watts 32 c.p130 Watts 50 c.p200 Watts	BC or ES	Clear

"Attralux" Lamps

The "Attralux" is an internally mirrored lamp the bottom end satin-frosted on the outside. It produces an intense beam of light. making it ideally suited for the illumination of detail. A further advantage is that it is physically small by compari-



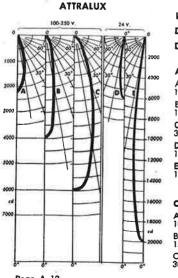
son with the large equipment usually used to obtain a similar effect. Attralux lamps burn in any position and are ideal for the highlighting of display features, etc.

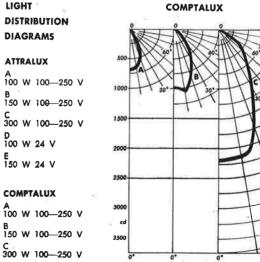
FEATURES: • Concentrated beam of light. • High luminous intensity. Sturdy construction.
 Mirror sealed against dust and depreciation.
 Average life is approximately 800 hours.

APPLICATIONS: Showrooms. Shop-windows. Shops. Department stores. Counter-display lighting. Fashion Restaurants (bars). Exhibitions, etc. Theatre footlights. • Special lighting in churches.

NOTE: For very special cases of highlighting, where an uncommonly high intensity may be needed, special 24 volt Attralux lamps may be ordered. These operate from normal type 24 volt transformers.

Cat. No.	Volts	Watts	Сар	Bulb
13411/44	24	100	BC or ES	R30
13411/44	100/250	100	BC or ES	R30
13378/44	24	150	BC or ES	R40
13378/44	100/250	150	BC or ES	R40
13221E/44	100/250	300	BC or ES	R40





Page A 12

"Comptalux" Lamps

Comptalux lamps are provided with an inside mirror and satin-frosted bulb bottom. Owing to their special shape, they produce a uniform light distribution of high value. The lamps are specially suited for additional illumination of counter display, shop windows, etc.

The silvered mirror is hermetically sealed, thus protecting it effectively against dust, deterioration, etc.

The average life is approximately 800 hours.



APPLICATIONS:

Shop-windows. Shops (especially over counters). Department stores. Exhibitions. Fashion shows. Announcement boards.

Blackboards in schools.

Cat. No.	Volts	Watts	Сар	Bulb
13412/44	100/250	100	BC or ES	R30
13211/44	100/250	150	BC or ES	R40
13320/44	100/250	300	BC or ES	R40

"Altrilux" Lamps



The Altrilux 250W and 500W are specially developed internally mirrored lamps with a bulb either outside frosted at the bottom or of clear glass. Both types produce a fairly narrow, sharply-defined beam of light and are excellent for use in the open air, such as the floodlighting of statues, trees, fountains and buildings. They can also be used for display purposes in exhibitions, etc., and are highly suitable for illumination of textile goods.

FEATURES: Concentrated beam of light. High luminous intensity.

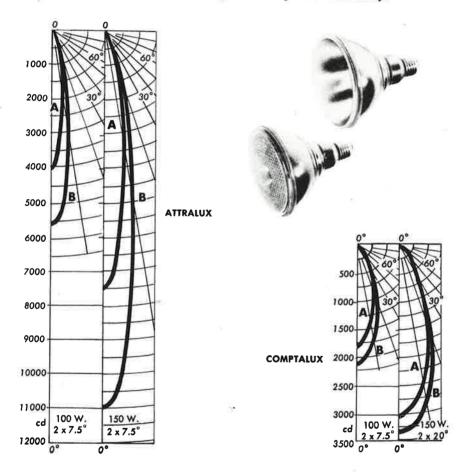
Strong construction

Cat. No.	Volts	Watts	Сар	Execution
13107E/06	100/250	100	E27	Clear
13102E/99	100/250	100	E27	Frosted
13103E/99	100/250	250	E27	Frosted
13103E/06	100/250	250	E27	Clear
13104E/99	100/250	500	E27	Frosted
13104E/06	100/250	500	E27	Clear

MOUNTING: Altrilux lamps are made with a particularly strong bulb. When used in the open they must be protected against rain and splashes of water. For illumination of fountains, if the lamps are mounted above water level, they must either be protected against spray or continuously covered with a stream of water: in the latter case the lamp must not be switched on before the water has started to flow. For use under water the mains connection must be watertight.

Pressed Glass Lamps

The 150W Attralux and Comptalux lamps in a Pressed Glass construction, are produced primarily for outdoor use and special fittings are unnecessary, as the lamp will operate under all weather conditions. Waterproof holders must be used however, to protect the electrical connections. Flood-lighting jobs and even many indoor situations lend themselves ideally to this lamp type. Especially effective when used in conjunction with Philips "Paraflood" Weatherproof Lampholder assembly.



Volts	Watts	Сар	Туре
100/250	100	E27	Attralux Spot
100/250	150	E27	Attralux Spot
100/250	100	E27	Comptalux Flood
100/250	150	E27	Comptalux Flood

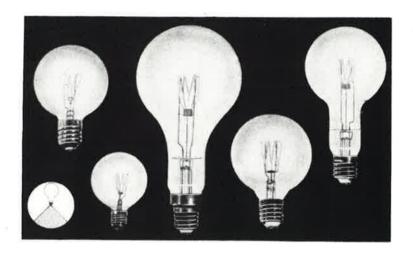
Argenta Super Lux

Made in the well known 'K' type bulb construction these lamps have the upper section of the outer envelope finished in the inside White "Argenta" execution. However, there is an inside frosted aperture at the base of the bulb which allows a higher intensity in the centre of the downward beam. At the same time the Argenta Super Lux maintains the features of the inside white finish, namely, soft shadows and well diffused illumination in the sideways and upwards direction. These lamps are ideal for reading lamps, also table and floor standard fittings.



Volts	Watts	Сар
100/250	60 100 150	BC/ES

Floodlighting Lamps



The shaded part illustrated in bottom left hand corner indicates the non-permissible burning position.

For use with high intensity floodlights to illuminate buildings, churches, hoardings, awnings, monuments, etc. Outlines of buildings and monuments are accentuated and new life is given to ancient facades and statues.

Average life is approximately 800 hours.

ų i		11		Dimensions, mm.			
Туре	Volts	Watts	Lumens	Diameter	Light Centre Length	Overall Length	Сар
268	100/260	100	1,000	80	76	116	ES
120E	100/160 200/260	100	1,200	80	76	120	ES
269	100/260	250	3,200	90	76	125	ES
123E	100/160 200/260	250	3,700 3,200	90	76	125	ES
271	100/260	500	7,600	120	108	168	GES
1 25G	100/260 200/260	500	8,750 7,600	120	108	175	GES
272	100/260	1,000	18,500	130	108	175	GES
6036G	100/160 200/260	1,000	20,500 18,500	130	140	210	GES
6115G	100/160 200/260	1,000	20,500 18,500	130	180	250	GES
6011G	100/160 200/260	1,500	30,000 28,500	170	235	340	GES

Train Lamps



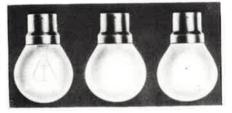
LOCOMOTIVE HEADLAMPS

Philips locomotive headlamps are specially designed for use with the standard types of locomotive headlight reflectors in use throughout Australia.

			Di			
Volts	Watts	Lumen Value at 24V.	Diameter	Light Centre Length	Overall Length	Caps
16.24/36 24/36 100/130	100 150 150	1,600 1,600 1,600	80 80 80	76 76 76	116 116 116	ES ES ES
24/36 }	250	4,600	80	76	116	ES
100/130	250	4,600	80	76	116	ES

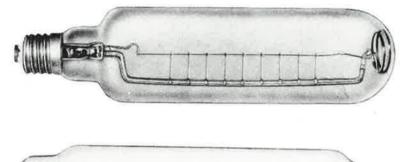
CARRIAGE & CAB LIGHTING

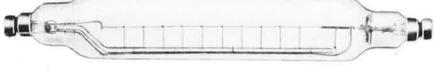
For use with the various systems of railway carriage lighting in this country Philips supply a complete range of specially designed train lighting lamps.



Volts	Watts	Сар	Service	Finish	Shape
24 24-32 12-36 12-36 12-36 12-36	6 10 15 20 25 30	BC, ES, SBC	Gasfilled Types Train Interior	Clear or Pearl	without Neck
16 16 24-32 24-32 24-32 48 48 48 12 24-32	10 15 15 20 25 15 20 25 25 36	BC, ES	Train Interior	Clear or Pearl	with Neck
65 65 75 75	25 40 25 40	BC, ES	R.C. Diesel Loco	Clear or Pearl	without Neck
32 32 32 32	10 15 20 25	BC, ES	R.C. Engine Cablights	Clear or Pearl	with Neck
75 75	25 }	BC, ES	R.C. Diesel Loco	Clear or Pearl	without Neck
75 75	25 40 }	BC, ES	R.C. Diesel Loco	Clear or Pearl	with Neck

"Linea" Lamps





Linea lamps with their straight filament are not only used as stage "footlights," but also for the illumination of larger show windows and for floodlighting. The lamp can burn in any position. When burning horizontally or obliquely, the glass support must be vertically below the filament and it is recommended to support the lamp at the end. When burning vertically or obliquely the cap of the lamp must be at the bottom. The double ended linea lamps illustrated are specially designed for aerodrome floodlights.

The life of the lamp is approximately 500 hours.

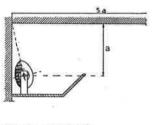
Туре	Volts	Watts	Approx. Lumens	Diam. mm.	Length in mm.	Сар
6093E	100-160 200-250	250	4,300 3,800	63	235	ES
6013G	100-160 200-250	500	9,500 9,000	90	355	GES
6014G	100-160 200-250	1000	21,000 20,000	100	400	GES
6027G	100-160 200-250	1500	32,000 30,000	100	400	GES

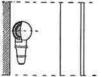
"Cornalux" Lamps

The "Cornalux" lamp represents the most advanced and efficient form of cornice lighting. The bulb has a ribbed surface and is half silvered on the inside. On account of its shape, the light rays are reflected and the light is thrown uniformly across walls and ceilings. The light is spread evenly over an area five times the height between the lamp and the ceiling. To ensure the best results the lamp has to be well adjusted and is therefore only supplied with normal B22 cap.



Volts	Watts	Сар	
100/250	60	B22	
100/250	100	B22	





"Cornalux":

To find the maximum distance on the ceiling to be uniformly illuminated by the "Cornalux" lamp, you can calculate the distance "a". This is then multiplied by 5.



Mirrored Lamps



LAMPS WITH HEAD MIRROR

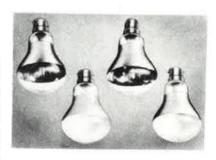
A complete, indirect lighting unit in itself, the Philips Head Mirror lamp is designed for home, office and similar applications where complete absence of glare is desirable. Downward light from the filament is

reflected from the internal high efficiency mirror in an upwards direction. This lamp is highly efficient in its operation.

Volts	Watts	Сар
100/250	60	B22/E27
100/250	100	B22/E27
100/250	150	B22/E27
100/250	200	B22/E27

LAMPS WITH RING MIRROR (Onion Lamps)

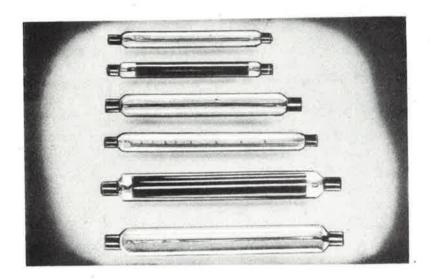
The small dimensions and squat bulb (hence the term "Onion" lamps) of the ring mirror type of incandescent lamp make it ideal for local lighting requirements in the home, office and factory and for display window



applications, particularly in jewellery stores. The partly mirrored bulb gives a concentrated beam and the requirements of good seeing have been catered for by permitting a proportion of the light to radiate upwards past the lamp cap. Ring mirror lamps are semi-direct lighting units in themselves and are ideal for use in many contemporary reading lamp standards and specialised light fittings.

Volts	Watts	Сар	
100/250	40	B22	
100/250	60	B22	
100/250	100	B22	

Show Window Lamps



These tubular two cap lamps are available in clear or half silvered finish. Being specially designed for show windows, show-cases, luminous signs, etc., this tubular light source of a small diameter and of a high intensity will provide the required effect. These lamps can be mounted in such a way that their luminous flux is equally distributed in a certain direction, whilst the light source remains hidden from view.

Volts	Watts	Diam. (mm)	Length (mm)	Сар
100/250	25	21	221	S 15
100/250	25	30	260	S 19
100/250	40	25	284	S 15
100/250	40	38	310	S 19
100/250	60	38	310	S 19

Infra-Red Lamps



For Industrial and Medical use

Philips infra-red lamps are designed for high efficiency industrial drying and heating, with paint drying as the main application. There are, however, many other uses for these lamps, including the drying of gummed flaps on envelopes, Foodstuffs, Tobacco, Blueprints and similar copying material, Paper and Cardboard and Electrical Equipment, to name just a few.

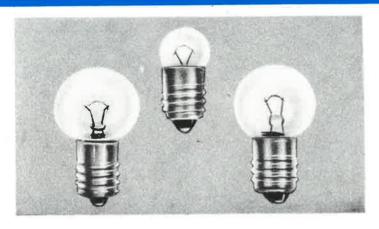
Another use to which infra-red lamps has been directed is in the raising of poultry and pigs. For this purpose, the industrial lamp can be used, or alternatively, there is available a lamp with a brown bulb-face designed to reduce visible light without affecting the infra-red radiation.

There is also the Infraphil, a 150W medical infra-red lamp, developed specially for therapeutic purposes.

Special attention is also directed to the special tubular quartz bulb infra-red lamps which are fast gaining in popularity. Designed initially as special heating elements for testing of various aircraft metals, they have become popular in the industrial field as well as a heat source for commercially marketed electronic barbecues, etc.

Volts		Approximate Dimensions in mm.				
	Watts	Overall Length	Diameter	Сар	Finish	Type No.
100/250	150	160	111	3 pin BC	Red glass internal mirror	13373F/479
100/250	250	185	125	ES	Clear	-
100/250	250	185	125	BC, ES	Frosted internal mirror	13352/99
100/250	250	185	125	BC, ES	Brown glass internal mirror	13345/98
100/250	375	185	125	ES	Frosted internal mirror	13344E/13
125/130	500	253	10	Special Clips	Quartz Glass Clear	13169X
220/250	1000	380	10	Special Clips	Quartz Glass Clear	13195X

Miners' Lamps

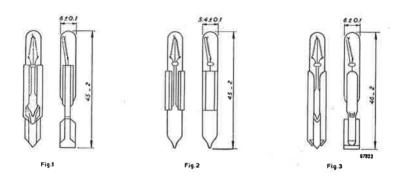


MINERS' LAMP: A full range of miners' lamps is manufactured with caps adapted to the special requirements of all types of hand and cap lamp equipments.

Voltage	Current	Average	Max.	length with	сар
Vollage	A	Life	E14	E10	B15
2	0.85 0.85 0.85 0.9 1.0	500 1000 1000 1000 300	42 50	29	37 42
2.4	0.6 0.8 0.85 1.0 1.15 1.5	500 500 500 500 500 250 500 500	50 50 50	29 30.5 29 30.5 30.5	48 48 48
2.5	0.5 0.7 0.75 1.0 1.0-0.75 1.25 1.5 1.75	500 500 500 500 500 500 500 500	50 50 50	29 29 30.5	48 48 48 48 48
2.6	0.5 0.5 0.7 0.7 0.9 1.0 1.2 1.25 1.35 1.5	500 300 500 300 300 300 300 500 300 500	50 50 50 50 50 50 50	29 29	48 48 48 48 49 48 48 48
3,6	1,0	500		30,5	
3.7/3.87	1,0/0,65	500		20.5	48
3.75	0.9	500	-	30.5 23.5	_
4	0.46 0.5 0.55 0.8	200 500 500 200		30.5 29 30.5	

Telephone Lamps

Telephone Switchboard Lamps: For all types of telephone switchboards, Philips supply a complete range of indicator lamps.



Туре	Voltage V	Current mA	Maximum Wattage	Сар	Fig.
BELL	3-1 6 18-60	30-100 30-100	3 3	TB 6/30	1
ERICSSON	3-16 18-60	30-100 30-100	3 3	TE 6.5/14.5	2
NAWI:	3-16 18-60	30-100 30-100	3 3	TN 7/30	3

When ordering these lamps, please indicate the exact voltage and current required.



PROJECTION AND CINEMA LAMPS
FILM STUDIO LAMPS

TALKIE EXCITER LAMPS

HOME CINEMA LAMPS

MICRO PROJECTION LAMPS



Projection and Floodlighting Lamps

REMARKS CONCERNING DATA

Voltage: Most lamps can be supplied for the following voltages:

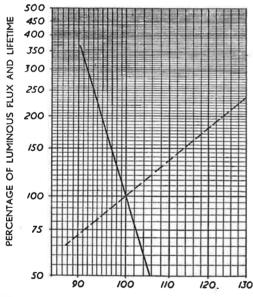
100, 110, 115, 120, 125, 130, 140, 150, 160, 200, 210, 220, 230, 240,

Lumens: The lumen values (in relation to candela) given for the lamps of the range of 100-160 Volts apply to 110 V and for those of the range of 200-250 V to 220 V. Lumen values are average values and do not

apply to individual lamps.

Dimensions: If not emphatically mentioned otherwise. dimensions аге subject to the following tolerances:

Bulb diameter in mm.	Tolerances in mm.	Light centre length in mm.	Tolerances in mm.	Overall length in mm.	Tolerances in mm.
up to 25 26-99 100-199 200-299 300-399	± 0.5 ± 1 ± 1.5 ± 2 ± 3	up to 109 110-129 130-159 160-189 190-219 220-269 270-899	± 3 ± 4 ± 5 ± 6 ± 7 ± 8 ± 10	up to 153 154-174 175-205 206-256 257-307 308-358 359-909	- 7 - 9 - 11 - 14 - 16 - 18 - 20



DIRECTIONS FOR USE

In order to arrange that the lamps will reach their nominal output, it is very important to use them on the right voltage. It is seen from the diagram that a slight drop in voltage causes a considerable decrease in light output.

Owing to the high burning temperature and the special construction of these lamps, they are highly susceptible to vibrations; against which they must be carefully protected.

If the lamps are used in reflectors, one should give attention to the beam not being reflected on the filament. The life of the lamps will be unduly shortened due to the over-heating thus produced.

With a view to the life of these lamps, make sure the cooling unit of the apparatus or fittings used, functions properly.

It is not recommended to design apparatus or fittings on the mere basis of a sample lamp or on the data of the catalogue. Full information and free advice are readily given upon request.

BURNING POSITION:

The lamps are illustrated in the position in which they are to be used. The deviations allowed are indicated by white sectors in a black circle.

Note: For the narrow gauge film lamps, the deviations should not exceed 15°.



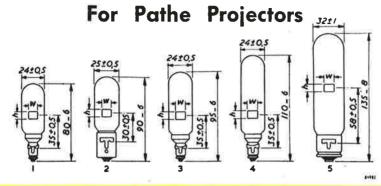
luminous flux



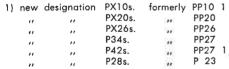


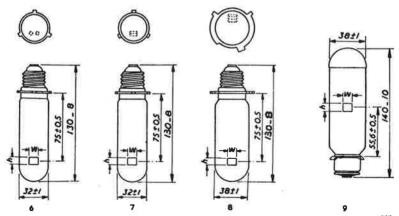
Page B 2

Lamps for Narrow Gauge Film and Home Cinema Apparatus



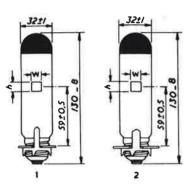
When ordering only quote		Current	Wattage				Filament		Average
Catalogue number	Voltage V	A	w	Lumens	Base 1)	Fig.	wxh	Exc. mm.	life hrs.
6181 C	60		50	800	PX10s	1	3.5 x 3	3	50
7238 X	12		100	2500	PX20s	2	3.5 x 3.5		25
7238 X	32		100	2400	PX20s	2	4.5 x 4.5	i	25
6130 C	80		100	1850	PX10s	3	5 x 5	3	50
6129 C	80		160	3100	PX10s	4	4.5 x 5	3	50
6132 C	50		200	4500	PX26s	5	5.5 x 6	5	50
6132 C	100-130		200	4200	PX26s	5	6.5 x 6.5	5	50
6135 C	200-250		250	5000	PX26s	5	10 x 8	5	50
6034 C	100		200	4200	P34s	6	6.5 x 6.5	7	50
7208 C	100		250	5600	P34s	6	7 x 7	7	50
7201 C	15	13		5600	P34s	7	5.5 x 5	7	50
7204 C	31	13		11500	P42s	8	6 x 9	8	50
13143 C	24		600	19500	P28s	9	8 x 8	7	25

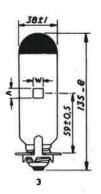


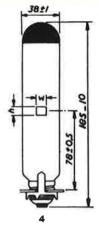


Projection and Cinema Lamps

BELL AND HOWELL





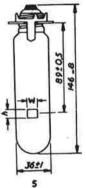








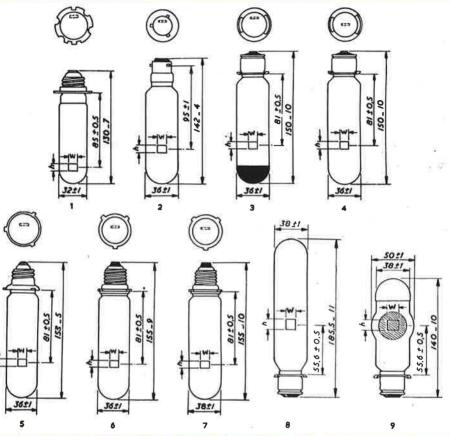




When ordering only quote		Wattage	Lumens	Base 2)	Fig.	Filament	Average life
Catalogue number	Voltage V	W	Loniens	Dase 2)	ııg.	wxh	hrs.
6131 H	100-130	300	7400	P38s	1	7.5 x 8	25
6131 X	100-130	300	7400	P46s	2	7.5 x 8	25
6117 H	100-130	400	9400	P38s	1	7.5 x 7.5	25
6117 X	100-130	400	9400	P46s	2	7.5 x 7.5	25
6152 H	100-130	500	12500	P38s	1	8.5 x 7.5	25
6152 X	100-130	500	12500	P46s	2	8.5 x 7.5	25
7244 H	100-130	500	12500	P46s	5	8.5 x 7.5	25
6153 H	100-130	750	19500	P46s	3	10 x 10	25
7243 H	100-130	750	19500	P46s	5	10 x 10	25
6186 H	100-130	1000	27000	P46s	4	11 x 11	25
7242 H 1)	100-130	1000	27000	P46s	3	11 x 11	25
7245 H	100-130	1000	27000	P46s	5	11 x 11	25
7081 H	100-130	1000	29000	P46s	3	11 x 11	10
7209 H	100	1200	35000	P46s	4	11 x 12	10

- 1) For 200-250 V: filament 14 x 11, lumens 25000
- 2) New designation P38s, formerly B & H 38 New designation P46s, formerly B & H 46/B & H 46 1

Projection and Cinema Lamps



Mark	When ordering only quote		Curr.	Wattage	_			Filame	nt	Average
Mark	Cat. No.	Volt. V	A	w	Lumens	Base 2)	Fig.	wxh	Exc.	life hrs.
Debrie	6169 C	100-130		500	12500	P39s	5	8.5 x 7.5	4	25
	6170 C	100-130		750	19500	P39s	5	10 x 10	4	25
Radio Cine.	7235	100-130		750	19500	P28s	3	10 x 10	7.5	25
Ericsson	7228 C	100-130		500	12500	P28s	4	8.5 x 7.5	_	25
	7231 C	100-130		750	19500	P28s	4	10 x 10		25
	7239 C	100-130		1000	27000	P28s	4	11 x 11		25
Precisvox	6169 Z	100-130		500	12500	P36s	6	8.5 x 7.5	4	25
	6170 X	100-130		750	19500	P36s	6	10 x 10	4	25
Gebescope	6169 F	100-130		500	12500	B22d-3	2	8.5 × 7.5	4	25
S.A.F.A.R.	7233 C	3-3	12.5	200	5500	PX44s	1	5.5 x 4.5	7	25
500.000.000.000	7234 C		12.5	300	8250	P44s	1	6 x 5	7	25
Philips	7240 C	110		1000	27000	P36s	7	14 x 10	6	25
	7079 C	110		750	— 1)	P28s	8	12.5 x 8.5	-	25

1) With mirror

٠,	AAIIII	11111101				
2)	New	designation	P39s	formerly	PD27	
	,,	,,	P28s	**	P28	
	,,	,,	P36s	**	PV27	
	,,	,,	P22d-3	**	P22-111	
	,,	"	PX44s	307	PS27-1	
			DAAc		PS27	

Lamps for Narrow Gauge Film and Home Cinema Apparatus

Various Types

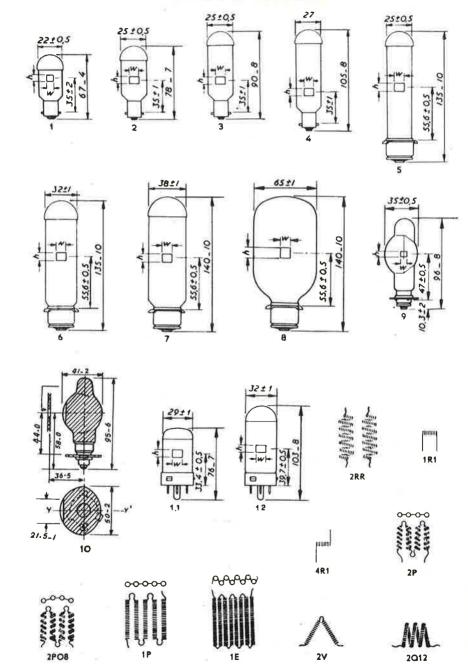
W	hen ordering	Water	Lumans	Base 1)	Fig.	Average life	Fì	ilament	
Cat. No.	Volts or Amps.	Walls	LUMENS	Dase ()	rig.	hrs.	wxh	Shape	Exc. mm.
13149 N 6156 N 7232 N 6157 N	115-125V 100-130V 100-130 V (110 V-0.45A) 100-130V	30 50 50 75	400 700 700 1200	BA15s BA15s BA15s BA15s	1 2 2	25 50 50 50	4 × 4.5 4 × 5 4 × 5 4 × 5	2V 2RR 2RR02 2RR	- 3 ± 1
7238 N 6158 N	200-250V 12V 100-130 V (110 V-0.9A) 200-250V	75 100 100 100	1000 2700 1700 1500	BA15s BA15s BA15s BA15s	2 2 2	50 25 50 50	8 × 4 4.6 × 2.6 5 × 5 7 × 6.5	2P 4R1 2RR 2P08	
13141 N 6166 N	100-130V 200-250V 100-130 V (110 V-1.8A)	150 150 200	2900 2700 4400	BA15s BA15s BA15s	3	50 50 50 25	6.5 × 7 8 × 8 6.5 × 6.5	2RR 2P08 2RR	
7212 N	200-250V 100-130V 200-250V	200 300 300	4000 7400 6900	BA15s BA15s BA15s	4	25 25 25	9 x 8 7.5 x 8 10 x 8	2P08 2RR 2P08	=
7066 N 13113 2) 13116 C/04	100-130, 200-250V 8V 12V	300 50 100	=	BA15s P15s P35s	9 10	25 25 25	2.6 x 1.4 2.6 x 0.4	1R1 1R1	=
6067 C 13140 C	100-130 V (110V-0.9A) 200-250V 100-130V	100 100 150	1700 1500 2900	P28s P28s P28s	5 5	50 50 50	5 x 5 7 x 6.5 6.5 x 7	2RR 2P08 2RR	=
6160 C	200-250V 100-130 V (110V-1.8A) 200-250V	150 200 200	2700 4300 3900	P28s P28s P28s	6	50 50 50	8 × 8 6.5 × 6.5 9 × 8	2P08 2RR 2P08	
6070 C 6131 C	100-130V 200-250V 100-130 V (100V-3A)	250 250 300	5300 5000 7400	P28s P28s P28s	6 6	50 50 25	7 x 7 10 x 8 7.5 x 8	2RR 2P08 2RR	=
6152 C	200-250V 100-130V (100V-5A) (110V-4-5A)	300 500	6900 12500	P28s P28s	6	25 25	10 x 8 8.5 x 7.5	2P08 1E	=
6153 C	200-250V 100-130V (100V-7.5A) (110V-6.8A) 200-250V	500 750 750	11400 19500 18000	P28s P28s P28s	7	25 25 25	12 x 9.5 10 x 10 13 x 10.5	1E 1E	=
7205 C	100V (7.5 A) 110V (6.8 A)	750	19500	P28s	7	25 25 25	10 x 10	1E02 1E	3 ± 1
7242 C	100-130V (100V-10A) 200-250V	1000	27000 25000	P28s P28s	7	25	11 x 11 14 x 11	1E	=
6185 C	100-130V 200-250V	1000	27000 25000	P28s P28s	8	25 25	11 x 11 14 x 11	1E 1E	-
7213 C 7224 C 7217 C 7229 C 7219 C	3.5A 4A = 5A 5A 5A	100 200 250 250 375	2300 4400 5750 6200 9000	P28s P28s P28s P28s P28s P28s	5 6 6 6	50 50 50 25 50	5 x 5 7 x 6,5 7 x 7 5 x 5 9 x 9	2RR 1P02 1P 2012 1P	5 ± 1 5 ± 1
6284 C 6280 C	100-130V 200-250V 100-130V	150 150 300	2900 2700- 7400	G17q G17a	11 12	25 25	6.5 x 7 8 x 8 7.5 x 8	2RR 2P08 2RR	=
6282 C	200-250V 100-130V 200-250V	300 500 500	6900 12500 11400	G17q G17q	12	25	10 x 8 8.5 x 7.5 12 x 9.5	2P08 1E 1E	=

¹⁾ New designation P28s; formerly P28.

