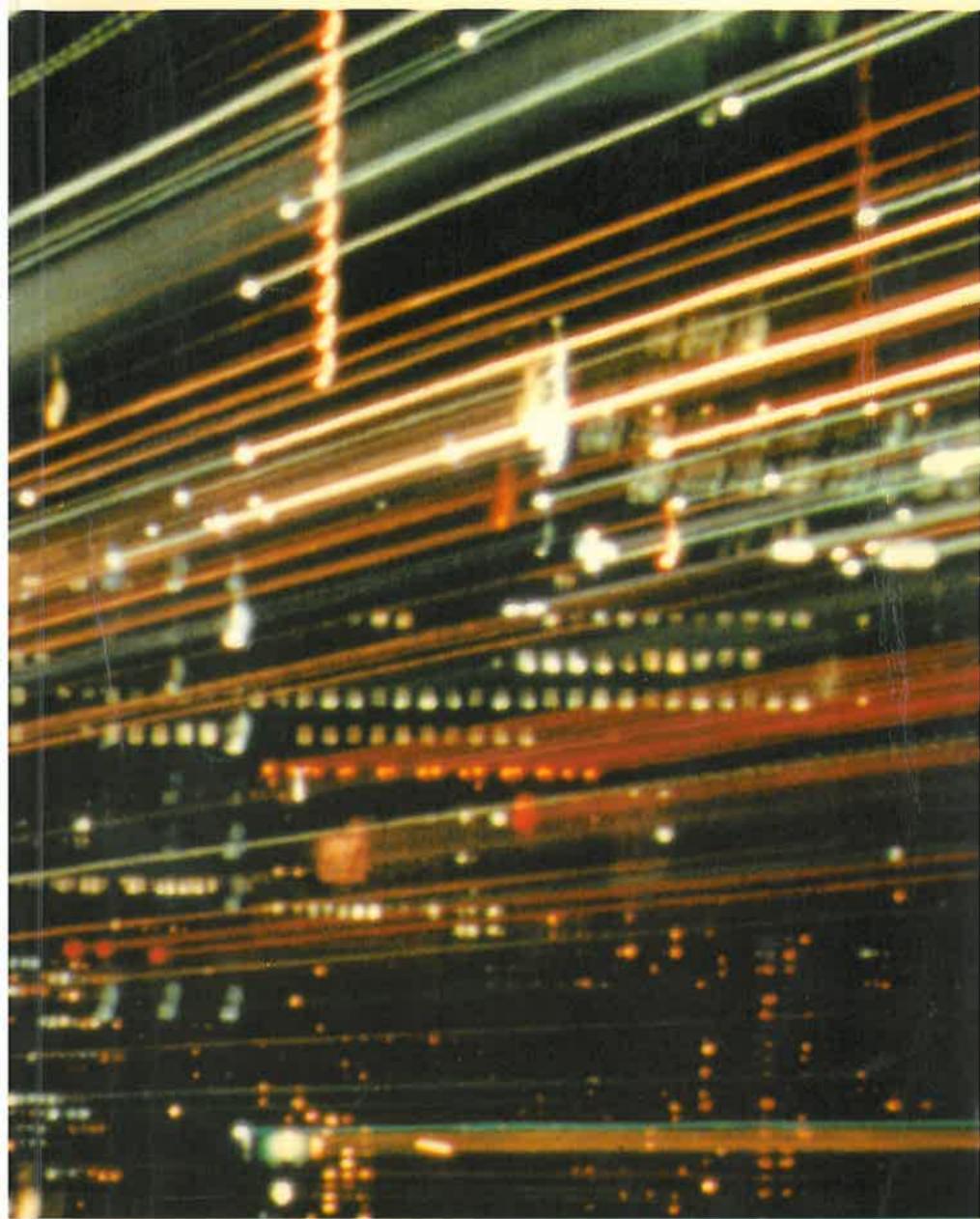
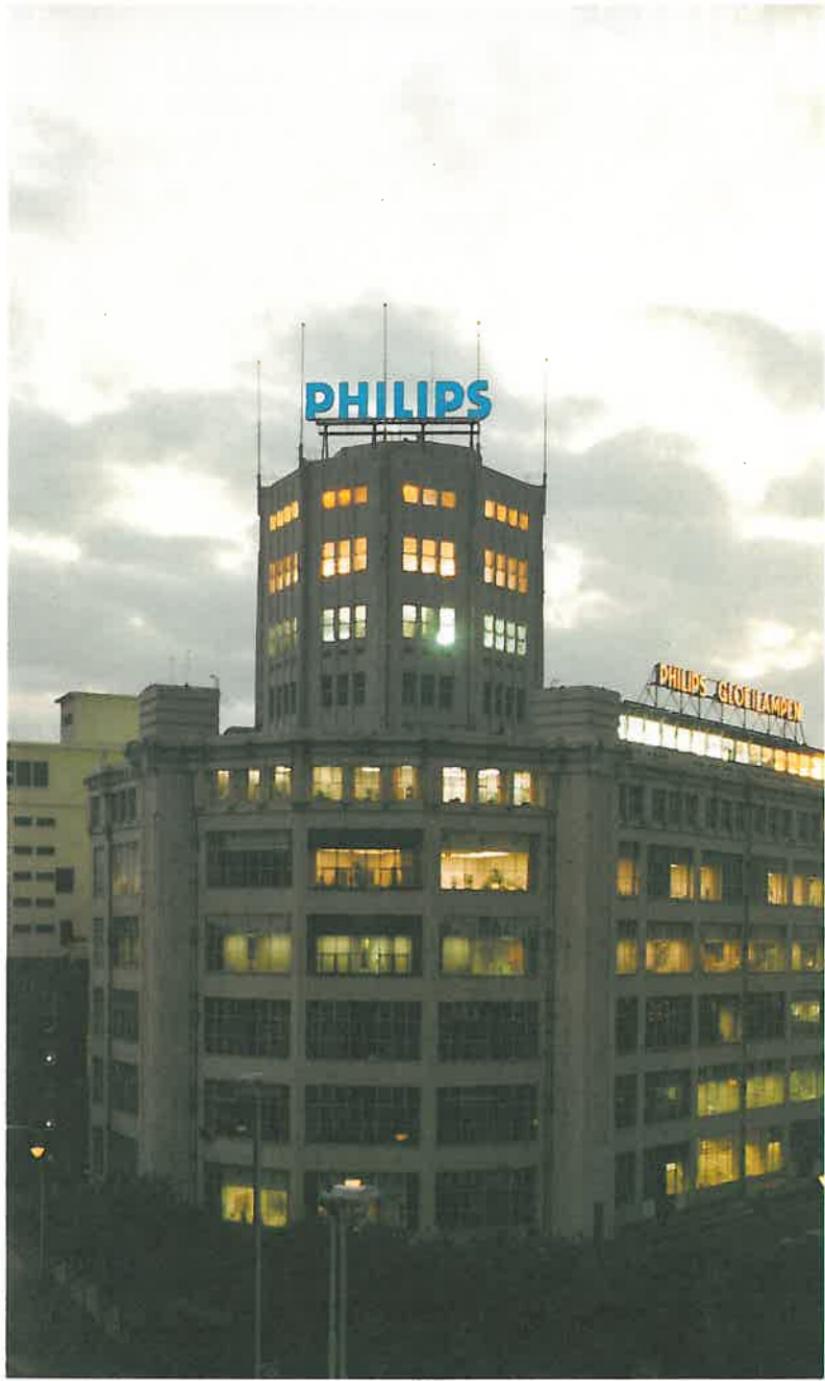


Lighting

PHILIPS



Compact Lighting Catalogue



PREFACE

This is the third, revised, edition of the Compact Lighting Catalogue. Since the previous edition of this catalogue, the rate of development and use of increasingly energy effective lighting systems has accelerated considerably.

Initial purchase price is only one of the factors to be considered when choice of one lighting system against another can lead to reduction of 60 per cent and more in the running costs. Philips have the most complete range of lighting equipment available. This means we can advise you on the choice of system best suited to your requirements.

The information contained in this catalogue is of necessity concise and whilst we attempt to be as comprehensive as possible, our policy of continuous development means that no catalogue can ever include the full range of products available. For further information, please contact your local Philips office.

Unless otherwise stated, dimensions are overall and are expressed in millimetres, while weights are nett and are expressed in grammes.

Packaging data is not included.

CONTENTS	Page	
Preface	5	
Index	8	
Backing our product expertise	23	
	1 Incandescent lamps	27
	2 Lamps for projection and cine lighting	77
	3 Photo equipment and flash lamps	89
	4 Automotive and miniature lamps	131
	5 'TL' fluorescent lamps and accessories	151
	6 SL*, PL* and TL* lamps and accessories	179
	7 Lighting regulation equipment	187
	8 Gas-discharge lamps and accessories	193
	9 Lamps and luminaires for special purposes	215

	Page
	200
10 Luminaires and systems for indoor fluorescent lighting	243
	244
11 Luminaires for industrial lighting	299
	300
12 Luminaires for accent and decorative lighting	329
	330
13 Luminaires for road lighting	379
	380
14 Luminaires for tunnel lighting	409
	410
15 Luminaires for environmental and security lighting	419
	420
16 Floodlights	431
	432
17 Airport lighting equipment	457
	458
18 Batteries and accessories	481
	482
Alphabetical index	491
	492

INDEX	Page
1 INCANDESCENT LAMPS	27
'Argenta' lamps	28
Super Lux lamps	28
K lamps	28
Standard lamps	29
Lustre lamps	29
Candle lamps	29
Three-light lamps	30
Fantasie lamp	30
Inside-frosted lamps	31
Standard lamps	31
Lustre lamps	31
Candle lamps	31
Clear lamps	32
Standard lamps	32
Lustre lamps	33
Candle lamps	33
Twisted candle lamps	33
Flame lamps	34
Standard lamps	34
Lustre lamps	34
Candle lamps	35
Pilot lamps	35
Coloured lamps	36
Standard lamps	36
Lustre lamps	36
Candle lamps	37
Pilot lamps	37
Decorative lamps	38
'Philinea' lamps	38
Colorenta lamps	39
Striplite lamps	40
G95 de Luxe globe lamps	41
G126 de Luxe globe lamps	41
Carbon filament lamps	42
Special incandescent lamps	43
Reinforced construction lamps	43
Extra-low-voltage lamps	43
Oven lamps	44
Tubular lamps	45
Sewing machine lamps	47
Pilot lamps	48

Daylight-blue lamps	49
Television lamp	49
'Anti-insect' lamps	50
Night lamps	50
Special products	51
Christmas tree illumination sets, P35, W10, W15, W20, W35, WA-15, A-30	51
Plug-in night lights	52
Adjustable plug-in night light	52
Voltage indicator screwdrivers	53
Lamp tester	54
Blown-bulb reflector lamps	56
R39, R50, R63, R80	56
R95, R125	57
Coloured lamps R50, R63, R95	58
Philux lamps	59
Transparent coloured disco-lamps	59
Bowl reflector lamps	60
Clear lamps A60, A65	60
Inside-frosted lamps, A60, A65, A80, A90	60
Golden-mirrored lamps, PC45, A60, A65	61
Micro-bowl reflector lamps, PC35	62
Mini-bowl reflector lamps, PC45	62
Pressed-glass reflector lamps	63
PAR38 Spot and Flood	63
PAR38 Cool Spot and Flood	64
PAR38 Coloured Spot and Flood	64
PAR38 Economy Spot and Flood	65
PAR38 Economy Cool Spot and Flood	66
PAR38 Economy Coloured Spot and Flood	66
PAR56 Spot, Flood and Wide Flood	67
Halogen reflector lamps	68
Halogen reflector lamps	68
The Light Point	70
Halogen floodlight lamps	71
Double-ended types	71
Single-ended types	73
Incandescent floodlight lamps	74

2 LAMPS FOR PROJECTION AND CINE LIGHTING

77

Lamps for narrow-gauge film and slide projectors	78
Pin-base projector lamps for narrow-gauge film projectors	79
Mirror condenser lamp for film projectors	80
Halogen overhead projector lamps	80
Halogen reflector lamps for micrographic equipment	81
Halogen lamps for film and slide projectors	82
Double-ended halogen overhead projector lamps	82
Halogen reflector lamps for Super 8 film	83
Halogen studio lamps	84
Double-ended halogen studio lamps	85
Quartz halogen theatre lamps	86

3 PHOTO EQUIPMENT AND FLASH LAMPS

89

Flashguns	90
P516 and P518C	91
Computerised flashguns P522C, P526C, P526TC, P526TCX	92
Electronic flashguns P532TC, P536TCLX, P536TCLS P536TCLSX	95
Professional flashguns P532GTC, P536GTCL, P536GTCLS, P536GTCLSX, P546GTCLX	98
Dedicated flashguns	101
Accessories to Philips flashguns	103
Bounce panel PFB 507	103
Power pack PFB 104	103
Slave units PSU 100 and PSU 110	104
Multiflash PMF 500	104
Battery rechargers PRU 010	104
Carrying bags PFB 501-502-503-504	104
Quick selection guide	105
Movie light PSG 125	107
Video light PVL 125	108
Photolamps	109
'Photolita' lamps	109
'Argaphoto' lamps	110
'Photocrescenta' lamps	111
Darkroom lamps	111
Halogen photolamps for movie and video lights	112
Darkroom equipment	114
PCS 1000 enlarger with incorporated electronic timer	114
PCS 130 and PCS 150 universal colour enlargers	115
PCS 2000 colour enlarger	116
Darkroom enlarger accessories	117
System 1000	118

PDC 1010 electronic timer	118
PBA 1030 enlarging exposure meter/analyser	119
PDT 1020 enlarging exposure meter/analyser and timer	120
System 2000	121
PDC 2010 digital timer	121
PDT 2015 process timer	122
PDT 2020 black-and-white analyser/timer	123
PCA 2060 colour analyser	124
System 2000 accessories	125
Flash bulbs	126
Flash bulbs PF1B and AG3B	126
Flash cubes PFC4 and Magicube	127
Topflash PF 8P and multiple flash	128
Flashbar	129
4 AUTOMOTIVE AND MINIATURE LAMPS	131
Automotive lamps	132
Headlight lamps	132
Auxiliary lamps – European standardized	133
Auxiliary lamps – standard types, exterior	134
Auxiliary lamps – standard types, interior	135
Traffic signal lamps	136
Normal traffic signal lamps	136
Halogen traffic signal lamps	136
Miniature lamps	138
Flashlights	138
Prefocus flashlight lamps	138
Lens-end lamps	138
Lenslite lamps	139
Bicycle lamps	140
Lamps for bicycles with auxiliary motor	140
Dial/signalling lamps	141
Miniature indicator lamps	142
Miners' lamps	142
Miniature halogen lamps	143
Glow lamps	144
Wire-terminal rod-electrode standard-brightness types	144
Wire-terminal rod-electrode high-brightness types	145
Wire-terminal rod-electrode super long-life types	145
Wire-terminal green fluorescent standard-brightness types	146
Base-fitting ring-electrode types	147
Christmas tree and illumination lamps	148

5 'TL' FLUORESCENT LAMPS AND ACCESSORIES

'TL' fluorescent lamps	152
'TL' colour choice guide	152
'TL' light colour characteristics	152
'TL'D/80 HF electronic lamps	158
/93 and /94 range 'TL'D lamps	159
/80 range 'TL'D and 'TL' lamps	160
Switch-start 'TL'D and 'TL' lamps	161
U-shaped 'TL'U and circular 'TL'E lamps	162
'TL' miniature lamps and 'TL'D lamps	164
Rapid-start 'TL'RS lamps	165
Rapid-start 'TL'M RS lamps	166
Very-high-output 'TL'(M) RS lamps	166
Slimline lamps	167
U-shaped rapid-start 'TL'U RS lamp	168
Circular rapid-start 'TL'E(M) RS lamps	168
Instant-start 'TL'X lamps	169
Instant-start 'TL'R lamps for D.C. operation	169

Ballasts for 'TL' fluorescent lamps

Ballasts for 'TL' fluorescent lamps	170
'Hoogkant' ballasts for switch-start operation of 'TL', 'TL'D, 'TL'E fluorescent lamps	170
Ballasts for switch-start operation of 'TL' miniature lamps	171
Ballasts for switch-start operation of 'TL'M 140W RS lamps	171
Ballast for starterless operation of 'TL'M RS/'TL' RS lamps	171
Low watts-loss ballast for 'TL' 40 W and 'TL'D 36 W	171
Preheating transformer	172
Step-up transformer	172
'Hoogkant' ballasts for 118V/ 50Hz, 118V/ 60Hz, 220V/60Hz, 240V/ 50Hz switch-start circuits	173
Aircraft ballasts	174
Transistor ballasts for 'TL' and 'TL'D lamps	175
Starters	176
Electronic ignitor ES 08	177
Lampholders and starterholders	177

6 SL*, PL* AND TL* LAMPS AND ACCESSORIES

SL* lamps	179
PL* lamps	180
Ballasts for PL* lamps, 220V/ 50Hz and 240V/ 50Hz	182
Lampholder for PL* lamps	183
TL* lamps	184

7 LIGHTING REGULATION EQUIPMENT

187

LRP 10N manual potentiometer	188
LRP 23 electronic potentiometer unit	188
LPS 1 control panel	189
LPB 81 control panel	189
LR 241 lighting regulator for fluorescent lamps	189
LR 247 lighting regulator for fluorescent lamps	190
LR 248 lighting regulator for incandescent lamps	190

8 GAS-DISCHARGE LAMPS AND ACCESSORIES

193

High-pressure sodium lamps	194
SON lamps	194
SON-T lamps	194
SON-H lamps	195
Low-pressure sodium lamps	196
SOX lamps	196
SOX-E lamps	197
High-pressure mercury lamps	198
HP lamps	198
HP-T lamps	198
HPL-N lamps	199
HPL Comfort lamps	200
HPL-R and HPL-R Comfort lamps	201
Metal halide lamps	202
HPI lamps	202
HPI-T lamps	203
MHN lamps	204
Blended light lamps	205
ML lamps	205
MLR lamps	205
Gear for gas-discharge lamps	206
Ballasts for HP lamps	206
Ballasts for HPI and HPI-T lamps	207
Ignition devices for HPI and HPI-T lamps	208
Ballasts for SON and SON-T lamps	209
Ignition devices for SON and SON-T lamps	210
Dimming ballasts and electronic circuit breakers for SON and SON-T lamps	211
Ballasts for SOX lamps	212
Ignition devices for SOX lamps	213