²⁾ Filament Dimensions front view.

Lamps for Narrow Gauge Film and Home Cinema Apparatus

VARIOUS TYPES



Page B 7

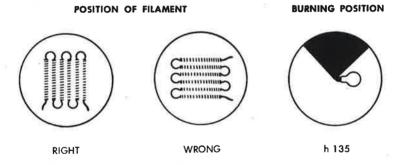
Projection Lamps (Horizontal)

Used in a suitable projector, these lamps give a sharp concentrated beam and are therefore very suited for stage lighting and similar purposes.

They can be supplied with or without mirror.

If lamps with mirror are applied, care is to be taken that the mirror does not come to lie over the filament. Eventual projectors have to be properly ventilated.

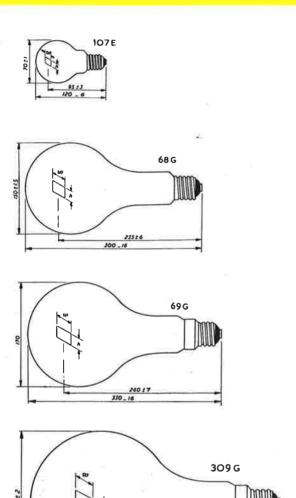
When ordering lamps with mirror, state the code numbers 01 behind the catalogue number, e.g., $107 \, \text{E}/01$.



Cat. No.	Voltage V	Wattage W	Cap	Filament w x h	Lumens	Average 1) life hrs.
107 E	100-160 200-250	100	E 27	11 x 9 12 x 9	1200 1050	300
68 G	100-160 200-250	1000	E 40	21 x 18 25 x 21	21000 19000	300
69 G	100-160 200-250	1500	E 40	25 x 21 28 x 26	33000 31000	300
309 G	100-160 200-250	2000	E 40	27 x 23 30 x 28	46000 42000	300
345 G	100-160 200-250	3000	E 40	30 x 25 35 x 25	70000 65000	300

¹⁾ Average life under laboratory conditions.

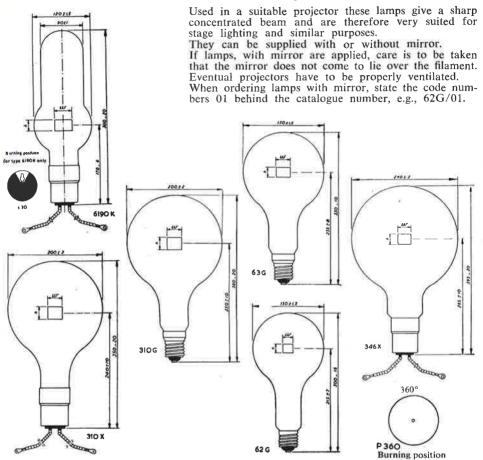
Projection Lamps (Horizontal)



275 ± 10 360 - 20

Projection and Cinema Lamps

PROJECTION LAMPS (Vertical)



Cat. No.	Voltage V	Wattage W	Сар	Filament wxh	Lumens	Average 1) life hrs.
62G	100-160 200-250	1000	E40	21 x 18 25 x 21	22000 20000	300
63G	100-160 200-250	1500	E40	29 x 21 32 x 25	34000 32000	300
310G	100-160 200-250	2000	E40	28 × 25 30 × 28	48000 44000	300
310X	100-160 200-250	2000	S59/2Ca	28 x 25 30 x 28	48000 44000	300
346X 6190K	100-160 200-250	3000	\$59/2Ca	30 x 25 35 x 25	72000 66000	300
OTTON	32 65	3000	\$59/2Ca	26 x 14 28 x 22	88500 85000	100
	100-160 200-250			28 x 20 36 x 24	85000 78000	

Episcope Lamps

These lamps can be supplied with and without mirror. When ordering mirrored lamps add the code numbers 01 behind the catalogue number. The values for the luminous flux apply to lamps without mirror.

Bott

**Bott

Cat. No.	Voltage V	Wattage W	Сар	Filament w x h	Lumens	Average 1) life hrs.
422 E	100-160	250	E 27	12 x 8	5000	100
	200-250			16 x 10	4500	
422 C	100-160	2 50	P 28s	12 x 8	5000	100
	200-250			16 x 10	4500	
437E 2)	100-160	500	E 27	14 x 11	11500	100
	200-250			17 x 12	10500	
490C 4)	100-160	1000	P 40s	17 x 14	26000	100
	200-250			22 x 14	23000	
437 C	100-160	500	P 28s	14 x 11	11500	100
	200-250			17 x 12	10500	
457 G	100-160	1000	E 40	17 x 14	26000	100
	200-250			22 x 14	23000	
457 C	100-160	1000	P 40s	17 x 14	26000	100
	200-250			22 x 14	23000	
6023G 3)	100-160	1000	E 40	17 x 14	26000	100
	200-250			22 x 14	23000	

6023G

1) Average life under laboratory conditions.

457G - 457C

3) Can also be supplied with P40 cap; Cat. No. 6023C.

4) Equivalent to 457C but with LCL 87 \pm 0-5 OVE 190-10mm. Page B 11

²⁾ On special request: For Bausch and Lomb apparatus with E 27/. . . with a light centre length of 94 \pm 3 mm. and total length of 148-1 mm. Cat. No. 437 X.

Film Studio Lamps (ca 3200°K)

Owing to their compact filaments these lamps have a high luminous intensity.

Moreover, an outstanding advantage over the arc lamps formerly used is the absence of interfering noises at the production of sound films, and these lamps will not so much affect the life of the parabolic mirror as the former arc lamps did.

as the former arc lamps did.

In lamps with 2-pin holders the filament has most exactly been centred with respect to the pins, so that the lamps can be replaced without any further adjustment.

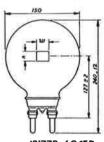
placed without any further adjustment. These lamps are suitable for both black and white and where 3200° is required. Life on the average approx. 100h., with exception of 13190 P (50 h.).

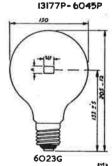
Cat. No.	Voltage	Wattage	Сар	Filament w x h	Lumens
13191P 4)	100-160	500	Bi 22	14 x 11	13000
	200-250			17 x 12	11500
13176P 5)	100-160	500	Bi 22	14 x 11	11500
1	200-250			17 x 12	10500
13174P 5)	100-160	750	Bj 22	14 x 13	19000
	200-250			18 x 14	18000
13173P 4)	100-160	750	Bi 22	14 x 13	19000
	200-250			18 x 14	18000
6023G 1)	100-160	1000	E 40	17 x 14	26000
	200-250			18 x 14	23000
6046G 1)	100-160	2000	E 40	24 x 19	55000
	200-250			30 x 23	50000
13177P	100-160	2000	Bi 38	24 x 19	55000
	200-250			30 x 23	50000
6039G 6)	100-160	3000	E 40	28 x 20	85000
	200-250			36 x 24	78000
6040K 2)	100-160	5000	K 59d	34 x 25	145000
	200-250			46 x 28	135000
6038P	100-160	5000	Bi 38	34 x 25	145000
	200-250			46 x 28	135000
13185P	100-160	5000	Bi 38	35 x 25	145000
	200-250			46 x 28	135000
6225K	100-160	10000	K1004	50 x 35	300000
	200-250			56 x 40	280000
13111P	100-160	10000	Bí 38	50 x 35	300000
	200-250			56 x 40	280000
13013K 3)	100-160	20000	K100E	55 x 35	600000
	200-250		K100d	70 x 53	560000
13171P 5)	100-160	1000	Bi 38	17 x 14	26000
	200-250			18 x-14	23000
13179P 5)	100-160	1500	Bi 38	15 x 14	40000
	200-250			19 x 17	36000
13180P	100-160	2000	Bi 38	24 x 19	55000
	200-250			30 x 23	50000

- 1) Can also be supplied with P 40s cap; Catalogue number 6023C LCL 100 \pm 3mm.
- 2) Cap K 59D previously \$59/2 Ca.
- 3) Low voltage with three cables, high voltage with two cables.
- 4) For 3200°K film.
- 5) For black and white only.
- 6) Can also be supplied with K59D base; type 6039K LCL 100 ± 3 mm.

13176P 13171P-13179P 13180P

Lumens
13000
11500
11500
11500
11500
119000
13191P 13173P-13174P







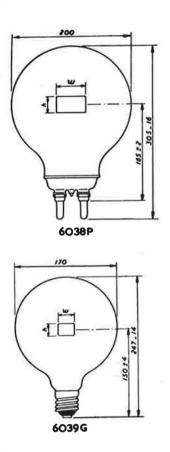


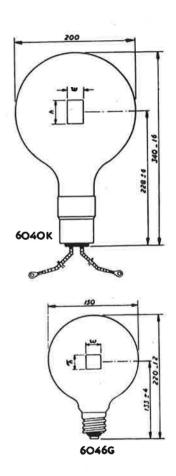
Only (13171 P for (13179 P 13180 P



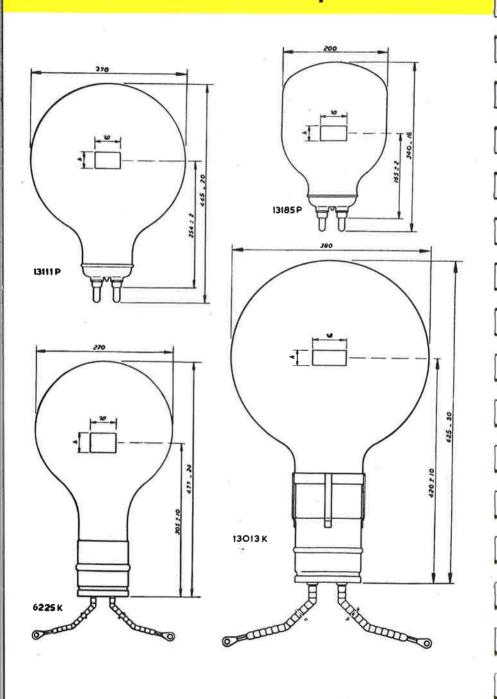
13176P only

Film Studio Lamps





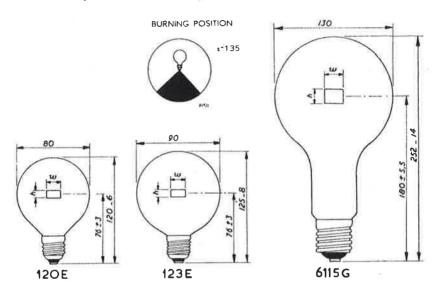
Film Studio Lamps



Floodlighting Lamps

For the floodlighting of buildings, stadiums, parks, etc., lamps of special design are used, containing a highly concentrated cylindrical filament in order to produce a strong beam.

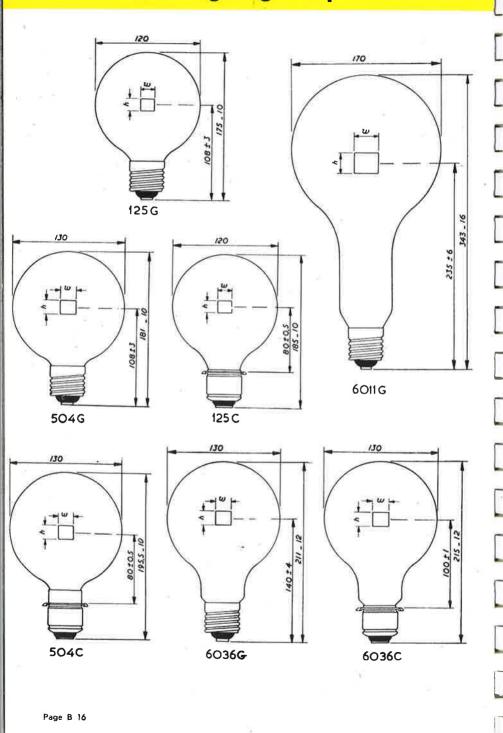
They fit any of the projectors commonly offered and if properly mounted produce the effect desired.



Cat. No.	Voltage V	₩attage W	Base	Filament w x h	Lumens	Average 1) life hrs.
120 E	100-160	100	E 27	12 x 6	1100	500
	200-250			14 x 9	900	
123 E	100-160	250	E 27	14×8.5	3500	500
	200-250			16 x 11	3200	
125 G	24	500	E 40	7 x 11	11500	500
	100-160			13 x 12	8800	
	200-250			16 x 14	7500	
6036 G	24	1000	E 40	15 x 11	22000	500
	100-160			15 x 14	19000	
	200-250			17 x 18	18000	
6036 C	24	1000	P 40s	15 x 11	22000	500
	100-160			15 x 14	19000	
	200-250			17 x 18	18000	
6115 G	100-160	1000	E 40	15 x 14	19000	500
	200-250			17 x 18	18000	
504 G	100-160	1000	E 40	15 x 14	19000	500
	200-250			17 x 18	18000	
504 C	100-160	1000	P 40s	15 x 14	19000	500
	200-250			17 x 18	18000	
6011 G	100-160	1500	E 40	22 x 15	31000	500
	200-250			24 x 22	29000	

¹⁾ Average life under laboratory conditions.

Floodlighting Lamps

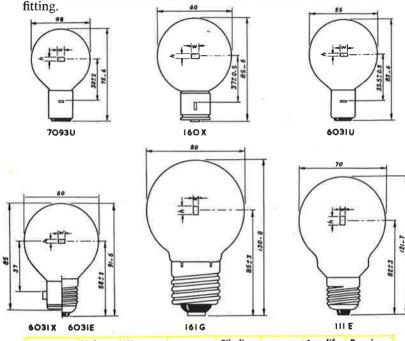


Special Theatre, Spot, and Floodlighting Lamps

SPECIAL 12 AND 24 V LAMPS FOR THEATRE-, SPOT- AND FLOODLIGHTING

By applying low voltage lamps one arrives at a very concentrated filament.

Owing to this compact filament, these lamps are very suitable to obtain a beam of high intensity when used with a proper



Cat. No.	Voltage V	Wattage W	Base 2)	Fil. dim. wxh	Lumens	Av. life hrs.	Burning position
7093 (J 24	100	BA20d	5.5×3.5	2000	100	S 135
6031	X 24	100	BA24s-3	5.5 x 3.5	2000	100	S 135
6031 (E 24	100	E27	5.5 x 3.5	2000	100	S 135
6031 U	24 ل	100	BA20d	5.5×3.5	2000	100	S 135
160 X	24	200	BA24s-3	6.5 x 4.5	4600	100	S 135
161 G	1) 24	250	E40	4.5 x 6.5	6400	100	S 135
111 E	24	250	E27	4.5 x 6.5	6400	100	S 135
13301	G 24	250	E40	4.5 x 7	6400	100	S 360
13301	Y 24	250	B42t	4.5 x 7	6400	100	S 360
162 G	24	500	E40	8 x 9	12000	100	\$ 135
162 X	24	500	B42t	8 x 9	12000	100	S 135
163 X	24	1000	B42t	12 x 12	26000	100	S 135

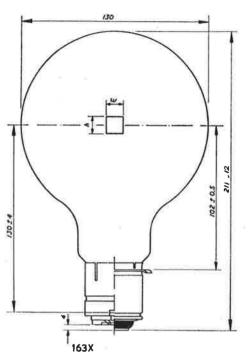
SPECIAL 12V LAMPS FOR SPOT AND FLOODLIGHTING

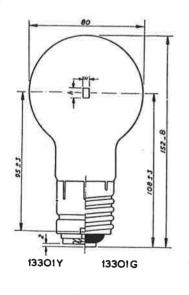
Q Q							
7093 U	12	100	BA20d	3.5 x 3.5	2500	100	\$ 135
6031 X	12	100	BA24s-3	3.5 x 3.5	2500	100	\$ 135
6031 E	12	100	E27	3.5×3.5	2500	100	S 135
6031 U	12	100	BA20d	3.5×3.5	2500	100	S 135
13301 Y	12	250	B42t	5 x 5	6500	100	S 360

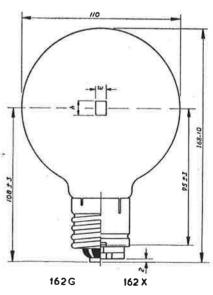
All these lamps can also be supplied with inside mirror.

With E27-base, Icl 76mm.; max. length 120mm.
 New designation BA24s-3, formerly BA24s.
 New designation B42t, formerly BA42.

Special Theatre, Spot, and Floodlighting Lamps







Page B 18

Projection and Cinema Lamps

TUBULAR PROJECTION LAMPS (cinema lamps)

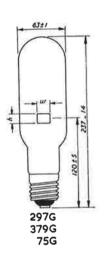
These lamps are mainly used in both epidiascopes and diaprojectors, the lamps in the higher wattages are also used in smaller cinemas and theatres.

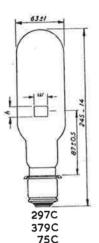


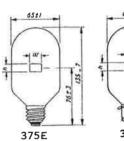


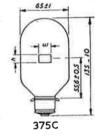


375 C 375 E









Cat. No.	Voltage V	Wattage W	Base 4)	Filament w x h	Lumens	Average 1) life hrs.	Burning position
375E	100-160	500	E 27	14 x 11	11500	100	S 45
	200-250			17 x 12	10500	100	C AE
375C	100-160	500	P 28s	14 x 11	11500 10500	100	S 45
	200-250	1000	E 40	17 x 12 17 x 14	26000	100	S 30
297G	100-160 200-250	1000	E 40	22 x 14	23000	100	0.00
297C	100-160	1000	P 40s	17 x 14	26000	100	S 30
2770	200-250	1000	. ,00	22 x 14	23000		
379C 2)	30	900	P 40s	11.5 × 8	24000	100	S 30
379G 2)	30	900	E 40	11.5 x 8	24000	100	\$ 30
75G 3)	30	900	E 40	12 x 11	24000	100	S 30
75C 3)	30	900	P 40s	12 x 11	24000	100	\$ 30

- 1) Average life under laboratory conditions.
- 2) Biplane filament.
- 3) Monoplane filament.
- 4) New designation P28s, formerly P28. New designation P40s, formerly P40.

Film Viewer Lamps

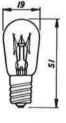
These lamps used in compact motion picture film viewers closely resemble projection lamps.

They are used in special apparatus of simple construction for viewing the separate images of motion picture films.

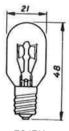
Their filaments are well concentrated and they give high light output. The equipment in which these lamps are used, being small in size and the fact that films are often left exposed for longer periods, are the reasons for the low wattage of these lamps.

Туре	Voltage V	Wattage W	Base	Lumens	Average life hrs.
7248M 1)	100-165 170-250	6	E 12	23 39	=
7247M 1)	100-165 170-250	10	E 12	75 65	
7246M 2)	100-165 170-250	15	E 12	130 115	1000
7249M	100-165 170-250	15	E 12	130 115	1000

- 1) Also available with E14 or BA15d base.
- 2) Also available with E14 base.

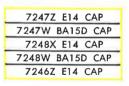


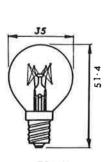
7248M



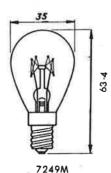
7247M

The following types can also be supplied.



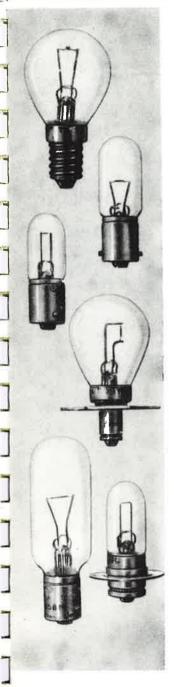


7246M



BURNING POSITION

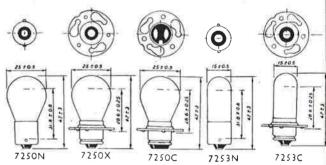




SOUND-FILM EXCITER LAMPS call for a very high degree of precision in manufacture and have to answer the most stringent demands as regards centering, dimensions, luminous intensity, etc. It is only by close attention to materials and supervision in manufacture that the high standard of Philips exciter lamps is achieved.

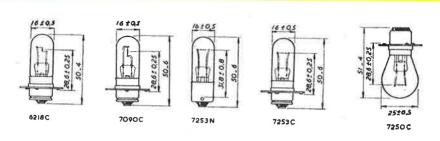
MICROPROJECTION LAMPS are specially designed for applications in the scientific field. These lamps are used for the projection of microfilms, etc., and have filaments specially designed for a variety of optical systems.

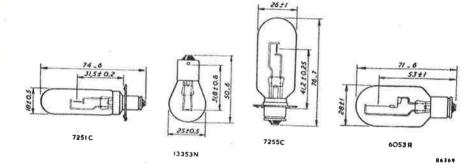
HOME CINEMA LAMPS should be protected from vibration, and care should be taken that they are used on the right voltage. When used with reflectors, the beam of light must not be reflected on to the filament.



PHILIPS/U.S.A. EQUIVALENTS

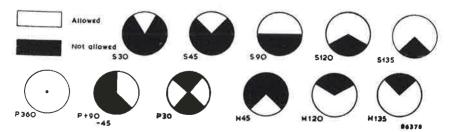
Philips Type	U.S.A. Type
7250 N	75A/S8SC "
7250 X	75A/S8SCP
7250 C	75A/S8DCP
7253 N	75A/T5SC
7253 C	75A/T5/1

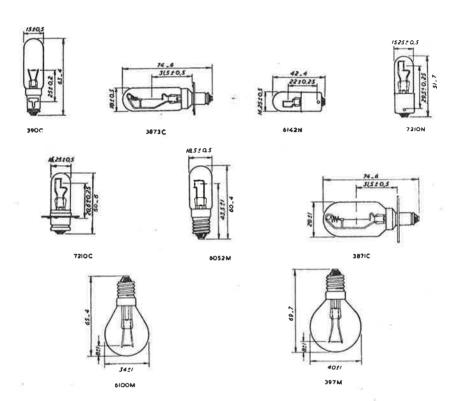




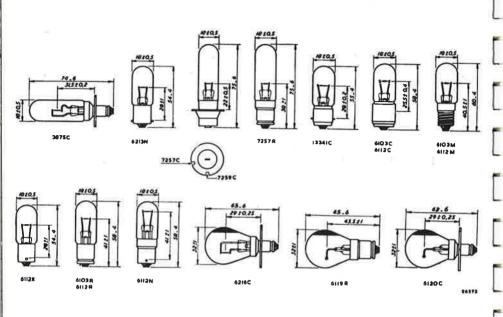
Type	٧	Α	Сар	Fil. Dim.	Lumens	life hrs.	Burning position
6218 C	2.5	3	P 15s	1 x 1	50	100	S 45
7090 C	4	0.75	P 15s	0.2 x 2	30	50	P 360
7253 N	4	0.75	BA 15s	2 x 0.2	30	50	P 360
7253 C	4	0.75	P 15s	2 x 0.2	30	50	P 360
7250 C	4	0.75	P 15h	2 x 0.2	30	50	H 120
7251 C	5	4	PG 28	0.6 x 5	245	1000	P + 90 - 45
13353 N	5	4	BA 15s	1.1 x 1.1	310	100	. , ,
7255 C	5	6.5	P 15s	1 x 5			H 45
6053 R	5.5	1.55	S 15s	0.071 x 16	700 95	100 100	S 135 P 360

EXPLANATION BURNING POSITION

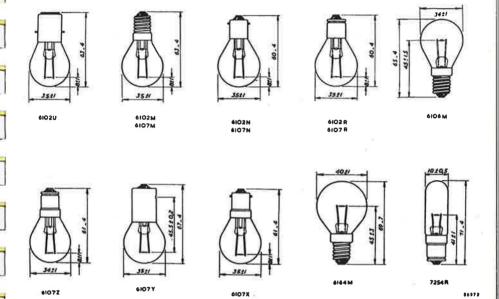




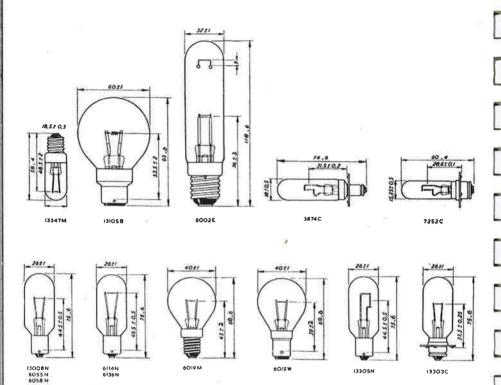
Туре	٧	- A	Сар	Fil. Dim.	Lumens	Life Hrs.	Burning position
390 C	6	0.5	P 10	1.2 x 0.2	42	30	P360
3873 C	6	0.8	P 28s	0.046 x 16	25	100	P30
6142 N	6	1 22	BA 15s	0.25 × 4	80	100	P360
7210 N	6	1	BA 15s	0.25 × 4	80	100	S45
7210 C	6	1	P 15s	0.25 × 4	80	100	S45
6052 M	6	1.45	E 14	1 x1	95	100	S30
3871 C	6	1.45	P 40s	0.073×20	80	100	P30
6100 M	6	4.35	E 14	4.5 × 0.8	440	100	H120
397 M	6	4.5	E 14	3 × 1	475	100	H120



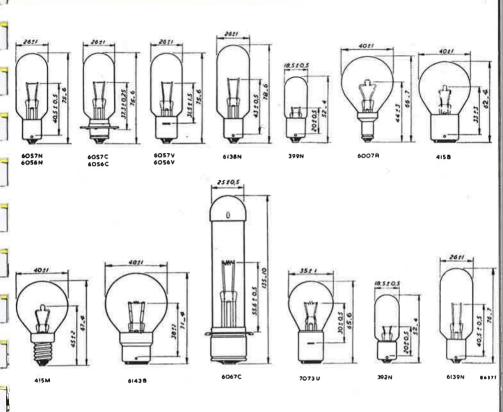
Туре	Voltage V	Current A	Base	Fil. Dim.	Lumens	Average life hrs.	Burning position
3875 C	6	5	PX28s	1 x 5	525	100	P + 90 - 45
6213 N	6	5	BA15s	5 x 1	525	100	S 30
7257 C	6	5	P27s	2.5 x 1.5	510	100	S 30
7257 R	6	5	\$15s	2.5 x 1.5	510	100	S 30
7259 C	6	5	P27s	2.5 x 1.5	510	100	S 30
13341 C	6	5	P16s	5 x 1	525	100	S 45
6103 C	6	5	PY20s	2.5 x 1.5	510	100	P 360
6103 M	6	5	E14	2.5 x 1.5	510	100	P 360
6103 R	6	5	S15s	2.5 x 1.5	510	100	S 30
6112 M	6	5	E14	5 x 1	525	100	S 45
6112 C	6	5 5	PY20s	5 x 1	525	100	S 45
6112 R	6		S15s	5 x 1	525	100	S 45
6112 N	6	5	BA15s	5 x 1	525	100	S 45
6112 X	6	5 5	BA15s	5 x 1	525	100	S 45
6216 C	6		PX40s	1 x 5	525	100	P + 90 - 45
6119 R	6	5	S15s	2.5 x 1.5	510	100	P + 90 - 45
6120 C	6	5	PX40s	2.5 x 1.5	510	100	P + 90 - 45



Туре	V	Α	Сар	Fil. Dim.	Lumens	Life Hrs.	Burning position
6102 U	6	5	BA20d	2.5 x 1.5	510	100	H120
6102 M	6	5	E14	2.5 x 1.5	510	100	H120
6102 N	6	5	BA15s	2.5 x 1.5	510	100	H120
6102 R	6	5	\$15s	2.5 x 1.5	510	100	H120
6106 M	6	5	E14	2 x 2	510	100	\$135
6107 M	6	5	E14	4 x 1	525	100	H120
6107 N	6	5	BA15s	4 x 1	525	100	H120
6107 R	6	5	\$15s	4 x 1	525	100	H120
6107 Z	6	5	S15s	4 x 1	525	100	H120
6107 Y	6	5	P20s	4 x 1	525	100	H120
6107 X	6	5	BA15s	4 x 1	525	100	H120
6164 M	6	5	E14	2 x 2	510	100	S90
7254 R	6	5	\$15s	2.5 x 1.5	510	100	S30



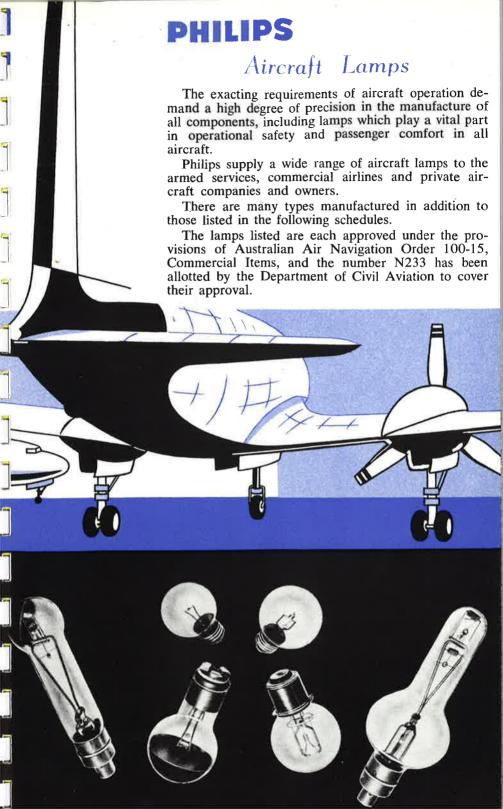
Type	V	A	w	Сар	Fil. Dim.	Lumens	Life Hrs.	Burning position
13347 M	6		15	E14	1.6 x 1.2	225	100	H135
13105 B	6		100	B22	3 x 3	2000	100	\$135
6002 E	6	16-17		E27	8.5 x 2.1	1400	100	\$30
38 7 4 C	6.5	1.48		P28s	0.5 x 3	110	500	P + 90 - 45
7252 C	7	0.2		P15s	0.15 x 3.5	10	50	P360
13008 N	8	2		BA15s	6 x 0.6	300	100	S135
6055 N	8	4		BA15s	7.5 x 0.5	625	100	S135
6114 N	8	4		BA15s	7.5 x 0.5	625	100	S135
6019 M	8	6		E14	2.5 x 2	900	100	S135
6019 W	8	6		BA15d	2.5 x 2	900	100	\$135
6136 N	8.5	4		BA15s	8 x 0.5	680	100	S135
13305 N	8.5	4		BA15s	0.5 x 8	680	100	S135
6058 N	8.5	4		BA15s	8 x 0.5	680	100	\$135
13303 C	9	4		P15s	5 x 1.25	575	500	S135



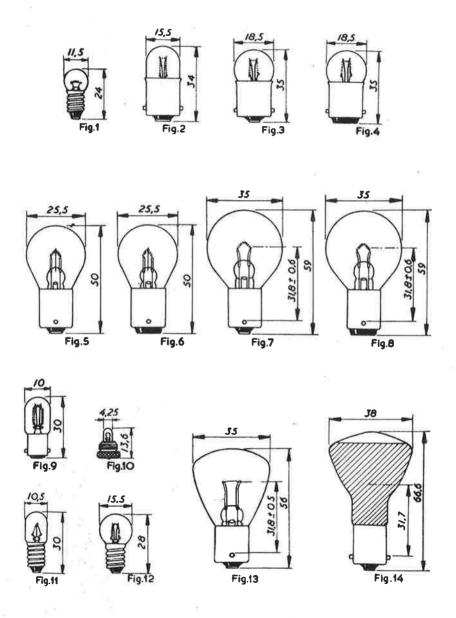
Туре	v	A	w	Cap	Fil. Dim.	Lumens	Life Hrs.	Burning position
6057 N	10	5		BA15s	4.5 x 1.5	1050	100	S30
6057 C	10	5		P15s	4.5 x 1.5	1050	100	S30
6057 V	10	5		BA17s	4.5 x 1.5	1050	100	S30
6138 N	10	5		BA15s	4.5 x 1.5	1050	100	S30
6056 N	10	7.5		BA15s	4.5 x 2	1650	100	\$30
6056 V	10	7.5		BA17s	4.5 x 2	1650	100	S30
6056 C	10	7.5		P15s	4.5 x 2	1650	100	S30
399 N	12	0.5		BA15s	2 x 0.9	120	100	S30
6007 R 1)	12	2		\$9.5s	3.5 x 2	=	25	S30
415 B	12	3.5		B22	4.5 x 2.5	880	100	\$135
415 M	12	3.5		E14	4.5 x 2.5	880	100	S135
6143 B	12		50	B22	2.5 x 2.5	1125	100	S135
6067 C	12		100	P28	2.6 x 3.3	2550	50	S30
7073 U	15		60	BA20d	2.6 x 2.4	1560	20	\$120
392 N	25	1		BA15s	3.5 x 1.2	450	100	S30
6139 N	27	1		BA15s	3.5 x 1	445	100	S135

¹⁾ Can also be supplied with outside mirror.





Aircraft Lamps



Aircraft Lamps

_	-	_	_	_	_		_	-	_			-	-			_	-	÷		-	-	-		_				_	-	-	-					
Fig.	ī	Page 14	Page 14	1	2	ო	ო	ო	4	Ŋ	2	2	5	ς,	9	9	01	ر ا	> 0	10	<u> </u>	۰, د	۰ ٥	0	10	10	1	4	٠,	Page Go	Page M/	Page M7	Page M4	Page M7	Page M7	Page B18
AN. No.	100		i	1	AN3141/301	A3131/303	1	1	AN3137/R304	1	į	AN3124/R307	1	AN3124/SB307	AN3132/308	1	AN3132/R308	ı	‡	110/001014	ANG 155/511		AN3121 / P313	1000	AN3136/323	AN3136/R323	AN3140/327	J	AN3121/1819	1	1		Į	i		1
Special Details	Į.		-	a	1	Į	И	Nat. Ruby	Red Coated	l. Frosted	l. Frosted	Red Coated	Nat. Ruby	Bottom Mirror	1	I. Frosted	Red Coated	1. Frosted	Bottom Mirror	Ked Coared	i	. Frosted	Pod Coated	Nat Riby		I	ĺ	Į				Fluor. Lamp	Fluor Lamp			1
O.L.	l	2	39	32	34	36	36	36	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50,5	9	8	8	35	88	38	200	3		1	i	1	1	50	230	200	25	930	930	131
Біат.	Ţ	10.5	10.5	18.5	15.5	18.5	18.5	18.5	18.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	36	93	9 8	8	0 0		20	31	1	1	J	1	9.5	9;	0 2	2 0	26	26	80
Aver. ife hrs.	1	3000	3000	200	200	200	200	200	200	300	300	300	300	300	300	300	300	300	200	200	200	200	200	36	350	350	350	1	İ	2000	3500	3200	2500	3500	3500	8
Cap	I	PO S	89s	B15s	B15s	B15s	B15s	B15s	B15d	B15s	B15s	B15s	B15s	B15s	B15d	B15d	B15d	B) 5s	B15s	2,29	8138	sc la	598 100	Bos	Soc	Spec.	Sés	1	1	Ba9s	Min Bipin	;	:		Med Bipin	
Watts	.045a	36	15.0	9	00	9		9	00 9	15 co	21 co	21 cp	21 cp	21 cp	21 cp	21 cp	21 cp	32 cp	32 cp	32 cp	50 cp	50 cp	0.17a	0.1/9	0 0 0 0	100	0.04a	20w	0.035a	0.5w	ęw	8%	A :	30%	30%	420w
Volts	9	44	2.6	6.5	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28			2 (28	28	28	65-215	Ī	t	ı	1 1	1	24
American Type	1	1	47	60	301	303	3030F	303NR	304R	3051F	3071F	307R	307NR	307SB	308		308R	3091F	309SB	310R	3	311F	3130F	313K	203	303D	327	1385	1819	NE51	F6T/S/D	F8T/S/D	F151/8/D	F201/12/D	F301/8w	
Philips Type No.	D116/01	13400	17	83 1	12000N	12001N	12001N/07	12001N/876	12001W/476	12100N/21	12101N/21	12101N/476	12101N/876	12101N/02	12101W	12101W/21	12101W/476	12102N/21	12102N/02	12102W/476	12103N	12103N/21	12006N/07	12000N/476	12000IN/ 0/0		1	12105N/13	12005N	GLION	TL6W/55	TL8W/55	TLD15W/55	TL D30W /55	TLD30W/29	13300C

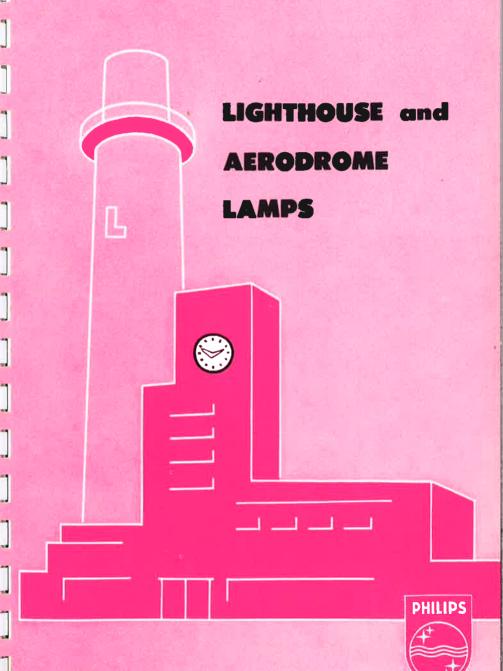
Aircraft Lamps

WITH COMPARABLE ABCSC TYPES

Nearest ABCSC	>	M	Сар	Dia.	O.L.	Remarks	Fig.
9959101 6		0.24W 0.24W	TB6/30 E10	6.5	23	Grey ends	Page A20 Page J3
		0.50W	0 0	==	182	pateon bad	Page J2
9951130 2.5		0.75W	000	===	233	w.	- 1 - 0
-		1.00W	B95	=	23.5	11	Page 14
9951142 12		1.20W(1.0W)	000	===	23	Exterior frosted	Page 14
7		2.80W	E10	- 5	27.5	(Alt. G5A/500601)	1 1
		2.80W	B9S	15	27.5	_	
9951233 24-28 9951239 6		2.80W	BA95	7 5	35.5	U	Page K12
-		6.00W	S8.5	:=	38.	1	Page K12
CAL		2.80W	E10	15	27.5	Red coated	12
9951271 28		4.75(3.5W) 4.75W(3.5W)	B95	22	25	ĺĬ	`=
101		2.80W(3.5W)	E10	2	27.5	Ī	12
_		2.80W(3.5W)	E10	15	27.5	0	27
9951283 28		2.80W(3.5W)	019	<u> </u>	27.5	Red coated	7.
		5.00W(6W)	B155	8	32.5(35)	1	Page K10
9952254 24		5.00W(6W)	B15D	18	32.5(35)	700	Page K10
9952261 12		5.00W(7W)	8150	9 c	32.5(35)	UV cockpit fitting	Page K10
-		5.00W(6W)	B15D	28			Page K10
-	2,000	15.00W(12W)	B15D	25	45		Page K9
_		15.00W(12W)	B155	(5) (2)	(45)		Page K9
9952404 24	_	30.00W	8150	27	28	Interior trosted	20 0
	_	24.00W	B150	38	21.8	11	0 00
		70.00W(60W)	B15D	38	26		13
		70.00W(80W)	8150	8 8 1		frosted—ident.	
9953202 24		32 00CB(20%)	815D	380	6 5 5 5 6 5 6 5 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Interior trosted—ident.	rage Ky
		15.00CP(7W)	B15D	52			0.40
9954717 26		240.00W	P28	95	9;	44.5mm. L.C.L.	Page B18
9959103 3	_	0.60W	Spec.	0.4 C	13.6	Kolsman	2
9959213 24	_	2.40W	TB6/30	6.5	44.5	ellow end	ij
		2.40W	TB6/30	6.5	44.5	3 support filament	I
9959702 28		280/280W	Special	90	202	60.3mm. L.C.L.	1
28		5.00W(6W)	8155	<u>2</u> 80	34		Page K10
58		21.00CP(18W)	B155	25.5	12	Ü	12
250		32.00CF(20W) 15.00CP	B15D	228	20	Alt. G5A/1696	, 9

Figures in brackets represent ABCSC specifications.

PHILIPS

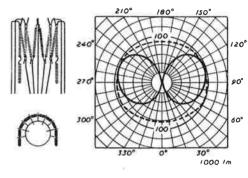


FILAMENT ARRANGEMENTS

Indication of the most important filament shapes with their corresponding light distribution diagrams (cd/1000 1m).

Filament Shape A (cylindrical filament).

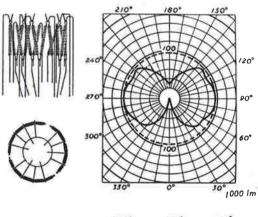
Coils arranged cylindrically consisting of only one circuit. cd/1000 1m.



Filament Shape B (cylindrical filament for 3-phase supply).

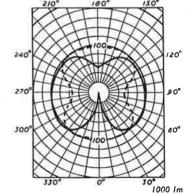
Coils arranged cylindrically consisting of three parts to be connected to a 3-phase supply. Parts can be switched in parallel for supply from a single phase system.

cd/1000 1m.



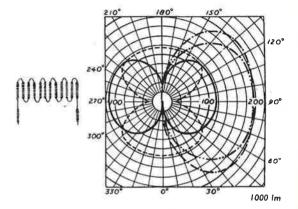
Filament Shape C (Coiled coil filament).

Filament consists of one coiled coil, cd/1000 1m.



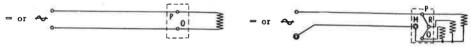
Filament Shape D (vertical grid filament).

Coils arranged vertically in one plane. cd/1000 1m.
-..-.. with mirror, plane or measurement vertical.
-.-. with mirror, plane or measurement horizontal.

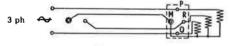


For connection to AC or DC single phase

For connection to AC or DC single phase

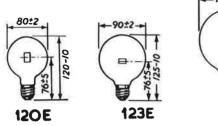


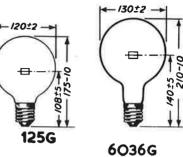
For connection to three phases and the neutral wire

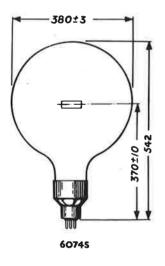


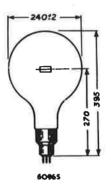
Catalogue number	Voltage V	Watts W	Filament Shape	Lumens	Av. Life	Сар	Diam.	Total Length	Light Centre Length
120 E	100-160 200-250	100	a	1100 900	500	E 27	80	120	76
123 E	100-160 200-250	250	a	3500 3200	500	E 27	90	125	76
	24		С	11500					
125 G	100-160 200-250	500	a	8800 7500	500	E 40	-120	175	108
	24		С	22000					
6036 G	100-160 200-250	1000	a	19000 18000	500	E 40	130	211	140
6074 S 1)	100	10000	b	185000	800	GIII	380	598	370
6096 S 1)	100	3000	b	50000	800	GIII	240	428	270
6190 K	32 65 100-160 200-250	3000	d	85000 85000 85000 78000	100	\$59/2Ca	120/90	380	178
6099 K	70	4200	С	94500	1000	E40/1Ka	300	495	292

¹⁾ Can also be supplied with mirror; catalogue number . . ./01.

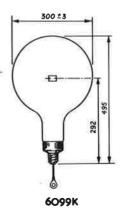












SUMMARY OF LAMPS

Some lamps are supplied with mirror, catalogue number/01. Other types can be supplied with or without mirror, catalogue number with mirror/01. The mirror gives the following advantages:

For radiation in an angle of 180° or less. Increased efficiency by means of a mirror on the inside of the bulb behind the filament. Not only the average brightness is increased, but the beam also is more homogeneous. The mirror is inside the lamp so that damage by atmospheric influences is avoided and absorption and reflection losses are reduced.









PHILIPS PHOTOGRAPHIC LAMPS

Photographic Lamps

Contents:

Photolita Lamps • Argaphoto Lamps

Photomirenta Lamps • Photocrescenta Lamps

Darkroom Lamps • Photoflux Flash Lamps

SPEED RATING COMPARISON TABLE

ASA	/10 DIN	°EUR. SCH.
12-20	12-14	23-25
25-40	15-17	26-28
50-80	18-20	29-31
100-160	21-23	32-34
200-300	24-26	35-37

GUIDE NUMBERS

The guide number is an aid to determine the recommended F number and is the product of aperture and distance lamp-object for a given exposure time and film speed.

Example: "PHOTOLITA" N at 10 ft. distance, exposure time $\frac{1}{2}$ sec., film speed 20-32 ASA.

From the table on page E4: guide number 79. Aperture $79 \div 10 = 7.9$, so aperture F8 can be used.

When using more lamps, guide numbers will increase accordingly, depending on number and relative position of lamps.

For colour photography, guide numbers are heavily depending on various conditions (surrounding, method of treatment, variations in film speed, etc.), so that their value cannot be more than indicative. The above various conditions have less influence when using black-and-white film, so these guide numbers need not be tentative.





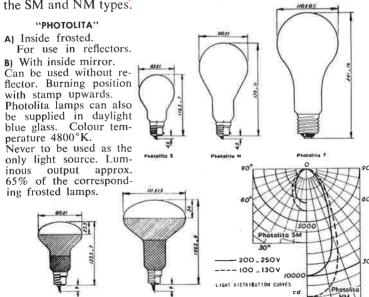
Philips photographic lamps are well known to all photographers, both professional and amateur, who use them extensively for still and cine interior and exterior photography, for which they offer many advantages.

PHOTOLITA SM/NM:

The Philips "Photolita" SM and NM lamps are lamp and reflector combined. Easily damaged separate reflectors are no longer needed. With the inside mirror the fullest degree of reflection is retained throughout the life of the lamps. Excellent photographs can be made with just one of these lamps, though, naturally, better results will be obtained when using two or three. These lamps are also ideal for amateurs working with 8 and 16 mm. cine film, which require a large amount of light. The colour temperature of the lamps enables photographs to be taken on tungsten type colour films without using filters.

PHOTOLITA S/N:

In contrast to types SM and NM, types S and N are not provided with inside reflectors. They are mainly for amateurs and professionals who have their own reflectors, but require lamps which otherwise answer the same requirements as are met with the SM and NM types.



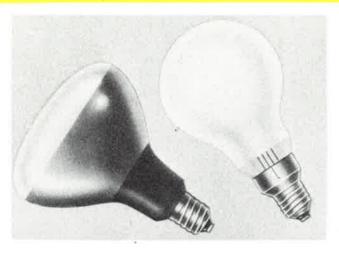


Туре	Cat. No.	Voltage	Watt	Lumens	Candles in centre of beam	Aver life hrs	Temp. ○K	Cap
"Photolita" S*	PF 207	100-130 200-250	250	8650 7500		3	3400	E 27
"Photolita" SM*	PF 217	100-130 200-250	250	and the	4000 3300	3	3400	E 27
"Photolita" N*	PF 208	100-130 200-250	500	17000 14500		6	3400	E 27
"Photolita" NM*	PF 218	100-130 200-250	500	===	12000 10000	6	3400	E 27
"Photolita" T	PF 209	100-130 200-250	1000	33500 28500	-	10	3400	E 40

*) Can also be supplied with cap B 22.

Add suffix/21 to catalogue number to indicate inside frosted. Add suffix/60 to indicate daylight.

GUIDE NUMBERS		lita" S Photoli		eflector M		lita'' Photoli		eflector M	"Phot	"Photolita" T in ref		
Film Exposure Speed time	10-16 ASA	20-32 ASA	40-64 ASA	80-125 ASA	10-16 ASA	20-32 ASA	40-64 ASA	80-125 ASA	10-16 ASA	20-32 ASA	40-64 ASA	80-125 ASA
1/500 sec	7 10 13 20 26 40	7 10 13 20 26 40 53 80 105	7 10 13 20 26 40 53 80 105 157	10 13 20 26 40 53 80 105 157 210	7 10 13 20 26 40 53 80 105	7 10 13 20 26 40 53 80 105	10 13 20 26 40 53 80 105 210 310		7 10 13 20 26 40 53 80 105 157	10 13 20 26 40 53 80 105 157 210	13 20 26 40 53 80 105 157 210 310	20 26 40 53 80 105 157 210 310 420



ARGAPHOTO B/BM:

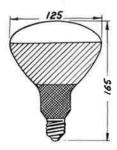
"Argaphoto" lamps are particularly suited for taking photographs with special toning effects, as accessory lighting for use with "Photomirenta" lamps, for colour photography, for infrared photography and for the production of direct positives. They are for professionals and the more advanced amateurs.

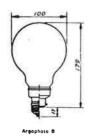
Type B is produced for use in a separate reflector.

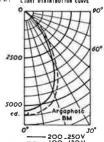
Type BM incorporates a specially designed inside mirror and can therefore be used without a separate reflector, which means that several lamps can be mounted in a very small space.

Туре	Cat. No.	Voltage	Watt	Lumens	Candles in centre of beam	Aver. life hrs.	Approx. temp. colour °K	Сар
"Argaphoto" B	PF 308	100-130 200-250	500	12500 11000		100	3200	E 27*
"Argaphoto" BM	PF 318	100-130 200-250	500		6000 5500	100	3200	E 27*
"Argaphoto"	PF 210	100-165 175-250	1000	26500 23000		100	3200	E 40









ARGAPHOTO (Contd.)

GUIDE NUMBERS	"Argaphoto" B in reflector "Argaphoto" BM					
Film Exposure speed time	10-16 ASA	20-32 ASA	40-64 ASA	80-125 ASA		
1/100 sec. 1/50 sec. 1/25 sec. 1/10 sec. 1/5 sec. ½ sec. 1 sec. 2 sec.	10 13 20 26 40 53	10 13 20 26 40 53	13 20 26 40 53 105 157	20 26 40 53 105 157 210		

PHOTOMIRENTA:

(For professional and amateur portraiture) This is the ideal lamp for the professional photographer. It consists of an opal bulb half of which is inside silvered. The internal mirror is designed to throw the greatest possible quantity of light in a given direction, while the opal glass bulb provides the maximum amount of diffusion.

Туре	Cat. No.	Voltage	Watt	Candles in centre of beam	life		Cap.
"Photo- mirenta"		100-130 200-250	500	1500 1350	100	3100	E 27

GUIDE NUMBERS

Film Exposure speed Time	10-16 ASA	20-32 ASA	40-64 ASA	80-125 ASA
1/10 sec,	10	13	17	23
1/5 sec.	13	17	23	35
1/2 sec.	17	23	35	48
1 sec.	23	35	48	70
2 sec.	35	48	70	93

ARGASOL

"Argasol" lamps have a colour temperature of approximately 4800°K. The bulbs are specially selected so as to eliminate deviations in colour temperature. Invaluable as supplementary lighting in studios, etc. Available in 500 and 1,000 watt ratings.



DARKROOM LAMPS

For use in both professional and amateur photographers' dark-rooms. Philips supply a complete range of darkroom lamps each individually laboratory tested for correct colour radiation and light value.

For negative material

Dark red—for the development of orthochromatic material.

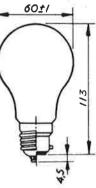
Green—for the development of panchromatic material.

For positive material

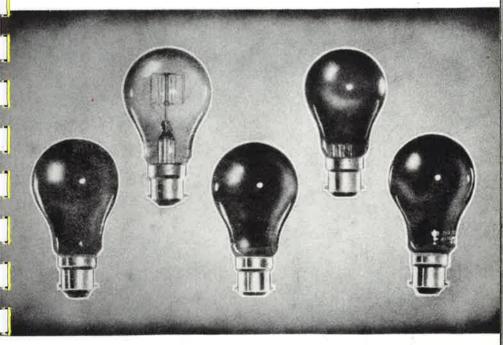
Yellow green—also for bromide paper.

Yellow—for use with normal contact paper and less sensitive bromide paper.

All darkroom lamps are made from naturally coloured glass except the yellow green type.



Туре	Colour	Colour Voltage	
PF 712	Dark-red	100 250	B 22 E 27
PF 711	Green	100 250	B 22 E 27
PF 710	Yellow-green	100 250	B 22 E 27
PF 713	Yellow	100 250	B 22 E 27



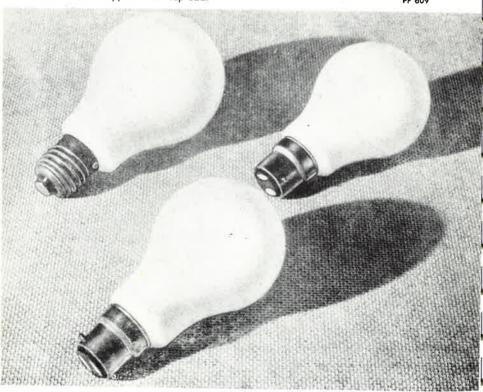
PF 603

PHOTOCRESCENTA (Enlarger):

For the various types of enlarging apparatus on the market today, Philips supply lamps of high luminous intensity with excellent light distribution and of small dimensions. These lamps are made of opal glass and are marked on the neck to prevent the projection of the maker's stamp.

						PF 607
Туре	Voltage	Watt	Lumens	Approx. colour temp. °K	Aver. life	Cap*
PF603E	100-160 200-250	75	1300 1150	2950	100	E27
PF605E	100-160 200-250	150	3000 2700	3050	100	E27
PF607E	100-160 200-250	250	= 8000 7200	3450	3	E27
PF609E	100-160 200-250	300	6000 5400	3100	100	E27
+ 0				_		





PERFECTION PERFECTION FLASH FLASH





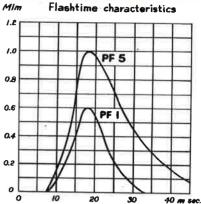






PFI/PFIB Class M

PF5 Class M

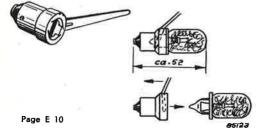


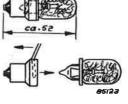
Туре	Light output 1 msec.	Max. lum. flux Mlm.	Time to full peak msec.	Flash duration at half peak msec.	Time to half peak msec.	Appr. colour temp. °K	Voltage range V	Colour
PF 1	7500	0.6	18	10	14	4000	3-30	clear
PF 1B	7500	0.6	18	10	14	5500	3-30	blue
PF 5	18000	1.0	18	14	14	4000	3-30	clear

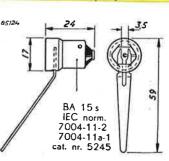
AAIAE HAMIDEVA	GUIDE	NUMBERS	
----------------	-------	---------	--

GUIDE	NUMBER	S			Shutter	Speed	10	
Туре		Film Speed		1/25 to 1/30 sec. (F and X)	1/50 to 1/125	1/200 to	1/400 to	
туре	ASA	BS	DIN	OPEN FLASH	5ec. (M)	1/300 sec. (M)	1/500 sec. (M)	
PF 1	12-20 25-40 50-80 100-160 200-320	22-24 25-27 28-30 31-33 34-36	12-14 15-17 18-20 21-23 24-26	70 110 150 220 300	50 75 110 150 220	40 55 75 110 150	30 40 60 75 100	
PF 1B	10-12 16-20 25-32 40-50 64-80 100-125 160-200	21-22 23-24 25-26 27-28 29-30 31-32 33-34	11-12 13-14 15-16 17-18 19-20 21-22 23-24	42 52 65 85 105 130 170	32 42 52 65 85 105	30 38 48 60 75 95	30 40 45 50 60	
PF 5	12-20 25-40 50-80 100-160 200-320	22-24 25-27 28-30 31-33 34-36	12-14 15-17 18-20 21-23 24-26	115 165 230 330 460	85 115 165 230 330	55 85 115 165 230	42 55 85 115 165	

ADAPTOR

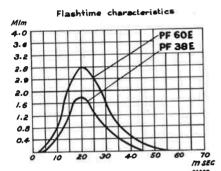


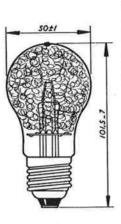


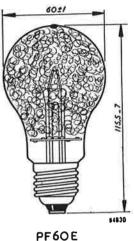


"PHOTOFLUX"

flashbulbs (class M) with time to full peak of 20 msec.