9 LAMPS AND LUMINAIRES FOR SPECIAL PURPOSES

215

Compact source lamps CS, CSI, CSX	217
Super-high-pressure mercury lamps SP, SPP	218
Tin-halide lamps SN	219
Reprographic lamps XOP	220
HPM and HP/AB lamps	221
HPA lamps	222
HPR 125W lamp	223
Ultraviolet drying and curing lamps HTQ	223
HOK lamps	224
Standard spectral lamps	225
Diazo copying lamps HOGK, HOQ, HOKI	226
Actinic lamps 'TL'05, 'TL'03, 'TL'09	227
Infrared lamps for health care	228
Pressed-glass infrared heat lamps	229
Blown-bulb infrared heat lamps for industry and agriculture	230
Quartz infrared lamps IRK	231
Tubular quartz infrared heat lamps IRH	232
Infrared module reflector unit IMR 020/6	233
Infrared reprographic lamps IRK	234
Blacklight blue and blacklight lamps 'TL'08, TW, HPW, MLW	234
Halogen copying lamps	235
HPK 125W mercury lamp for photochemical processes	236
HUV 5 mercury lamp for deodorization and sterilization	236
TUV germicidal lamps for air and water sterilization	237
TGC 115 and TGC 130 mounting channels for TUV germicidal lamps	238
GGA 115 and GGA 130 reflectors for TGC 115 and TGC 130 mounting channels	239
GGB 130 reflector for TGC 130 mounting channel	240

10 LUMINAIRES AND SYSTEMS FOR INDOOR FLUORESCENT LIGHTING

243

Luminaires for surface mounting	244
TCS 232	244
TCS 029	246
TCS 129	247
TCS 312	248
TCS 444	255
Luminaires for recessed mounting	257
Luminaires for standard modular ceilings	257
TBS 300/305/312	257
Luminaires for modular strip-ceilings	269
TBS 185/285	269
TBS 261	274
Luminaires for ceilings with building-related modules	276

TBS 100	276
TBS 300/305/312 extended	277
Luminaires for special applications	278
Low-brightness luminaire TBN 284	278
Luminaires for plaster, wood and other non-modular ceilings TBS 312, TBS 185	279
Integrated ceiling systems	280
Ceiling suspension system GPS 100	280
Ceiling suspension system GPS 200	284
Linear air-supply diffusers ZGN 400	288
Linear air-supply diffusers ZGN 401	290
Hospital lighting	292
CGH 060-062-066 patient room system	293
11 LUMINAIRES FOR INDUSTRIAL LIGHTING	299
Industrial battens and trunking systems	300
TMS 012 basic battens	300
GKD reflectors for TMS battens	301
GKH reflectors for TMS battens	301
GDL reflectors for TMS battens	301
GCS 101 and GCS 102 louvre attachments to TMS battens	302
GCB polystyrene louvre attachments to TMS battens	303
GMS 176 diffuser	303
GMS 102 wall-mounting diffuser	304
TGH 327 multi-version stem suspension system	305
TMS 012 'TL' KOMBI	306
TMX 100 'SLIM' battens with through-wiring	307
TMX 100 'WIDE' battens with through-wiring	308
TMX 100 'SLIM' battens, empty (non-prewired)	309
TMX 100 'WIDE' battens, empty (non-prewired)	309
GTX 100 attachments to TMX 100 battens and TTX 100 trunking	311
GTX 101 and GTX 102 attachments to TMX 100 battens and TTX 100 trunking	311
GTX 103 attachments to TMX 100 battens and TTX 100 trunking	311
TTX trunking system	313
TCK 101/102/103/104 'TL' KOMBI'S	315
Dust-proof and jet-proof battens and luminaires	316
TMW 065 battens for 'TL' fluorescent lamps	316
TCW 075 luminaires for 'TL' fluorescent lamps	318
TCH 327 surface-mounted luminaire	320
TCH 328 vandalproof luminaire	320
TCH 220 luminaire for 'TL' fluorescent lamps	321

Luminaires for high-bay lighting	322
Luminaires for high-bay lighting HDK/SDK/MDK	323
HDK 100/101/102/103/106 luminaires with high-pressure mercury lamps	324
SDK 100/101/102 luminaires with high-pressure sodium lamps	325
MDK 100/101/102 luminaires with metal halide lamps	326
Luminaires for plant irradiation	327
MGR 102/103/104	327
SGR 102/103/104	327
12 LUMINAIRES FOR ACCENT AND DECORATIVE LIGHTING	329
Philips Direct Contact System	330
Luminaires for Direct Contact System	331
Professional Spot Series DCN/QCN'600	331
QCN 210	332
QCN 220	334
ACS 20, 40, 42	335
DCN 350	336
Consumer Spot Series DCN 200	337
DCN 490-491	338
DCN 120	339
Accessories for Direct Contact System	340
Luminaires for wall and ceiling mounting	341
DGN 451	341
AGS 20, 40, 42	342
DGN 350	343
DGN 550	344
DGN 490	346
DGN 491	346
DGN 120	347
RCS 655 power track system for surface mounting	348
RPS 100 electro-mechanical ceiling system	351
Spots for RCS 655 and RPS 100 systems	352
Spots for RCS 655 power track	354
DRN 554	354
DRN 457	355
Luminaires for recessed and close-ceiling mounting	356
DBS 430, 431, 432	356
DSS 430, 431, 432	356
DCS 430, 431, 432	357
GGZ 430, 431, 432 wall-washers for DBS/DSS/430, 431, 432	358

DBS 420, 421, 422	360
DSS 420, 421, 422	360
DCS 420, 421, 422	360
DBN 101	362
Directional downlighters DBS 282, QBN 282	363
Various luminaires	364
NWG 135-16 'Philinea' luminaires	364
MDK 051 and MDK 031 luminaires for indoor plant irradiation	365
Luminaires for PL* lamps	367
FCN 305 for Direct Contact System	367
Light tiles FCS 310, 311, 320, 321, 312, 322	368
FWX basic unit	370
TCS 605, 607, 608 Flatlight luminaires	372
FBS 320/109 downlighter	373
FBS 233, FCS 233 ceiling luminaires	374
FBD 234, FCD 234 wall-washers	376
FWN 229 task lights	377
13 LUMINAIRES FOR ROAD LIGHTING	379
Luminaires without integral gear	380
HGS-SGS 201/250	380
HGS-SGS 201/400	380
HDS-SDS 201/150-250	381
Luminaires for high-pressure mercury lamps	382
HGS 201/080-125(G)	382
HGS 201 KOMBI	383
HGS 201/208-212G	384
HGS 201/250(G)	384
HGS 201/225G	385
HGS 201/400 (G)	385
HDS 201/208-212G	386
HDS 201/250G	386
HGS 203/080G/125G	387
HRP 010G	388
HRP 011(G)	389
HRP 012(G)	390
Luminaires for high-pressure sodium lamps	391
SGS 201/050G	391
SGS 201/070G	391
SGS 201/100G	391
SGS 201 KOMBI	392
SGS 201/207G	393
SGS 201/150G	393
SGS 201/250(G)	393
SGS 201/215G	394

SGS 201/400G	394
SDS 201/207G	395
SDS 201/150G	395
SDS 201/250G	395
SGS 203/050G	396
SGS 203/070G	396
SGS 203/100G	396
SGS 203/100TG	397
SGS 203/150TG	397
Luminaires for low-pressure sodium lamps	398
XGS 201/018G	398
XGS 201/218G	398
XGS 201/035G	398
XGS 201 KOMBI	399
SRM 120	400
SRM 120X	400
SRS 201	401
SRS 202/90G	402
SRS 202/90-135	402
SRS 202/135G	402
SRS 202/135-180	402
SRS 202/209G	403
SRS 202/205-209	403
SDP 252	404
SDP 253	404
Luminaires for 'TL' fluorescent lamps	405
TRC 026	405
TRC 027	405
TRK 220	406
TRL 320	407
14 LUMINAIRES FOR TUNNEL LIGHTING	409
Universal system for tunnel lighting	410
TRX 001/002/003	412
SRX 001/002/003	414
XRX 001/002/003	416
15 LUMINAIRES FOR ENVIRONMENTAL AND SECURITY LIGHTING	419
Bollards	420
HGC 130, HGC 131	420
HGC 133, HGC 134	421
Post-top luminaires	422
HPC 143, 144, 145	422
SPC 143, 144, 145	422
FPP-HPP-NPP-SPP	423
TPP 140	426
XPP 140	426

Luminaires for security and orientation lighting	427
FGC 100 PL* Kombi	427
FGC 200 PL* Kombi	427
XGC 001 Kombi	428
16 FLOODLIGHTS	431
Floodlights for HID lamps	432
HNF 001	432
HNF 002	433
HNF 003	434
HNF 206	435
HNF 013	436
SNF 011	437
SNF 200	438
MNF 200	438
M/SNF 201	439
SNF 026	440
XNF 003G	441
NNF 010	442
Floodlights for halogen lamps	444
QVF 410	444
QVF 411	444
QVF 412	444
QKF 101 Flood-Kombi	446
Floodlights for pressed-glass reflector lamps	448
DHF 012	448
DHF 017	449
DHF 016	450
DVF 102	450
Floodlights for marine lighting	452
SNT 001	452
SNT 001/Zone 2	453
SNT 003	454
SNT 003/Zone 2	454
17 AIRPORT LIGHTING EQUIPMENT	457
Approach lights	458
PS 22 omni-directional approach light	458
PS 24 approach light	459
PS 28 approach light	460
PS 124 approach light	461
Runway edge lights	462
PS 16 runway edge light	462
PS 45 runway edge light	463
PS 116 runway edge light	464

Taxiway edge lights	465
PS 22 taxiway edge light	465
Marker light accessories	466
Marker light replacement parts	466
Inset lights	467
PS 27/04 taxiway centre line light	467
PS 29/04 touch-down zone light	468
PS 31/04 runway centre line light	469
PS 34/04 taxiway curve centre line light	470
PS 37/04 approach, runway threshold or runway end light	471
Series isolating transformers	472
Obstruction lights	473
PS 14 obstruction light	473
Airfield lamps	474
Quartz halogen airfield lamps with bi-pin base	474
Quartz halogen double-ended airfield lamps	475
Quartz halogen airfield lamps with cable connection	476
Quartz halogen dichroic mirror reflector airfield lamps	477
Incandescent airfield lamps	478
18 BATTERIES AND ACCESSORIES	481
Zinc-manganese dioxide batteries	482
Alkaline-manganese dioxide batteries	485
Nickel-cadmium rechargeable batteries	486
Chargers for nickel-cadmium rechargeable batteries	487
MINICELL batteries	489
MINICELL batteries for hearing aids	489
Battery tester	490
Torches	490



BACKING OUR PRODUCT EXPERTISE

A catalogue is a place for products but consider for a moment the Philips belief that developing, then producing the best lighting products available is only half the story.

We built our reputation on backing our products with the know-how of how to make the best possible use of lighting systems. When you choose Philips that world-wide knowledge and experience is available to you too.

Lighting Design and Engineering Centres in the principal national organizations are staffed by lighting engineers with global experience and information interchange backed by computer links to make recommendations of the most cost-effective lighting for a particular project.

Also at strategically chosen centres, are the project teams who can carry out international projects ranging from airports to relatively modest schemes. To help you understand the importance of lighting and demonstrate the many important new products available, Philips have facilities in many important centres to demonstrate the basic principles of lighting and compare products and systems.

This includes the only full-scale road laboratory which forms the Philips Outdoor Lighting Laboratory in the Netherlands, where comparisons and calculations can be carried out to help, for instance, local authorities decide upon the most suitable lighting system for their highway and streetlighting. There is even a mobile lighting laboratory which can measure the lighting in a town or city and where necessary demonstrate the effect of different lighting systems on the spot.

All this backing to ensure that Philips products provide the best lighting solution available, and shall continue to do so.

Because when you have done everything possible to produce the best, you want your customers to benefit by ensuring your products are effectively used.





1 INCANDESCENT LAMPS

Many new types of lamps have been introduced since the incandescent lamp made electric lighting universally available. The incandescent lamp continues to be the most used type of lamp and we will go on to improve and develop our range and production methods.



'ARGENTA' LAMPS

'ARGENTA' SUPER LUX LAMPS

1

The exceptional combination of the partial 'Argenta' finish and the satin frosted bulb-'window' makes it possible to provide up to 35 per cent more light on the working plane, at no extra current cost.



Wattage Voltage Ordering number with base E 27
W V

40	115	9202 262
60	120	9202 362
75	125-130	9202 412
100	220-230	9202 462
150	240	9202 512
200		9202 575

Wattage W	Lumens					Dia.	Max. length
	115 V	120 V	125- 130 V	220- 230 V	240 V		
40	465	460	455	400	390	50	91,5
60	780	770	760	670	660	50	91,5
75	1010	1000	990	890	870	60	104,5
100	1460	1440	1440	1280	1260	60	104,5
150	2280	2280	2260	2060	2020	75	125,5
200	3200	3200	3150	2900	2800	75	125,5

'ARGENTA' K LAMPS

Small dimension lamps that emit a pleasant evenly distributed light.
Designed for those spaces where the larger conventional lamp would not fit.



Wattage W	Voltage V	Ordering number with base	
		E27	B22
25	9202 211	9202 201	
40	115	9202 261	9202 251
60	120	9202 361	9202 351
75	125-130	9202 411	-
100	220-230	9202 461	9202 451
150	240	9202 511	-
200		9202 561	-

Wattage W	Lumens					Dia.	Max. length
	115 V	120 V	125- 130 V	220- 230 V	240 V		
25	230	230	225	190	185	50	91,5 90
40	440	435	430	375	370	50	91,5 90
60	740	730	720	640	620	50	91,5 90
75	960	950	940	840	820	60	104,5 -
100	1380	1360	1360	1200	1180	60	104,5 103
150	2100	2080	2060	1880	1840	75	125,5 -
200	2950	2950	2900	2650	2600	75	125,5 -

'ARGENTA' STANDARD LAMPS

Because of their excellent diffusion, warm light and soft shadow effect, these lamps are particularly suited to home, office and shop lighting.



Wattage	Voltage	Ordering number with base E 27
W	V	
25	115	9200 014
40	115	9200 114
60	120	9200 214
75	125-130	9200 314
100	220-230	9200 414
150	240	9200 620
200		9200 727

Wattage W	Lumens					Dia.	Max. length
	115 V	120 V	125- 130 V	220- 230 V	240 V		
25	235	235	230	205	200	60	107,5
40	450	445	440	385	375	60	107,5
60	750	740	730	650	630	60	107,5
75	980	970	960	860	840	60	107,5
100	1420	1400	1400	1240	1220	60	107,5
150	2200	2200	2180	1980	1960	65	123,5
200	3100	3100	3050	2800	2700	80	166,5



'ARGENTA' LUSTRE LAMPS

Decorative lamps for chandeliers, sconces and ornamental wall brackets.

'ARGENTA' CANDLE LAMPS

Type	Wattage ¹⁾ W	Dia.	Max. length		Ordering number with base ²⁾	
			E14	E27	E14	E27
Lustre	25	45	78	73	9214 112	9214 117, ³⁾
	40				9214 212	9214 217, ³⁾
	60				9214 269	9214 277, ³⁾
Candle	25	35	100	96,5	9214 868	9214 872
	40				9214 917	9214 922
	60				9215 012	-

¹⁾ For voltages 115, 120, 125-130, 220-230, 240 V.

²⁾ With B15 and B22 base on special request.

³⁾ Only 220-230 V.

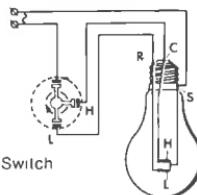
'ARGENTA' THREE-LIGHT LAMPS

Double filament lamp providing three lighting levels. Medium for normal lighting, low for decorative, and high – both filaments – when visual clarity is the main criterion. The 'Argenta' finish of the bowl emits a pleasing softly diffused light that is ideal for the home.



WIRING DIAGRAM

C = Central contact
 R = Ring contact
 S = Side contact
 H = High wattage filament
 L = Low wattage filament



Wattage W	Voltage V	Base	Dia.	Max. length	Ordering number
40/60/100	{ 110-115 125-130 220-230	E26d	68	124	9205 580
60/100/160			80	142	9205 583

'ARGENTA' FANTASIE LAMP

A decorative lamp of unusual style. Mounted in a simple holder, it can replace the more conventional lamp and white globe. Used as interior lighting in living rooms, halls, restaurants, shops and recreation rooms.



Wattage W	Voltage V	Dia.	Max. length	Ordering number with base E 27
40	{ 115 220-230	70	148	9232 721

INSIDE-FROSTED LAMPS

INSIDE-FROSTED STANDARD LAMPS

Freedom from glare and correctly diffused lighting make these lamps suitable for a wide variety of purposes.

Wattage	Voltage	Ordering number with base	
W	V	E27	B22
15		9201 056	9201 051
25	115	9200 011	9200 001
40	120	9200 111	9200 101
60	125-130	9200 211	9200 201
75	220-230	9200 311	9200 301
100	240	9200 411	9200 401
150		9200 619	9200 616
200		9200 726	9200 721



Wattage W	Lumens					Dia.	Max. length	
	115 V	120 V	125-130 V	220-230 V	240 V		E27	B22
15	135	135	135	120	115	60	107,5	106
25	265	265	260	230	225	60	107,5	106
40	500	495	490	430	420	60	107,5	106
60	840	830	820	730	710	60	107,5	106
75	1090	1080	1070	960	940	60	107,5	106
100	1580	1560	1560	1380	1360	60	107,5	106
150	2460	2460	2440	2220	2180	65	123,5	122
200	3450	3450	3400	3150	3050	80	166,5	165



INSIDE-FROSTED LUSTRE LAMPS

INSIDE-FROSTED CANDLE LAMPS

Decorative lamps for chandeliers, sconces and ornamental wall brackets.

Type	Wattage ¹⁾ W	Dia.	Max. length		Ordering number with base ²⁾	
			E14	E27	E14	E27
Lustre	15	45	78	73	9214 011	9214 016
	25				9214 111	9214 116
	40				9214 211	9214 216
	60				9214 268	9214 276
Candle	15	35	100	96,5	9214 811	-
	25				9214 866	9214 871
	40				9214 916	9214 921
	60				9215 011	9215 016

¹⁾ For voltages: 115, 120, 125-130, 220-230, 240 V.

²⁾ With B15 and B22 base on special request.

CLEAR LAMPS

1

CLEAR STANDARD LAMPS

Ideal lamps for closed luminaires and indirect lighting where brilliance and sparkle are more important than the reduction of glare.



Watt.	Volt.	Dia.	Max. length			Ordering number with base		
			E27	B22	E40	E27	B22	E40
15		60	107.5	106	-	9201 055	9201 050	-
25		60	107.5	106	-	9200 010	9200 009	-
40		60	107.5	106	-	9200 110	9200 100	-
60		60	107.5	106	-	9200 210	9200 200	-
75	115	60	107.5	106	-	9200 310	9200 300	-
100		60	107.5	106	-	9200 410	9200 400	-
150	125-130 220-230	65	123.5	122	-	9200 618	9200 615	-
200		80	166.5	165	-	9200 725	9200 720	-
300	240	88	176.5	175	186	9201 405	9201 400	9201 410
500		110	-	-	239	-	-	9201 505
1000	130	-	-	-	274	-	-	9201 705
2000	200	-	-	-	358	-	-	9201 900

Wattage	Lumens				
	115 V	120 V	125-130 V	220-230 V	240 V
15	135	135	135	120	115
25	265	265	260	230	225
40	500	495	490	430	420
60	840	830	820	730	710
75	1090	1080	1070	960	940
100	1580	1560	1560	1380	1360
150	2460	2460	2440	2220	2180
200	3450	3450	3400	3150	3050
300	5300	5250	5200	4850	4800
500	9400	9300	9300	8400	8300
1000	20200	20000	20000	18800	18400
2000	43000	43000	43000	40000	39500



CLEAR LUSTRE LAMPS

Decorative lamps for chandeliers,
sconces and ornamental wall brackets.

Type	Wattage ¹⁾ W	Dia.	Max. length E14	Max. length E27	Ordering number with base E14	Ordering number with base E27
Lustre	15	45	78	73	9214 010	9214 015
	25				9214 110	9214 115
	40				9214 210	9214 215
	60				9214 267	9214 275
Candle	15	35	100	96,5	9214 810	-
	25				9214 865	9214 870
	40				9214 915	9214 920
	60				9215 010	9215 015

¹⁾ For voltages: 115, 120, 125-130, 220-230, 240 V.

CLEAR TWISTED CANDLE LAMPS

Crystal clear lamps whose twisted bulbs enhance the beauty of decorative luminaires and bring a sparkling brilliance to their surroundings.



Wattage ¹⁾ W	Dia.	Max. length	Ordering number with base E 27
15	35	100	9214 825
25			9214 891
40			9214 941
60			9215 020

¹⁾ For voltages: 115, 120, 125-130, 220-230, 240 V.

FLAME LAMPS

1

FLAME STANDARD LAMPS

Provided with a soft-pink coating.
Thanks to their soft colour, flame
lamps are particularly suitable to
create a cosy atmosphere.



Wattage W	Voltage V	Dia.	Max. length with base E27	Ordering number with base E27
15				9203 415 432 ..
25				9200 012 432 ..
40	220-230	60	107,5	9200 112 432 ..
60				9200 212 432 ..
75				9200 312 432 ..
100				9200 412 432 ..

FLAME LUSTRE LAMPS



Wattage W	Voltage V	Dia.	Max. length		Ordering number with base	
			E14	E27	E14	E27
15	220-230	45	78	73	9214 009 432 ..	9214 018 432 ..
25					9214 113 432 ..	9214 114 432 ..
40					9214 213 432 ..	9214 214 432 ..

FLAME CANDLE LAMPS



Wattage W	Voltage V	Dia.	Max. length with base E14	Ordering number with base E14
15				9214 809 432..
25				9214 863 432..
40	220-230	35	100	9214 919 432..

FLAME PILOT LAMPS



Wattage W	Voltage V	Dia.	Max. length with base E14	Ordering number with base E14
15	220-230	28	65,5	9217 725 432..

COLOURED LAMPS

1

COLOURED STANDARD LAMPS

Internally coated to avoid scratching, fading and weathering, these lamps are ideal for outdoor decorative use and equally for indoor colour effects. In orange, yellow, red, green and blue.



Colour	Wattage W	Voltage V	Dia.	Max. length	Ordering number with base E27
Orange					9203 513
Yellow	25	{ 110-130			9203 511
Red		220-230			9203 514
Green	40	240-250	60	107,5	9203 612
Blue					9203 610

COLOURED LUSTRE LAMPS

Brilliantly effective lustre lamps in orange, yellow, red, green and blue. Coated internally and suitable for indoor or outdoor use.
E 14 or E 27 base (B15 base on request).



Colour	Wattage W	Voltage V	Dia.	Max. length		Ordering number with base	
				E14	E27	E14	E27
Orange						9215 613	9215 623
Yellow	15	{ 110-130				9215 611	9215 621
Red		220-230				9215 614	9215 624
Green	25	240-250	45	78	73	9215 712	9215 722
Blue						9215 710	9215 720

COLOURED CANDLE LAMPS

Decorative candle lamps in five colours. Internally coated to prevent scratching or weathering. For decorative purposes both indoors and out.

E14 base (B15 on request).



Colour	Wattage W	Voltage V	Dia.	Max. length	Base	Ordering number
Orange						9216 183
Yellow						9216 181
Red	25	{ 110-130 220-230 240-250	35	100	E14	9216 184
Green						9216 182
Blue						9216 180

COLOURED PILOT LAMPS

Internally coated to prevent scratching, these pilot lamps are available in five colours: orange, yellow, red, green and blue.

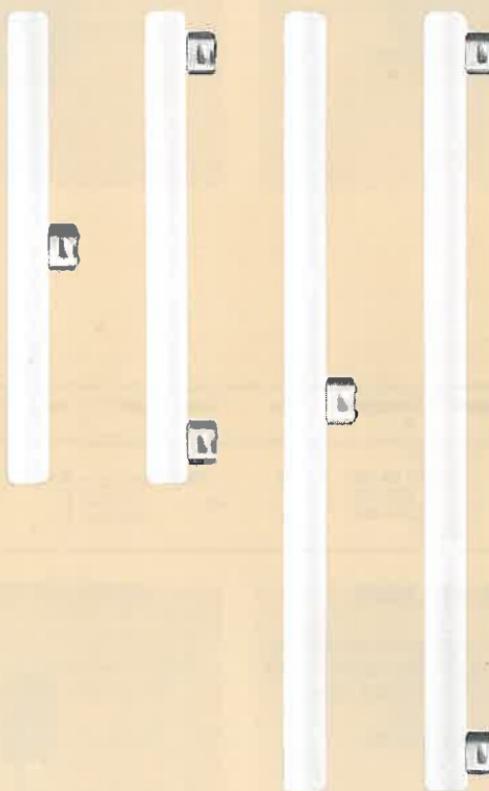
E14 base (B15 on request).



Colour	Wattage W	Voltage V	Dia.	Max. length	Base	Ordering number
Orange						9217 723
Yellow						9217 721
Red	15	{ 110-130 220-230 240-250	28	65	E14	9217 724
Green						9217 722
Blue						9217 720

DECORATIVE LAMPS

1



'PHILINEA' LAMPS

Slimness of line, clean white finish and concealed bases combine to create a simple elegance that is visually pleasing. The positioning of the lamp bases allows the lamps to be installed to form continuous strips of light.

Finish	Wattage W	Voltage V	Base	Dia.	Max. length	Ordering number
'Argenta'	35	115	2 x S14s	26	300	9210 207
	60	125-130		26	500	9210 217
	120	220-230		30 ¹⁾	1000	9210 230
	35	240	1 x S14d	26	300	9210 206
	60	250		26	500	9210 216

¹⁾ Will be changed to 26 mm in the course of 1984.

'COLORENTA' LAMPS

Decorative lamps with a charming candlelight effect.

1



Available in three versions:

Colorenta - white enamelled
Colorentina - white enamelled }
Mini-Colorenta - clear

on special request
also available in
clear version

Type	Wattage W	Voltage V	Dia.	Base	Max. length	Ordering number
Colorenta	40	{ 125-130 220-230 240-250	38	E27	315,5	9210 421
	60			B22	311	9210 420
				E27	315,5	9210 431
				B22	311	9210 430
Colorentina	25	{ 125-130 220-230 240-250	30	E27	161	9210 410
Mini-Colorenta	15	{ 125-130 220-230 240-250	21	E14	117,5	9211 105
	25			E14	117,5	9211 110



STRIPLITE LAMPS

These lamps, with their high luminous intensity and small diameter, are ideally suited for lighting:

- Shop windows
- Show cases
- Aquariums, pictures and mirrors

Finish ¹⁾	Wattage W	Voltage V	Base	Dia.	Max. length	Ordering number
Clear	25	220-230	2x S15	26	221	9210 280
	25		2x S19	26	260	9210 275
	40		2x S19	38	311	9210 330
	60		2x S19	38	311	9210 350
	100		2x S19	38	480	9210 375
	30	240	2x S15s	26	221	9210 328
					284	9210 329
	60		2x S15s	26	221	9210 359
					284	9210 360
'Argenta'	25	220-230	2x S19	26	260	9210 271
	40		2x S19	38	311	9210 333
	60		2x S19	38	311	9210 353
	30	240	2x S15s	26	221	9210 326
					284	9210 327
	60		2x S15s	26	221	9210 357
					284	9210 358

¹⁾ On special request the 25 W, 40 W and 60 W with S15/S19 base are also available in inside-frosted version.

G95 DE LUXE GLOBE LAMPS

Decorative, spherical incandescent lamps, clear or 'Argenta', gas-filled bulb.



Finish	Wattage W	Voltage V	Dia.	Max. length	Ordering number with base	
					E27	B22
Clear	40	{ 220-230 240	95	149	8222 200 173 ..	—
	60				8222 200 175 ..	—
	100				8222 200 052 ..	—
'Argenta'	40				8222 200 174 ..	—
	60				8222 200 176 ..	8222 340 049 ..
	100				8222 340 040 ..	8222 340 053 ..

G126 DE LUXE GLOBE LAMPS

Decorative lamps available in six versions: bowl mirror, ring mirror, clear, 'Argenta' and translucent gold or silver.



Finish	Wattage W	Voltage V	Dia.	Max. length	Ordering number with base E27
Bowl mirror	60	220-230	126	182	9232 648 ..
	100				9232 657 ..
Ring mirror	60				9232 649 ..
	100				9232 658 ..
Clear	40	220-230	126	182	8222 200 081 ..
	60				9232 696 ..
	100				9232 698 ..
'Argenta'	40				8222 200 082 ..
	60				9232 697 ..
	100				9232 699 ..
Translucent gold	35	220-230	126	182	9232 614 ..
Translucent silver	35				9232 613 ..

CARBON FILAMENT LAMPS

This historical lamp, which formed the foundation of the Philips Concern, is no longer used for ordinary lighting applications but is now primarily intended for decorative purposes both indoors and outdoors.
For outdoor use, only in closed luminaire.



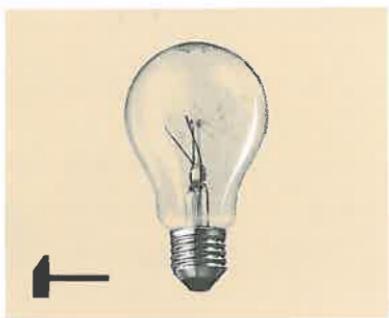
Wattage W	Voltage V	Dia.	Max. length		CP	Ordering number with base	
			E27	B22		E27	B22
35	125-130	60	107,5	106	10	9239 751	9239 750
60	220-230				16	9239 761	9239 760
90	240-250	68	125,5	124	25	9239 771	9239 770
115					32	9239 781	9239 780

SPECIAL INCANDESCENT LAMPS

REINFORCED CONSTRUCTION LAMPS

Inside-frosted or clear lamps with exceptionally strong filaments that enable them to be used in places where shocks, bumps and vibrations frequently occur.

Wattage W	Voltage V	Dia. E27	Max. length B22
25		60	107,5 106
40	115	60	107,5 106
60	120	60	107,5 106
75	125-130	60	107,5 106
100	220-230	68	125,5 124
150	240	80	145,5 144
200		80	166,5 165



Wattage W	Ordering number with base			
	Inside-frosted		Clear	
	E27	B22	E27	B22
25	9204 436	9204 431	9204 435	9204 430
40	9204 456	9204 451	9204 455	9204 450
60	9204 508	9204 503	9204 507	9204 502
75	9204 556	9204 551	9204 555	9204 550
100	9204 606	9204 601	9204 605	9204 600
150	9204 671	9204 666	9204 655	9204 650
200	9204 728	9204 726	9204 727	9204 725

EXTRA-LOW-VOLTAGE LAMPS

Inside-frosted or clear lamps manufactured specially for rural and isolated areas where power is supplied by battery or generator. Range from 6 to 65 volts.



Wattage W	Voltage V	Dia.	Max. length E27	B22
15	6, 12, 24, 32, 42, 48, 65	60	107,5	106
25	6, 12, 24, 32, 42, 48, 65	60	107,5	106
40	6, 12, 24, 32, 42, 48, 65	60	107,5	106
60	12, 24, 32, 42, 48, 65	60	107,5	106
100	12, 24, 32, 42, 48, 65	60	107,5	106
200	24, 42, 48, 65	80	166,5	165

Wattage W	Ordering number with base			
	Inside-frosted		Clear	
	E27	B22	E27	B22
15	9201 056	9201 051	9201 055	9201 050
25	9200 011	9200 001	9200 010	9200 000
40	9200 111	9200 101	9200 110	9200 100
60	9200 211	9200 201	9200 210	9200 200
100	9200 411	9200 401	9200 410	9200 400
200	9200 726	9200 721	9200 725	9200 720



OVEN LAMPS

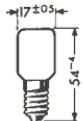
Manufactured for ovens, rotisseries and high temperature environments. Heat resistant solder and lamp-base cement ensure satisfactory operating at temperatures up to:
250 ° (conventional A60 shape)
300° (pilot S22 and lustre P45 shape).

Finish	Shape	Wattage W	Voltage V	Dia.	Max. length	Base	Ordering number
Clear	S22	15		22	48	E14	9228 713
Clear	P45	25	220-230	45	79	E14	9232 621
		40					9232 633
Inside-frosted	A60	40		60	107,5	E27	9205 505
		60					9205 515

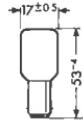
TUBULAR LAMPS

Very useful lamps for a wide range of domestic and industrial applications such as refrigerators, vacuum cleaners, switch boards, cupboard and piano lighting.

Finish: clear



7822 X/M
7965 X/M
7966 X/M

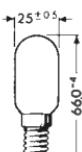


7822 W
7965 W
7966 W

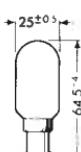


T17

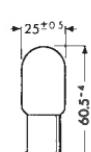
Type	Wattage W	Voltage V	Base	Ordering number
T17	7/5		E12	9210 526
7822 X		30/24	E14	9210 527
7822 M		42/32	B15	9210 525
7822 W		60/45		
7965 X	10/6	95/65	E12	9210 571
7965 M		140/110	E14	9210 572
7965 W		250/220	B15	9210 570
7966 X	15/10	140/110	E12	9210 581
7966 M		250/220	E14	9210 582
7966 W			B15	9210 580



7692 M
7693 M



7692 W
7693 W

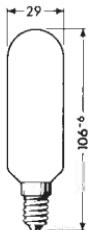


7692 B
7693 B

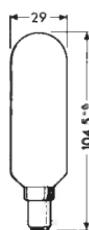


T25

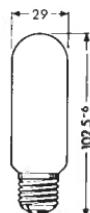
Type	Wattage W	Voltage V	Base	Ordering number
T25	15		E14	9210 729
7692 M			B15	9210 721
7692 W			B22	9210 725
7692 B		110/115 125/130		
7693 M	25	220/230	E14	9210 836
7693 W		240/250	B15	9210 835
7693 B			B22	9210 838



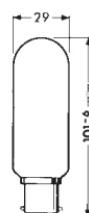
7690 M
7691 M



7690 W
7691 W



7690 E
7691 E

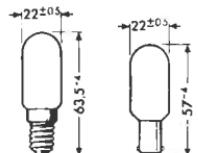


7690 B
7691 B

Type	Wattage W	Voltage V	Base	Ordering number
T29	25		E14 B15 E27 B22	9210 849 9210 854 9210 847 9210 848
7691 M		110/115		
7691 W		125/130		
7691 E				
7691 B				
7690 M	40	220/230	E14	9210 905
7690 W		240/250	B15	9210 907
7690 E			E27	9210 904
7690 B			B22	9210 906

SEWING MACHINE LAMPS

Lamps with a reinforced filament construction. Vibration resistant. For use in sewing machines.
Finish: inside frosted.

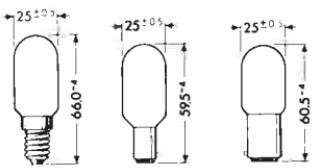


7648 M 7648 W



T22

Type	Wattage W	Voltage V	Base	Ordering number
T22	15		E14 BA15	9210 716..... 9210 715.....
7648 M		110/115 125/130 220/230		
7648 W	20		E14 BA15	9211 236..... 9211 235.....