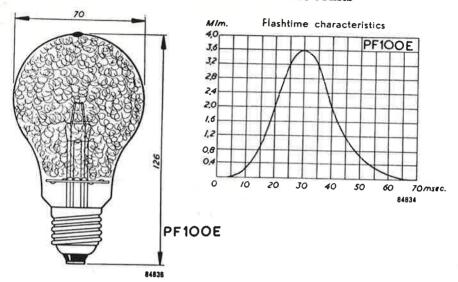


PF38E

Туре	Light output 1 msec.	Max. lum. flux Mlm.	Time to full peak msec:	Flash duration at half peak msec.	Time to half peak msec.	Approx. colour temp. °K	Voltage range V	Сар	Colour
PF 38E	30000	1.8	20	16	13	3800	3-30	E27	Clear
PF 60E	62000	2.8	20	20	11	3800	3-30	E27	Clear
PF 60E/97	38000	1.8	20	20	11	6000	3-30	E27	Blue

LUDE N	UMBERS				Shutter Speed					
	OMBLING	Film Speed		1/25 to 1/30	1/50 to 1/60	1/100 to 1/125	1/200 to 1/300	1/400 to 1/500		
Туре	ASA	BS	Din.	Sec (X)	Sec (M)	Sec (M)	Sec (M)	Sec (M)		
PF 38E	12-20 25-40 50-80 100-160 200-320	25-27 28-30 31-33 34-36	15-17 18-20 21-23 24-26	150 215 300 430 600	125 180 250 360 500	90 125 175 250 350	65 90 125 175 250	45 65 85 125 175		
PF 60E	12-20 25-40 50-80 100-160 200-320	25-27 28-30 31-33 34-36	15-17 18-20 21-23 24-26	215 300 430 600 860	180 250 360 500 720	125 175 250 350 500	90 125 175 250 360	65 85 125 175 250		
PF 60E/97	10-12 16-20 25-32 40-50 64-80 100-125 160-200	21-22 23-24 25-26 27-28 29-30 31-32 33-34	11-12 13-14 15-16 17-18 19-20 21-22 23-24	95 125 155 190 250 310 380	80 105 125 160 210 250 320	55 75 90 110 150 180 220	40 52 62 80 105 125 160	28 37 45 55 75 90 110		

"PHOTOFLUX" flashbulbs with extended time to full peak of 30 msec. (class S) FOR BETWEEN THE LENS SHUTTERS



For between the lens shutters	
the lens	

	Туре	Light output 1 msec.	Max. Ium. flux Mlm.	Time to full peak msec.	Flash duration at half peak msec.	Time to half peak msec.	Approx. colour temp. °K	Voltage range V	Сар	Colour	
n	PF 100E	95000	3.6	30	22	19	4000	3-30	E27	Clear	
S	PF 100E/97	57000	2.4	30	22	19	5500	3-30	E27	Blue	

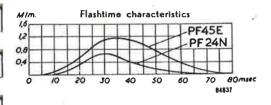
GUIDE NUMBERS

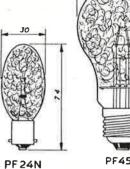
Туре	Exposure time		File	m Speed	ASA	
.,,,,	sec.	12-20	25-40	50-80	100-160	200-320
PF 100E	1/25 (X) 1/50 (M)	270 215	380 305	540 430	760 610	1080 860

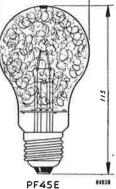
Guide numbers blue "Photoflux" lamps, for use with daylight colour film (tentative values and for guidance only).

Туре	Exposure time	FILM SPEED ASA								
	sec.	10-12	16-20	25-32	40-50	64-80	100-125	160-200		
PF 100E/97	1/25-1/30 (X) 1/50-1/60 (M)	120 95	150 120	180 145	240 190	300 240	360 290	480 380		

"PHOTOFLUX" flashbulbs with long flash duration (class FP) FOR FOCAL PLANE SHUTTERS.







Туре	Light output 1msec.	Max. lum. flux Mlm.	Time to full peak msec.	Flash duration at half peak msec.	Time to half peak msec.	Approx. colour temp °K.	Voltage range V	Сар	Colour
PF 24N	15000	0.55	_	25	17	4000	3-30	BA15s	Clear
PF 24N/97	10000	0.4	-	25	17	5500	3-30	BA15s	Blue
PF 45E	4500	1.1	1225	30	18	4000	3-30	E 27	Clear
PF 45E/97	27000	0.7		30	18	5500	3-30	E 27	Blue

GUIDE NUMBERS

T	Exposure	FILM SPEED ASA							
Туре	time sec.	12-20	25-40	50-80	100-160	200-320			
PF 24N	1/1000	20	26	36	56	65			
	1/500	26	36	50	65	100			
	- 1/250-1/300	36	50	65	100	140			
	1/100-1/125	50	65	100	140	200			
	1/50 -1/60	66	100	140	200	280			
PF 45E	1/1000	26	36	50	65	100			
	1/500	36	50	65	100	140			
	1/250	50	65	100	140	200			
	1/100	65	100	140	200	280			
	1/50	100	140	200	280	400			

	Exposure	FILM SPEED ASA								
Туре	time sec.	10-12	16-20	25-32	40-50	64-80	100-125	160-200		
PF 24N/97	1/50 -1/60 1/100-1/125 1/250-1/300 1/400-1/500	30 25 —	40 30 25 —	50 40 30 25	65 50 40 30	80 65 50 40	100 - 80 65 50	130 100 80 65		
PF 45E/97	1/50 -1/60 1/100-1/125 1/250-1/300 1/400-1/500	45 40 25	50 45 40 25	80 50 45 40	90 80 50 45	100 90 80 50	160 100 90 80	180 160 100 90		

"PHOTOFIUX"

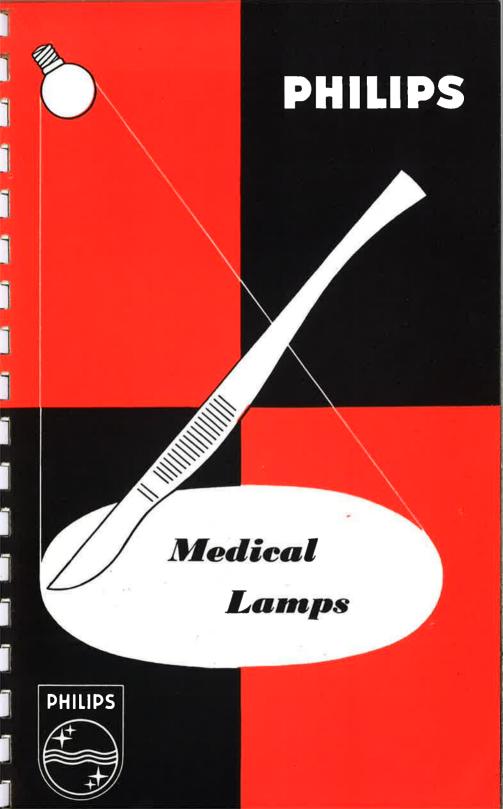




PFIE

"PHOTOFLUX"

PHILIPS

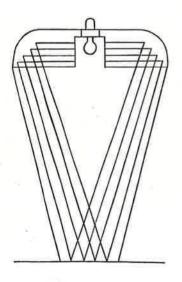


Introduction

Philips Research Laboratories have played an important part in the field of illuminating engineering and in the development of a wide range of lamps for various purposes. This has Philips scientists to devote much of their time to one particular phase of illumination, the medical lamp. It was obvious that these lamps were to be of a vastly different type, for the problems concerned differed considerably from those of home and factory lighting. As a result of investigations and experiment we now show you a series of lamps which were manufactured for the suitability of medical requirements.

The medical world has always shown a great interest in the Research work of Philips Scientists and we trust that the information in this catalogue will contribute to an even greater interest in the results obtained.

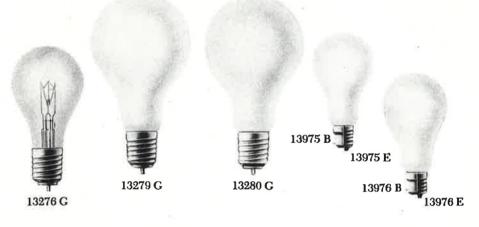




Page F 2

SURGICAL LAMPS

We need not dwell upon the primary necessity of reliable lighting in the operating theatre, both over the operating table and elsewhere in the room. Special measures have been taken to guarantee this reliability. However, more is required, above all a good illumination level with a particular type of light which excludes the possibility of any shadows which might be dangerous. At the same time, there may be no annoying reflection on bright surgical instruments.



A - C - C - C	Catalogue	Volta	ige V	Watt	age W	Lum	ens				
Application	number	Fil. 1	Fil. 2	Fil. 1	Fil. 2	Fil. 1	Fil. 2	Cap	Diam.	Lcl.	Ovl.
Lamps for	13276G	100-145 150-250	12/24 12/24	150 150	100 100	1900 1850	1700 1500	EFc40d	90	-	180
operating theatres	13279G	100-145 150-250	12/24 12/24	150 150	100 100	1900 1850	1600 1400	EFc40d	120	-	221
(two-filament lamps)	13280G	100-145 100-145 150-250	100-145 150-250 150-250	150 150 150	150 150 150	1900 1900 1850	1600 1600 1400	EFc40d	120	9228	221
	13975E	100-165 170-250	=	75 75		740 590	=	E27	75	104.5	145
Surgical lamps (single	13975B	100-165 170-250		75 75		740 590	Ξ	B22	75	100	140.5
filament lamps)	13976E	100-165 170-250	_ =	150 150		1700 1500		E27	80	104.5	148.5
	13976B	100-165 170-250		150 150	=	1700 1500	_	B22	80	100	144

Reliable lighting is obtained by the combination of a main filament and an auxiliary filament in one bulb. The main filament is connected to the ordinary electricity mains, whilst the auxiliary filament is connected to an accumulator battery set. If there is a breakdown in the electricity mains during an operation, the auxiliary filament is switched on. In the case of some apparatus this is done automatically.

It can be said that in this instance two lamps are combined in one, and this also offers particular advantages as regards the complicated optical system of the reflectors of the lamp.

MICRO-PROJECTION LAMPS





A proper illumination of an object under a microscope is indispensable. The Philips lamps for this purpose have a small-sized incandescent body with a high intensity. They are suitable both for alternating and direct currents. They are connected via a transformer either to the A.C. mains, or to an accumulator battery.

The tungsten tape lamps are the most suitable light sources for obtaining a uniform distribution of their bright light. The incandescent body consists of a flat strip of tungsten which emits light over the entire surface, so that uniformity of surface brightness is guaranteed.



Туре	Volt	Amp.	Diam. mm.	Total length mm.	Light centre length mm,	Сар	Glass
6019M	- 8	6	40	68	45	E14	spherical clear
6002E	6	16-17	32	118	, 76	E27	tubular clear



When ordering Medical Lamps state:

- 1. Type number.
- 2. Voltage and wattage of the main and auxiliary filaments, if any.
- 3. Type of cap.
- 4. Finish of bulb.
- 5. For nightlamps A.C. or D.C.



NEON NIGHT LAMPS

There are numerous cases—for instance in hospitals—where a source of illumination is required for soft lighting of wards or rooms. A solution for this problem is found in Philips Neon Night Lamps. This group consists of night lamps with clear, inside frosted, or opalescent glass bulbs. They are excellently suited for corridors, staircases, smaller bedrooms, etc., where only a dim permanent light is required. They consume very little current but, thanks to their two coiled electrodes, they emit a pleasant light with ample visibility, and therefore have a very long life.



FLUORESCENT NIGHT LAMPS

The Philips fluorescent night lamp is a later addition to the aforementioned group and has been designed to widen the range of applications. Here, too, the current consumption is very low, but this lamp gives a stronger light than the ordinary night lamp, viz. 1.9 lumens as compared with 0.9 lumens. It has been found that these lamps can be successfully applied in hospital wards and larger rooms, as well as in corridors. They also serve as permanent lighting in toilets and stores.



-			А	.c.	D		
Finish	Catalogue number	Сар	Voltage	Wattage	Voltage	Wattage	Dimensions
Frosted	13503 E/21 13503 B/21	E27 B22	75-135V	Max. 2.5W	100-185V	Max. 2W	103 mm. overall length
Fluorescent	13503 E/48 13503 B/48	E27 B22	140-250V	Max. 2.5	190-250V	Mux. 2vv	55 mm. diameter
Fluorescent	13511 E 13511 B	E27 B22	110-145V 150-250V	0.8W	125-190V 200-250V	Max. 0,8W	80 mm. overall length 45 mm. diameter

INFRAPHIL (INFRA-RED) LAMP



"Infraphil" is a portable home therapy lamp used for the relief of many common ailments — rheumatism, sciatica, lumbago, arthritis, neuritis, etc.; also beneficial in treating athletes' complaints such as sprains, strains, and other muscular pains. Available in a complete unit which is lightweight and adjustable to any angle, or separate lamp only.

Volts	Watts	Сар	Finish	Type No.
100/250	150	3 pin BC	Red glass internal mirror	13373F/4 7 9

ULTRAPHIL (ULTRA-VIOLET) LAMP



This lamp, emitting rays which are a close reproduction of the sun, not only tans the skin, but also stimulates the production of Vitamin D in the human body and replenishes reserves of energy. The ultraphil lamp operates from any standard 240V. AC outlet.

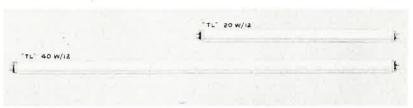
Volts	Watts	Сар	Finish
240/250	300	3 pin BC	Mirrored back Satin Frost

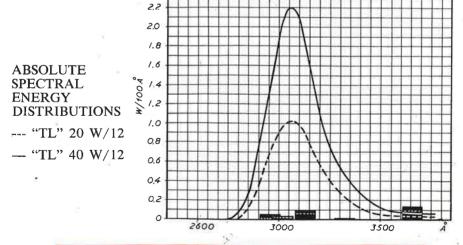
FLUORESCENT SUNLAMPS

TL/12 fluorescent sunlamps, too, are of the low pressure mercury-discharge type.

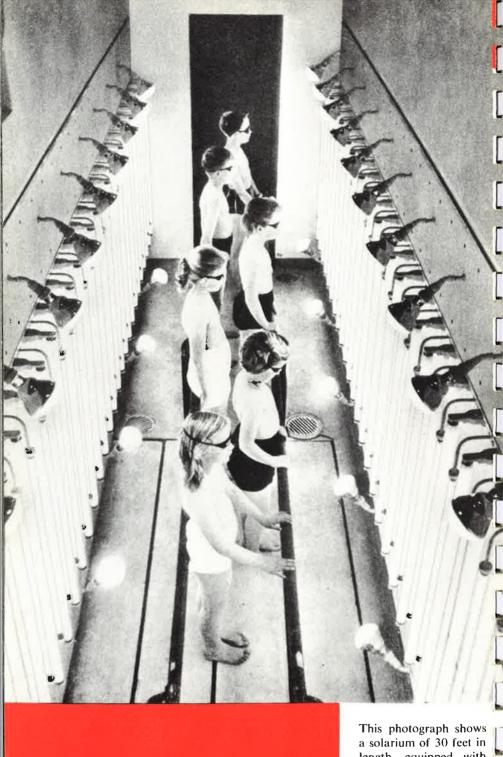
The envelope is made of an ultra-violet transparent glass, which together with the special coating ensures a continuous radiation spectrum, comprising all wave-lengths between 2800 A and 4000 A. Ballasts and other accessories are the same as those used with standard 20 W and 40 W fluorescent lamps.

TL/12 fluorescent lamps may serve as elements for the equipment of various kinds of solaria and are eminently suitable for use in conjunction with infra-red and TUV germicidal lamps.





Catalogue number	Lamp voltage V	Lamp current A	Сар	Diam.	Max. Length
"TL" 20 W/12	58	0.39	Standard	38	590
"TL" 40 W/12	103	0.44	bi-pin	38	1199



This photograph shows a solarium of 30 feet in length, equipped with approximately 200 TL/12 fluorescent sunlamps.

PHILIPS

NEON GLOW LAMPS





Neon Glow Lamps

INTRODUCTION

Neon glow lamps are gaseous discharge lamps, in which light is given off from negative glow, at the electrodes. In the case of D.C. one electrode glows and in the case of A.C. both glow.

The lamps are filled with a rare gas, usually neon, giving an orange red light.

As with all discharge lamps, the current has to be stabilised. For this a resistance is generally built-in the cap. Lamps can be supplied without built-in resistor where required.

To start the glow discharge an initial voltage is needed—(referred to as the ignition voltage)—about 100V. for the low voltage (L.V.) D.C. types and about 150V, for the high voltage (H.V.) D.C. types. For A.C. the corresponding voltages are about 30% lower.

WORKING VOLTAGE

After the ignition and consequently after the discharge has become stable, the lamps attain their normal operating condition during which the voltage between the electrodes drops (approximately 10V. for indicator lamps). The series resistance absorbs the difference between mains voltage and working voltage. If the mains voltage should drop unduly below the level of the working voltage the lamp will be extinguished.

EXAMPLE:

Type GL8 for 250V. A.C., maximum current 0.25 mA., working voltage approximately 140V. At 1 mA., the resistance has to absorb a voltage of 80V., corresponding with 80,000 ohms.

If the mains voltage is increased, the current intensity increases too, and so does the intensity of the glow. However, the blackening of the bulb—resulting from the electrode evaporation—increases with higher current intensity, shortening the life of the bulb.

We therefore, if necessary, indicate the maximum current intensity giving a sufficient electrode irradiation and a reasonable average life of the lamp.

Neon Glow Lamps

NIGHT LAMPS

FEATURES

- Very low consumption.
- Subdued light.
- Great resistance against shocks and vibrations.

TYPES

- a. with frosted bulb (orange light).
- b. with fluorescent bulb (greenish light).

CAPS

The lamps are available with Edison Screw (ES) cap or with Bayonet (BC) cap.

APPLICATIONS

Bedrooms, Hospitals, Corridors, Staircases, Dark Corners, Lavatories, Stables, Air Raid Shelters.

NOTE:

When ordering please specify whether for A.C. or D.C. operation. E27—Edison Screw Cap B22—Bayonet Cap

et 1.1	Catalogue		•	-		
Finish	Number	Сар	Voltage	Wattage	Voltage	Wattage
Frosted	13503 E/21 13503 B/21	E 27 B 22	75-250 V	Max. 2, 5 W	110-250 V Max. 2 V	
Fluorescent	13503 E/48 13530 B/48	E 27 B 22	75-250 V	Max. 2, 5 W	110-250 V	/V(dx. 2 VV

LAMP FOR WAVELENGTHS

PARTICULARS: This is a tubular lamp and has no built-in resistance. A resistance has therefore to be connected up in series with the lamp, the value of which depends on the voltage used and must be suitable for the max, current of the lamp.

TYPE: Clear glass bulb.

ORDERING DATA:

55±1

1	Finish Cat. Cap		A	.c.	D	.c.
Finish			Voltage	Current	Voltage	Current
Clear bulb	4018 D	E 10	100 - ∞ V	Max. 1 mA.	140 - ∞ V	Max. 1 mA.

Resistance can be found by applying Ohms Law to mains tension minus about 85V. A.C. or 130V. D.C.



Neon Lamps

EMBLEM LAMPS

Emblem lamps are tubular or pear-shaped neon glowlamps with a clear bulb and a frosted saw-edge band just above the cap. These lamps are supplied with different types of electrodes.

FEATURES

- Striking light colour.
- Very low power consumption.
- Vibration and shockproof.

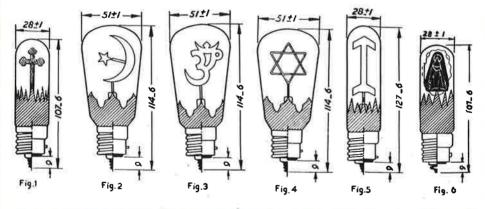
APPLICATIONS (For Arrow lamp only)*

- Cinemas Theatres Offices Corridors, etc.
- * The other lamps are specially produced for use by religious and other bodies.

CAPS

The lamps fitted with a bayonet cap (B 22) have the pins in a plane midway between the two electrodes.

The lamps with screw cap (E 27) have a small spring soldered to the central contact, so that the lamps cannot fail to be screwed in properly.



Finish	Catalogue	Cap	٠	_		=	F1_
rantan	Number	Сар	Voltage	Wattage	Voltage	Wattage	Fig.
Crucia lamp	13501 E/16 13501 B/16	E 27 B 22	100-250V		105-250V		1
Crescent lamp	13507 E/16 13507 B/16	E 27 B 22	100-250V		105-250V		2
Ohm lamp	13506 E/16 13506 B/16	E 27 B 22	100-250V 105-250V		3		
Zion lamp	13540 E/16 13504 B/16	E 27 B 22	100-250∨	Max. 3.5W	105-250V	Max. 2.5W	4-
Arrow lamp	13502 E/16 13502 B/16	E 27 B 22	100-250V	1	105-250V		5
Madonna	13983 E/16 13983 B/16	E 27 B 22	100-250V		105-250V		6

Neon Lamps



ARGON GLOW LAMPS

(For fluorescent activation)

PARTICULARS: Radiation mostly in the U.V. wavelength 0.30-0.38 millimicrons which is very effective for activating fluorescent materials. This radiation does not affect the eyes or the skin.

TYPES: a. With clear glass bulb.

b. With wood glass bulb.

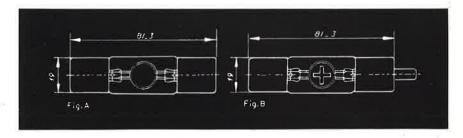
	Cat. No	Сар	Α.	C.	D.C	:.
	Car. 140	Cap	Voltage	Current	Voltage	Current
Clear	13200 E 13200 B	E 27 B 22	110.050 V	0.10 4	105 050 W	4.0 4
Wood Glass	13200 E/70 13200 B/70	E 27 B 22	110-250 V.	8-10 mA.	125-250 V	6-8 mA.

TENSION INDICATOR LAMPS

PARTICULARS: Strong simple construction. Reliable. Insusceptibility to shocks or vibration.

TYPES: a. Indicator lamps. Merely used as tension indicator on switchboards, etc.

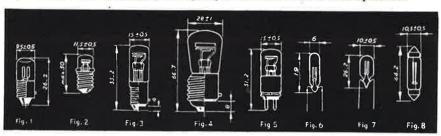
b. Test lamp. Specially designed for the Philips tension tester, Cat. No.: 4017.



#1-1-L	Finish Cat.		A.C.	Fig.	
Finish number	Сар	Voltage	Current	rig.	
Indicator	13525 T	Two caps S 19	265-750 V.	1-2mA.	A B
Tester	4017 T	One cap \$ 19 and one cap with pin	110-750 V.	Max. 5 sec. continuous use	В
Tester	4021 T	One cap S 19 and one cap with pin	200-750 V	Max. 5 sec. continuous use	В

Neon Lamps

INDICATING LAMPS The Neon Indicating Lamps are tubular of pear-shaped glowlamps or dimensions in various types. The lamps are extremely suitable as tension indicators for various applications. They emit an orange-yellow light. Note: When ordering, please specify whether for A.C. or D.C. operation.



	Catalogue			A	l.C.	D.C.		
Resistor	No.	No. Fig. Ca	Сар	Mains Voltage (4)	Current	Mains Voltage (4)	Current	
	GL40D(2) GL40N(2)	ī	E10 Ba9s	75-150 V 155-250 V	max.0.5mA(7)	100-195 V 200-250 V	max.0.5mA	
ilt-in	GL41M(2) GL41W(2)	2	E14 B15	100-250 V 380 V	max.1mA(7)	110-250 V	max.1mA	
ē.	GL42M(2) GL42W(2)	3	E14 B15	75-150 V 155-250 V	About 2mA(7)	110-195 V 200-250 V	1-2mA	
With	GL44M(3) GL44W(3)	4	E27 B22	75-150 V 155-250 V	About 2mA	110-195 V 200-250 V	2-3mA	
	9510P	5	G2.5 x 7	75-150 V 155-250 V	1-3mA	110-195 V 200-250 V	1-2mA	

Г			130		Voltage	(1)	Volta	ge (1)
	Catalogue No.	Fig	Сар	Striking Voltage ~	A.C.	Recom- mended Series Resistor Ohms	D.C.	Recom- mended Series Resistor Ohms
Resistor	GL1M GL1W	2	E14 B15	About 75V ~ About 105V =	80-110 V 115-145 V	47000 82000	110-145V 150-195V	3900 82000
1-	GL2M GL2W GL2N		E14 B15 B15s	About 125V ~ About 175V =	About 150-180V About 185-215V	68000 100000	200-250V	82000
built-in	GL3M(4) GL3W(4)		E14 B15	About 200V ~	220-230 V 230-250 V 380 V	39000 47000 12000.5W	_	=
Without	GL8	6	1	About 65V ~ About 90V =	200-250V(8)	680000	200-250V (8)	560000
Wii	GL10 GL10N(5) GL10D	7 1	Ba9s E10	About 65V ~ About 90V =	65-100 V 105-130 V 135-180 V 185-215 V	100000 150000 270000 330000	90-100V 105-130V 135-195V 200-250V	22000 82000 220000 330000
	GL11(4) GL11D(4) GL11N(4)	7 1 1	E10 Ba9s	About 200V ~	220-230 V 230-250 V 380 V	68000 82000 180000	-	-
	4016T(6)	8	2 x S7	About 65V ~ About 90V ==		t 380 V t 500 V		1000000 1200000

⁽¹⁾ For lamps without built-in resistance, the appropriate resistance has to be connected in series with the lamp. Rating 0.25W except where otherwise shown.

(2) Lamps in voltage group 220/230V—230/250V and 380V are high brightness types.

(3) Add /972 for yellow bulb finish, /973 for green, /976 red.

(4) High brightness types.

(5) American equivalent NE51.

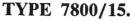
(6) For pencil-tension tester and tension indicator combined with screw-driver.

(7) Lamp currents of high brightness types GL40D/N, GL41M/W and GL42M/W are 1mA, 2mA and 3mA respectively.

(8) Lower voltage types also available.

Neon Tension Indicators

LOW TENSION TYPES—AC/DC





This pencil type indicator is also a handy screwdriver, having a finely ground hardened blade. It is fitted with a pocket clip for vertical pocket carrying. Suitable for use on 110V. to 500V. AC/DC, a glow is obtained by inserting the blade into flat pin sockets or the like and earthing the top of the indicator with the thumb. A return lead may be plugged in instead if desired.

Replacement double cap neon lamps (type 4016T) may be fitted when necessary.



This heavy duty tester is an essential part of every electrician's kit. It is suitable as a potential and polarity indicator, the bright glow being visible through a large window in the body of the unit.

Neon lamps type 4017T/91 should be used for the voltage range 110/240V. AC/DC and type 4021T/91 for range 240/750V. AC/DC. The lamp is inserted by unscrewing the two halves of the indicator body.

Neon Tension Indicators

HIGH TENSION TYPES—AC

(Frequency Range 40-60 cycles)

In installations where there is no risk of the tube being damaged, it may be attached to the high tension cables by means of metal clamps. In all other cases it is mounted in a special "Pertinex" cylinder which is provided with longitudinal inspection ports. Each end of the cylinder is capped with metal and provided with a hook which forms the external contact for the tube. The holder is for permanent use between two phases, one phase and earth or with one phase only.

IMPORTANT: Although the neon glow is visible under practically all conditions, it is advisable to shield the indicator from direct sunlight.



TYPE 4049

MINIMUM IGNITION VOLTS: 1,200V.

DIMENSIONS: Length 272mm., Max. Diam. 18mm.

MOUNTING POSITION: VOLTAGE RANGE:
Between 2 phases; or between

1 phase and earth 2,000V. to 15,000V.



TYPE 9503

MINIMUM IGNITION VOLTS: 1,300V.

DIMENSIONS: Length 315mm., Max. Diam. 22mm.
MOUNTING POSITION: VOLTAGE RANGE:

- 1. Between 2 phases; or between 1 phase and earth .. 2,000V. to 8,000V.
- 2. As above but with one
- hook insulated 8,000V. to 10,000V.

 3. Only one hook making con-
- tact 10,000V. to 25,000V.
- As above but with the hook not in use removed ... 25,000V. to 50,000V.



HOLDER-TYPE 17105

Designed to give a good background against which the glow of the tube may be easily seen, this special holder takes both 4049 and 9503 tubes. It is a convenient method of mounting the tubes. The mounting positions and voltage ranges listed above apply when the 17105 holder is used.

HIGH FREQUENCY APPLICATIONS:

In cases of high frequency, such as are generated by transmitters or used in high frequency ovens, the situation differs. Here it is usual practice to connect the indicator parallel to the conductor. Standing rules for connection and frequency range cannot be given owing to the wide variations between installations.

PHILIPS



DECORATIVE LAMPS





GENERAL INFORMATION

The "Colorenta" lamp is a decorative lamp designed to create a restful and intimate atmosphere. It provides charming candle-light and thus tends to enhance the beauty of any room. The "Colorenta" is made entirely of opal glass, making its surface brightness very low and its light very pleasant to the eyes.

"Colorentina" lamps have been designed to create candle-light effect. The candle-shaped bulb has a frosted top whilst the remainder is sprayed with ivory-coloured enamel.

Attractive effects can be obtained by using a small shade on top of the bulb.

COLORENTA AND COLORENTINA

FEATURES: Soft light; decorative appearance.

APPLICATIONS: Home lighting • Stairways • Fashion establishments • Hotel rooms • Museums • Bars • Lighting of mirrors and pictures.

		***		Max.	length
Finish	Voltage	Watts	Diam.	E 27	B 22
Colorenta Colorentina Baby Colorentina	100-250	40 & 60 25 25	38 38 30	310 227 150	305.5 222.5 148



FANCY ROUND AND CANDLE LAMPS

CANDLE LAMPS

For decorative purposes, Philips supply a vast range and variety of lamps. Candle lamps have proved most popular and can be supplied in either clear, inside frosted or coloured. Some ratings can also be supplied in inside white (Argenta).

Voltage	Watts	Shape	Cap	Finish
12/36-100/260 12/36-100/260 210/260	15-25-40 15-25-40 25-40	Plain Twisted Torch	SES-SBC BC -ES	Clear, Inside Frosted or Coloured "



Sometimes, owing to lack of space, it is desirable to use incandescent lamps of small dimensions. For instance, in small table lamps, cornices, etc., the fancy round lamp

is admirably suited for all such purposes and can be supplied with clear inside frosted or inside white finish.

				Dimensio	ns
Volts	Watts	Сар	Overall Length BC ES		Diameter
100/250 100/250 100/250	15 25 40	BC or ES BC or ES BC or ES	69.5 69.5 73±3.5	71 71 74.5 ±3.5	45 45 50

FESTIVE ILLUMINATION LAMPS

For festive illumination and ornamental lighting there are available dwarf-candle, candle, pine-apple, dwarf-olive and drop-shape lamps of low wattage in a wide colour range, such as red, green, blue, (orange), yellow and white. They have to be mounted in series, while the drop-shape are also available for parallel burning. All lamps for series burning, with the exception of the drop-shape lamps with B15 base, are provided with a short circuiting device, to make sure that the circuit is not interrupted when one of the lamps is burnt out.











Circuit	Shape	Finish	Volts	Watts	Diam.		Max. length with base (mm)		
	×.			Walls	mm.	Fig.	E10	E14	B15
	candle	ribbed top ivory sprayed shaft	7-14 °)	3	14.5	1	95	-	-
For	pine-apple	clear or coloured	7-14 ⁸) & 20	1.5-3	18	2	53	-	=
series burning	dwarf-olive	clear or coloured 2)	7-14 ⁸) & 20	1.5-3	17.5	3	52		-
	dwarf-candle	ribbed	7-14 ³)	1.5-3	13.5	Ă	47	-	
	drop	clear or coloured 1)	14	3.75	45	5		78.5	77
For parallel burning	drop	clear or coloured 1)	100-250	15	45	5	-	78.5	77

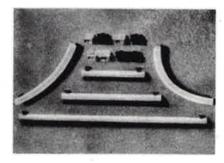
Red, green, blue, orange, yellow, or white sprayed.
 Transparent: red, green, blue, or yellow.
 Special voltages on demand.

PHILINEA LAMPS

Philips "Philinea" lamps are inside enamelled tubular incandescent lamps. They can be used as wall ornaments or as luminous lines along the ceiling or around door openings and are designed to fit in with any architectural style.

FEATURES: Very decorative appearance Low surface brightness (no need for screening).

APPLICATIONS: Homes ● Shops ● Showrooms ● Restaurants Showrooms • Restaurants
Theatres • Cinemas • Mail steamers



Specially designed lampholders are available for individual mountings as well as for mounting in a continuous row.

Shape	Volts	Watts	Overall Length mm.	Diam.	Radius of Circle
Straight Eighth circle Quarter circle	100-250 "	35 60 120 50 50	300 500 1000 500 500	30 30 30 30 30	636 mm. 318 mm.

INSIDE FLUSHED COLOURED LAMPS

A new process of coating the inside of the bulb wall so that permanent, weather-proof colouring is assured. Available in Red, Blue, Green, Yellow, Orange, Flame and Ivory. These lamps can be used extensively for festive lighting in homes, gardens, theatres, restaurants, etc. Ideal also for fair-grounds, fetes and public decorative lighting.

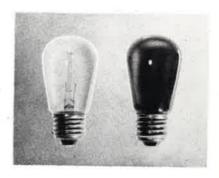
Volts	Watts	Сар
24/95 100/260	15 15	B.C./E.S.
24/95 100/260	25 25	
24/95 100/260	40 40	W.
100/260	60	wc .
100/165 170/260	75 75	#
100/165 170/260	100 100	; ;
100/260	150	; iù
100/260	200	"



SIGN LAMPS

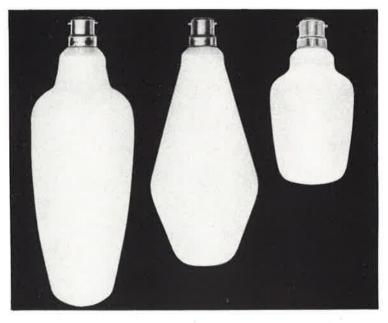
Supplied in Clear, Daylight and Coloured, Sign Lamps, as their name denotes, are used in various types of illuminated displays and signs. Both series operated and parallel lamps are available.

Volts	Watts
20-80	5
40-95	10
80-95	15
100-165	10
100-250	15
240	20
100-260	25



CAPS & DIMENSIONS

BC OL 90 ± 3.5 mm, Dia. 45 mm ES OL 91.5 ± 3.5 mm, Dia. 45 mm



Shape A

Shape B

Shape C

FANTASIE LAMPS

Fantasie Lamps need no lampshade or separate diffuser. They are made in three attractive shapes with distinctive modern styling. Finished in white opal effect they cast no shadows and are especially effective when used in clusters. If required they can be used in existing fittings.

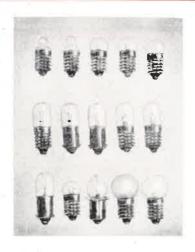
Volts	Watts	Сар	Finish	Shape
200/250	60	BC/ES	White Opal	A
200/250	60	BC/ES	White Opal	B
200/250	40	BC/ES	White Opal	C

PHILIPS

MINIATURE

LAMPS

Miniature Lamps



Philips market a complete range of focusing torch lamps, prefocus flashlight lamps, lens-end lamps, Bicycle head and tail lamps, radio panel lamps, etc. Philips flashlight lamps are manufactured to rigid specifications and accuracy of filament mounting and position is especially watched.

24-2

Fig.1



Fig.2

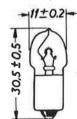


Fig.3

FLASHLIGHT LAMPS

Catalogue number	Volt.	Amp.	Lumen	Life hrs	Сар	Fig.
7100 D	1.5	0.15	1.	15	E10	.j
6889 D	2	0.2	3.2	15	E10	
233	2.3	0.27	5.1	10	E10	1
7111 D	2.5	0.1	2	15	E10	15
6890 D	2.5	0.2	4.2	15	E10	1
7135 D 1)	2.5	0.3	6.5	15	E10	1
6891 D	3.5	0.2	7.3	15	E10	1
7138 D 2)	3.8	0.3	12	15	E10	1
7139 D	4.5	0.3	12	15	E10	10
27	4.9	0.3	16.5	30	E10	2
605	6.15	0.5	40	15	E10	2
7145 D 3)	6.2	0.3	24	15	E10	2

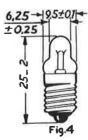
1)	American	equivalent	type	14
2)	"	,,	"	13
3)				31

PREFOCUS FLASHLIGHT LAMPS

Catalogue number	Volt	Amp.	Bead colour	Lumen	Life hrs	Сар	Fig.
PR 8 PR 4 PR 2 PR 6 PR 9 PR 3 PR 7 PR 12	1.9 2.3 2.4 2.5 2.7 3.6 3.8 6	4.6 0.27 0.5 0.3 0.15 0.5 0.3 0.5	lightgreen blue brown green pink	8 5.1 10 6 3 10.5 11.5 39	10 10 15 30 45 15 30 15	P9 P9 P9 P9 P9 P9	333333333

LENS-END LAMPS

Catalogue number	Volt	Amp.	Bead colour	Lumen	Life hrs	Сар	Fig.
112 222 7067 D	1.2 2.25 2.2	0.22 0.25 0.18	pink white	0.65 4.5 2.8	5 5 5	E10 E10 E10	4 4 4



Miniature Lamps

BICYCLE LAMPS Head lamps

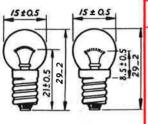
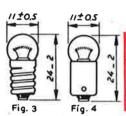


Fig. 1 Fig. 2

Catalogue number 1)	Volt	Amp.	Lumen	Life hrs	Сар	Fig.
7126 D	4	0.3	11.8	100	E10	1
7120 D	6	0.15	8.5	100	E10	1
7133 D	6	0.25	16.5	100	E10	-1
7140 D	6	0.30	20	100	E10	1
7120 D 7120 D 7133 D 7140 D 7141 D	6	0.35	23.5	100	E10	1
7142 D	6-	0.45	27	100	E10	1
7143 D	6	0.50	30	100	E10	1
7152 C	6	0.40	25	100	EP10	2
7152 D	6	0.40	25	100	E10	1
7185 D	8	0.45	40	100	E10	1
7186 D	8	0.5	46	100	E10	1
7192 D	10	0.4	48	100	E10	i

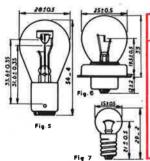
¹⁾ All types can also be supplied in granulated finish.



Tail lamps

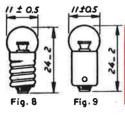
Catalogue number	Volt	Amp.	Lumen	Life hrs	Сар	Fig.
7121 D 7121 N 7098 D 7181 D 7181 N	6 6 8 8	0.05 0.05 0.1 0.05 0.05	1 1 2 1.5 1.5	1000 1000 1000 1000 1000	E10 BA9s E10 E10 BA9s	3 4 3 3 4

LAMPS FOR BICYCLES WITH AUXILIARY MOTOR Head lamps



Catalogue number	Volt	Watt	Lumen	Life hrs	Сар	Fig.
7010 D 7011 D 7012 D 7013 D 7014 D 7015 D 7016 D 7016 D 7017 D 7018 D 7019 D 7030 *)	66666666666	3.4 3.7 4.0 4.4 4.8 5.2 5.7 6.0 6.2 6.8 7.5 15/15	33 39 42 48 53 57 64 69 71 81.5 97	100 100 100 100 100 100 100 100 100 100	E10 E10 E10 E10 E10 E10 E10 E10 E10 EAX15d P26s	777777777756

^{*)} Duplolamp.



Tail lamps

Catalogue number	Volt	Watt	Lymen	Life hrs	Сар	Fig.
7000 D 7000 N 7009 D 7009 N 7087 D	6 6 6 6	1.5 1.5 2 2 2 3	6.7 6.7 14 14 22.5	1000 1000 1000 1000 1000	E10 BA9s E10 BA9s E10	8 9 8 9 8

Miniature Lamps

DIAL LAMPS

Catalogue number	Volt	Amp.	Сар	Fig.
8041 D 8000 D 8023 N 8006 D 8073 D 8008 D 1) 8009 D 2) 8008 N 3) 8009 N 4) 8024 D 8024 D 8045 D 8047 D 8048 D 8049 D 8058 D 8058 D 8059 D 8059 D 8055 D 8069 D 8069 D	4 6 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 7.2 10 12 12 12 15 18 18	0.1 0.21 0.18 0.1 0.15 0.25 0.15 0.25 0.3 0.32 0.32 0.64 0.3 0.1 0.2 0.2 0.1 0.1	E10 E10 EA9s E10 E10 E10 E10 BA9s BA9s E10 BA9s E10 E10 E10 BA9s E10	1 2 1 1 1 3 3 1 3 1 1 2 1 1 1 4 2 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1

10.5±0.5	// ± 0.5
	7 %
	Ein 2

Fig. 1 Fig. 2

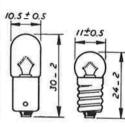
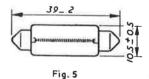


Fig. 3

Fig.4



BATTERY AND ACCUMULATOR LAMPS

Catalogue number	Volt	Amp.	Lumen	Life hrs	Сар	Fig.
502	5.1	0.15	7.3	100	E10	6

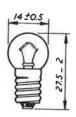


Fig. 6

¹⁾ American equivalent type 40 2) 46 3) 47 4) 44

Miniature Lamps

BLINKER (FLASHER) LAMPS

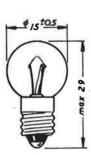




Fig. 1

Fig. 2

OPERATION

Philips flasher lamps contain a special non-mechanical flasher device. The flashing is obtained by a bi-metal strip bending away from the lead-in wire by the heat of the burning filament. By breaking the circuit the lamp goes out and the metal strip cools down, thus returning to its original position, this operation being continuously repeated.

ORDERING DATA

Туре No.	Voltage	Amperage	Сар	Frequency per min.	Average useful life h	Fig.
7406	2.6	0.27	E10	90 ± 30	50	1
7407	4.9	0.3	E10	90 ± 30	50	1
7405	6	0.5	E10	90 ± 30	50	1
7408	12	0.25	E10	90 ±330	50	1
FTA 25	6	0.19	E10	30 ± 15	100	2

APPLICATIONS

Applications for Philips flasher lamps are numerous. The following are outstanding examples:

MARKER LIGHT in the event of a break-down of your car.

WARNING LIGHT in case of road accidents.

IDENTIFICATION LIGHT on police belts.

INDICATOR LIGHT in case of road repairs.

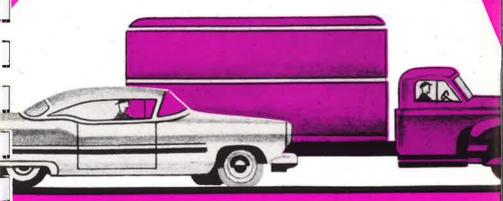
FLASHING UNIT in festive illuminations, etc., etc.



PHILIPS



Motorcar Lamps



Headlamps (Duplo)

TWIN FILAMENT WITH METAL CUP

LAMP DESIGN AND CAP	Туре	Volts	Watts	Service
40	6715*	6	25/25	Headlamps
	6725	6	35/35	for
	6745	6	45/40	Continental
DA214	12725	12	35/35	and some
BAZIU	12745	12	45/40	Australian
	13745	24	45/40	cars and
				trucks.

Also for American cars if the sealed-beam units are replaced by French or Belgian reflectors.

35		Туре	Volts	Watts	Service
		6708 [‡]	6	15/15	Headlamps
		6718*	6	25/25	for English,
o \		6728	6	35/35	Continental
70 X X	BA20d	6748	6	45/40	and some
W W W W W W W W W W W W W W W W W W W		12728	12	35/35	Australian
		12748	12	45/40	cars and
		13748	24	45/40	trucks.
. 28 _ 1		Туре	Voits	Watts	Service
	100	6722	6	35/35	Headlamps
	100	6742	6	45/40	for
* \ 1		12722	12	35/35	American
25 Am	BA15d/1	12742	12	45/40	cars and
m m		13742	24	45/40	trucks,
35		7030	6	15/15	For Motor Cycles only
	The second	į.			
	Barbara I				- 1
					18
00 \					
09 X8	BA15d				

^{*} Also for Motor Cycles.

Headlamps (Duplo)

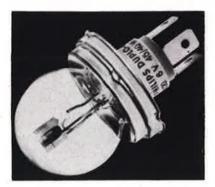
TWIN FILAMENT WITH METAL CUP

Туре	Volts	Watts	Service	LAMP DESIGN AND CAP
6791* 6792 12792 13792	6 6 12 24	25/25 35/35 35/35 35/35 35/35	Headlamps for British cars	BA15d Og xeE
Туре	Volts	Watts	Service	28
6711* 6721 6741 12721 12741 13741	6 6 6 12 12 24	25/25 35/35 45/40 35/35 45/40 45/40	Prefocus lamps for British and some Australian cars and trucks.	P22d
Туре	Volts	Watts	Service	35
6951 12951	6 12	35/35 35/35	Prefocus lamps for American cars.	P15H 09 xew
Туре	Volts	Watts	Service	35
6953	6	35/35	Prefocus lamps for American cars.	P15V 09 XeE

Lamps with cap P15H and P15V are not interchangeable. Mind the position of the notch on the prefocus ring. For cap P15V the position of this notch in regard to the contacts is turned 90° as compared with cap P15H.

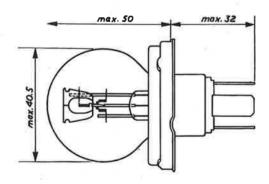
^{*} Also for motor cycles.

"DUPLO"-d HEADLIGHT LAMP



for asymmetrical lighting system with inside metal cup

The "Duplo"-d lamps contribute to greater road safety by combining a powerful main-beam with a passing-beam giving better visibility at longer distance on nearside, sharply cut-off beam on offside and better possibilities for a correct adjustment of the reflectors.



Туре	v	w	Сар	Service
6620 12620 13620	6 12 24	45/40 45/40 50/50	P 45 P 45 P 45	Lamps for European asymmetrical lighting system.

TWIN FILAMENT WITHOUT METAL CUP

6612 6 25/25 Headlamps for American cars. Type Volts Watts Service 6902 6 35/35 97efocus headlamps for American cars.	
12622 12 35/35 American cars. Type Volts Watts Service 6902 6 35/35 Prefocus headlamps for American	
Type Volts Watts Service 6902 6 35/35 Prefocus 12902 12 35/35 headlamps for American	
Type Volts Watts Service 6902 6 35/35 Prefocus 12902 12 35/35 headlamps for American	
Type Volts Watts Service 6902 6 35/35 Prefocus 12902 12 35/35 headlamps for American	
Type Volts Watts Service 6902 6 35/35 Prefocus 12902 12 35/35 headlamps for American	
6902 6 35/35 Prefocus 12902 12 35/35 headlamps for American	
12902 12 35/35 headlamps for American	
12902 12 35/35 headlamps for American	
cars.	
Type Volts Watts Service	
6905 6 35/35 Prefocus	
12905 12 35/35 headlamps for American	
American #	
cars.	

Lamps with cap P15H and P15V are not interchangeable. Mind the position of the notch on the prefocus ring. For cap P15V the position of this notch in regard to the contacts is turned 90° as compared with Cap P15H.

Туре	Volts	Watts	Service		1
12958 12959	12 12	42/36 42/36	Prefocus headlamps for British cars.	P22d	79 x 800

These lamps should be distributed only in countries where there are no regulations decreeing the use of "Duplo" lamps.

Type 12958 is equivalent to Lucas type 354 (for countries with "left traffic").

Type 12959 is equivalent to Lucas type 355 (for countries with "right traffic").

SINGLE FILAMENT LAMPS

LAMP DESIGN AND CAP	Туре	Volts	Watts	Service
35	6221	6	35	Spot and
	6241	6	45	foglamps.
	12221	12	35	
	12241	12	45	
	13241	24	45	
BA15s				
				1
35	Туре	Volts	Watts	Service
	6222	6	35	Spot and
	6242	6	45	foglamps.
-1 A A /	12222	12	35	
9 1	12222	12	ან	
BA15d	12242	12	45	
BA15d				
BA15d	12242	12	45	
BA15d	12242	12	45	

If used in British headlamps write capital "L" behind the type number.

NAME OF TAXABLE PARTY.				
35	Туре	Volts	Watts	Service
	6227	6	35	Spot and
	6247	6	45	foglamps.
BA20s	12227	12	35	٠,
BA20s	12247	12	45	
	13247	24	45	
· (O)			7	"
40	Туре	Volts	Watts	Service
				Jeivice
	6224	6	35	Table 1
	6224 6244			Spot and
	I	6	35	Table 1
BA21s	6244	6	35 45	Spot and
BA21s	6244 12224	6 6 12	35 45 35	Spot and
BA21s	6244 12224 12244	6 6 12 12	35 45 35 45	Spot and
BA21s	6244 12224 12244	6 6 12 12	35 45 35 45	Spot and

SPECIAL SINGLE FILAMENT LAMPS

Туре	Volts	Watts	Service	LAMP DESIGN AND CAP
6299	6	35	Spot and	_ 35
12299	12	35	Foglight	
13299	24	35	rogiigiii	
13299	24	33		P15s \ A / S
			ਬ	P15s
Туре	Volts	Watts	Service	40
				h /
6253	6	45	Spot and	(
12253	12	45	Foglight	BA21s
13253	24	50		[]
			/	(O) <u></u>
				9
Туре	Volts	Watts	Service	28
6323	6	35	Spot and	P22s
6228	6	45	Foglight	T 3
12323	12	35	rogrigin	ž ž
12323	12	45		
		45 45		
13322	24	45		
Туре	Volts	Watts	Service	78
6318	6	35	Spot and	P22s
6343	6	45	Foglight	
12343	12	45	rogngiii	max 62
12343	12	45		(O)) ===================================
Туре	Volts	Watts	Service	28
12292	12	35	Spot and	P22d
13293	24	45	Foglight	H %
10273			7 09 119 111	
				S E
Туре	Volts	Watts	Service	25
6325	6	25		(П)
12325	12	25	Headlamp	17 2
13324	24 -	25		BA15s

LAMP DESIGN AND CAP	Туре	Volts	Watts	Service
	6400	6	10	Signal and
18	12400	12	10	Dome
	13400	24	10	
BA15d				
BAISO	22 g			~
	9 =			
	Туре	Volts	Watts	Service
	6410	6	10	Signal and
BA15s	6413	6	: 15	Dome
BA15s	12410	12	10	
Ĕ (O)	12413	12	15_	
	13410	24	10	
	13413	24	15	
22	Туре	Volts	Watts	Service
	12416	12	15	Stop and
	F- 1	1.0		signal
BA15d spec.		2		
2				
			3	- 4
26	Туре	Volts	Watts	Service
	6421	6	20	Turn signal
BA15s	12421	12	20 =	
BA15s	13421	24	20	
E .	P 15			
<u> بالمحالة بالمحالة المحالة بالمحالة بالمحالة بالمحالة بالمحالة بالمحالة بالمحالة بالمحالة بالمحالة بالمحالة با</u>				2.5
25	Туре	Volts	Watts	Service
	6422	6	20	Turn signal
	12422	12	20	I
BA15d	13422	24	20	
NEW .				

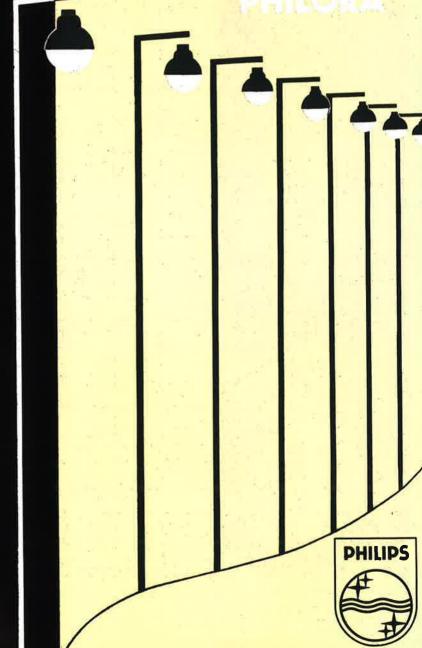
Туре	Volts	Watts	Service	LAMP DESIGN AND CAP
6401 12401 13401	6 12 24	15 15 15	Stop Lamps	BA15s
Туре	Volts	Watts	Service	
6402 12402 13402	6 12 24	15 15 15	Stop Lamps	BA15d Se
Туре	Volts	Watts	Service	
6503 12503 13406	6 12 24	20/5 20/5 20/5	Stop Tail Lamps	BA15d Signal Sig
Туре	Volts	Watts	Service	25
6500 12500 13500	6 12 24	20/5 20/5 20/5	Stop Tail Lamps	BA15d spec.

LAMB PROJECT AND GAR				
LAMP DESIGN AND CAP	Туре	Volts	Watts	Service
1-22	6403	6	15	Interior bus
The state of the s	12403	12	15	lighting
	13403	24	15	
BA15s				2
BA15s	-			
	ı			
				-
22	Туре	Volts	Watts	Service
1	6404	6	15	Interior bus
» (V)	12404	12	15	lighting
BA15d	13404	24	15	
Ĕ				
				_
	Туре	Volts	Watts	Service
- 18 - 				
	6811 (200)	6	3	Indicator,
BA15s	12811 (219) 6821 (205)	12	4	Parking,
BA15s	12821 (207)	6 12	6 6	Dashboard, Interior.
	13821 (149)	24	6	- interior.
	11.5947.50	~ .	J	A _{BC}
18	Туре	Volts	Watts	Service
	6812 (204)	-6	3	Indicator,
BA15d	12812 (635)	12	4	Parking,
25. See 1	6822 (206)	6	6	Dashboard,
	12822 (209)	12	6	Interior.
	13822	24	6	=
is .	Туре	Volts	Watts	Service
	6819 (951)	6	6	Indicator for
BA9s	12819 (989)	12	6	British cars.
	13819	24	6	
			12 11	
				- 1

Туре	Volts	Watts	Service	LAMP DESIG	N AND CAP
6875 (982)	6	1.8	Dashboard		11
(990)	· 6	3	Indicator		
2875 (987)	12	2.2		E10/13	
3875 (993)	24	2.8	//		2
			ä	0	max 24
Туре	Volts	Watts	Service		12
6876	6	2	Dashboard	E10/19	
12876	12	3	Indicator		2 2
13876	24	3			max x
			=		
Type	Volts	Watts	Service	k to the	1
	,	0	D - ulci- e	BA9s	(0)
6910 (641)	6	3	Parking Dashboard		2
12910 (643)	12	2.2	Indicator		max 24
651	24	2.8	Indicator	•••	
Туре	Volts	Watts	Service	BA9s	9.2
6913 (640)	6	1.8	Parking	Dros	(77)
12913 (643)	12	3.2	Dashboard		max 26
13913 (651)	24	2.8	Indicator		9
6929	6	4			4 1
12929	12	4			
Туре	Volts	Watts	Service		1
6828	6	0,6	Indicator	BA7s	
6829	6	1.2	Speedometer		\$
12829	12	2		0	ă h h
12027	12				<u> </u>
		-			
Туре	Volts	Watts	Service		7.5
12926	12	0.75	Turn Signal	E5.5	(V) 12
	.=		Dash		Mex 16:5
	Į.		Indicator		m m
				(0)	

LAMP DESIGN AND CAP	Туре	Volts	Watts	Service
EAMI DESIGN AND CAI				
	6842	6	3	Trafficator
4	12842	12	3	Interior
				Dashboard
	l			Parking
S7 max 31				
REAL VISITIONS	Туре	Volts	Watts	Service
To be	6843	6	3	Trafficator
	12843	12	3	Interior
max 36	13843	24	3	Dashboard
S7				Parking
	Туре	Volts	Watts	Service
	6849	6	3	Trafficator
	12849	12	3	Interior
max36		1		Dashboard
S6				Parking
		17.11		
	Туре	Volts	Watts	Service
	6914	6	3	Trafficator
	12914	6 12	3 3	Interior
max39				Interior Dashboard
S7 max 3 9	12914	12	3	Interior
S7 max39	12914	12	3	Interior Dashboard
S7	12914 13914	12 24	3 3	Interior Dashboard Parking
\$7	12914 13914 Type 6844 6854	12 24 Volts 6 6	3 3 Watts 5 10	Interior Dashboard Parking Service Trafficator Interior
S7	12914 13914 Type 6844 6854 12844	12 24 Volts 6 6 12	3 3 Watts 5 10 5	Interior Dashboard Parking Service Trafficator Interior Dashboard
S7	12914 13914 Type 6844 6854 12844 12854	12 24 Volts 6 6	3 3 Watts 5 10 5	Interior Dashboard Parking Service Trafficator Interior
S7	12914 13914 Type 6844 6854 12844	12 24 Volts 6 6 12 12	3 3 Watts 5 10 5	Interior Dashboard Parking Service Trafficator Interior Dashboard
S8.5 max39	12914 13914 Type 6844 6854 12844 12854 13844	12 24 Volts 6 6 12 12 24	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking
S7	Type 6844 6854 12844 12854 13844 Type 6864 6866	12 24 Volts 6 6 12 12 24 Volts 6 6	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service
S8.5 max39	12914 13914 Type 6844 6854 12844 12854 13844 Type 6864 6866 12864	12 24 Volts 6 6 12 12 24 Volts 6 6 12	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator
S8.5 max 39	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12864 12866 13864	12 24 Volts 6 6 12 12 24 Volts 6 6 12 24 24 Volts	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard
S8.5 max39	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12866	12 24 Volts 6 6 12 12 24 Volts	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior
S8.5 max 39	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12864 12866 13864	12 24 Volts 6 6 12 12 24 Volts 6 6 12 24 24 Volts	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard
S8.5 max 39	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12866 13864 13866	12 24 Volts 6 6 12 12 24 Volts 6 6 12 12 24 24	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard Parking
S8.5 Max 39 S8.5	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12866 13864 13866 Type	12 24 Volts 6 6 12 12 24 Volts 6 6 12 24 Volts	3 3 Watts 5 10 5 10 5 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Service Service Service
S8.5 max 44 S8.5	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 12866 12864 13866 Type 6850	12 24 Volts 6 6 12 12 24 Volts 6 12 12 24 Volts	3 3 Watts 5 10 5 10 5 Watts 5 10 5 Watts 15 10 The state of the state	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Interior Dashboard Parking Service
S8.5 Max 39 S8.5	Type 6844 6854 12844 12854 13844 Type 6864 6866 12864 13866 13866 Type 6850 12850	12 24 Volts 6 6 12 12 24 Volts 6 6 12 24 Volts 6 12 12 12 24 24 Volts	3 3 Watts 5 10 5 10 5 Watts 5 10 5 Watts 15 10 Watts	Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Trafficator Interior Dashboard Parking Service Interior Dashboard Parking

PHILIPS



Philips Mercury electric discharge lamps are available in many versions according to the particular application for which they are designed. Basically, though, they fall into three groups, viz.;

1. HP. Series— (English designation MB.)

High pressure mercury lamps. This group embraces the standard pear-shaped mercury lamps in 80W. and 125 watt and the tubulars ranging from 250 to 2,000 watts. A suffix letter "/T" is added in the case of HP. lamps of 250 watts and above to denote tubular shape.