7647 M 7647 W 7647 B



T25

Type	Wattage W	Voltage V	Base	Ordering number
T25	25		E14 B15 B22	9210 832..... 9210 830..... 9210 831.....
7647 M		110/115 125/130 220/230		
7647 W				
7647 B				

PILOT LAMPS

1

Lamps with low light output for use in restricted spaces. Applications include signs, running text switchboards and domestic equipment. Clear bulb. E14, B15, E27 and B22 base.



Wattage W	Voltage V	Dia.	Max. length			
			E14	B15	E27	B22
15	{ 12, 24, 48, 65 110-115, 125-130 220-230, 240-250	28	66	64	62	61,5
25	{ 110-115, 125-130 220-230, 240-250	28	66	64	62	61,5

Wattage W	Ordering number with base			
	E14	B15	E27	B22
15	9215 260	9215 250	9215 265	9215 255
	9215 275 ¹⁾	9215 270 ¹⁾		
25	9215 310	9215 300	9215 315	9215 305

¹⁾ On special request only; with pear-shaped bulb of 26 mm dia., with E14 or B15 base; max. length 57,5-4 mm and 56-4 mm, respectively.

DAYLIGHT-BLUE LAMPS

Natural-coloured glass bulb filters out excess red, producing a light that closely resembles daylight.
Extremely useful for colour matching.



Finish	Wattage W	Voltage V	Dia.	Max. length E27 B22	Ordering number with base E27 B22			
Natural blue	25	{ 125-130 40 220-230 60 240-250 75 100	60	107,5 106	9202 845			
							9202 841	
							9202 801	9202 800
							9202 805	-
							9202 811	9202 810

TELEVISION LAMP

For comfortable visual conditions, when watching television, it is advisable to have some light in the vicinity of the set. The colour of the light should harmonize with the lighted screen.

The television lamp has been specifically designed to fulfil these requirements. With its transparent blue bulb, the lamp emits a colour of light which is restful and pleasant for the eyes and so prevents fatigue.



Finish	Wattage W	Voltage V	Dia.	Max. length	Base	Ordering number
Natural blue glass	25	220-230	28	66	E14	9215 325 432 ..

'ANTI-INSECT' LAMPS

Lamps whose yellow light is less attractive to insects. Ideal for garden parties, camps, road stands, service stations, etc.



Finish	Wattage W	Voltage V	Max. dia.	Max. length		Ordering number with base	
				E27	B22	E27	B22
Inside yellow	60	{ 110-130 220-230 240-250	60	107,5	106	9203 716	9203 706
	100					9203 911	9203 901

NIGHT LAMPS

Low current consumption, long life and subdued lighting make these lamps ideally suited as night and orientation lights. Luminous intensity: 5 cd (approx.).
Finish: inside frosted.



Wattage W	Voltage V	Dia.	Max. length			Ordering number with base		
			E14	E27	B22	E14	E27	B22
7,5	{ 110-130 220-250	45	78	73	71,5	9214 252	9214 251	9214 250

SPECIAL PRODUCTS

CHRISTMAS TREE ILLUMINATION SETS

Philips offers a wide choice of Christmas tree illumination sets, including types for indoor and outdoor use.

They fully conform with the quality and safety requirements applicable to this type of product. All sets are fitted with a built-in short-circuit device, so that if one of the lamps fails the current circuit remains intact and the faulty lamp can thus be located and replaced immediately.

The lights of the P 35 set are fixed to the branches by means of sliding rings or 'nooses', the lights of all the other sets are fitted with a crocodile clip which keeps the holders upright. A pen-shaped single-pole female plug can be inserted into the mains plug to simplify installation of the set on the Christmas tree.

Spare lamps are supplied with the set (P 35) or are separately available in blister packing.



Designation	For lamps	Wattage W	Voltage V	Ordering number
P 35	35x 'Pisello'	35		9140 000 807..
W 10	10x dwarf-candle	30		9140 000 164.. NEMKO
W 15	15x dwarf-candle	45		9140 000 192.. ÖVE
				9140 000 118.. DEMKO
				9140 000 187.. NEMKO
				9140 000 193.. ÖVE
				9140 000 199.. SEV
				9140 000 204.. SEMKO
				9140 000 267.. KEMA
W 20	20x dwarf-candle	60	220/230	9140 000 172.. SEV
				9140 000 189.. NEMKO
				9140 000 194.. ÖVE
				9140 000 269.. KEMA
W 35	35x dwarf-candle	53		9140 000 806.. KEMA
WA 15	15x dwarf-candle	45		9140 000 115.. DEMKO
				9140 000 173.. SEV
				9140 000 196.. ÖVE
				9140 000 201.. KEMA
				9140 000 202.. NEMKO
				9140 000 203.. SEMKO
A-30	15x candle	60		9140 000 168.. KEMA

1

PLUG-IN NIGHT LIGHTS

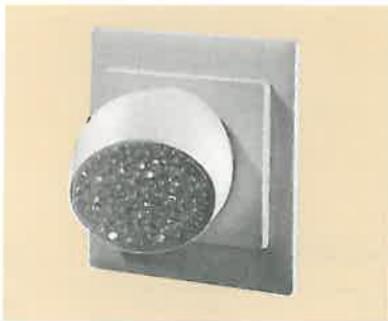
These beautifully simple night lights plug straight into the mains to give a soft red or green glow. Comfort for children in bed. Safety for everyone in dark places. A two-pin Europlug, strongly made, it runs at negligible cost.



Type	Light colour	Voltage V	Dia.	Length	Ordering number
GH 3/02	Red	220-250	43,5	57	9283 546 099 ..
GH 3/03	Green	220	43,5	57	9283 547 099 ..

ADJUSTABLE PLUG-IN NIGHT LIGHT

The rotating upper part of this attractively styled plug-in night light will throw soft pink light in any direction. Away from sleeping children, towards obstacles in dark rooms or walkways. Multi-facet lens. Two-pin Europlug, sturdy design, negligible running cost.

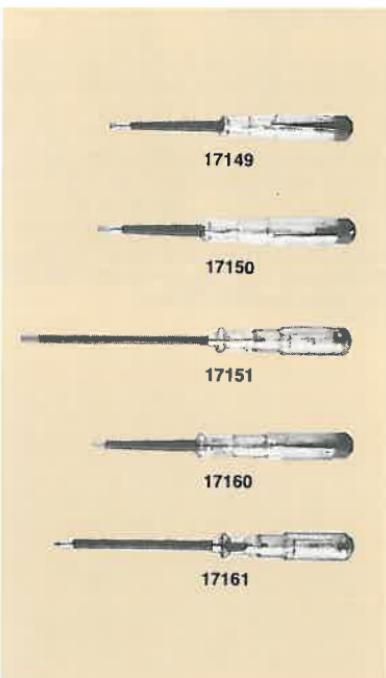


Type	Light colour	Voltage V	Dia.	Length	Ordering number
GH 5/02	Pink	220-250	47,5	80	9283 543 099 ..

VOLTAGE INDICATOR SCREWDRIVERS

Useful device for the electrician and do-it-yourself man.

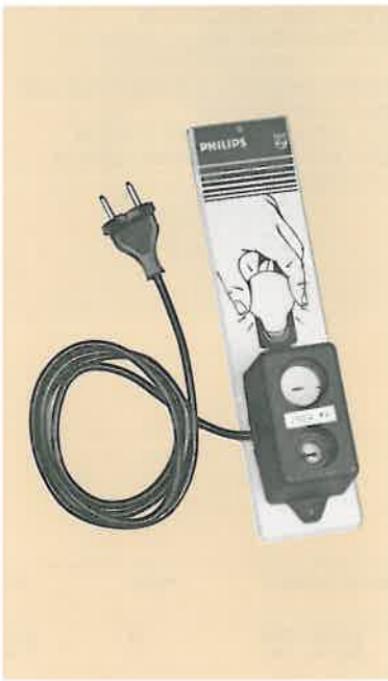
For voltages between 110 and 250 V/A.C., with normal blade or crossheaded.



Type	Type number	Dia.	Length	Ordering number
Voltage indicator screwdriver, blade	17149	16	130	9140 000 03701
	17150	16	140	9140 000 03101
	17151	21	220	9140 000 03801
Voltage indicator screwdriver, crossheaded	17160	15	130	9140 000 02901
	17161	21	200	9140 000 03901

LAMP TESTER

A lamp tester which is both simple to use and safe. It can be used for testing lamps with E27 or E14 caps. The lamp tester incorporates a simple insulated spring-loaded diaphragm, giving basic protection from the electrical contacts. Insertion of a lamp pushes aside a simple release catch to allow the diaphragm to be depressed and the contacts exposed. Suitable for 220V mains.





BLOWN-BULB REFLECTOR LAMPS

1



R39, R50, R63, R80

In miniature as well as conventional sizes, the Philips range of blown-bulb reflector lamps offer elegant, efficient and economic directional lighting in every indoor application.

Type	Wattage W	Voltage ¹⁾ V	Average life h	Base	Ordering number
R39	30	220-230 240-250	1000	E14	8222 340 059 .. 8222 340 061 ..
R50	25		1000	E14	9233 002
	40				9233 007
R63	40	115 125-130 220-230 240	1000	E27	9233 005
	60			B22	9233 004
	40			E27	9233 013
	60			B22	9233 012
R80	40		1000	E27	—
	60				—
	75		1000	E27	9232 059
	100				9232 066

1) For other voltages, apply to your local Philips organization.

Type	Wattage W	Luminous intensity in beam centre		Beam spread	Weight	Dia.	Max. length
		LV	HV				
R39	30	—	180	42°	15	39	66,5
R50	25	220	200	30°	16	50	86
	40	460	425	30°	16	50	86
R63	40	500	450	30°	32	63,5	102,5
	60	860	800	30°	32	63,5	102,5
R80	40	475	415	30°	45	80	112
	60	850	750	30°	45	80	112
	75	1250	1100	30°	45	80	112
	100	1825	1600	30°	45	80	112



R95



R125

R95, R125

Type	Wattage W	Voltage ¹⁾ V	Average life h	Base	Ordering number
R95	75	115	1000	E27	9232 054
	100	125-130		B22	9232 053
		220-230		E27	9232 065
		240		B22	9232 064
R 125 Flood	150	220-230		E27	9232 067
	150	115		E27	9232 076
		125-130		B22	9232 075
	300	220-230		E27	9232 081
R125 Spot	150	24	1000	E27	9232 023 205 ..

1) For other voltages, apply to your local Philips organization.

Type	Wattage W	Luminous intensity in beam centre cd		Beam spread	Weight	Dia.	Max. length
		LV	HV				
R95	75	1150	1050	30°	61	95	135
	100	1650	1500	30°	61	95	135
	150	—	2500	33°	61	95	135
R125	150	2500	2300	35°	100	125	175
	300	5500	5000	35°	100	125	175
	150 24 V	23000	—	10°	100	125	175



R50



R63

COLOURED LAMPS**R50, R63, R95**

Externally lacquered reflector lamps in various colours for striking indoor lighting effects.



R95

Type	Colour	Watt. W	Voltage ¹⁾ V	Weight	Max. length	Dia.	Ordering number with base E14	
R50	blue yellow green red	25		16	86	50	9233 140 9233 141 9233 142 9233 143	
R63	blue yellow green red violet	40	{ 115 125-130 220-230 240	30	102,5	63,5	E27 9233 015 9233 016 9233 017 9233 018 9233 014	B22 9233 019 9233 020 9233 021 9233 022 9233 023
R95	blue yellow green red violet	75		63	135	95	9233 075 9233 076 9233 077 9233 078 9233 079	9233 070 9233 071 9233 072 9233 073 9233 074

¹⁾ For other voltages, apply to your local Philips organization.

PHILUX LAMPS

A range of wide beam (80°) blown-bulb reflector lamps designed for general indoor lighting.
 Satinized bulb-front and internal aluminium mirror. A wide variety of applications, including restaurants, hotels, exhibitions, window displays, bars, night clubs, homes.



Watt. W	Voltage ¹⁾ V	Luminous intensity in beam centre cd		Weight ²⁾ 45	Max. length 114,5	Max. dia. 80,5	Ordering number with base	
		LV	HV				E27	B22
40	115	180	160				9232 260	9232 261
60	125-130	300	270				9232 265	9232 266
75	220-230	400	360				9232 280	9232 281
100	240	580	530				9232 295	9232 296

1) For other voltages, apply to your local Philips organization.

2) Weight 48 g for B22 base.

TRANSPARENT COLOURED DISCO-LAMPS

Reflector lamps with a transparent lacquer coating in the colours blue, yellow, green, red, orange or violet on the front of the bulb. Internal aluminium mirror.



Transparent colour	Wattage W	Voltage ¹⁾ V	Max. length	Dia.
Blue				
Yellow	40	{ 115		
Green		125-130	120,5	80
Red		220-230		
Orange		240		
Violet				

1) For other voltages, apply to your local Philips organization.

Transparent colour	Ordering number and weight			
	With base E27	Weight	With base B22	Weight
Blue	9232 271		9232 251	
Yellow	9232 272		9232 252	
Green	9232 273		9232 253	48
Red	9232 274	45	9232 254	
Orange	9232 282		9232 277	
Violet	9232 283		9232 278	

BOWL REFLECTOR LAMPS

1



CLEAR BOWL REFLECTOR LAMPS



INSIDE-FROSTED BOWL
REFLECTOR LAMPS

The bulbs of these lamps are coated internally to create a silvered bowl which shields the filament and gives excellent indirect lighting. The inside-frosted version emits a soft diffused light, while the clear lamp is specially designed for use in spotlight fittings.

CLEAR BOWL REFLECTOR LAMPS, A60, A65

Wattage W	Voltage V	Dia.	Max. length E27	Max. length B22 III	Ordering number with base E27	Ordering number with base B22 III
75	24	60	-	106	-	9204 323 205 ..
40	{ 115	60	107,5	-	9204 302	-
60	125-130	60	107,5	-	9204 316	-
100	{ 220-230	65	123,5	-	9204 338	-
	240					

INSIDE-FROSTED BOWL REFLECTOR LAMPS, A60, A65, A80, A90

Wattage W	Voltage V	Dia.	Max. length E27	Max. length B22	Ordering number with base E27	Ordering number with base B22
60	{ 115	60	107,5	106	9204 315	9204 305
100	125-130	65	123,5	122	9204 335	9204 330
150	{ 220-230	80	145,5	-	9204 345	-
200	240	90	175	-	9204 350	-

**GOLDEN-MIRORED BOWL
REFLECTOR LAMPS, PC45, A60,
A65**

The 'golden-mirrored' bowl reflector lamps have been specially developed to harmonize with the popular colour finishes of many luminaires (brown, beige and copper) and to produce a pleasant soft lighting effect for cosy atmosphere. It is a variation of the highly successful silver-mirrored bowl reflector lamp.



Finish	Wattage W	Voltage V	Base)	Weight	Max. length	Dia.	Ordering number
'Golden-mirrored'	25	{ 115 125-130 220-230 240	E14	18	78,5	45	8222 340 08500
	40		E14	18	78,5	45	8222 340 08600
	60	E27	33	107,5	60	8222 340 08700	
	100		E27	40	123,5	65	8222 340 08800

¹⁾ B15/B22 available on special request.

MICRO-BOWL REFLECTOR LAMPS, PC 35

1

Bowl reflector lamp with very small dimensions for brilliant indoor lighting effects. The PC 35 gives a sharply defined beam shape.



Wattage W	Voltage V	Base	Weight	Max. length	Dia.	Ordering number
30	220/230 240/250	E14	14	73,5	35	8222 340 058 .. 8222 340 056 ..

MINI-BOWL REFLECTOR LAMPS, PC 45

Small lamps with mirrored bowl for decorative effect lighting.
Homogeneous beam when used in combination with small spotlight luminaires.
Their decorative shape and low luminance make them ideal for "atmosphere" lighting.



Wattage W	Voltage V	Base	Weight	Max. length	Dia.	Ordering number
25	{ 115 125-130		18	78,5	45	9204 394
40	{ 220-230 240	E14	18	78,5	45	9204 398

PRESSED-GLASS REFLECTOR LAMPS

PAR 38 SPOT AND FLOOD

The beamed light output of these lamps is about 1.5 times greater than that of blown-bulb reflector lamps of the same power. Made of hard glass, they are suitable for indoor, outdoor and underwater use. A 24V, 150 W safety version of the PAR 38 Spot is available. Applications include shops, window displays, hotels, restaurants, theatres, exhibitions, floodlighting, advertising signs, sports grounds, gardens, statues, fountains.

1



Type	Wattage W	Voltage ¹⁾ V	Average life h	Base	Ordering number
PAR 38 Spot	150	24	2000	E27	9238 030 205 ..
	75	220-230			9238 045
	100	{ 115, 125-130,			9238 020
	150	{ 220-230, 240			9238 030
PAR 38 Flood	75	220-230			9238 046
	100	{ 115, 125-130,			9238 021
	150	{ 220-230, 240			9238 031

Wattage W	Luminous intensity in beam centre cd LV	Beam spread HV	Weight	Dia.	Max. length
150, 24 V	25000	—	10°		
75	—	2600	16°		
75	—	1200	30°		
100 Spot	5600	4000	16°	350	121
150 Spot	9500	7000	16°		
100 Flood	2150	1800	30°		136
150 Flood	3400	3100	30°		

¹⁾ For other voltages, apply to your local Philips organization.



Cool Flood



Coloured Spot

PAR 38 COOL SPOT AND FLOOD

For indoor applications where beam heat could damage the subject. With these lamps, 75 per cent of the beam heat is drained away through a special heat-transmitting reflector.

Type	Wattage W	Voltage V	Average life h	Base	Ordering number
PAR 38 Cool Spot	150	{ 115 125-130 220-230 240	2000	E27	9238 038
PAR 38 Cool Flood					9238 039

Type	Luminous intensity in beam centre cd	Beam spread	Weight	Dia.	Max. length
	LV HV				
Cool Spot	9500	7000	16°	350	121
Cool Flood	3400	3100	30°		136

PAR 38 COLOURED SPOT AND FLOOD

Coloured versions of the PAR 38 pressed-glass reflector lamps for strikingly decorative lighting effects both indoors and out.