Apart from the 80W, which has a soft glass outer all other sizes have the outer in clear hard glass.

HPL. Series— (English designation MBF.)

High pressure fluorescent mercury (colour corrected) lamps.

Employing the same quartz inner discharge tubes as their HP, counterparts, these lamps differ in that the outer glass has a coating of fluorescent powder on the inside surface. This coating is activated by the mercury arc radiation and the result is a pleasing white light instead of the usual bluish light as from standard mercury lamps.

The group includes wattages 50W., 80W., 125W., 250W., 400W., 700W., and 1000W.

3. ML. Series-(English designation MBT/U.)

Mercury incandescent mixed light lamps. These lamps have a high pressure mercury quartz tube combined with a tungsten filament inside the outer bulb. The filament acts as the stabilising element for the mercury arc so that no external control gear is required.

Although the efficiency of this series is not as high as for the conventional mercury lamps, it is nevertheless an improvement on the straight-forward tungsten lamp and is readily adaptable to existing incandescent installations.

The range includes the types ML. 160 watt, ML 250 and ML. 500W.

The following variations of these three types are offering for specialised use.

- HPK.— Laboratory type mercury burners for spectral analysis and similar uses.
- HPR .- Photographic reflector back mercury lamps for photocopying lithographic printing and so on.
- HPW.— Woods glass mercury ultra violet lamps for long wave fluorescence.
- HPLR.—Reflector backed coloured corrected fluorescent mercury lamps for high bay industrial and similar applications.
- MLU.— Mercury incandescent sun lamps for ultra violet irradiation.

Other specialised gas discharge lamps are the HOGK, HOKI and HOQ high intensity photoprinting lamps as well as an extensive range of spectral analysis sources.

Apart from the ML. and MLU. series, all other types require specially designed control gear for the purpose of regulating the power in the lamp so that the rated light output is enjoyed consistent with long life. In the majority of cases, the control circuit comprises a choke with a condenser to provide the correct power factor in the circuit. The HO. photoprinting lamps employ a specially rated transformer.

The type numbers and ratings appropriate to the various lamps are given in the following pages.

 Catalogue Nos.
 H.P. 80W. 3 pin BC cap
 57235B/00

 H.P. 80W. ES cap
 57235E/00

 H.P. 125W. 3 pin BC cap
 57236E/00

 H.P. 125W. ES cap
 57236E/00

 H.P. 125W. GES cap
 57130G/00

 H.P.T. 250W. GES cap
 57131G/00

 H.P.T. 1000W. GES cap
 57213G/00

 H.P.T. 2000W. GES cap
 57214G/00

Bulb Type: H.P.—Clear pear-shaped.

HP/T. Clear tubular hard glass outer.

Spectrum: Lines-continuous.

Colour Quality: Bluish white.

Nominal Lumens1:

80W.	 3100
125W.	 5400
250W.	11500
400W.	20500
1000W.	 52000
2000W	 114000
2000 44 1	 114000

Luminous Efficiency2:

80W.		38.7	L/W
125W.	***************************************	43.2	L/W
250W.		46	L/W
400W.			L/W
1000W.		52	L/W
2000W.		57	L/W

Starting Period:

(t	o 80%	full	brilliance.)			
80W.			***************************************	3.5	mins.	
125W.	**********		*******	1.5	mins.	
250-2000W.	220,220,510			4	mins.	

Life⁸:

9000 hours (HP/T 2000W.-2000 hours.)

Light Depreciation:

(after 5000 hours.) 80-125W. 18% 250-400W. 14%

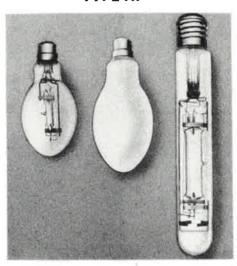
1000W. 18%

10% (after 2000 hours).

Burning Position: All positions.

Footnotes:
1. After 100 burning hours.
2. Excluding control gear losses.
3. Based on 5 hours' burning per switching.

TYPE HP



APPLICATIONS:

- 1. Streetlighting.
- 2. Floodlighting.
- 3. General factory lighting.
- 4. Inspection of polished surfaces.
- 5. Egg testing.
- 6. Microscopic examination.

Note: To be used where colour rendering is not important.

CONTROL GEAR

Lamp Type	Choke Type	Mains	O/Length	Width	Height	Capacitor O.8 P.F.
HP. 80W. HP. 125W. HP. 250W. HP. 400W. HP. 1000W. HP. 2000W.	FP. 1300 FP. 1306 FP. 1310 FP. 1316 FP. 1327	230/250V 50 c/s 230/250V " 230/250V " 230/250V " 230/250V "	5½" 5½" 5½" 5½" 5½" 5½"	4.1/16" 4.1/16" 43" 51" 7.5/16"	3.7/16" 3.7/16" 4.1/16" 43" 64"	8 mfd 8 mfd 15 mfd 20 mfd 40 mfd

LAMP DIMENSIONS

Wattage	O/All Length	Diameter	Light Centre
80W.	152 mm ± 4	70 mm ± 1	98 mm ± 3
125W.	172 mm ± 5	75 mm ± 1	111 mm ± 3
250W.	250 mm ± 7	46 mm ± 1	158 mm ± 4
400W.	305 mm ± 8	46 mm ± 1	193 mm ± 5
1000W.	372 mm ± 10	65 mm ± 1	240 mm ± 8
2000W.	455 mm ± 12	82 mm ± 1	290 mm ± 8

HPL.	50W.	ES cap	. 57224E/25
HPL.	80W.	ES cap	. 57235E/25
HPL.	80W.	3/BC cap	. 57235B/25
HPL.	125W.	ES cap	. 57236E/97
HPL.	125W.	3 BC cap	. 57236B/97
HPL.	125W.	GES cap	57236G/97
HPL.	250W.	GES cap	57220G/97
HPL.	400W.		
HPL.	700W.	GES cap	57226G/97
HPL.	1000W.	GES cap	57222G/97
HPL.	2000W.	GES cap	57229G/97

Internally fluorescent coated.

Lines-continuous.

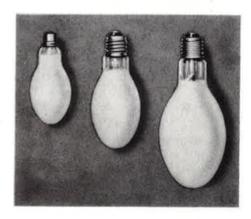
White light.

50W.	***************************************	1600
80W.		3000
125W.		5400
250W.		11500
400W.	***************************************	20000
700W.		36000
1000W.		52000
2000W.	***************************************	125000
50W.		32 L/W
80W.		37.5 L/W
12W.		43.2 L/W
250W.		46 L/W
400W.		50 L/W
700W.	***************************************	51.4 L/W
1000W.	***************************************	
		52 L/W
2000W.		62.5 L/W

(to 80W	full brilliance)		
50W.		5	mins.
80W.		3.5	mins.
125W.			mins.
250W.	***************************************	4	mins.
400W.		4	mins.
700W.		4	mins.
1000W.		4	mins.
2000W.		4	mins.

(after 5000 hours of life) 80—125—250—400W.—18% 50—700—1000W.—22/% (after 3000 hours of life) 2000W.—20%

TYPE HPL



APPLICATIONS:

- 1. Streetlighting.
- 2. Outdoor and indoor industrial lighting.
- 3. Commercial lighting.
- 4. Floodlighting.
- 5. Park and garden lighting.

All positions.

Lamp Type	Choke Type	Mains	O/Length	Width	Height	Capacitor O.8 P.F.
HPL. 80W. HPL. 125W. HPL. 250W. HPL. 400W. HPL. 700W. HPL. 1000W. HPL. 2000W.	FP. 1300 FP. 1306 FP. 1310 FP. 1316 FP. 1327	230/250V 50 c/s 230/250V ,, 230/250V ,, 230/250V ,, 230/250V ,, 230/250V ,,	521" 521" 556" 841"	4.1/16" 4.1/16" 43" 51" 5.13/16" 7.5/16"	3.7/16" 3.7/16" 4.1/16" 49" 5½" 6å"	8 mfd 8 mfd 15 mfd 20 mfd 30 mfd 40 mfd

Wattage	O/All Length	Diameter
80W. 125W. 250W. 400W. 700W. 1000W. 2000W.	152 mm ± 4 172 mm ± 5 250 mm ± 7 305 mm ± 8 320 mm ± 9 372 mm ± 10 455 mm ± 12	70 mm ± 1 75 mm ± 1 46 mm ± 1 46 mm ± 1 140 mm ± 1.5 65 mm ± 1 82 mm ± 1

57205E/90.

TYPE HPR REPRO-MERCURY

(English designation MBR/U.)



Specially moulded bulb incorporating an internally silvered reflector. The face of the bulb is granulated for evenness of light distribution.



Spactrum:

Lines—continuous.

Colour Quality

Bluish white light with strong actinic radiation, suitable for black and white reproduction and copying.

Starting Pariod

3.5 minutes.

Little Little

2000 hours.

20%.

2800 lumens nominal.

Any.

Overall length—222 mm. Diameter 110 m.m.

Control Gear

Choke: FP. 1306; Mains: 230/250V. 50 c/s; Height: $3\frac{7}{16}$ ", O/L Length: $5\frac{1}{2}$ "; Width: $4\frac{1}{16}$ ", Capacitor 0.8 P.F.: 8 mfd.

APPLICATIONS:

- All photo-copying processes.
- Special application flood lighting.

Evolution

- 1. The percentage by which the light, viz., the actinic radiation has decreased with respect to the figure at nominal 100 hours.
- 2. After 100 burning hours.

Catalogue Nos.:

HPW. 125W.—57202E/70.

Cap:

E.S. only.

Bulb Finish:

Woods glass bulb transmitting ultra violet radiations.

Spectrum:

Lines in long wave U.V. region—principally 3650-3655 Angstrom units.

Starting Period:

2.5 minutes before reaching 80% of maximum radiation.

Life :

2000 hours based on 2.5 burning hours per switching.

Radiant Energy Depreciation:

30% after 75% of rated life.

Burning Positions

Any. However, in the vertical positions with cap down there is a slight risk that mercury droplets will settle between the main and auxiliary electrodes. Under this condition the lamp may not start.

Lamp Dimensions:

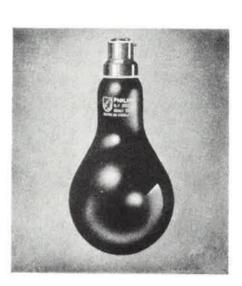
Overall Length—172 mm. \pm 5: Diameter—90 mm. \pm 1.

Control Gear :

Choke type: FP1306; Mains: 230/250V. 50 c/s.; O/L Length: $5\frac{1}{2}$ "; Width: $4\frac{1}{16}$ "; Height: $3\frac{7}{16}$ "; Capacitor 0.8 P.F.: 8 mfd.

TYPE HPW ULTRA VIOLET

(English Designation MBW/U.)



APPLICATIONS:

- 1. Excitation of fluorescent materials for display.
- 2. Chemicals analysis—all types.
- 3. Medical scalp examinations.
- 4. Examination of laundry marks, documents, etc., etc.

HPLR, 250 watt — 57223G/93 HPLR, 400 watt — 57225G/93

G.E.S. only.

Inside satin frosted hard glass - internal mirror coated with fluorescent powder.

Lines and continuous.

White light.

Any.

4 minutes.

250W. 9000 lumens 400W. 16500 lumens

20% after 4000 hours.

250W.—O/L Length -263 mm. ± 7 400W.—Diameter —183 mm. ± 1.5

Choke: FP. 1306; Mains: 230/ 250V. 50 c/s; O/L Length: $5\frac{1}{2}$ "; Width: $4\frac{1}{16}$ "; Height: $3\frac{7}{16}$ "; Capacitor 0.8 P.F.: 8 mfd.

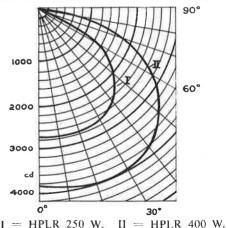
HPLR SERIES

Colour corrected mercury reflector lamps.



APPLICATIONS:

- 1. High bay industrial lighting.
- 2. Building facia lighting.
- 3. General floodlighting in rugged situations.



Catalogue Nos.:

HPK. 125W .- 57203B/00

Cap:

B.15 (S.B.C.) cap only.

Bulb Finish:

Quartz burner compensated for burning without the need for outer glass envelope.

Spectrum:

Continuous and marked lines between 2480 and 6000 Å.

Starting Period:

3.5 minutes.

Luminous Flux:

4750 lumens at 100 hours.

Light Depreciation:

15% after 1000 hours.

Brightness:

640 stilb.

Life:

1000 hours with an average of 2.5 burning hours per switching.

Lamp Dimensions:

Control Gear :

Choke type: FP. 1306; Mains: 230/250 50 c/s; Height: $3\frac{7}{16}$ "; O/L Length: $5\frac{1}{2}$ "; Width: $4\frac{1}{16}$ "; Capacitor 0.8 P.F.: 8 mfd.

HPK

Laboratory burners.

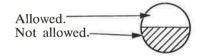


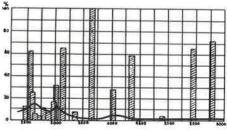
APPLICATIONS:

Specially designed for laboratory use for spectral analysis and similar applications.

BURNING POSITION

(Base down)





Relative Spectral Energy Distribution.

Blended Light Lamps

Catalogue Nos.:

ML. 160W. 240/250V. B.C. 57276B/56 ML. 250W. 240/250V. G.E.S. 57285G/56 ML. 500W. 230/240V. G.E.S. 57252G/94

Bulb Finish:

160W./250W.—

Inside silica sprayed (opalised). 500W.—

Inside frosted hard glass outer.

Spectrum:

Continuous + lines.

Colour Quality:

White light.

Colour Temperature:

Close to 4000°K.

Luminous Flux:

160	watt	**********	2650	lumens
250	watt	*********	4300	lumens
500	watt	200000000000000000000000000000000000000	11000	lumens

Colour Adjustment

Period:

2 minutes.

Mains Connection:

For use on AC mains only 40-60 cycles. No control gear is required.

Life:

3000 hours.

Light Depreciation:

20% after burning hours reach 70% rated life.

Brightness:

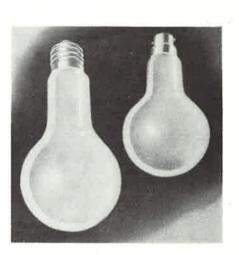
160	watt	***************************************	10	stilb.
250	watt	*****************	10	stilb.
500	watt	******************	40	stilb.

Lamp Dimensions:

160W—O/L Length — 178 mm ± 5 Diam. 90 mm ± 1 250W—O/L Length — 243 mm ± 7 Diam. 110 mm ± 1.5 500W—O/L Length — 267 mm ± 7 Diam. 130 mm ± 1.5

TYPE MLU

(English designation MBT/U.)



BURNING POSITION

ML 160W.

ML 250W. ML 500W.





In shaded positions difficulties may be expected regarding starting.

Catalogue Nos.

HOGK 700W.—57123 AH/51 HOGK 2000W.—57118 AH/51 HOGK 2500W.—57124 AH/51 HOQ 700W.—57123 AH/60 HOQ 2000W.—57118 AH/60 HOQ 2500W.—57124 AH/60 HOKI 1200W.—57129 A.P/65 HOKI 2000W.—57128 AP/65 HOKI 3000W.—57125 AP/65 HOKI 5000W.—103930

HOGK and HOQ series fitted with universal bases suitable for (a) side contact (b) end contact or (c) end contact screw.

HOKI-cylindrical base contact.

HOGK—normal quartz requiring external jacket.

HOQ—special quartz, not allowing ozone formation, to be used in those machines working according to the semi-dry principle.

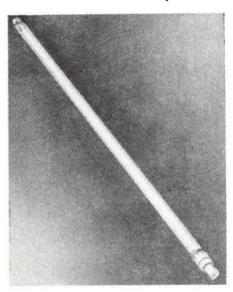
HOKI—quartz burner with inbuilt jacket of special glass with high long wave U.V. transparency.

1000 hours at average of four burning hours per switching.

20% after 1000 hours.

All positions.

DIAZO PRINTING LAMPS for A.C. OPERATION only.



APPLICATIONS:

For DIAZO PRINTING

Central Guar

Specially designed control gear is required—details available on request.

Туре	O/L Length	Bulb	Arc
	(inc. caps)	Diameter	Length
HOGK 700W. HOGK 2000W. HOGK 2500W. HOQ 700W. HOQ 2000W. HOQ 2500W. HOK! 1200W. HOK! 2000W. HOK! 3000W. HOK! 5000W.	565 mm. ± 2 1365 mm. ± 2 1502 mm. ± 2 565 mm. ± 2 1365 mm. ± 2 1365 mm. ± 2 1502 mm. ± 2 520 mm. ± 4 710 mm. ± 5 1490 mm. ± 5	24 mm. max. 35 mm. max. 50 mm. max. 50 mm. max.	415 mm. ± 1215 mm. ± 1352 mm. ± 1415 mm. ± 1215 mm. ± 1352 mm. ± 400 mm. ± 590 mm. ± 1370 mm. ± 1370 mm. ±

INTRODUCTION

Philips Sodium lamps produce an amber yellow light, principally in two wavelengths: 5890 Angstroms and 5896 Angstroms. As these two wavelengths are very close together, it is correct for practical purposes to speak of sodium light as being monochromatic.

This special colour quality makes sodium lamps eminently suitable for the illumination of major roads with heavy traffic volume since the following advantages are to be gained:

- 1. High visual acuity.
- 2. Increased speed of vision.
- 3. Enhanced contrast effect.
- 4. Low surface brightness of the lamp—thus no glare.
- 5. Exceptionally high luminous efficiency.
- 6. An inherent ability to penetrate snow, fog, mist, rain, smoke and dusty atmosphere. This ability is solely due to the monochromatic properties of the sodium lamp.

The range of Philips Sodium lamps falls into two classes viz. those with separate and detachable vacuum jackets and the more recent integral jacket series.

A Sodium lamp has two main components—an inner discharge tube and an outer vacuum glass for thermal insulation.

The inner tube contains the arc which is developed in a mixture of critical measures of rare gases such as neon and argon together with the sodium. The addition of the rare gases is necessary to facilitate starting because the sodium is normally in metallic form and must be vaporised before it will sustain the arc and emit light.

The temperature at which this vaporization occurs is quite high, so the outer vacuum shield is used in the same manner as a thermos flask to retain the heat generated within the lamp itself. In the integral lamp a further precaution is taken to prevent heat escaping, with the inclusion of a glass shield between the discharge tube and outer vacuum envelope. This extra shield results in lower losses through radiation.

An added feature in the construction of Philips integral lamps is the provision of dimples along the surface of the inner discharge tube. These behave as "storage cells" for condensed sodium thus minimising the indiscriminate formation of sodium mirrors. The lumen maintenance through life is greatly improved by this technique.

The choice between the sodium lamp inner with detachable vacuum jacket and the integral construction lamp depends on the particular application.

The separate vacuum jacket may be used with 4 or 5 sodium inners before there is any noticeable reduction in efficiency. Notwithstanding the higher efficiency of the integral unit, there will be occasions when it is more economical to select a separate lamp-jacket combination.

Like all other forms of Gaseous Discharge lamps, some electrical device is needed to control the current supplied to the lamp. With Sodium lamps this takes the form of a specially designed leak transformer which also performs an important starting function.

Depending on the regulations of the various Supply Authorities, a power factor condenser may be required to raise the power factor of the circuit to .8 or better but this does not play any part in the operation of the lamp.

Catalogue Nos.:

SOI	45W.	***************************************	57015B/00
SOI	60W.	***************************************	57016B/00
SOI	85W.		57017B/00
SOI	140W.	***************************************	57018B/00
SOI	200W.		57019B/00
-			

Cap:

B.C. cap only.

Spectrum:

Lines (96% monochromatic)

Colour Quality:

Characteristic amber yellow

Nominal Lumens:

45W.	*****************************	3300
60W.		5000
85W.	***************************************	7900
140W.	The control of the co	13000
200W.		21500

Lamp Efficiency:

(nominal)

45W.	***************************************	73.3	1ms/wat	
60W.		83.3	,,	,,
85W.		92.9	"	,,
140W.		92.8	"	"
200W	COSTAGES - PROSES NOS	107.5	,,	,,

Light Depreciation:

(after	5.000	hours)		15%
(arrer	3,000	nours)	CARLO STREET,	13%

Life:

5,000 hours based on average 5 burning hours per switching.

Starting Period:

45W.		5	mins.
buw.	*****************************	- 6	mins.
OJ W.		10	mins.
140W.	***************************************	10	mins.
200W.	*****, *****, *****, ***, **********	12	mins.

Lamp Dimensions:

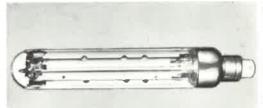
Туре	Overall Length	Arc Length	Light Centre	Diameter
SOI 45W.	250 mm ± 7	140 mm	160 mm	51 mm ± 1
SOI 60W.	312 mm ± 7	200 mm	190 mm	51 mm ± 1
SOI 85W.	417 mm ± 7	305 mm	250 mm	51 mm ± 1
SOI 140W.	518 mm ± 7	500 mm	290 mm	60 mm ± 1
SOI 200W.	775 mm ± 10	655 mm	420 mm	60 mm ± 1

Control Gear:

Lamp type	Transformer type No.	Mains Supply	Overall length (incl. flange)	Width	Height	Capacitor size (O.8 P.F.)
SOI 45/60/85W.	FP. 1030	230-250V	6§"	61"	35"	16 mfd
SOI 140W.	FP. 1031	50 c/s 230-250V	6§"	61"	4½"	20 mfd
SOI 200W.	L. 4200	50 c/s 190-260V 50 c/s	10.9/10**	4.9/16"	4.3/5"	P.F. corrected (0.90)

SOI

Integral construction.

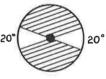


BURNING POSITIONS

SO.	45W.
SO.	60W.







H. 110

P 2x20

CATALOGUE NOS.:

45W.	57002 B/01
60W.	57004 B/01
85W.	57006 B/01
140W.	57007 B/01

VACUUM JACKETS:

45W.	61025/00
60W.	61026/00
85W.	61027/00
140W.	61028/00

SPECTRUM:

Lines (96% monochromatic amber light)

COLOUR QUALITY:

Characteristic Amber Yellow.

STARTING PERIOD:

(to 60% full diffiditee.)				
45W.		5	mins.	
			mins.	
85W.		10	mins.	
		10	mins.	

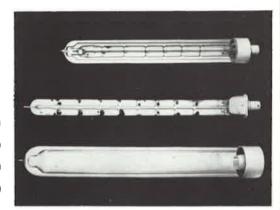
(to 80% full brilliance)

CONTROL GEAR:

Same as for Integral Sodium

TYPE SO/H

(WITH DETACHABLE JACKET)



NOMINAL LUMENS:

45W.	*********	2600
60W.		4000
85W.		6200
140W.		10200

LIFE:

5000 hours; based on an average 5 hrs. burning per switching.

LIGHT DEPRECIATION:

45/60/85W	(at	80%	of	
life) 140W	(at	80%	of	20% rated
life)	w		60 m a 1664	20%

TYPE SO/H (Cont.)



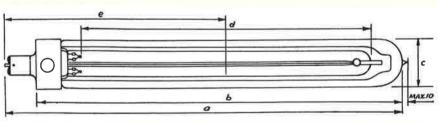


45W. & 60W.

85W. & 140W.

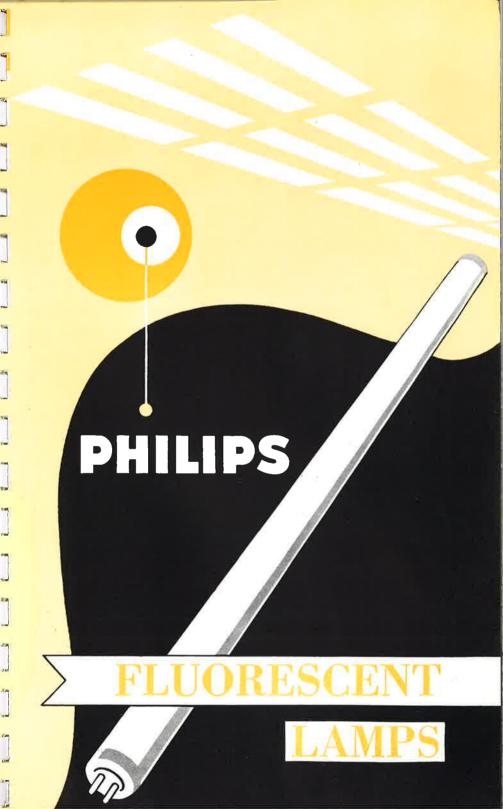
(millimetres)

DIM.	45W.	60W.	85W.	140W.
a	235	297	412	510
b	205	267	382	486
c	50	50	50	65
d	130	189	305	400
e	135	170	230	280



- 1. Highway and Street Lighting.
- 2. Wharf Lighting.
- 3. Lighting of canals and waterways.
- 4. Lighting of traffic points.
- 5. Yard Lighting.
- 6. Quarry and open cut mine Lighting.
- 7. Crossbars for Calvert system of Aerodrome Approach Lighting.
- 8. Floodlighting.
- 9. Interior and exterior Lighting.

- Testing, sorting and inspection process Lighting.
 Sports Lighting.
 Laboratory monochromatic sources. saccharimetry, polarimetry, ref tometry, optical measurement, etc. refrac-



INTRODUCTION

Philips fluorescent lamps are tubular, low pressure, mercury are discharge lamps in which the ultra-violet energy generated in the arc is converted into visible light by a transformation process in the coating of fluorescent powder on the inner surface of the glass tube. The quantity and colour of the light depends on the composition of the fluorescent powders and the wattage rating of the lamp.

The fluorescent lamp section lists lamps of many shapes and sizes for operation under many conditions and for use in many different situations and for many purposes. For each lamp group a separate page is included and the salient information is tabulated for the lamp ratings in which each particular lamp is being produced.

All Philips fluorescent lamps are manufactured in accordance with the requirements of International Electro-Technical Commission Publication No. 81, 1961 (British Standard Specifications 8053-1960, and 1270-1960 also apply where appropriate). Physical dimensions, electrical ratings and light output characteristics are all tabulated in the following pages and comply in every respect with the I.E.C. recommendations.

It will be noted that two groups of lamps are catalogued; the more popular types manufactured in Australia and branded with the standard B.S. nomenclature, (MCF etc.), and many special purpose lamps imported from our main factory in Holland and branded according to the Philips "TL" system.

BS, 1270/1960 NOMENCLATURE

- MCF Glass Discharge Tube loaded below 10 watts per centimetre of arc length with internal fluorescent coating for use on switch start circuits only.
- MCFA Glass Discharge Tube as for MCF with an external conducting strip connected to both caps or otherwise intended to be earthed or at fitting potential.
- MCFE Glass Discharge Tube as for MCF with an external water repellent coating (silicone coating).

With internal reflecting coating.

NOTE: In Australia the MCFE lamp is also branded Preheat Rapid-Start to indicate the new execution with low resistance cathodes. This lamp is a general purpose type which can be used with all switch start equipment and is also suitable for the new rapid-start ballasts. Old type quick-start equipment requires the use of the MCFA lamp with higher resistance

cathodes.

PHILIPS NOMENCLATURE

This covers the standard range of fluorescent lamps which operate with starter switches and ballasts. Most of these lamps are of 1½" tube diameter but the group also includes the miniature lamps with §" diameter tubing.