Type	Colour	Watt. W	Voltage V ¹⁾	Average life h	Weight	Dia.	Max. length	Base	Ordering number
PAR 38 Spot ²⁾	blue yellow green red	150	{ 115 125-130 220-230 240	2000	350	121	136	E27	9238 072 9238 073 9238 074 9238 075
PAR 38 Flood	blue yellow green red	100							9238 022 9238 023 9238 024 9238 025

¹⁾ For other voltages, apply to your local Philips organization.

²⁾ This lamp is sensitive to local cooling down and when used in open air or humid spaces it requires protection against rain or spray-water.



PAR 38 ECONOMY SPOT AND FLOOD

Pressed-glass reflector lamps of high luminous intensity, saving 20% energy consumption yet producing the same useful light as conventional PAR lamps; available in Flood and Spot versions in various wattage and voltage ratings.

Type	Wattage W	Voltage ¹⁾ V	Average life h	Base	Ordering number
PAR 38 Economy	120	24	2000	E27	8222 340 077 ..
	60				8222 340 078 ..
	80	220-230			8222 340 079 ..
	120				8222 340 080 ..
PAR 38 Economy	60		2000	E27	8222 340 081 ..
	80	220-230			8222 340 082 ..
	120				8222 340 083 ..
Flood					

Wattage W	Luminous intensity in beam centre cd		Beam spread	Weight	Dia.	Max. length
	LV	HV				
120, 24 V	23000	—	10°			
60 Spot	4300	3900	12°			
80 Spot	5950	5400	12°			
120 Spot	10450	9500	12°	350	121	136
60 Flood	1400	1200	30°			
80 Flood	2150	1800	30°			
120 Flood	3400	3100	30°			

¹⁾ For other voltages, apply to your local Philips organization.



Cool Flood



Coloured Spot

PAR 38 ECONOMY COOL SPOT AND FLOOD

For indoor applications where beam heat could damage the subject. Twenty per cent energy saving compared with conventional cool lamps.

Type	Wattage W	Voltage V ¹⁾	Average life h	Base	Ordering number
PAR 38 Economy Cool Spot					8222 340 112..
PAR 38 Economy Cool Flood	120	220-230	2000	E27	8222 340 116..

Type	Luminous intensity in beam centre cd		Beam spread	Weight	Dia.	Max. length
	LV	HV				
Cool Spot	9500	7000	12°	350	121	136
Cool Flood	3400	3100	30°			

PAR 38 ECONOMY COLOURED SPOT AND FLOOD

Coloured versions of the PAR 38 Economy pressed-glass reflector lamps for strikingly decorative lighting effects both indoors and out. Twenty per cent less energy consumption compared with conventional coloured PAR lamps.

Type	Colour	Watt. W	Voltage V ¹⁾	Average life h	Weight	Dia.	Max. length	Base	Ordering number
PAR 38	blue								8222 340 120..
Economy yellow		80							8222 340 125..
Coloured green									8222 340 130..
Flood	red								8222 340 135..
PAR 38	blue								8222 340 139..
Economy yellow		120							8222 340 142..
Coloured green									8222 340 145..
Spot ²⁾	red								8222 340 148..

¹⁾ For other voltages, apply to your local Philips organization.

²⁾ This lamp is sensitive to local cooling down and when used in open air or humid spaces it requires protection against rain or spray-water.



Spot



Wide Flood

1

PAR 56 SPOT, FLOOD AND WIDE FLOOD

Extremely powerful pressed-glass reflector lamps in three beam widths. The spot version is designed for long distance beaming, the flood and wide flood versions mainly for high mounting applications. Suitable for indoor or outdoor use. In the latter case the lamps should be protected from water splashes by a glass-covered, well-gasketed housing.

Type	Wattage W	Voltage ¹⁾ V	Average life h	Base	Ordering number
PAR 56 Spot		115			9238 040
PAR 56 Flood	300	125-130	2000	GX16d ²⁾	9238 041
PAR 56 Wide Flood		220-230			9238 042
		240			
PAR 56 Wide Flood	300	12	2000	Screw terminal	9238 080 171 ..

Type	Luminous intensity in beam centre cd		Beam spread		Weight	Max. dia.	Max. length
	LV	HV	hor.	vert.			
PAR 56 Spot	50000	40000	12°	8°			
PAR 56 Flood	24000	22000	25°	11°	560	179	127,5
PAR 56 Wide Flood	10000	9000	40°	16°			
PAR 56 Wide Flood 12 V	16000	—	40°	16°	560	179	127,5

¹⁾ For other voltages, apply to your local Philips organization.

²⁾ Mogul end-sprong.

HALOGEN REFLECTOR LAMPS

1



The Philips philosophy in accent lighting has resulted in a range of extra-low-voltage halogen reflector lamps. These lamps provide a choice of high-intensity beams, suitable for professional spotighting, task lighting and domestic accent lighting. The small extra-low-voltage filaments used in these lamps are optically positioned in a highly efficient reflector; optimum beam control is thus secured. Because halogen lamps operate at very high temperatures, the reflector has a protective frontglass which prevents both the user and combustible material from coming into contact with the hot bulb. This frontglass also ensures that the reflector stays clean and therefore remains efficient throughout lamp life.

For a good mechanical and electrical contact in the fitting and for ease of replacement, the lamps are equipped with a B15d base.

The range consists of lamps with an anodised aluminium reflector and lamps with a (glass) coolbeam reflector.

For replacement purposes, two types of coolbeam reflector lamps are equipped with a GX 5,3 lamp base.

Maximum permissible temperatures at different points on the lamp to be taken into account during operation:

Reflector : 450°C
Contact : 220°C
Pinch : 350°C

Frontglass : 250°C
Quartz bulb : 900°C
GX 5,3 pins : 300°C

	Type	Voltage V	Wattage W	Average life h	Base	Type of reflector
Aluminium reflector	6424	6	15	2000 ¹⁾	B15d	1
	6425	6	15	2000 ¹⁾	B15d	4
	6426	6	15	2000 ¹⁾	B15d	6
	6433	12	20	2000 ¹⁾	B15d	1
	6434	12	20	2000 ¹⁾	B15d	2
	6435	12	20	2000 ¹⁾	B15d	3
	6429	6	35	2000	B15d	4
	6430	6	35	2000	B15d	5
	6438	12	50	2000 ¹⁾	B15d	5
	6439	12	50	2000 ¹⁾	B15d	6
Coolbeam reflector	6440 ³⁾	12	50	2000	GX5,3	²⁾
	6441 ³⁾	12	50	2000	GX5,3	²⁾
	6443 ³⁾	12	50	2000	B15d	7
	6444 ³⁾	12	50	2000	B15d	8

¹⁾ Provisional release has been given for 1000 h.

²⁾ Reflector type as Fig. 7 resp. 8, but different base.

³⁾ Under development. latest information available from your local Philips organization.

Type	Half-value beam spread ¹⁾	Luminous intensity cd	Dia.	Max. length	Ordering number ²⁾
6424	6°	5000	37	35	8222 206 618 ..
6425	4°	10000	56	56	8222 341 008 ..
6426	14°	1200	56	56	8222 341 009 ..
6433	6°	5000	37	35	8222 206 994 ..
6434	18°	1000	37	35	8222 341 041 ..
6435	32°	350	37	35	8222 341 042 ..
6429	6°	14000	56	56	9238 821 101 ..
6430	14°	3000	56	56	9238 823 101 ..
6438	10°	11000	56	56	8222 341 083 ..
6439	25°	2000	56	56	8222 341 084 ..
6440	8°	13000	51 max.	51	8222 341 128 ..
6441	30°	2000	51 max.	51	8222 341 129 ..
6443	8°	13000	51 max.	56	8222 341 130 ..
6444	30°	2000	51 max.	56	8222 341 131 ..

¹⁾ Angle measured at which the luminous intensity is half of that in the beam centre.

²⁾ Last two digits: specify '02' for individual packing, and '17' for industrial packing.

THE LIGHT POINT

The Light Point is a lamp-unit with incorporated transformer and fitted with a standard E27 lamp base. It contains a 6V, 15W halogen reflector lamp with which narrow beams and high intensities can be obtained (4°, 6° and 14°).

The Light Point can directly replace a reflector lamp working on mains voltage in an existing installation, offering the following benefits:

- Flexibility of use
- Ease of installation
- Functional and attractive design
- Durability of the unit
- Long lamp life
- Considerable energy savings

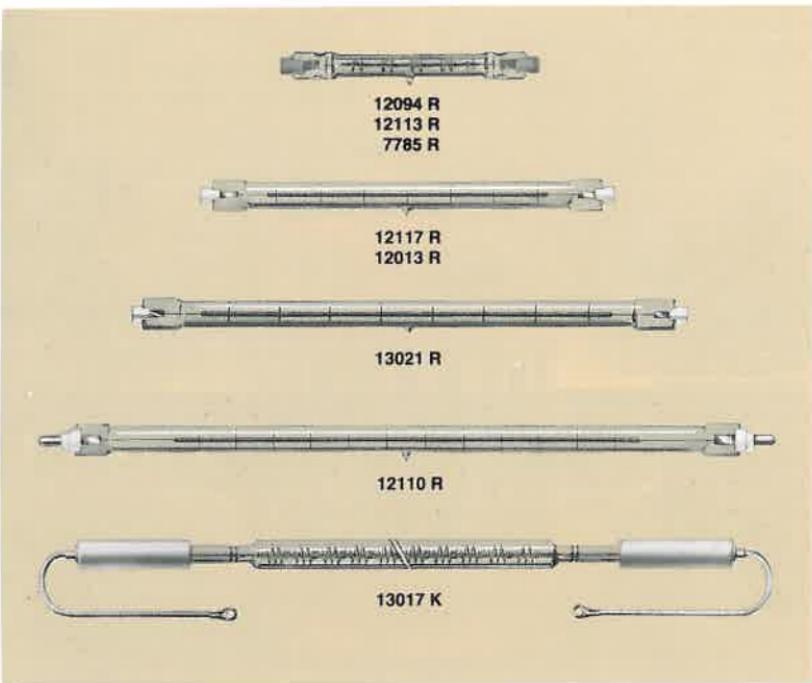
The Light Point is a narrow-beam spotlight, ideal not only for professional and special industrial applications, but also in domestic lighting schemes.



Type	Lamp type	Beam spread	Luminous intensity in beam centre cd	Transformer unit			
				Average life hrs	Base	Voltage	Ordering number ¹⁾
HS37	6424	6°	5000	approx. 20000	E27	120V 220V 240V	8222 341 05702 8222 341 02402 8222 341 03802
HS56	6425	4°	10000	approx. 20000	E27	120V 220V 240V	9222 341 05802 8222 341 02502 8222 341 03902
HS56	6426	14°	1200	approx. 2000	E27	120V 220V 240V	8222 341 05902 8222 341 02602 8222 341 04002

¹⁾ Complete with halogen reflector lamp.

HALOGEN FLOODLIGHT LAMPS



DOUBLE-ENDED TYPES

High luminous efficacy, excellent colour rendering and constant lumen output during lamp life; halogen floodlight lamps are ideal for all professional and domestic floodlighting work.

The comprehensive Philips range – from 200 W to 10000 W – of these compact light sources covers every application from the small local flood of light to the bright illumination of a great sporting arena.

The 200, 300 and 500 W versions are often used in indoor applications.

For extra safety, they are equipped with fuses built into both lamp ends and with a reinforced filament support construction.

Average life: 2000 hours, with the exception of the 12094 R, for which a release has been given for 1000 hours.

Maximum permissible tube temperature: 900 °C.

Maximum permissible pinch temperature: 350 °C.

Burning position: P4.



Type	Voltage V	Wattage W	Filament length mm	Luminous flux lm	Base	Max. length	Max. dia.	Nett weight	Ordering number
12094 R	220-230 240-250	200	62	3200	R7s-15	117,6	11	10,5	9238 813 432 .. 9238 813 457 ..
12113 R	115-120 220-230 240-250	300	41 62 62	5100	R7s-15	117,6	11	10,5	9238 804 345 .. 9238 804 432 .. 9238 804 457 ..
7785 R	115-120 130 220-230 240-250	500	58 58 62 62	9500	R7s-15	117,6	11	10,5	9238 803 345 .. 9238 803 361 .. 9238 803 432 .. 9238 803 457 ..
12117 R	220-230 240-250	750	120	15500	R7s-15	189,1	11	16	9238 812 432 .. 9238 812 457 ..
12013 R	115-120 220-230 240-250	1000	110 120 120	22000	R7s-15	189,1	11	16	9238 800 345 .. 9238 800 432 .. 9238 800 457 ..
13021 R	220-230 240-250	1500	170	33000	R7s-15	254,1	11	21	9238 805 432 .. 9238 805 457 ..
12110 R	220-230 240-250	2000	215	44000	Fa 4	334,4	11	23	9238 810 432 .. 9238 810 457 ..
13017 K	220-230	10000	290	260000	K 28s	655	28,8	560	9238 815 432 ..

SINGLE-ENDED TYPES

A major step forward in making halogen lamps even more suitable for general interior lighting and accent lighting, was the development of single-ended lamps. These compact lamps can be used in any burning position and offer the advantages of halogen lamps on mains voltage. These advantages, viz. excellent colour rendering and constant luminous flux during lamp life, together with compactness, make this type of lamp an even more economical light source for small, light-weight luminaires. Thus enabling the formation of well-defined beams of light.

The lamps are equipped with a fuse in the B15d lampbase.



Maximum permissible bulb temperature : 900°C.

Maximum permissible pinch temperature : 350°C.

Wattage W	Voltage V	Luminous flux lm	Light centre length	Average life h	Max. length	Dia.	Nett weight	Ordering number
100 ¹⁾	220	1400	67 ± 3	2000	95	18	80	-
150 ¹⁾	220	2250	67 ± 3	2000	95	18	20	-
250 ¹⁾	220	5000	67 ± 3	2000	95	18	20	-
250 ²⁾	220	5000	46 ± 3	2000	95	18	16	8222 206 819..

¹⁾ Under development; latest information available from your local Philips organization.

²⁾ Base: GY 9,5.

INCANDESCENT FLOODLIGHT LAMPS

1

Bulbous floodlight lamps for beacon lighting and such subjects as buildings, statues and sports grounds. The concentrated cylindrical filaments generate a powerful, accurately controlled light beam. The range includes low voltage floodlight lamps for theatre stages.

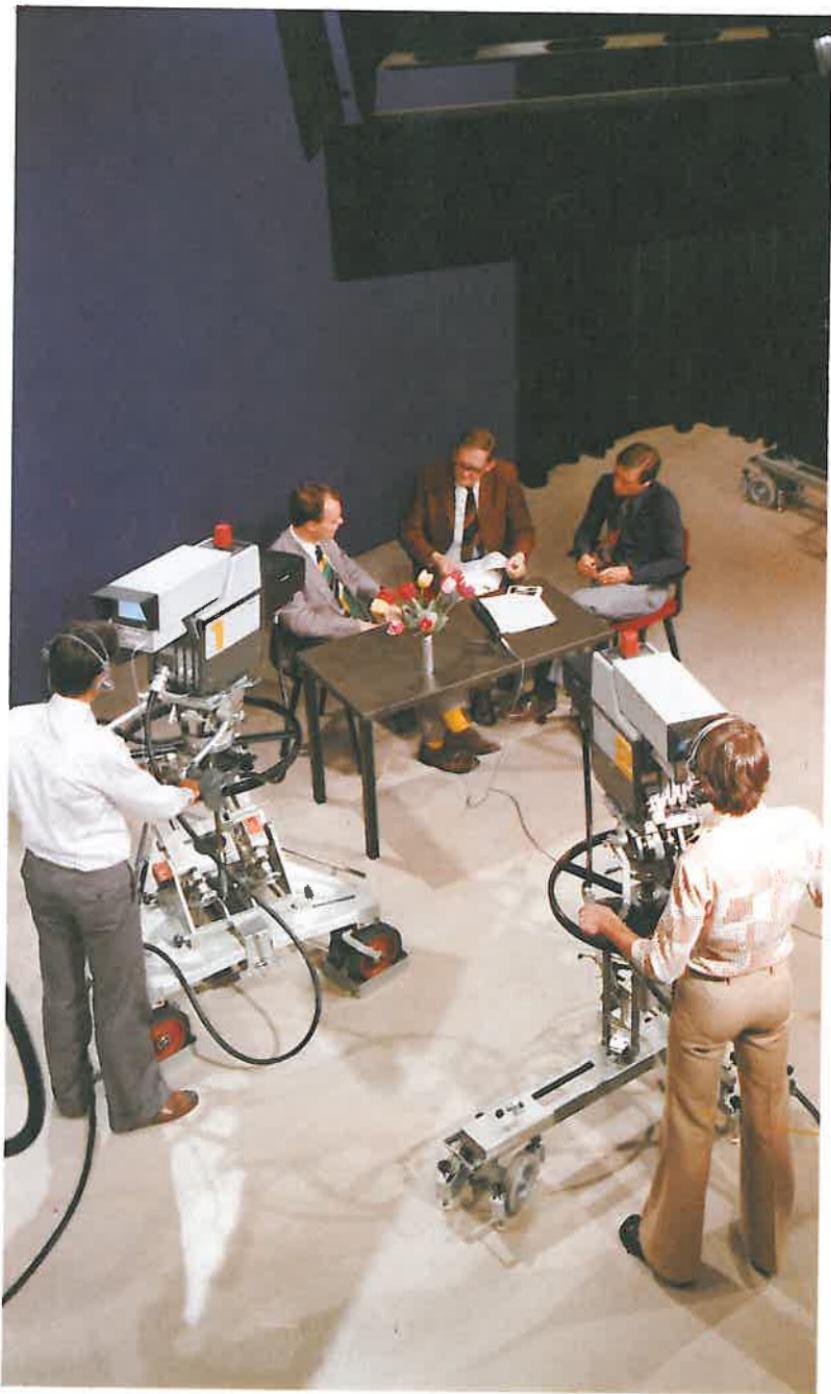


Type ¹⁾	Wattage W	Voltage V	Luminous flux lm	Base	Max. length	Max. dia.	Ordering number
120E	100	220-230	1050	E27	120	81	9223 331
123E	250	220-230	3250	E27	120	81	9223 403
125G	500	220-230	8000	E40	177	129	9223 453
6036G	1000	220-230	19000	E40	211	132	9223 491
7093U	100	24	2250	BA20d	75	51	9223 750 205 ..
7093U/02	100	24	2250	BA20d	75	51	9223 752 205 ..
162G/02	500	24	12600	E40	168	111	9223 469 205 ..

¹⁾ With top mirror type/02.

This table lists the most important types of incandescent floodlight lamp. Full technical data on the complete range is available from your local Philips organization.





Philips' vast experience in designing and making accurately dimensioned light sources has also resulted in an extensive range of high-precision projection and cine lamps. Only a small selection of the most important types are featured here. For further details please contact your Philips National Organization. Philips' service and expert advice on projection and cine lighting problems – based on the latest research and development – are available to all who wish to make use of them.



2 LAMPS FOR PROJECTION AND CINE LIGHTING

LAMPS FOR NARROW-GAUGE FILM AND SLIDE PROJECTORS

Philips range of normal-type projector lamps is second to none for luminous efficacy, concentrated filaments with optimum luminous intensity and minimum manufacturing tolerances.



7909J

Type	Wattage W	Voltage V	Max. length	Average life h	Base	Burning position	Ordering number
7238N	100	12	78	25	B15s	S15	9222 051 171 ..
7909J	100	12	79	25	B15s	S15	9222 069 171 ..
6067C	100	250	135	25	P28s	S15	9222 057 462 ..
6158N	100	220 230	78	25	B15s	S15	9222 051 429 .. 9222 051 442 ..
13141N	150	220 230 240 250	90	25	B15s	S15	9222 101 429 .. 9222 101 442 .. 9222 101 455 .. 9222 101 462 ..
13140C	150	220 230	135	25	P28s	S15	9222 104 429 .. 9222 104 442 ..
6166N	200	115 220	90	25	B15s	S15	9222 121 344 .. 9222 121 429 ..
6070C	250	220 230 240	135	50	P28s	S15	9222 146 429 .. 9222 146 442 .. 9222 146 455 ..
7212N	300	220 230 240	105	25	B15s	S15	9222 152 429 .. 9222 152 442 .. 9222 152 455 ..
6131C	300	220 230 240 250	135	25	P28s	S15	9222 153 429 .. 9222 153 442 .. 9222 153 455 .. 9222 153 462 ..
6152C	500	100 110 220 230 240	135	25	P28s	S15	9222 201 309 .. 9222 201 319 .. 9222 201 429 .. 9222 201 442 .. 9222 201 455 ..
6153C	750	110 220 230	140	25	P28s	S15	9222 231 319 .. 9222 231 429 .. 9222 231 442 ..
7242C	1000	220 230	140	25	P28s	S15	9222 270 429 .. 9222 270 442 ..
6185C	1000	220 230	140	25	P28s	S15	9222 274 429 .. 9222 274 442 ..



6158N



1314N



6070C



6185C

**PIN-BASE PROJECTOR LAMPS
FOR NARROW-GAUGE FILM
PROJECTORS**



6284C



8280C

Type	Wattage W	Voltage V	Max. length	Average life h	Base	Burning position	Ordering number
6289C	150	24	103	25	G17q	S15	9222 107 205 ..
6284C	150	220 230 240	76	25	G17q	S15	9222 105 429 .. 9222 105 442 .. 9222 105 455 ..
6280C	300	220 230	103	25	G17q	S15	9222 162 429 .. 9222 162 442 ..
6282C	500	220 230	103	25	G17q	S15	9222 212 429 .. 9222 212 442 ..

MIRROR CONDENSER LAMP FOR FILM PROJECTORS

Narrow-gauge film projector lamp with internal ellipsoidal mirror for use without separate condenser lens. For low power consumption, this lamp achieves screen brilliance equal to many conventional lamps of much higher wattage.

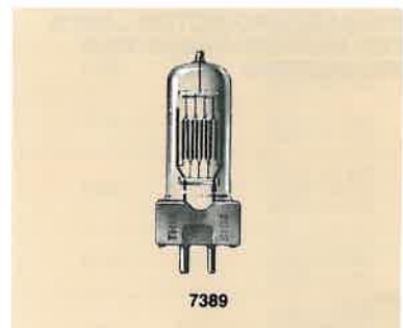
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Type	Wattage W	Voltage V	Max. length	Average life h	Base	Burning position	Ordering number
13120C	50	8	96	25	P30s	S15	9222 014 145 ..

HALOGEN OVERHEAD PROJECTOR LAMPS

Halogen overhead projector lamps for use with mains voltages, with precisely aligned grid-type filaments. Can be used in horizontal position. Available in 500 W, 800 W and 900 W. Three types with proximity reflector.



7389

Type	Wattage W	Voltage V	Max. length	Average life h	Base	Burning position	Ordering number
7389	500	220-230 240-250	75	50	GY9,5	S90	9238 716 432 .. 9238 716 457 ..
5968 ¹⁾	500	115-120 220-230 240-250	75	50	GY9,5	S90	9238 792 345 .. 9238 792 432 .. 9238 792 457 ..
7764	800	220-230 240-250	87	50	GY9,5	S90	9238 765 432 .. 9238 765 457 ..
5969 ¹⁾	800	220-230	87	50	GY9,5	S90	9238 791 432 ..
7804 ¹⁾	900	220-230 240-250	87	75	GY9,5	S90	9238 778 432 .. 9238 778 457 ..

¹⁾ With proximity reflector.



2

HALOGEN REFLECTOR LAMPS FOR MICROGRAPHIC EQUIPMENT

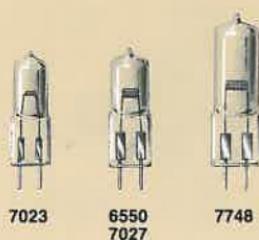
Halogen lamps with specially designed filaments, accurately aligned to the shape of dichroic mirrors. They give a well-defined cool beam, producing a high level of uniform screen illumination in microfilm readers and reader/printers.

Type	Philips	ANSI	Wattage W	Voltage V	Base	Approx. life h	Ordering number
35 mm type							
13529			9	6	GZ 4	250	8222 206 746 ..
13528			15	6	GZ 4	500	8222 206 731 ..
13074	-FJY		28	12	G 3,9	1000	8222 206 627 ..
13527	-FJZ		30	13,8	GZ 4	500	8222 206 730 ..
50 mm type							
13151			15	6	GZ 4	500	8222 206 747 ..
13137	-FHX		25	13,8	GX 5,3	250	8222 341 011 ..
13075	-EWJ		28	12	GX 5,3	1000	9238 948 171 ..
13155	-FJX		30	13,8	GX 5,3	500	8222 206 720 ..
13189	-EPZ/DJT		50	13,8	GX 5,3	1000	9238 835 182 ..
13139			75	12	GZ 6,35	50	8222 206 710 ..
13160	-DDS		80	21	GX 5,3	1000	8222 206 895 ..
13194	-DED		85	13,8	GX 5,3	1000	9238 836 182 ..
13186	-EPX/EPV		90	14,5	GX 5,3	500	8222 206 873 ..
13158	-ELD/EJN		150	21	GX 5,3	40	8222 206 959 ..

HALOGEN LAMPS FOR FILM AND SLIDE PROJECTORS

Quartz halogen lamps for 8 and 16 mm film and slide projectors. They maintain their high luminous intensity throughout the entire lamp life. The lamps have excellent colour rendering.

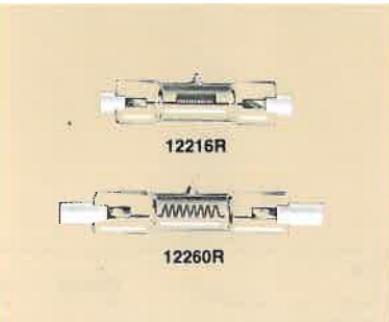
2



Type	Wattage W	Voltage V	Max. length	Average life h	Base	Burning position	Ordering number
7027	50	12	44	50	G6.35-15	S90	9238 702 171 ..
7023	100	12	44	50	GY6.35-15	S90	9238 700 171 ..
6550	150	15	44	50	G6.35-15	S90	9238 706 185 ..
7158	150	24	50	50	G6.35-15	S90	9238 705 205 ..
77489	250	24	55	50	G6.35-15	S90	9238 708 205 ..
7787	400	36	60	50	G6.35-20	S90	9238 714 233 ..

DOUBLE-ENDED HALOGEN OVERHEAD PROJECTOR LAMPS

These types have been especially designed for overhead projectors used mainly for educational purposes.



Type	Wattage W	Voltage V	Max. insertion length	Average life h	Base	Burning position	Ordering number
12216R	420	120	63,7	75	R7s-15	P4	9238 715 363 ..
12260R	600	120 220-230 240-250	91,8	75	R7s-18	P4	9238 718 363 .. 9238 718 432 .. 9238 718 457 ..
6365R	650	115-120 220-230	78,3	75	R7s-21	P4	9238 782 345 .. 9238 782 432 ..
6366R	800	220-230 240-250	78,3	75	R7s-21	P4	9238 783 432 .. 9238 783 457 ..

HALOGEN REFLECTOR LAMPS FOR SUPER 8 FILM

Designed for projection of Super 8 film, these lamps combine an efficient mirror condenser system with a halogen source. From 75 W, the lamps have a dichroic cool-light mirror which reflects virtually all the light but only 40 per cent of the generated heat. Excellent screen illumination is obtained by means of a prefocus centring principle.



2

Type ¹⁾	Wattage W	Voltage V	Average life h	Base	Burning position	Ordering number
6847	50	8	50	GZ6,35-25	S105	9238 720 145 ..
6853	75	12	50	GZ6,35-25	S105	9238 721 171 ..
6834	100	12	50	GZ6,35-25	S105	9238 722 171 ..
6423 <i>KFR</i>	150	15	50	GZ6,35-25	S105	9238 723 185 ..

¹⁾ Max. length: 42. Diameter 49,7 ± 0,3.

HALOGEN STUDIO LAMPS

Halogen quartz lamps of small dimensions for compact studio spotlight fittings. These single-ended lamps are suitable for 3200 K balanced colour film and have longer life than conventional and hard-glass halogen studio lamps of comparable wattage.

Types with built-in proximity reflectors eliminate adjustment and dust problems.

2



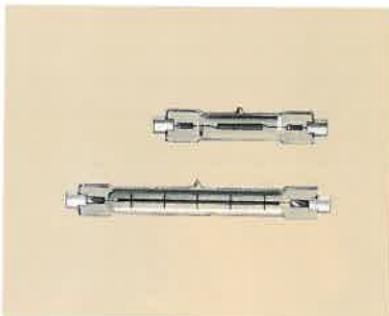
Type	Wattage W	Voltage V	Average life h	Base	Burning position	Ordering number
6993P	650	220 240	100 100	GX9,5 GX9,5	S90 S90	9238 903 429 .. 9238 903 455 ..
6993Z	650	220 240	100 100	G22 G22	S90 S90	9238 904 429 .. 9238 904 455 ..
6993C	650	220 240	100 100	P28s P28s	S90 S90	9238 931 429 .. 9238 931 455 ..
6993E	650	220	100	E27	S90	9238 930 429 ..
6827Z-EGR	750	120	200	G22	S90	8222 206 969 ..
6995P	1000	220 240	200 200	GX9,5 GX9,5	S90 S90	9238 846 429 .. 9238 846 455 ..
6995Z-EGT		120	250	G22	S90	8222 206 965 ..
6995Z	1000	220	200	G22	S90	9238 847 429 ..
6995Z		240	200	G22	S90	9238 847 455 ..
6995Y-CYV	1000	120	250	G38	S90	8222 206 968 ..
6983P-FEP	1000	220 240	200 200	G9,5 G9,5	Any Any	8222 206 970 .. 8222 206 971 ..
6994P	2000	220 240	400 400	GY16 GY16	S90 S90	9238 910 429 .. 9238 910 455 ..
6994Z-CYX		120	400	G38	S90	8222 206 729 ..
6994Z	2000	220	400	G38	S90	9238 911 429 ..
6994Z		240	400	G38	S90	9238 911 455 ..
6994G	2000	220	400	E40	S90	9238 946 429 ..
6994C	2000	220 240	400 400	P40s P40s	S90 S90	9238 945 429 .. 9238 945 455 ..
6994Y	2000	220 240	400 400	G22 G22	S90 S90	9238 947 429 .. 9238 947 455 ..
6963Z	5000	220 240	350 350	G38 G38	S90 S90	8222 206 615 .. 8222 341 045 ..

LAMPS WITH PROXIMITY REFLECTORS

6999P	650	220 240	100 100	GX9,5 GX9,5	S90 S90	8222 206 925 .. 8222 206 926 ..
6999Z	650	220 240	100 100	G22 G22	S90 S90	8222 206 927 .. 8222 206 928 ..
6984P	1000	220 240	200 200	GX9,5 GX9,5	S90 S90	8222 206 886 .. 8222 206 887 ..
6984Z	1000	220 240	200 200	G22 G22	S90 S90	8222 206 919 .. 8222 206 920 ..

DOUBLE-ENDED HALOGEN STUDIO LAMPS

Double-ended halogen lamps for use with colour film and colour TV where a colour temperature of 3200 K is required. Colour temperature remains constant throughout lamp life.



2

Type	Wattage W	Voltage V	Max. insertion length	Average life h	Base	Burning position	Ordering number
13477R	800	220-230 240-250	117,6	150	R7s-15	P180	9238 770 432 .. 9238 770 457 ..
7786R	1000	115-120 220-230 240-250	117,6	200	R7s-15	P180	9238 771 345 .. 9238 771 432 .. 9238 771 457 ..
13989R	1000	115-120 220-230 240-250	189,1	200	R7s-15	P180	9238 780 345 .. 9238 780 432 .. 9238 780 457 ..
6358R	1250	220-230 240-250	189,1	200	R7s-15	P4	9238 784 432 .. 9238 784 457 ..
7775R/16 frosted	625	220-230	189,1	150	R7s-15	P180	9238 790 432 ..

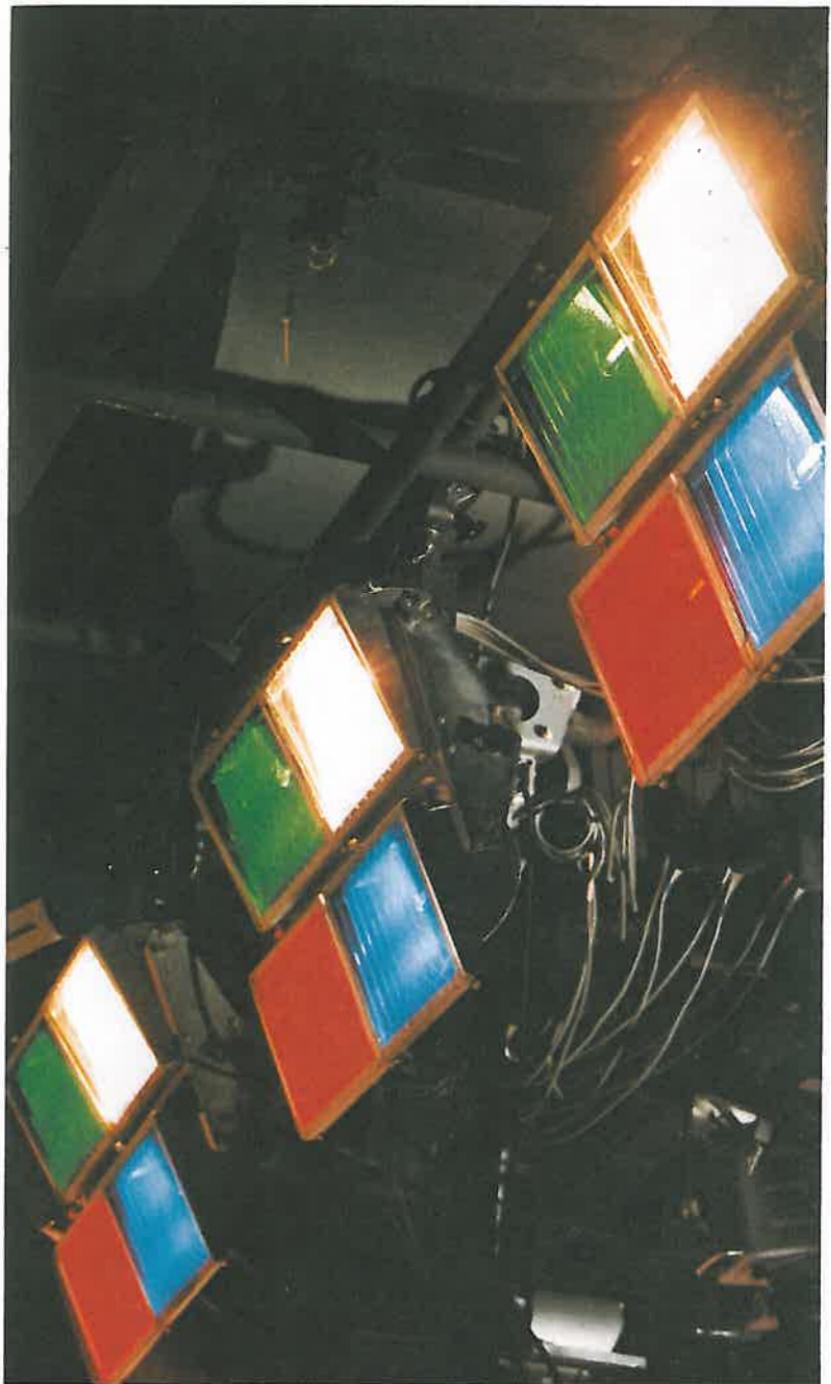
QUARTZ HALOGEN THEATRE LAMPS

Quartz halogen single-ended lamps with 'biplane' filament, designed for theatrical lighting where longer life is of greater importance than 3200 K colour temperature.