R

- "TL"A This is a group of lamps sometimes referred to as universal types suitable for either switch start or quick-start ballasts and manufactured according to British Specifications with high resistance cathodes. They are similar to the British MCFA execution.
- "TL"B The lamp is a special execution available only in 40W. similar to the "TL" execution but designed for operation and low ambient temperatures.
- "TL"C This type is especially designed for DC operation in trams, trains and ships. It is operated with stabilising resistance valves.
- "TL"D This group covers lamps of 1" tube diameter with characteristics similar to those of the "TL" group.
- "TL"E These are the circular fluorescent lamps with characteristics similar to the "TL" execution.
- "TL"F Similar to the "TL" group but with an internal reflecting powder coating.
- "TL"M/RS These lamps operate without starters on special instant start "TL"M ballasts.
- "TL"R Special lamps for DC operation exclusively. They need auxiliary equipment such as stabilising lamps or valves together with magnetic relays.
- "TL"S This type has an inside ignition strip and can be operated with a stabilising lamp as well as with an inductive ballast. No starter is required.
- "TL"W This lamp is a new "W" shape lamp with electrical characteristics similar to the "TL" group.
- "TL"X Similar to "TL"S but with special end caps for use in flameproof equipment. Electrical characteristics similar to "TL"S.

COLOUR

Most fluorescent lamps are available in a wide range of colour characteristics to suit many different kinds of conditions whether maximum luminous efficiency or a well balanced spectrum for good colour rendition. The preferred light colour for given applications varies from country to country and even from one region to another. Taste and climatic conditions are decisive in the choice of light colours. The full colour range available is as follows:

AUSTRALIAN IMPORTED

WW /29 Warmwhite

The composition of the fluorescent powder layer is wholly directed towards obtaining a high luminous flux. The lamp is used mainly where colour rendition is of minor importance.

AUSTRALIAN IMPORTED

wwx	/32 Warmwhite de luxe	e This lamp gives a decidedly warm light. The colour red in particular is accented. Combines with tungsten lamp light. This colour is especially recommended for domestic use.
W43	/33 White	This lamp with its high lumin- ous flux harmonises well with daylight and is therefore excel- lent as complementary lighting to daylight.
WX	/34 White de luxe	In spite of a lower luminous flux, this colour is often used because of its exact colour rendition.
	/54 Cool Daylight. 1)	For general lighting, used in the tropics because of the cool impression it creates.
D65	/55 Daylight	The same application as colour /54 but with a better colour rendition.
8 	/57 1)	The colour highly approximates to "Abbot Gibson 7400°K" of daylight of —7400°K and is applied where colour control is carried out at high levels of illumination. Sometimes specified by Govt. Depts. or large undertakings and available to special order.
W35 2)	-	A 3500°K white lamp.
	/15 Red /16 Yellow /17 Green /18 Blue	Fancy Coloured "TL" Lamps for decorative purposes.
	1)	These colours available in imported lamps only.
	2)	Australian made lamps only.

For efficient operation of Philips fluorescent lamps they should be used in conjunction with Philips fluorescent control gear which is designed to operate the lamps at their correct ratings under normal supply mains conditions.

A detailed description of the application of many of the special types of Philips fluorescent lamps and their operation under specialised circuit conditions cannot be given within the scope of this catalogue. It is recommended that those requiring accurate information in detail on matters arising from the catalogue should consult with the Lighting Section of any Philips office or distribution Agent.

MCFE PREHEAT/RAPID START (Universal Series)— SILICONE COATED

MADE IN AUSTRALIA

Lamps in the MCFE Series are suitable for operation as ordinary switch start types and thus are fully interchangeable with existing lamps operated from normal preheat circuits. When used in conjunction with suitable rapid start Ballasts (e.g. Philips Type 8656) they become rapid start lamps incorporating all the characteristics of almost instant starting yet retaining all of their light output properties.



Watts	Length	Dia- meter	Сар	Colour	Approx. Lumens	Catalogue Number	Stand. Pack
40	48″	l ½"	Stand- ard Bipin	Warm White Warm White DeLuxe White White DeLuxe Daylight 3500°K W35	3000 1900 2950 2000 2150 2850	MCFE40W/WWX MCFE40W/W43 MCFE40W/W43 MCFE40W/WX MCFE40W/D65 MCFE40W/W35	24
40*	48"	l <u>‡</u> ″	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	2570 2520 1800 1870 2580	MCFER40W/WW MCFER40W/W43 MCFER40W/WX MCFER40W/D65 MCFER40W/W35	24
80	60″	l <u>‡</u> ″	Stand- ard Bipin	Warm White Warm White DeLuxe White White DeLuxe Daylight 3500°K W35	5510 3570 5410 3625 4050 5410	MCFE80W/WW MCFE80W/W43 MCFE80W/W43 MCFE80W/WX MCFE80W/D65 MCFE80W/W35	16
80*	60″	<u>1</u> "	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	4850 4760 3360 3560 4760	MCFER80W/WW MCFER80W/W43 MCFER80W/WX MCFER80W/D65 MCFER80W/W35	16

^{*}Reflector Types.

SWITCH START SERIES—PREHEAT TYPE MCF

MADE IN AUSTRALIA

These lamps are made in 20W size only and are suitable for operation on all preheat circuits using normal starter switches.

Watts	Length	Dia- meter	Сар	Colour	Approx. Lumens	Catalogue Number	Stand. Pack
20	24"]	Stand- ard Bipin	Warm White Warm White DeLuxe White White DeLuxe Daylight 3500°K W35	1175 760 1150 770 870 1150	MCF20W/WW MCF20W/WWX MCF20W/W43 MCF20W/WX MCF20W/D65 MCF20W/D65	24
20*	24"	l ½"	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	1030 1010 700 765 1010	MCFR20W/WW MCFR20W/W43 MCFR20W/WX MCFR20WD65 MCFR20W/W35	24

^{*}Reflector Type.

"REFLECTALITE" SERIES

MADE IN AUSTRALIA

The "Reflectalite" fluorescent lamp is provided with a reflecting powder coating, covering about two-thirds of the circumference between the normal layer of fluorescent powder and the glass wall. This reflector layer reflects light that would normally be emitted "upwards". The majority of light output therefore passes through the single-coated portion of the lamp. Consequently, in the direction of this single-coated part the luminous intensity is considerably higher than that of a normal tube, whereas in the direction of the coating the intensity is considerably reduced.

The luminous intensity in the downward direction is approximately 70%

greater than that of non-reflector lamps.

The "Reflectalite" fluorescent lamp is ideal for lighting installations which must have a high illumination level that does not depreciate with time. Even when protected by an external reflector, in course of time a layer of dust collects on the top of the lamp. The presence of dust on a reflector fluorescent lamp so mounted that the light rays are mainly directed downwards, causes practically no trouble. For practical use this means that the illumination level obtained with "Reflectalite" fluorescent lamps will remain considerably higher than that obtained with normal fluorescent lamps.

The lamp is the ideal light source for dusty situations such as workshops,

and it has advantages in offices also.



	Total Bill I am I						
Type	Length 1)	Dia- meter	Сар	Light Colour	Approx. Lumens	Catalogue Number	Stand. Pack
MCFR20W	24″	1½"	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	1030 1010 700 765 1010	MCFR20W/WW MCFR20W/W43 MCFR20W/WX MCFR20W/D65 MCFR20W/W35	24
MCFER40W 2)	48"	1 ½"	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	2570 2520 1800 1870 2580	MCFER40W/WW MCFER40W/W43 MCFER40W/WX MCFER40W/D65 MCFER40W/W35	24
MCFAR40W 3)	48″	1½"	Stand- ard Bipin	Warm White White White DeLuxe Daylight	2620 2580 1800 1910	MCFAR40W/WW MCFAR40W/W43 MCFAR40W/WX MCFAR40W/D65	24
"TL"F65W 4)	60″	11/2"	Stand- ard Bipin	Warm White White Daylight	4250 4150 3100	"TL"F65W/WW "TL"F65W/W43 "TL"F65W/D65	16
MCFER80W	60″	l <u>₹</u> ″	Stand- ard Bipin	Warm White White White DeLuxe Daylight 3500°K W35	4850 4760 3360 3560 4760	MCFER80W/WW MCFER80W/W43 MCFER80W/WX MCFER80W/D65 MCFER80W/W35	16

- 1) Inclusive of lampholders, 2) Switch Start/Rapid Start (Universal Types).
- Instant Start with external strip.
 Made in Holland.



- 1 fluorescent powder layer
- 2 reflecting layer
- 3 glass tubing



Light distribu-tion of a "Re-flectalite" lamp in comparison with a normal lamp.

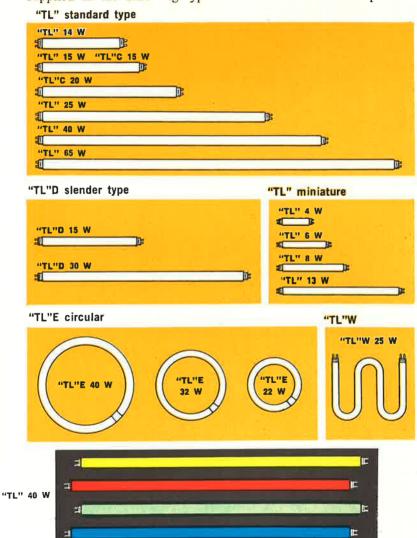
"TL" STANDARD RANGE

The lamps of this range are to be operated on A.C. mains with ballasts and starters. They are supplied in the following types:

"TL" standard type lamps, "TL"D slender type lamps,

"TL" miniature lamps,

- "TL"E circular lamps,
- "TL"W lamps and "TL" coloured lamps.



E 3 킈 "TL" 20 W Page M 7 t I

"TL" STANDARD RANGE

Туре	Length	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
''TL''4W	6"	<u>\$</u> "	Minia- ture Bipin	Warm White White White Deluxe Daylight	110 100 70 80	"TL"4W/29 "TL"4W/33 "TL"W4/34 "TL"4W/55	240 4)
''TL''6W	9"	₹″	Minia- ture Bipin	Warm White White White Deluxe Daylight	250 240 170 180	"TL"6W/29 "TL"6W/33 "TL"6W/34 "TL"6W/55	240 4)
"TL"8W	12"	<u>5</u> ″	Minia- ture Bipin	Warm White White White Deluxe Daylight	400 390 270 300	"TL"8W/29 "TL"8W/33 "TL"8W/34 "TL"8W/55	240 4)
"TL"13W	21″	<i>§"</i>	Minia- ture Bipin	Warm White White White Deluxe Daylight	780 760 540 570	"TL"13W/55 "TL"13W/29 "TL"13W/33 "TL"13W/34	240 4)
"TL"14W	15″	1 ⅓″	Stand- ard Bipin	Warm White White Deluxe White Deluxe Daylight Cool Daylight	620 400 610 410 460 540	"TL" 4W/29 "TL" 4W/32 "TL" 4W/33 "TL" 4W/34 "TL" 4W/55 "TL" 4W/54	24
"TL" 15W "TL" CI5W	18″	14"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	820 530 800 540 600 660	"TL"CI5W/29 "TL"CI5W/32 "TL"CI5W/33 "TL"CI5W/34 "TL"CI5W/55 "TL"CI5W/54	24
"TL"'D15W	18"	1"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	880 570 860 580 640 700	"TL"DI5W/29 "TL"DI5W/33 "TL"DI5W/34 "TL"DI5W/55 "TL"DI5W/54	24
''TL'''C20W	24"	l <u>‡</u> ″	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	1040 680 1020 680 770	"TL"C20W/29 "TL"C20W/32 "TL"C20W/33 "TL"C20W/34 "TL"C20W/55	24
"TL"25W	39″	14"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	1720 1130 1700 1130 1270 1400	"TL"25W/29 "TL"25W/32 "TL"25W/33 "TL"25W/34 "TL"25W/55 "TL"25W/54	24
"TL"W25W		ነ ዜ″	Stand- ard Bipin	White Deluxe	900	"TL"W25W/34	6

"TL" STANDARD RANGE (cont.)

Туре	Length	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
"TL"D30W	36"	1"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	2080 1350 2050 1300 1540 1700	"TL"D30W/29 "TL"D30W/32 "TL"D30W/33 "TL"D30W/34 "TL"D30W/55 "TL"D30W/54	24
''TL''40W 2)	48"	14″	Stand= ard Bipin	7400°K	1850	"TL "40W/57	24
"TL''65W	60″	½"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	4800 3150 4750 3200 3550	"TL"65W/29 "TL"65W/32 "TL"65W/33 "TL"65W/34 "TL"65W/55	16
'TL''DI5W Coloured	18"	l″	Stand- ard Bipin	Green	1000	"TL"'DI5W/I7	24
'TL''20W Coloured	24″	Ή¥w	Stand- ard Bipin	Red Yellow Green Blue	60 800 1300 250	"TL"20W/15 "TL"20W/16 "TL"20W/17 "TL"20W/18	24
'TL''40W Coloured	48″	I <u>‡</u> ″	Stand- ard Bipin	Red Yellow Green Blue	160 2000 3300 650	"TL"40W/I5 "TL"40W/I6 "TL"40W/I7 "TL"40W/I8	24
"TL''E22W	8 <u>1</u> " 3)	1 ″	4 pin	Warm White White White Deluxe Daylight Cool Daylight	1120 1100 750 820 900	"TL"E22W/29 "TL"E22W/33 "TL"E22W/34 "TL"E22W/55 "TL"E22W/54	6
''TL''E32W	12″3)	 	4 pin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	1900 1230 1850 1250 1400 1530	"TL"E32W/29 "TL"E32W/32 "TL"E32W/33 "TL"E32W/34 "TL"E32W/55 "TL"E32W/54	6
'TL''E40W	16" 3)	। <u>†</u> ″	4 pin	Warm White Warm White Deluxe White White Deluxe Daylight Cool Daylight	2700 1760 2640 1800 1980 2170	"TL"E40W/29 "TL"40W/32 "TL"40W/33 "TL"E40W/34 "TL"E40W/55 "TL"E40W/54	6

¹⁾ Inclusive of lampholders.

²⁾ For ambient temperatures lower than +5° C., "TL"B 40W lamps are identical to "TL" 40W lamps both as regards dimensions and electrical characteristics and are available in colours /29, /33 and /55. They will ignite down to -20° C.

³⁾ Outer diameter of circle.

⁴⁾ The packing unit contains 10 boxes of 24 lamps each.

MCFA INSTANT START

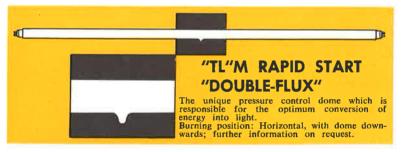
MADE IN AUSTRALIA

The well known, widely used instant start lamp with external metallised strip. This type can be supplied in standard and/or reflectorised finish.



Type of Lamp	Length I)	Diam.	Сар	Light Colour	Approx. Lumens	Catalogue Number	Stand. Pack
MCFA40W	48"	½"	Stand- ard Bipin	Warm White Warm White DeLuxe White White DeLuxe Daylight	2900 1880 2850 1910 2110	MCFA40W/WW MCFA40W/WWX MCFA40W/W43 MCFA40W/WX MCFA40W/D65	24
MCFAR40W 2)	48″	½"	Stand- ard Bipin	Warm White White White DeLuxe Daylight	2620 2580 1800 1910	MCFAR40W/WW MCFAR40W/W43 MCFAR40W/WX MCFAR40W/D65	24

1) Inclusive of lampholders, 2) "Reflectalite" Type.



Double-Flux means "DOUBLE LUMINOUS FLUX", i.e., that twice as much light per unit length of the lamps is produced than was previously possible.

The luminous output from these new lamps is 1400 lumens per foot, which means that it is the most powerful fluorescent lamp in terms of luminous output per unit of length.

Until recently the light output of fluorescent lamps could only be raised by increasing the length of the lamp.

The development of the pressure control dome resulted in a 120 W lamp of a length of 5 ft. only.

The "TL"M 120W is also available with a reflector powder layer, as described with the "reflectalite" lamps (Page M 6).

Type of Lamp	Length*	Diam.	Сар	Light Colour	Approx.	Catalogue Number	Stand. Pack
"TL"M120WRS	60"	1 용"	Stand- ard Bipin	White Daylight	7300 5500	"TL"M120W/33RS "TL"M120W/55RS	16
''TL'''MF I20WRS	60″	1골"	Stand- ard Bipin	White Daylight	6200 4700	"TL"MF120W/33RS "TL"MF120W/55RS	16

^{*} Inclusive of lampholders,

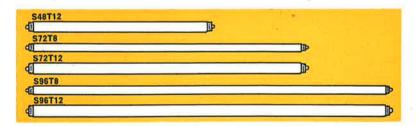
SLIMLINE

Slimline lamps are instant start tubular fluorescent lamps with non-preheated electrodes. Used in series with a suitable ballast the lamp starts immediately after switching on without blinking.

These single pin lamps are available in a wide range of sizes, wattages and colours. The most popular size is the 8ft. lamp $1\frac{1}{2}$ " diameter. (S96T12) giving the highest lumen output. The 1" diameter type can be operated at different current ratings, giving flexibility of brightness and light output.

IMPORTANT CHARACTERISTICS OF SLIMLINE LAMPS

- Coating with high efficiency fluorescent powder for top luminous performance.
- Reliable ignition down to 0° F. (− 18° °C.) with most types of ballasts.
- Strong triple coiled electrodes for long life and reliable service.
- Invisible water-repellant coating ensures reliable operation under humid conditions.



SLIMLINE

Туре	Length	Diam.	Сар	Light Colour	Lamp Current A	Power Absorbed W	Approx. Lumens	Catalogue Number
S48T12	48"	1½"	Single pin	Warm White White Cool Daylight Daylight	0.425	38	2650 2600 2150 1950	\$48T12/29 \$48T12/33 \$48T12/54 \$48T12/55
				Warm White	0.12 0.20 0.30	25 36.5 48	1850 2750 3500	S72T8/29
			Single pin	White	0.12 0.20	25 36.5	1850 2750	S72T8/33
S72T8	72"	194		White Deluxe	0.12 0.20 0.30	25 36.5 48	1240 1840 2340	S72T8/34
		Cool Daylight	0.12 0.20 0.30	25 36.5 48	1550 2300 3200	S72T8/54		
			Daylight	0.12 0.20 0.30	25 36.5 48	1600 2050 3000	S72T8/55	
S72T12	72″	½"	Single pin	Warm White White White Deluxe Cool Daylight Daylight	0.425	55	4200 4100 2750 3350 3050	\$72T 2/29 \$72T 2/33 \$72T 2/34 \$72T 2/54 \$72T 2/55
				Warm White	0.12 0.20 0.30	33 49 64	2900 4250 5450	S96T8/29
				White	0.12 0.20 0.30	33 49 64	2800 4150 5350	S96T8/33
S96T8	96″	l"	Single pin	White Deluxe	0.12 0.20 0.30	33 49 64	1900 2800 3550	S96T8/34
				Cool Daylight	0.12 0.20 0.30	33 49 64	2300 3400 4400	S96T8/54
				Daylight	0.12 0.20 0.30	33 49 64	2100 3050 3950	S96T8/55
S96T12	96"	l <u>‡</u> ″	Single pin	Warm White White Deluxe White Deluxe Cool Daylight Daylight	0.425	74	5750 5600 3750 4600 4150	\$96T12/29 \$96T12/33 \$96T12/34 \$96T12/54 \$96T12/55

"TL" 105 W RS (high-output lamp)

These 8 ft. Rapid Start fluorescent lamps of normal 1½" diameter are equipped with R.D.C. (Recessed Double Contact) bases. The lamps are operated without starter on Rapid Start ballasts and are used in industry, large stores, etc. They are mechanically and electrically identical with the American High-Output lamp F96 T12/. . . ./H.O.

UTI II 445 WDG
"TL" 105 WRS

Туре	Length*	Diam.	Сар	Light Colour	Approx. Lumens	Catalogue Number	Stand. Pack
''TL'''105W RS	96"	l <u>‡</u> ″	Recessed double contact	Warm White White	8100 7900	"TL"105W/29RS "TL"105W/33RS	12

^{*} Inclusive of lampholders.

NOTE: Proper ventilation of the lamps is required for optimum performance. This can be obtained e.g. in open top industrial trough-fittings. Mount the lamp within 1" from earthed metal reflector, channel or metal strip at least 1" wide and as long as the lamp.



Light distribution diagrams

HIGH-OUTPUT REFLECTOR

The above-mentioned "TL" 105 WRS lamps are also available with a reflector powder layer, as described with the "Reflectalite" F lamps (Page M6). The advantages of this built-in reflector are outstanding when used in dusty surroundings while dust collection on the lamp has little or no influence on the luminous output.

Туре	Length*	Diam.	Сар	Light Colour	Approx. Lumens	Catalogue Number	Stand, Pack
''TL''F I05WRS	96″	11/2"	Recessed double contact	Warm White White	7100 7000	''TL''F105W/29RS ''TL''F105W/33RS	12

^{*} Inclusive of lampholders.

"TL"A TYPE UNIVERSAL SWITCH START —QUICK START

"TL"AF REFLECTOR TYPE UNIVERSAL SWITCH START —QUICK START

"TL" A lamps are so-called "universal" lamps, silicone coated with outside strip, suitable for either switch or quick start ballasts. They are meant for application in countries in which the British quick start system is sufficiently wide spread. They are not interchangeable with Rapid Start lamps of the same rating because the electrodes are of the double coil high-voltage type.

"TL"A 15 W			
"TL"A 20 W			
"TL"A 30 W	-		
"TL"A 40 W			
"TL"A 80 W			

Туре	Length	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
''TL''ADI5W	18″	1w	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	700 550 700 510 600	"TL"ADI5W/29 "TL"ADI5W/32 "TL"ADI5W/33 "TL"ADI5W/34 "TL"ADI5W/55	24
''TL'''A20W	24"	۱ <u>۱</u> ″	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	1040 720 1040 670 790	"TL"A20W/29 "TL"A20W/32 "TL"A20W/33 "TL"A20W/34 "TL"A20W/55	24
"TL"'AF20W	24"	l <u>‡</u> ″	Stand- ard Bipin	Warm White White Daylight	930 930 740	"TL"AF20W/29 "TL"AF20W/33 "TL"AF20W/55	24
''TL''AD30W	36"	۱″	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	1900 1300 1900 1210 1420	"TL"AD30W/29 "TL"AD30W/32 "TL"AD30W/33 "TL"AD30W/34 "TL"AD30W/55	24

^{*} Inclusive of lampholders,

"TL"A TYPE UNIVERSAL SWITCH START

-QUICK START

"TL"AF REFLECTOR TYPE UNIVERSAL SWITCH START

-QUICK START

Туре	Length	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
'TL''A30W	36"	l <u>½</u> ″	Stand- ard Bipin	White White Deluxe	1900 1240	''TL''A30W/33 ''TL''A30W/34	24
"TL"A40W	48″	l ½"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	2650 1780 2650 1680 2000	"TL"A40W/29 "TL"A40W/32 "TL"A40W/33 "TL"A40W/34 'TL"A40W/55	24
''TL''AF40W	48″	1 <u>‡</u> "	Stand- ard Bipin	Warm White White Daylight	2360 2360 1730	"TL"AF40W/29 "TL"AF40W/33 "TL"AF40W/55	24
''TL''AK40W	48"	14"	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	1850 1250 1850 1130 1400	"TL"AK40W/29 "TL"AK40W/32 "TL"AK40W/33 "TL"AK40W/34 "TL"AK40W/55	24
'TL''A80W	60″	l ½″	Stand- ard Bipin	Warm White Warm White Deluxe White White Deluxe Daylight	5100 3450 5100 3200 3800	"TL"A80W/29 "TL"A80W/32 "TL"A80W/33 "TL"A80W/34 "TL"A80W/55	16
''TL''AF80W	60"	<u>†</u> "	Stand- ard Bipin	Warm White Warm White Deluxe White	8750 5700 8600	"TL"A125W/29 "TL"A125W/32 "TL"A125W/33	12
"TL"AFI25W	96"	½"	Stand- ard Bipin	Warm White White	7500 7400	"TL"AF125W/29 "TL"AF125W/33	12

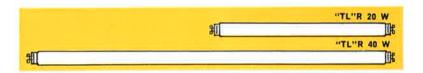
^{*} Including lampholders.

"TL"R SERIES—INSTANT START FOR DIRECT CURRENT OPERATION

"TL"R lamps are designed for DC operation exclusively and ignite immediately after switching on; no blink.

"TL"R 40/W lamps: polarity of the current has to be reversed once per five to ten hours.

"TL"R 20/W lamps: at ambient temperatures below 22° C. (72° F.) the polarity of the current has to be reversed once per 5 to 10 hours.



Туре	Length*	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
"TL"R20₩	24"	½"	Recessed Single Contact	Warm White Warm White Deluxe White	870 560 870	"TL"R20W/29 "TL"R20W/32 "TL"R20W/33	24
"TL"R40W	48"	½"	Recessed Single Contact	Warm White Warm White Deluxe White White Deluxe	2250 1500 2250 1700	"TL"R40W/29 "TL"R40W/32 "TL"R40W/33 "TL"R40W/34	24

^{*} Including lampholders.

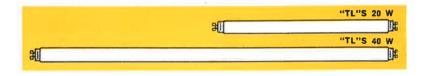
"TLS" SERIES—INSTANT START FOR A/C OPERATION

"TL"S 20W and 40W lamps ignite immediately after switching on; no blink.

The "TL"S 20W lamp is stabilised by means of a choke on 220 V AC mains and by means of an autoleak transformer on 110 and 125 V mains.

The "TL"S 40W lamp is applied in combination with STA or STB stabilising incandescent lamps on 220, 230, 240 and 250 V AC mains 40-60 c/s.

The "TL"S 40W lamp may be applied as well with specially designed ballasts on AC mains of different voltages. For 240 V and 250 V mains a simple 40 W choke suffices as well as on 230 V mains, provided the mains voltage is not below 220 V when the lamps are switched on.



Туре	Length*	Diam.	Сар	Light Colour	Lumens	Catalogue Number	Stand. Pack
''TL''S20W	24"	l <u>‡</u> ″	Recessed Single Contact	Warm White Warm White Deluxe White White Deluxe Daylight	990 620 900 580 680	"TL"S20W/29 "TL"S20W/32 "TL"S20W/33 "TL"S20W/34 "TL"S20W/55	24
"TL"S40W	48"	1 <u>‡</u> ″	Recessed Single Contact	Warm White Warm White Deluxe White White Deluxe Daylight	2400 1600 2400 1550 1780	"TL"S40W/29 "TL"S40W/32 "TL"S40W/33 "TL"S40W/34 "TL"S40W/55	24

^{*} Including lampholders.

"TL"X SERIES—INSTANT START FOR FLAMEPROOF FITTINGS

The "TL" X fluorescent lamp is an instant start type which is exactly like the "TL" S fluorescent lamp but for the caps which are nickelled single pin. They are operated from a ballast which provides the required starting voltage. This lamp type is to be applied in "Flameproof" and "increased safety" fittings as designed after the German V.D.E. 170/171 and similar specifications. The flameproof lampholder is made by specialised fitting makers.

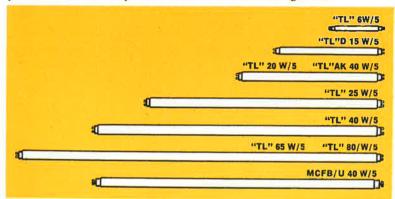
Туре	Length*	Diam.	Сар	Light Colour	Approx. Lumens	Catalogue Number	Stand. Pack
"TL"X20W	24"	l <u>↓</u> ″	Single pin	Warm White White	900 900	"TL"X20W/29	24
''TL'''X40W	48"	l <u>‡</u> ″	Single pin	Warm White White	2400 2400 1780	"TL"X40W/29 "TL"X40W/33 "TL"X40W/55	24

^{*} Max. length incl. of pins; length of pins 3" each.

"TL"/5 SERIES—ACTINIC BLUE

Actinic "TL" lamps are second to none as regards efficiency of long wave U.V. radiation, needed for various photochemical processes such as light (diazo) printing, copying and reproduction. Their dimensions and electrical characteristics are identical to those of standard "TL" lamps of the same ratings.

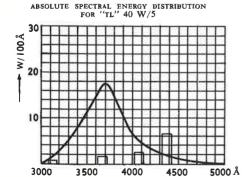
Temperature below 5°C. and above 50°C. should be avoided because they cause a reduction of active output. In the case of excessively low temperature there also may occur some trouble with the ignition.



Туре	l) Length	Diam.	Сар	Light Colour	Catalogue Number	Standard Pack
"TL"6W	9″	5"	Min. Bipin	Actinic Blue	"TL"6W/5	24
"TL"15W	18"	1"	Standard Bipin	Actinic Blue	"TL"DI5W/5	24
"TL"20W	24"	۱ <u>۱</u> ″	Standard Bipin	Actinic Blue	''TL''20W/5	24
"TL"25W	39″	۱ <u>۱</u> ″	Standard Bipin	Actinic Blue	''TL''25W/5	24
"TL"40W	48″	l <u>‡</u> ″	Standard Bipin	Actinic Blue	"TL"40W/5	24
"TL"AK40W	24"	I ∄ ″	Standard Bipin	Actinic Blue	"TL"AK40W/5	24
"TL"65/80W	60″	1⅓″	Standard Bipin	Actinic Blue	"TL"65/80W/5	16
"TL"M125WRS	60″	18"	Standard Bipin	Actinic Blue	"TL"M125WRS/5	16
MCFB/U40W 2)	48"	l <u>i</u> "	Recessed Single Contact	Actinic Blue	MCFB/U40W/5	24

1) Including lampholders.

2) Made in England.



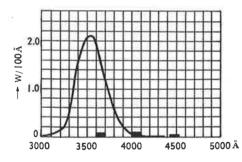
For the other types multiply W/100Å by the following factors:

Туре	Factor
"TL"6W/5 "TL"DI5W/5 "TL"20W/5 "TL"25W/5 "TL"3K40W/5 "TL"65/80W/5 "TL"M(25W/5RS	0.25 0.4 0.6 1.0 1,6/1.8 2.2

BLACK LIGHT BLUE FLUORESCENT LAMPS TL/8

Black light blue fluorescent lamps are tubular low pressure mercury vapour lamps coated on the inside with a fluorescent powder, which converts the arc's energy into long wave ultra-violet with a maximum emission at 3500 Å. The envelope is made of a deep blue glass, which is transparent to long wave ultra-violet, but which absorbs the near visible radiations. The ballasts and accessories are identical to those used for standard fluorescent lamps of the same rating.





- Harmless to the eyes.
- No separate filter required.
- Very little visible light.

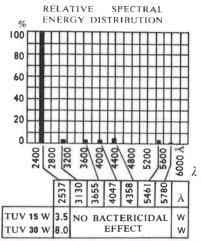
ABSOLUTE SPECTRAL ENERGY DISTRIBUTION FOR "TL" 40W/8.

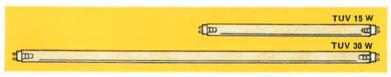
For the "TL" 20W/8 multiply W/100 by factor 0.4.

Catalogue Number	Lamp Voltage V	Lamp Current A	Сар	Diam.	Max. Length
''TL''20W/8	58	0.39	Standard	38	590
''TL'''40W/8	103	0.44	Bipin	38	1199

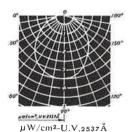
GERMICIDAL TUV

Most of the energy radiated by Philips germicidal (TUV) lamps has a wavelength of 2537 Å. This wavelength is very near the wavelength most effective in destroying bacteria and moulds. TUV lamps are widely applied in hospitals, meat storage rooms, cheese warehouses, pharmaceutical industries, dairies, breweries. bacteriological research institutions, etc. TUV lamps have to be used with caution, for even short exposures affect the skin (erythema) and the eyes (conjunctivitis) of men and animals.





Туре	Lamp Voltage V	Lamp Current A	Energy Output UV2537 Å	Catalogue Number	Diam.	Max. Length
TUVISW	53	0.33	3.5 ₩	57415P/40	26	437
TUV30W	100	0.37	8.0W	57413P/40	26	894



GERMICIDAL TUV 6W

Operates on the principle of a glow discharge, It suits 220/230 V mains without needing a ballast. The lamp will be used in spaces of reduced dimensions where the absence of ballasts is of added advantage. For this latter reason the lamp constitutes an inexpensive, handy source of Ultra-Violet radiation, used in luminescence analysis, in refrigerators and in liquid vending machines.

RELATIVE POLAR ENERGY DISTRIBUTION at 50 cm from centre



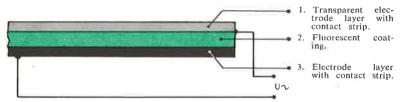
Catalogue Number	Lamp Current A	Lamp Power W	Energy Output 2537Å	Diam.	Max. Length
57416E/40	0.027	6	85 mW	26	150

Electroluminescent Panels

Philips electroluminescent panels are characterised by their space-saving flat thin shape. The panels are easily mounted and can be supplied in a wide range of shapes, sizes and colours.

Electrically, the electroluminescent panel is a capacitor, which can be directly connected to a.c. mains of its own voltage rating, without the aid of a ballast. Between the capacitor's two conducting surfaces or electrodes—one of which is transparent—a layer of phosphor powder is sandwiched, this emitting a uniform and soft light under the influence of the alternating fields.

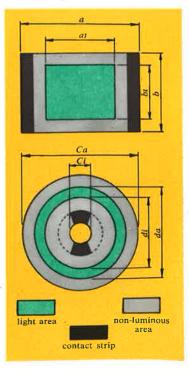
Electroluminescent panels are not suitable for general lighting purposes on account of the low light output per unit area of surface, whilst the efficiency, too, does not allow them to compete with other light sources. Electroluminescent panels can be used to advantage however, in numerous applications where a flat luminous source of uniform and low brightness is required, as, for example, for the illumination of indicators, scales and dials, particularly in dark or semi-dark surroundings. As the frequency is increased, moreover, the luminous flux and the luminance rise appreciably, so that in some instances the extra cost of frequency conversion may be justifiable.



£1	Light	Area	Max.	Area
Shape	mm	mm	mm	mm
	aı	bı	a	ь
Square I:I	40	40	60	50
	80	80	100	90
	120	120	140	130
	280	280	300	290
Oblong 2:1	40	20	60	30
	80	40	100	50
	120	60	140	70
	160	80	180	90
Oblong 4:1	80	20	100	30
	160	40	180	50
	240	60	260	70
Oblong 8:1	160	20	180	30
	240	30	260	40
Ring	d; 30 30 30	d _a 40 80 120	10 10 10	50 90 130

PHILIPS electroluminescent panels are provided with two 5 mm wide contact strips for connection to the a.c. mains. A 5 mm wide insulating border surrounds the light area. The panel is approx. 3 to 5 mm thick. The maximum size available at the present moment is 200 x 300 mm. The above forms and dimensions only serveas examples. Deviating panels on appli-

as examples. Deviating panels on application, but please state mains voltage and frequency, light area desired and permissible maximum area.



Electroluminescent Panels

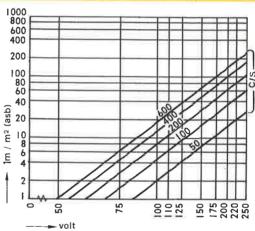
TECHNICAL DATA

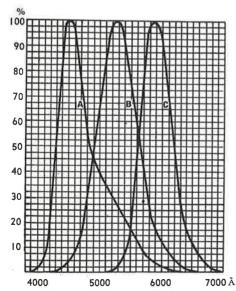
The peak voltage is important in connection with breakdown. For sinusoidal voltages it corresponds to a maximum value of $\sqrt{2X}$ effective voltage.

Relations between frequency, voltage and luminous flux per square meter of Philips electrol u m i n e s c e n t panels.

These relations refer to green panels, designed for 220V ~ nominal mains voltage. For the colours blue and orange multiply 1m/m² by a factor 1/3, for the colour white by a factor 1/2

	Unit	Colour "Green"
Nominal frequency Nominal voltage Peak voltage max,* Loss factor Capacitance per sq. metre Power per sq. metre	c/s V V Tan δ μF/m² W/m²	50 220 Approx. 340 Approx. 0.2 Approx. 3 Approx. 8
Luminous flux per sq. metre at 50 c/s Luminous flux per sq. meter at 100 c/s Luminous flux per sq. metre at 400 c/s Luminous flux per sq. metre at 600 c/s		Approx. 22 Approx. 45 Approx. 130 Approx. 200





RELATIVE SPECTRAL ENERGY DISTRIBUTION (220V, 50 c/s)

A = blue

B = green

C = orange

Fluorescent Control Gear and Accessories

INTRODUCTION

BALLASTS

Unlike the incandescent filament lamp, Fluorescent lamps require for their satisfactory operation suitably designed control gear.

The function of the control gear is to provide within the electrical circuit the conditions whereby the lamp arc will be struck correctly and then maintained at a current flow such as will provide optimum light output and lamp life. According to the type of application the control gear must possess also those characteristics of design quality as economic efficiency, freedom from noise, compact dimensions and good thermal properties which, combined with proper fitting design, ensure a long and trouble free service life. All of these features are embodied in Philips ballasts.

The choice of equipment is determined by the lamp type and electricity supply. For normal 240 and 250 volt A.C. mains supplies the commonly known inductor ballasts are used with hot cathode fluorescent lamps. Transformer ballasts are required with certain types of fluorescent lamps and for A.C. mains where the voltage supplied is insufficient to strike the arc. Transformer ballasts of another kind are used for quick start preheat or starterless operation of the "TL"A type lamps. With these the transformer section is permanently connected to the lamp cathodes and provides the preheating necessary for the lamp to start. The ballast section performs as a normal one. Both sections are integrated in the one can for the popular lamp sizes. For other ratings they are available as separate units.

Fluorescent lamp operation from D.C. mains supplies and voltages 72-110V, 220 and 550V is achieved by means of special tubes ("TL"C and "TL"R) and resistive stabilising tubes or lamps in special circuitry. The distinction is that the stabilising "lamp" emits visible light and may be used as part of the illumination system whereas the "tube" does not. For intermediate D.C. voltages above 60 volts depending on the fluorescent tube type suitably rated wire wound resistors can be used. The simple resistor may also be employed as an alternative to the stabilisers on the mentioned voltages but their efficiency is significantly less.

Fluorescent lighting from low voltage battery supplies (12 and 24 volts) is possible with the use of transistor convertor ballasts. Their compact dimensions, extremely high efficiency and almost infinite life make this lamp combination eminently suitable for transportation lighting.

For the dimming of fluorescent lamps on 220/240V A.C. supplies thyratron light regulators for manual and automatic control are offering which allow the light output of a large number of 40 watt tubes (type "TL"A) to be varied simultaneously or in separate groups from zero to maximum output and vice-versa without flicker. Incandescent spot lamps, etc. can also be connected to the same equipment to provide an integrated dimming control for an entire theatre, restaurant or the like.

Fluorescent Control Gear and Accessories

STARTING DEVICES

Apart from certain types of laboratory lamps, most discharge sources do not require auxiliary starting equipment, ignition being achieved by the combination of lamp and control gear. This applies also to fluorescent quick start preheat transformer type ballasts ("TL"A tubes). The "TL"S tube provides for ignition within itself and so requires merely the standard inductor ballast or incandescent ballast lamp.

Otherwise hot cathode fluorescent tubes require a starting aid, which for normal A.C. mains is the glow type starter switch. Its function is to temporarily short circuit the tube so as to preheat the cathodes and then interrupt the current flow through the ballast in order to obtain a high voltage for starting the arc.

On D.C. supplies with "TL"C and "TL"R tubes cathode preheating is obtained with a magnetic relay which relies on solenoid action to switch the lamp circuit from starting to running conditions.

MOUNTING ACCESSORIES

Philips lampholders and mounting accessories are designed to high quality standards and are intended for specialised application or where exacting conditions demand more than average features.

Noteworthy qualities in all Philips holders are-

- Robust construction and truly squared faces which ensure accurate and rigid seating on or through the mounting surface.
- Wide angle entry for ease in positioning tube pins—especially important with long lamps.
- Strong contact springs—all metal ware in plated brass to withstand corrosion.
- Electrically safe.
- Simple connection.

An additional feature in several types of holders in the spring-loaded rotor. By means of cam action the rotor face is held flush with that of the holder in the "receiving" position so the tube slips easily into place. With the tube turned 90° the rotor is thrust against the tube end by a strong rear spring holding it firmly in contact though it be subjected to severe vibration.

Holders for specialised use include a multiposition medium bipin holder which allows full utilisation of the directional qualities of the reflector back fluorescent tubes, watertight bipin holders and monotype single contact holders for "TL"S/"TL"R lamps. In the "receiving" position the lamp contact piece is disconnected from the circuit wiring.

Low mounting bases to accommodate the multiposition and monotype holders are useful where it is desired to mount tubes directly to cornices and valances with the control equipment situated remotely.

BALLASTS (Standard Switch Start)

DESCRIPTION

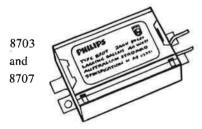
Aircooled, impregnated, compact brick type designed and manufactured to comply fully with the requirements of S.A.A. specification C-322. Available in the full range of the lamp wattages for 240 volt 50c/s operation and selected range for 250 volt 50c/s. All ballasts are fitted with 85° H.T. P.V.C. leads.

APPLICATION

General use with appropriate switch start lamps in all situations, provided ambient temperatures in the ballast enclosure do not exceed 40° C. (104° F.) in continuous operation.

STANDARD CODE:-

"SQUAT BRICK"



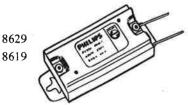
STANDARD CODE:-

"BRICK"

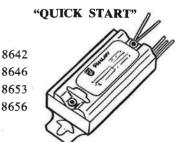
8174 8716 8179 8717 8175 8718 8177

STANDARD CODE:-

"THETA"



STANDARD CODE:-



BALLASTS

	_		_		_
Туре		STANDARD CODE SWITCH START	LOW LOSS SWITCH START	STANDARD CODE QUICK START	STANDARD CODE—RAPID START (FOR USE WITH MCFE/MCFER FLUORESCENT TUBES)
Mounting	Occupation of the state of the		स्य स्त्र स्त्र स्रोहत्स्क्रास्ट्र	905554	5‡
n.)	H	 	7 7 7 7 7	d- *******	<u>*</u>
Dimensions (in.)	*	されななななななななななる。 ***************************	777	44444 44444	2츄
Dim	0/r	444444444444	444	0000 4	9
Supply	(V)	250 250 250 250 250 250 250 250 250 250	240 240 240	7557 7560 7500 7500 7500 7500 7500 7500	240
Frequency			200 200 200	500 S	50
۵	Size	4/6/8W 13/W 15/W 20/W 33/W 4/6/8W 15/W 20/W 30/W 30/W 40/W 80/W 80/W	20W 40W 80W	84528 8458 8458	40.W
Lamp	Number		1) 20,755	-4	-
Catalogue	ė Ž	8174 C 8179 C 8703 C 8703 C 8703 C 8707 C 8707 C 8707 C 8707 C 8717 C 88173 WA 88173 WA 88173 WA 88173 WA 88173 WA 88173 WA 88173 WA 88173 WA	*8716 *8717 *8718	8642 8653 8646 8680/1 8680/2	8656

*Available to special order only.

The 80 watt quick-start ballast (8680/1 and 2) is a twin-unit construction.

TRANSISTOR CONVERTERS

Fluorescent lighting on low voltage direct current mains such as is the case in vehicle lighting, has always been rather complicated hitherto, because of the conversion of the low voltage DC mains into higher voltage AC. Until recently, the use of rotary equipment was required and in many cases fluorescent lamps could only operate on special circuits with special accessories.

Philips have now succeeded in the development of transistor converters for fluorescent lamps, which make it possible to connect the fluorescent lamp via this converter directly to the low voltage DC power supply. The low voltage DC is converted into high voltage AC, sufficient to strike and operate the fluorescent lamp via a starterless circuit which is also contained in the unit. In consequence of the high frequency (about 8000 c/s) chosen, dimensions could be kept small and watt losses low. Thus, a high overall efficiency of about 80% could be achieved. As the converter only contains static components, no maintenance is needed. These features make the transistor converter excellent for train, bus and aircraft lighting and in all other cases where only low voltage DC supply is available.



Catalogue Number	Nominal DC Voltage	Battery Current A	Secondary Frequency c/s	Number and Size of Lamps	Description	
59801TB/00	26	1.1	8000	l x 20W	With condenser	
103839	13	2.0	8000	I × 20W	With condenser	
59803TB/00	26	2.2	8000	{2 × 20W x 40W	With condenser	
59808TA/00	13	0,9 1.1	9000	l x 6W l x 8W	With condenser	
103877	26	1.7	8000	6 × 6W	With condenser	
103878	26	-	Ballast for use with 103877			

STARTERS

The function of the starter in the fluorescent lamp circuit is to start the lamp automatically. This is done by short-circuiting the fluorescent lamp for preheating the electrodes and interrupting the current flow through the ballast to obtain a high voltage impulse for starting the arc.

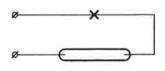


_	Catalogue	E . 11 . M// . 1	Packing Unit		
Туре	Number	For Use With	Qty.	Wght.	Dim.
PIO	61454/01	4, 6, 8, 13, 15, 20, 22, 25, 30 32, 40, 65, 80W on 210-250 V mains 13, 25, 30, 40, 65, 80W on 110-130 V mains	200 (20 boxes	5 <u>1</u> fbs.	10‡"×8}"
P2	61411/41	4, 6, 8, 14, 15, 20, 22W on 210-250 V mains 4, 6, 8, 14, 15, 20, 22W on 110-130 V or two In series on 210-250 V mains	of 10)	54 1007	× 4‡″
\$12	61442/00	"TL"MI20WRS	500 (20 boxes of 25)	10 lbs. 13 ozs.	9" × 9" × 8 §"

STABILIZING LAMPS FOR "TL" LAMPS

Stabilizing lamps are to replace the ballast with the application of "TL"S fluorescent lamps. They are available in a silvered bowl finish type STA (inside mirrored) and in the normal inside pearl finish type STB.

The combination of this concentrated tungsten light source with fluorescent lamps results in an excellent, plastic rendering of objects, a factor of great importance in shop and show window lighting. Moreover, this combination is economic and simple to install.



I	
STA	
I.	
STB	

	Cat. No.		Filament Voltage V	Current A	Watts W	Lumin- ous flux Im
STA lamps	6552 6555 6556 6557	220-230 230 240 250	135 140 150 160	0.5 0.5 0.5 0.5	67.5 70 75 80	750 770 820 860
STB lamps	6562 6565 6566 6567	220-230 230 240 250	135 140 150 160	0.5 0.5 0.5 0.5	67.5 70 75 80	770 800 860 920

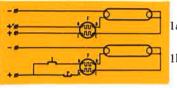
*40-60 c/s

STABILIZING TUBES FOR "TL"C LAMPS

Stabilizing tubes replace the ballasts with "TL"C lamps operating on DC mains. They consist of an inside frosted glass bulb with twin filament stabilizing resistors. One of them stabilizes the lamp current and the other one provides for the pre-heating of the negative electrodes on the full mains or battery supply. Being filament devices, they function not only as current limiters but also as current regulators.



For lamps	Mains Voltage	Catalogue Number	Maximum Length	Diameter
"TL"C14W, "TL"C15W	72 V =	3240X	76	32
"TL"C14W, 15W and 20W	110 V =	3243X	83	32



1a Ignition by central starting switch 1b Ignition by push-button

F = Stabilizing tube

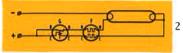
CIRCUITS:

with stabilizing tube

(circuits 1a and 1b)

"TL"C 14 W and "TL"C 15 W on 72 V and 110 V DC mains with large fluctuations (60-105 V and 80-140 V resp.). "TL"C 20 W on 110 V DC mains with large fluctuations (80-140 V).

Remark to circuit 1a: A group of lamps is ignited by connecting feeder +' temporarily to feeder +, thus preheating the lamp cathodes. Circuits 1a and 1b are often used in combination.



with stabilizing tube and relay

(circuit 2)

"TL"C 14 W, 15 W and 20 W on 110 V DC mains.

F = Stabilizing tube 13243X:

G = relay 103629

Note: B and C refer to the terminals of holder 61479/00



MAGNETIC RELAY FOR "TL"C LAMPS

13243	X	103629

For lamps	Mains Voltage	Catalogue Number	Maximum Length	Diameter
"TL"C14W, 15W and 20W	110 V =	103629	46.5	29

WARNING NOTICE:

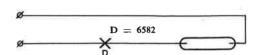
To avoid cataphoresis involving dark ends at the anode side of the lamps, it is recommended to mount "TL"C and "TL"R lamps in enclosed fittings.

The polarity of the connections to the circuits with "TL"R lamps has to be reversed regularly (e.g. every 8 hours). Polarity reversing is not allowed for the circuits with "TL"C lamps.

CONTROL GEAR FOR "TL"R LAMPS

STABILIZING LAMP

Finish: silvered bowl

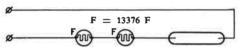


Circuit for "TL"R 40 W lamp on 220 V DC



Туре	Mains Voltage	Cat. No.	Filament Voltage	Current A	Watts W	Appr. Im
STR	220 V =	6582	105 V	0.35	37	450

Circuit for "TL"R 40 W lamp on 220 V DC



For Lamps	Mains Voltage	Cat. Number	Max. Length	Diam.
2 x "TL"R20W I x "TL"R40W	220 V =	13376F	86.5	32

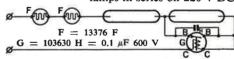
STABILIZING TUBE



MAGNETIC RELAY



Circuit for 2 "TL"R 20 W lamps in series on 220 V DC

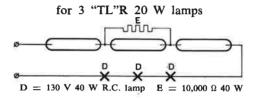


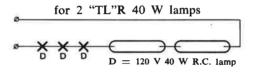
B and C refer to the terminals of holder 61479/00.

For Lamps	Mains Voltage	Cat. Number	Max. Length	Diam.
2 x "TL"R20W	220 V =	103630	46,5	29

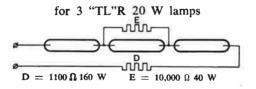
CIRCUITS FOR 550 V DC WITH LARGE VOLTAGE FLUCTUATIONS (450-650 V) IN SERIES

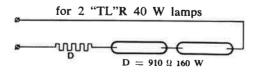
WITH REINFORCED CONSTRUCTION LAMPS





IN SERIES WITH WIRE-WOUND RESISTOR





Fluorescent Accessories

LAMPHOLDERS FOR FLUORESCENT LAMPS

The value of good lampholders as wiring accessories in fluorescent lighting systems cannot be over-emphasized. They do not only support the lamp but must make firm electrical contact, thus avoiding the risk that the lamp may extinguish due to vibration. Moreover the lamp must be easily removable for cleaning or replacement purposes. The lampholder shape should not interrupt the line of light formed by the lamps, when mounted in continuous rows, also the thickness must be reduced to a minimum without interfering with the strength of the lampholder. Philips' lampholders are well moulded to resist wear and tear and are designed so as to be fully shockproof.

Description	Catalogue No.	Fig.
Springloaded rotor type lampholder for back mounting	61478/02	ĵ
Springloaded rotor type lampholder for base mounting	61469/02	2
Adjustable lampholder for "Reflectalite" lamps	61502/02	3
Watertight lampholders for medium bi-pin caps	61497/01	4
Watertight lampholders for "TL" D lamps	61497/11	4
For circular lamps with four-pin cap lampholder support base	61487/02 61486/02 61488/02	5 6 7
Lampholder for "TL" S lamps up to 250 V	61476/12	8
Lampholders for recessed double contact caps	61501/02 61500/02	9 10

Fluorescent Accessories

SPRINGLOADED ROTOR TYPE LAMPHOLDERS for medium bi-pin caps



A: for back mounting (Fig. 1)



B: for base mounting (Fig. 2)

ADJUSTABLE ROTOR TYPE LAMPHOLDER FOR "REFLECTALITE" LAMPS

To widen the scope of "Reflectalite" lamps, an adjustable lampholder is available. Correct operation in 14 (2 x 7) positions is ensured by means of strong spring contacts which means that the beam of the "Reflectalite" lamp can be adjusted in practically all directions required.





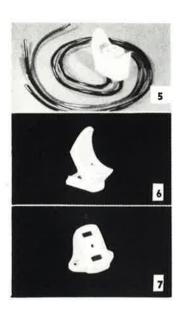


WATERTIGHT LAMPHOLDER WITH SPRING-LOADED ROTOR

A lampholder type provided with a silicone rubber sealing to prevent the contacts from moisture and damp. Available in white or black "Philite" finish.

Fluorescent Accessories

ACCESSORIES FOR "TL"E CIRCULAR FLUORESCENT LAMPS



Lampholder designed for 4-pin lampbases standard to all circular fluorescent lamps; supplied with leads of 12"; one is needed per lamp.

Spring tension support which is used merely for holding the lamp. Two are needed per lamp.

Bases to suit lampholders and supports. If needed at all, then three per lamp.

LAMPHOLDER FOR "TL"S AND "TL"R LAMPS

This lampholder too is manufactured to meet the many requirements which experience with fluorescent lamps has demanded.



LAMPHOLDERS FOR RECESSED DOUBLE CONTACT CAPS



Push-pull rotor lampholders for "TL" 105 WRS (8 ft.) fluorescent lamp with R.D.C. caps.



PHILIPS BRANCHES

SYDNEY (H.O.) MELBOURNE	
BRISBANE	
ADELAIDE	11-13 West Terrace
PERTH	672-4 Murray Street
HOBART	
CANBERRA Per	trie Street, Civic Centre
NEWCASTLE	194 Parry Street
N.S.W. BRANCH 67	7 Mars Road, Lane Cove

AGENTS

NEW SOUTH WALES:

William Adams & Co. Ltd., 175 Clarence Street, Sydney. 766 Hunter Street, Wickham. 180 Corrimal Street, Wollongong. Lawrence & Hanson Electrical Pty. Ltd., 862-866 Elizabeth Street, Zetland. 186 Parry Street, Newcastle. Kenny & West Streets, Wollongong. Alpha Lane, Wagga. 194 Marius Street, Tamworth. 184 Peisley Street, Orange. 188 Byron Street, Inverell. Carlotta and Reserve Streets, Artarmon. Merchants Pty. Limited, Bennett Street, Chester Hill. Sun Electric Co. Ptv. Ltd., 68 Meeks Road, Marrickville, Warburton Franki Ind. (Syd.) Pty. Limited, 307-315 Kent Street, Sydney. 80 Keira Street, Wollongong. 844-846 Hunter Street, West Newcastle. H. Rowe & Co. Pty. Ltd., 136-140 Elizabeth Street, Sydney. 411 Cleveland Street, Redfern. 210 Pacific Highway, Crow's Nest. 555 Smollett Street, Albury. 3 Lonsdale Street, Braddon, A.C.T.

VICTORIA:

William Adams & Co. Ltd.,
691 Geelong Road, Footscray.
Email Limited,
Brooks Robinson Division,
17-23 Maffra Street, South Melbourne.
Lawrence & Hanson Electrical (Vic.) Pty.
Ltd.,
71 City Road, South Melbourne.
Sun Electric Co. Pty. Ltd.,
562-566 Little Bourke Street, Melbourne.
Warburton Franki Ind. (Melb.), Pty. Ltd.,
355 Lonsdale Street, Melbourne.
H. Rowe & Co. Pty. Ltd.,
7 Flinders Court, Melbourne.
54-68 Racecourse Road, North Melbourne.

QUEENSLAND:

William Adams & Co. Ltd., Cnr. Stanley & Peel Streets, South Brisbane. Lawrence & Hanson Electrical Co. (Q'land)

Cnr. Boundary & Fortescue Streets, Brisbane.

67 Sheridan Street, Cairns. 8 East Street, Rockhampton. Walker Street, Townsville.

Toowoomba.

Warburton Franki (Bris.) Pty. Ltd., 13 Chester Street, Fortitude Valley. H. Rowe & Co. Pty. Ltd., 29 Wyandra Street, Valley.

SOUTH AUSTRALIA:

William Adams & Co. Ltd., 157 Waymouth Street, Adelaide. Gerard & Goodman Limited, 192-196 Rundle Street, Adelaide. Also at Whyalla, Mt. Gambier, Alice Springs. Lawrence & Hanson Electrical (Vic.) Pty. 274 Waymouth Street, Adelaide. Newton McLaren Limited. 17 Leigh Street, Adelaide. Sun Electric Co. Pty. Ltd., 304 Waymouth Street, Adelaide. Unbehaun & Johnstone Ltd., 54 North Terrace, Adelaide. Also at Pt. Lincoln. Warburton Franki Limited, 204 Flinders Street, Adelaide. H. Rowe & Co. Pty. Ltd., 121 Pirie Street, Adelaide.

WESTERN AUSTRALIA:

William Adams & Co. Ltd., 432-436 Murray Street, Perth. Also at Kalgoorlie. Carlyle & Co. (1959) Pty. Ltd.,

1-9 Milligan Street, Perth. Also at Kalgoorlie, Bunbury.

TASMANIA:

William Adams & Co. Ltd.,
Derwent Park, Hobart.
Hobart Road, Youngtown.
Lawrence & Hanson Electrical (Vic.) Pty.
Ltd.,
56 Collins Street, Hobart.

29 St. John Street, Launceston.



Simmons Limited, Glebe, Sydney.