2



Type	Wattage W	Voltage V	Average life h	Base	Burning position	Ordering number
6800C	500	220/230 240	750 750	P28s P28s	S90 S90	8222 206 975 .. 8222 206 976 ..
6820P	500	220/230 240	300 300	GY9,5 GY9,5	S90 S90	8222 206 724 .. 8222 206 725 ..
6998P	650	220/230 240	750 750	GX9,5 GX9,5	S90 S90	8222 206 935 .. 9222 206 936 ..
6998C	650	220/230 240	750 750	P28s P28s	S90 S90	8222 206 937 .. 8222 206 938 ..
6996P	1000	220/230 240	750 750	GX9,5 GX9,5	S90 S90	8222 206 910 .. 8222 206 912 ..
6996C	1000	220/230 240	750 750	P28s P28s	S90 S90	8222 206 911 .. 9222 206 913 ..
6997C	1000	220/230 240	600 600	P28s P28s	H90 H90	8222 206 914 .. 8222 206 915 ..







3 PHOTO EQUIPMENT AND FLASH LAMPS

Philips offer a wide range of photographic equipment and flash lamps, not only for the amateur photographer, but also for the professional.

Philips' flashguns, movie and video lights, timers, analysers and enlargers, they are all characterised by ease of operation. The flashguns constitute one family, both in outward appearance and in function variation. Depending on the possibilities wanted, one can opt for flashgun types offering one or more of the following features: computer-controlled operation, built-in adaptation to tele- and wide-angle camera lenses, illuminated f-stop indication, fully dedicated possibilities, quick-loading circuits, etc.

Philips' enlargers have built up a reputation for their ease of operation and high-quality performance.

The truly unique electronic Tri-one colour enlarging system lies at the root of this success.

System 1000 consists of a range of analogue timers and analysers for the beginning amateur, whilst the timers and analysers of System 2000 bring the ultimate accuracy of micro-electronics together with digital read-out in the darkroom.

Philips photo equipment continues to increase the scope of photography.

PHOTO LAMPS

'PHOTOLITA' LAMPS

'Photolita' lamps, available in two versions: inside-frosted or with internal reflector, have an extremely high luminous intensity. They can be used for general photographic and cine lighting and are suitable both for black-and-white and for 3400 K film.



3

INSIDE-FROSTED

Type	Wattage W	Voltage V	Luminous flux lm	Average life h	Max. length	Ordering number with base	
						E27	B22
		120	8500			—	9205 250 363..
'Photolita' S PF 207	250	220		3	60	9205 253 429..	—
		230	7500			9205 253 442..	—
		250				9205 253 462..	9205 250 462..
'Photolita' N PF 208	500	220		6	88	9205 263 429..	—
		240	14800			9205 263 455..	9205 260 455..
		250				9205 263 462..	9205 260 462..

INTERNAL REFLECTOR

Type	Wattage W	Voltage V	Luminous intensity in centre of beam cd	Average life h	Base	Dia.	Max. length	Ordering number
'Photolita' SM PF 217	250	220 240	3300	3	E27	95	135	9232 155 429.. 9232 155 455..
'Photolita' KM PF 215	375	220 240	13000	4	E27	95	135	9232 170 429.. 9232 170 455..
'Photolita' NM PF 218	500	220 240 250	8000	6	E27	125	175	9232 185 429.. 9232 185 455.. 9232 185 462..

'ARGAPHOTO' LAMPS

These lamps, available with (BM) or without (B) internal reflector, are an invaluable aid both for professionals and advanced amateurs.
(for 3200 K film material)



3

'ARGAPHOTO' B

Type	Wattage W	Voltage V	Luminous flux lm	Average life h	Base	Dia.	Max. length	Ordering number
'Argaphoto' B PF 308	500	220 240	11 000	100	E27	88	180	9205 201 429.. 9205 201 455..
'Argaphoto' PF 210	1000	240	21 000	100	E40	130	274	9205 210 455..

'ARGAPHOTO' BM

Type	Wattage W	Voltage V	Luminous intensity in beam centre cd	Average life h	Base	Dia.	Max. length	Ordering number
'Argaphoto' PF 319	150	220	2750	100	E27	95	135	9232 191 429..
'Argaphoto' BM PF 318	500	220 240	3000	100	E27	125	177	9232 190 429.. 9232 190 455..



'PHOTOCRESCENTA' LAMPS

Enlarger lamps with a white diffusing bulb, providing even distribution of light.

DARKROOM LAMPS

Philips range of darkroom lamps meet the special requirements encountered in the processing of cine and photographic materials.

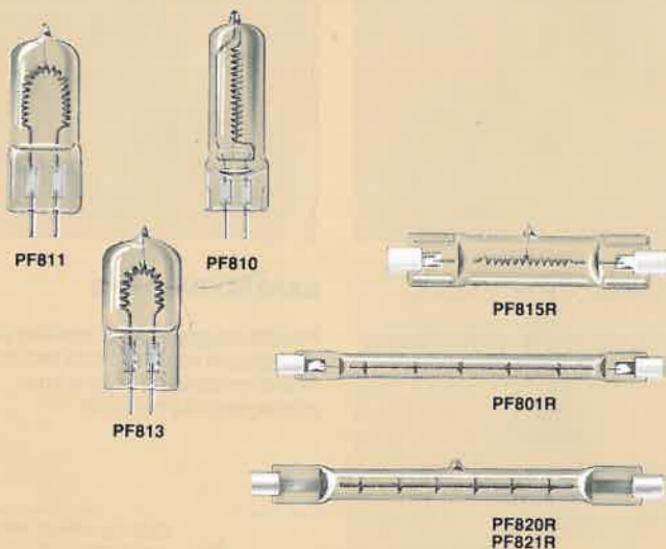
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'PHOTOCRESCENTA' LAMPS

Type	Wattage W	Voltage V	Luminous flux lm	Average life h	Colour temperature K	Dia.	Max. length	Ordering number with base
						E27	B22	
PF 603	75	120	1300					9205 311 363.. -
		220		100	2800	60	108	9205 311 429.. -
		240	1100					9205 311 455.. 9205 310 455..
		250						9205 311 462.. -
PF 605	150	120	2750					9205 321 363.. -
		220		100	2800	65	118	9205 321 429.. -
		240	2500					9205 321 455.. 9205 320 455..
		250						9205 321 462.. -
PF 607	250	120	7000					9205 326 363.. -
		220	6500	3	3000	65	118	9205 326 429.. -
		240						9205 326 455.. -
		PF 609	300	220	5000	88	180	9205 331 429..

DARKROOM LAMPS

Type	Wattage W	Voltage V	Colour	Life h	Dia.	Max. length	Ordering number with base
					E27	B22	
PF 710	15	125/130					9205 355 356.. -
		220/230	Yellow/green	1000			9205 355 432.. 9205 350 432..
		240/250					- 9205 350 457..
PF 711	15	220/230	Green	1000	60	108	9205 356 432.. -
PF 712	15	125/130					9205 357 356.. -
		220/230	Red	1000			9205 357 432.. 9205 352 432..
		240/250					- 9205 352 457..
PF 713	15	220/230	Yellow	1000			9205 358 432.. 9205 353 432..



HALOGEN PHOTO LAMPS FOR MOVIE AND VIDEO LIGHTS

Single- and double-ended lamps for 3400 K colour film for both still and cine photography.

To provide perfect floodlighting for the home moviemaker Philips has available an appropriate range of photo lamps. The high, constant light output and correct colour temperature of the lamps form the basis for taking accurately exposed dew-fresh pictures, in colour as well as in black-and-white.

Type PF821R is for video lights, the other types are for movie lights.

Type ¹⁾	Wattage W	Voltage V	Luminous flux lm	Average life h	Base	Dia.	Max. length	Ordering number
PF 810	650	220/230 240/250	21 000	15	G 6,35-20	16,5	67	9238 751 432.. 9238 751 457..
PF 813	650	220/230 240/250	21 000	15	GX 6,35-25	24	60	9238 760 432.. 9238 760 457..
PF 811	1000	220/230 240/250	34 000	15	GX 6,35-25	24	70	9238 756 432.. 9238 756 457..
PF 815 R	1000	220/230	33 500	15	R 7s-18	18	96	9238 762 432..
PF 801 R	1000	115/120 125/130						9238 627 345.. 9238 627 356..
		220/230 240/250	34 000	10	R 7s-15	10	128	9238 627 432.. 9238 627 457..
PF 820 R	1000	220/230 240/250	32 000	6	R 7s-15	12	136	9238 917 432.. 9238 917 457..
PF 821 R	500	220/230 240/250	11 000	75	R7s	12	136	8222 341 031.. 8222 341 105..

¹⁾ These types must be operated with a separate quick acting High Breaking Capacity fuse, 150 V AC (IEC Publication 127/CEE 4).

FLASH BULBS



PF1B



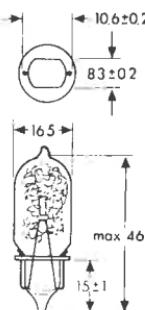
AG3B

FLASH BULBS, PF1B AND AG3B

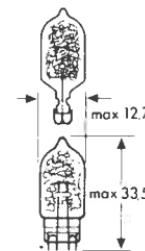
3

Single-shot flash bulbs for electric flash guns. Some cameras have built-in flash units which use the AG3B. Both types are suitable for all black-and-white and daylight colour films, including instant film.

DIMENSIONS

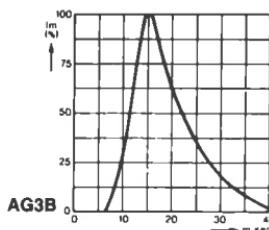
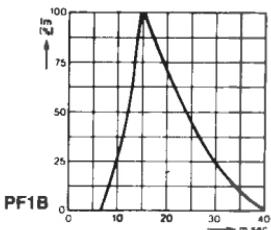


PF1B



AG3B

RELATIVE LIGHT EMISSION CURVES



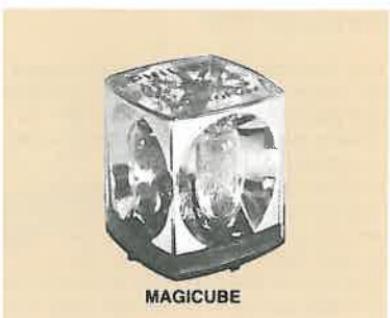
Type	Voltage V	Ordering number
PF1B	3-30	9239 501 04325
AG3B	3-30	9239 508 04325

APERTURES

X contact	1/25 - 1/30 s					
DIN ASA	15-17 25-40	18-19 50-64	20 80	21-22 100-125	23 160	24 200
1.5-2.5 m	11	16	16-22	22	22-32	32
2.5-3.5 m	8	11	11-16	16	16-22	22
3.5-5.0 m	5.6	8	8-11	11	11-16	16
5.0-6.5 m	4	5.6	5.6-8	8	8-11	11
6.5-8.5 m	2.8	4	4-5.6	5.6	5.6-8	8



PFC4

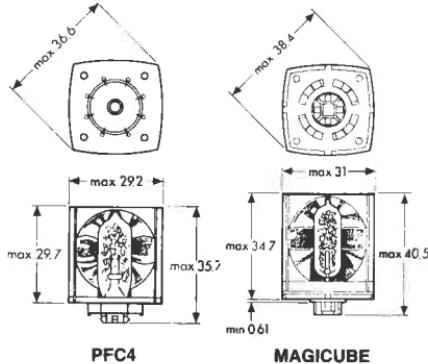


MAGICUBE

FLASH CUBES, PFC4 AND MAGICUBE

Four-shot flash cubes for pocket and 126 cassette-loading cameras. The PFC4 is battery operated, the Magicube uses the mechanical striker system. Both are suitable for all types of black-and-white and daylight colour film, including instant.

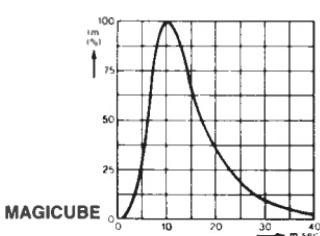
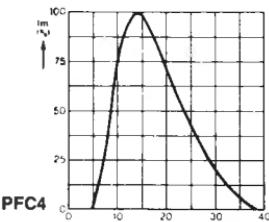
DIMENSIONS



GUIDE NUMBERS

21 for 21 DIN film, to DIN 19011.
Distance in metres. 80 for 100 ASA
film, to ISO 1230. Distance in feet.
Aperture is guide number divided by
distance.

RELATIVE LIGHT EMISSION CURVES



Type	Voltage V	Gross weight per 100	Ordering number
PFC4	3-30	1460	9239 520 04325
Magicube	-	1590	9239 515 00025

TOPFLASH PF8P

The 'topflash' is specially developed for use on pocket and instant cameras with piezo-electric ceramic cubes to provide the electrical discharge needed for ignition of the bulbs.

The unit contains 8 hard-glass flashbulbs and a blue cover divided in two groups of 4 bulbs, each bulb with its own individual reflector. The 'topflash' is shaped as a vertical array in which the top 4 bulbs will flash in a given sequence. As the 'topflash' is vertically mounted on top of the camera, the distance between the flash source and the lens opening is increased; hence, the 'topflash' acts as its own extender and reduces the occurrence of red-eye to the minimum. The 'topflash' is suitable for black-and-white and colour films, including instant film.

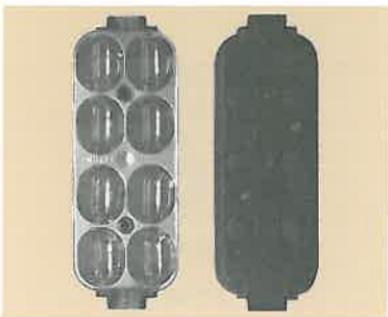
3

MULTIPLE FLASH

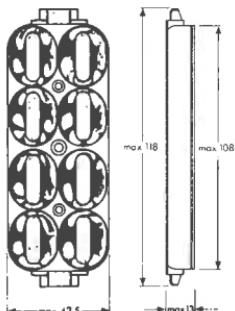
The 'topflash' features the unique possibility of simultaneous, multiple flash and is, therefore, the only non-electronic flash system that offers the possibility of adapting the light output to the flash distance. As under-exposed pictures are a frequent cause of

disappointment amongst amateur photographers, simultaneous, multiple flash is an important advantage in those situations where a single bulb proves to be entirely inadequate.

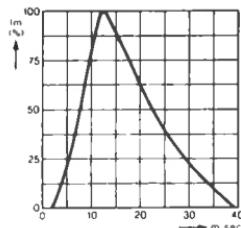
By pressing the numbers on the 'topflash', up to four bulbs can be flashed simultaneously. This will enable the photographer to take well-exposed pictures, for instance at weddings, receptions, sport events or whenever a large area or many people form the subject of a picture.



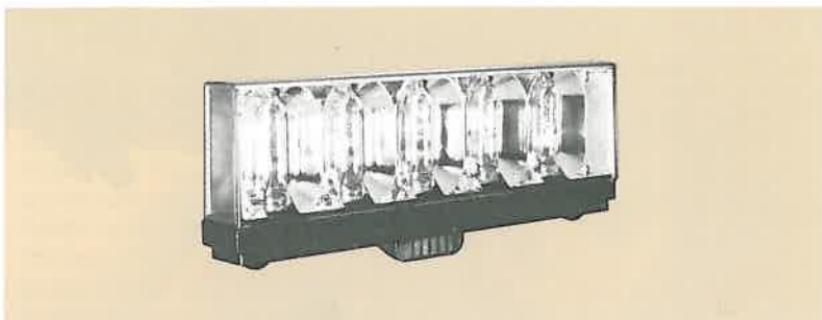
DIMENSIONS



RELATIVE LIGHT EMISSION CURVE



Type	Gross weight per 100	Ordering number
PF8P	3170	9239 525 69922



FLASHBAR

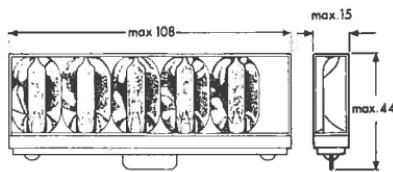
The 'flashbar' contains 10 hard-glass flash bulbs, each with its own individual reflector, divided in two groups of 5 bulbs. The two groups face in opposite directions, so that the bar has to be turned round after 5 flashes. The power needed for ignition is provided by a battery in the camera. The 'flashbar' is specially developed for use with some specific instant cameras and is, therefore, suitable for all instant films used in these cameras.

GUIDE NUMBERS

45 for 21 DIN film, to DIN 19011.
Distance in metres. 155 for 100 ASA
film, to ISO 1230. Distance in feet.
Aperture is guide number divided by
distance.

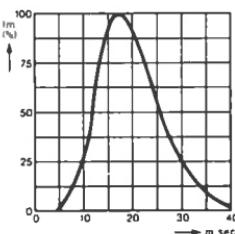
Type	Voltage V	Gross weight per 100	Ordering number
Flashbar	3-30	4700	9239 529 00016

DIMENSIONS



3

RELATIVE LIGHT EMISSION CURVE

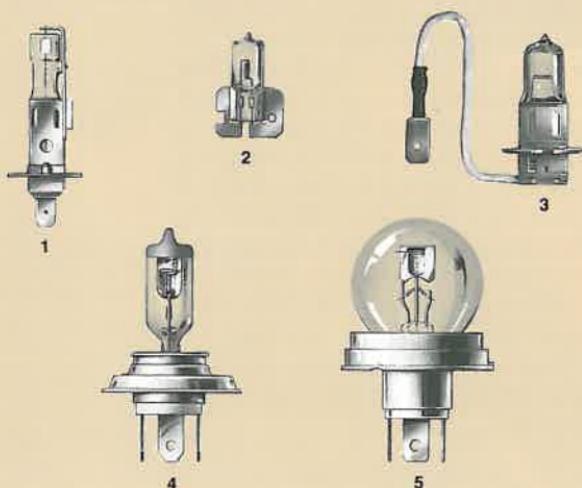




4 AUTOMOTIVE AND MINIATURE LAMPS

Traffic safety demands efficient and reliable vehicle lighting. Philips' continuous research and development has established a comprehensive range of lamps for all vehicle applications, including motorcar lamps. Available to European and American standards and in non-standard lamps – all to the same Philips quality in design and manufacture. The only miniature feature of Philips miniature lamps is their size. They are certainly small enough to meet the limited-space requirements for which they were so carefully designed. But in every other sense they are very much full-size. In efficiency, strength, reliability, life – in every aspect of performance. You can depend on them to give outstanding service wherever they are employed. And that is almost everywhere.

AUTOMOTIVE LAMPS



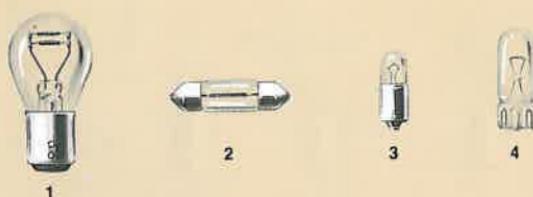
4

HEADLIGHT LAMPS

First quality European standardized lamps. Data conforms with the regulations laid down by the United Nations Economic Commission for Europe (R37).

Type ¹⁾	Voltage V	Wattage W	Base	Weight	Dia.	Max. length	Fig.	Ordering number
Halogen lamps H1/H2								
Axial-filament types								
12258 H1	12	55	P14,5s	8	—	67,5	1	9238 855 171..
13258 H1	24	70						9238 860 205..
12311 H2	12	55	X511	2,5	9	31	2	9238 854 171..
13311 H2	24	70						9238 863 205..
Halogen lamps H3								
Transversal-filament types								
12336 H3	12	55	PK22s	8	11,5	42	3	9238 857 171..
13336 H3	24	70						9238 861 205..
Halogen lamps H4								
Asymmetric types								
12342 H4	12	60/55	P43t-38	26	—	92	4	9238 866 171..
13342 H4	24	75/70	P43t-38					9238 866 205..
'Duplo'-d lamps								
12620 R2	12	45/40	P45t-41	27	41	82	5	9226 190 171..
13620 R2	24	55/50						9226 192 205..

¹⁾ For dimensions, apply to your local Philips organization.



AUXILIARY LAMPS - EUROPEAN STANDARDIZED

These lamps conform to U.N.E.C.E. regulations (R37). Only 12 V lamps are listed. 6 V and 24 V lamps can also be supplied.

DIMENSIONS

Type	Fig.	Max. length	Max. bulb dia.
12499	1	52,5	26,5
12498	-	52,5	26,5
12821/12814	-	37,5	16,5
12844	2	36	11
12961	-	26,8	10,29
12929	3	27,4	8,8
12256	4	26,8	10,29

Type	Wattage W	Base	Weight	Fig.	Ordering number
Double-filament stop/tail lamps					
12499 P25-2	21/5	BAY15d	9	1	9226 777 171..
Single-filament stop/flasher lamps					
12498 P25-1	21	BA 15s	9	-	9234 245 171..
Side, tail and parking lamps					
12821 R19/5	5	BA 15s	5,65	-	9234 047 171..
12814 R19/10	10				9234 050 171..
12844 C11	5	SV 8,5	2,6	2	9236 341 171..
12961 W10/5	5	W 2,1 x 9,5d	1,25	-	9237 220 171..
12929 T8/4	4	BA 9s	2,05	3	9234 350 171..
Interior/dashboard lamps					
12256 W10/3	3	W 2,1 x 9,5d	1,25	4	9237 212 171..



AUXILIARY LAMPS - STANDARD TYPES - EXTERIOR

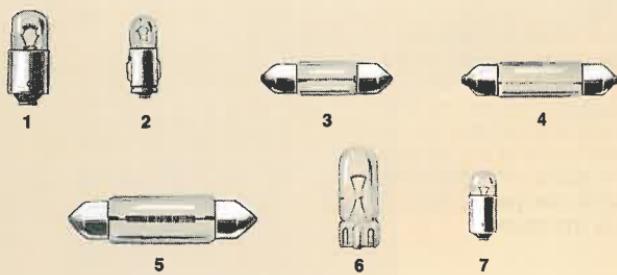
12 V lamps for exterior functions. 6 V and 24 V types can also be supplied.

4

DIMENSIONS

Type	Fig.	Max. length	Max. bulb dia.
12503	1	52,5	26,5
12421	2	46,5	26,5
12402	2	46,5	22,5
12413	3	37,5	19
12850/12807	4	42	15

Type	Wattage W	Base	Weight	Fig.	Ordering number
Double-filament stop/tail lamps					
12503	20/5	BA15d	9	1	9226 771 171..
Single-filament stop/flasher lamps					
12421	20	BA15s	8	2	9226 721 171..
12402	15	BA15d	6	-	9234 201 171..
12413	15	BA15s	5,65	3	9234 210 171..
12850	15	SV8,5	2,8	4	9236 390 171..
12807	18				9236 395 171..



AUXILIARY LAMPS - STANDARD TYPES - INTERIOR

12 V lamps for interior functions. 6 V and 24 V types can also be supplied.

4

DIMENSIONS

Type	Fig.	Max. length	Max. bulb dia.
12910	1	23,9	8,8
12829	2	20,7	6,8
12818	3	27	6,3
12849	4	32	6,3
12854	-	36	11
12864	5	41	11
12516	-	20	5
12960	6	26,8	10,29
12913	7	23,9	8,8

Type	Wattage W	Base	Weight	Fig.	Ordering number
Dashboard, interior and parking lamps					
12910	3	BA9s	2,03	1	9234 340 171..
12829	2	BA7s	1,1	2	9234 316 171..
12818	3	SV6	1,55	3	9236 319 171..
12849	3	SV6	1,8	4	9236 324 171..
12854	10	SV8,5	2,6	-	9236 382 171..
12864	5	SV8,5	2,8	5	9236 342 171..
12516	1,2	W2x4,6d	0,47	-	9237 200 171..
12960	2	W2,1x9,5d	1,25	6	9237 205 171..
12913	2	BA9s	2,0	7	9234 315 171..

TRAFFIC SIGNAL LAMPS

NORMAL SIGNAL LAMPS

Clear lamps with a reinforced construction filament suspended by nine supporting points. Therefore highly resistant to vibrations and shocks. Long and reliable life: a replacement cycle of six months, with the necessity to replace irregular failures within this period reduced to an absolute minimum.



Finish	Wattage W	Voltage V	Dia	Max. length with E27
Clear	40		60	107,5
	60		60	107,5
	75	220-240	60	107,5
	100		65	118,5

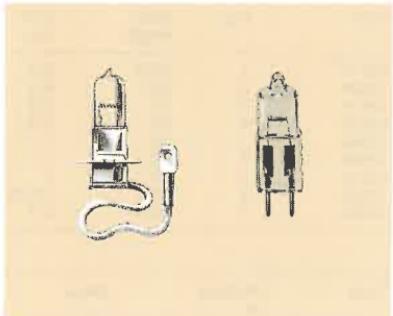
Wattage W.	Lumens	L.c.l.	Ordering number with base E27
40	240	69 ± 2	8222 340 004..
60	360	69 ± 2	8222 200 170..
60*	420	69 ± 2	8222 340 008..
75	520	69 ± 2	8222 340 002..
100	720	79 ± 3	8222 200 171..
100*	830	79 ± 3	9205 585 433..

* For installations dimmed at night.

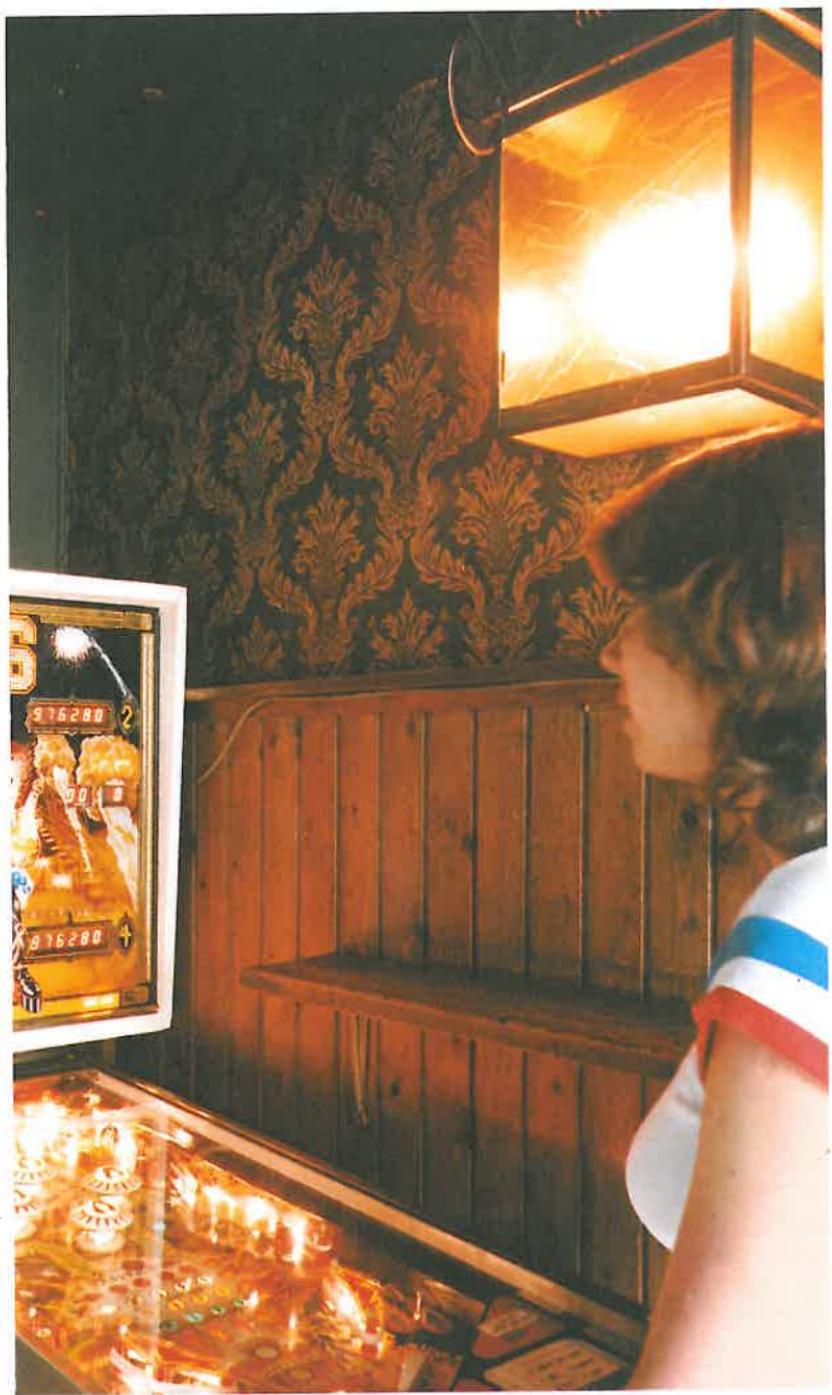
4

HALOGEN TRAFFIC SIGNAL LAMPS

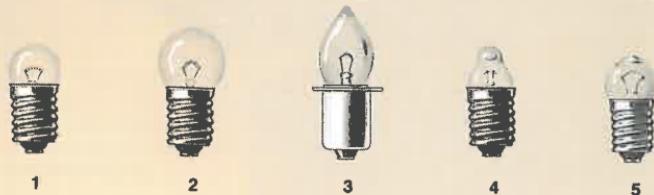
Low-voltage halogen lamps, eminently suitable for use in traffic lights because of their very small size (the lamp takes up little space in the reflector) and their high lighting intensity. Long and reliable life: a replacement cycle of 12 months with replacements within this period reduced to a minimum



Wattage W	Voltage V	Base	Luminous output lm	Life h	Ordering number
35	10	PKX22s	525	6000	8222 343 066..
35	10	BA15d	525	6000	8222 341 106..
50	10	PKX22s	820	6000	9238 891 158..
50	10	BA15d	820	6000	8222 343 081..
50	12	GY6,35	900	2000	9238 879 171..



MINIATURE LAMPS



FLASHLIGHT LAMPS, PREFOCUS FLASHLIGHT LAMPS, LENS-END LAMPS, LENSLITE LAMPS

Round bulb flashlight lamps for an even spread of light or torches which have a focusing device. Prefocus lamps for a high-intensity beam when used with a parabolic reflector. Lens-end lamps for a concentrated light beam, commonly used in pencil-type torches. Lenlite lamps, giving a wider beam.

4

FLASHLIGHT LAMPS

Type	Fig.	Voltage V	Current A	Luminous flux lm	Base	Max. length	Dia.	Ordering number
7100D	1	1,5	0,15	1,1		24	11	9234 500 013..
6890D	1	2,5	0,20	4,2		24	11	9234 510 032..
7135D	1	2,5	0,30	6,5		24	11	9234 530 032..
6891D	1	3,5	0,20	7,3		24	11	9234 510 052..
6882D	1	3,8	0,07	2,4		24	11	9234 580 058..
7138D	1	3,8	0,30	12		24	11	9234 530 058..
7139D	1	4,5	0,30	16,2		24	11	9234 530 072..
7145D	2	6,2	0,30	23		27	14	9234 535 109..

PREFOCUS FLASHLIGHT LAMPS

PR 4	3	2,3	0,27	5,9				9234 529 028..
PR 2	3	2,4	0,50	11,4				9234 540 029..
PR 6	3	2,5	0,30	6,9				9234 531 032..
PR 9	3	2,7	0,15	3				9234 501 036..
PR 3	3	3,6	0,50	21				9234 540 054..
PR 7	3	3,8	0,30	12				9234 531 056..
PR13	3	4,75	0,50	28,5				9234 540 077..
PR12	3	6,0	0,50	38,1				9234 540 101..
PR18	3	7,2	0,55	61,4				9234 545 131..
PR20	3	8,6	0,50	62,8				9234 547 154..

LENS-END LAMPS

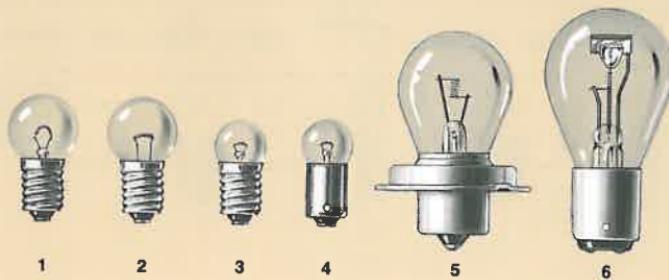
112	4	1,2	0,22	0,8				9234 518 007..
7067D	4	2,2	0,18	2,9				9234 509 026..
222	4	2,2	0,25	4,8				9234 520 026..
7068D	4	2,5	0,20	4,25	E10	23,5	9,1	9234 514 032..
7071D	4	2,5	0,30	6,5				9234 533 032..
7069D	4	3,5	0,20	6,65				9234 514 052..
7072D	4	3,7	0,30	11,3				9234 533 056..

LENSLITE LAMPS

Type	Fig.	Voltage V	Current A	Luminous flux lm	Base	Max. length	Dia.	Ordering number
6890D/34	5	2,5	0,20	4,25				9234 512 032..
7135D/34	5	2,5	0,30	6,9	E10	24	11,5	9234 532 032..
6891D/34	5	3,5	0,20	7,3				9234 512 052..
7138D/34	5	3,8	0,30	12				9234 532 058..

4





BICYCLE LAMPS AND LAMPS FOR BICYCLES WITH AUXILIARY MOTOR

A wide range of dependable lamps for bicycle, with or without auxiliary motor, for safety after dark or in bad weather conditions.

4

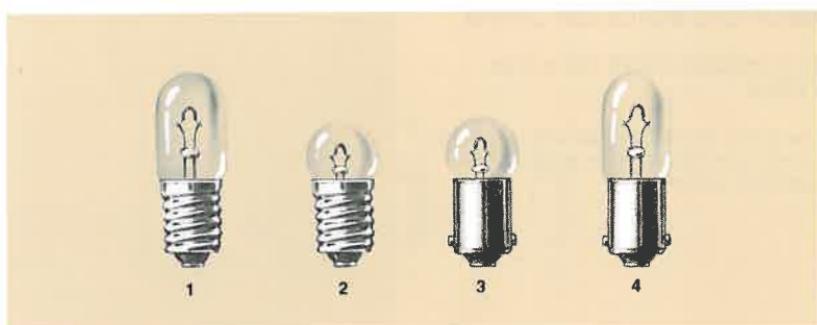
BICYCLE LAMPS

Type	Fig.	Voltage V	Current A	Luminous flux lm	Base	Max. length	Dia.	Ordering number
Head lamps								
7133D	1	6	0,25	15,75	E10	29	15	9234 420 101..
7141D	1	6	0,35	22,5	E10	29	15	9234 430 101..
7152C	2	6	0,40	24	EP10	29	15	9234 438 101..
7142D	1	6	0,45	29,7	E10	29	15	9234 440 101..
7143D	1	6	0,50	32	E10	29	15	9234 445 101..
Tail lamps								
7121D	3	6	0,05	7,2	E10	24	11	9234 406 101..
7121N	4	6	0,05	7,2	BA9s	24	11	9234 405 101..
7098D	3	6	0,10	2,1	E10	24	11	9234 411 101..

LAMPS FOR BICYCLES WITH AUXILIARY MOTOR

Type	Fig.	Voltage V	Wattage W	Luminous flux lm	Base	Max. length	Dia.	Ordering number
Head lamps								
7014D	1	6	4,8	52,8	E10	29	15	9234 474 101..
7019D	1	6	7,5	91,5	E10	29	15	9234 479 101..
7008	5	6	15	-	P26s	48	25	9226 597 101..
7030/991)	6	6	15/15	-	BAX15d	54	28	9226 040 101..
Tail lamps								
7009D	4	6	2	13	E10	24	11	9234 467 101..
7087D	3	6	3	22	E10	24	11	9234 451 101..

¹⁾ 'Duplo' lamp.



DIAL/SIGNALLING LAMPS

An extensive range of low-voltage lamps for panel lighting and indication purposes. Widely used in radio and audio equipment because of their interference-free operation, they are suitable for many other applications too.

Type	Fig.	Voltage V	Current A	Luminous flux lm	Base	Max. length	Dia.	Ordering number
8041D	1	4	0,1	1,8	E10	29	10	9235 421 063..
8023N	3	6	0,18	6,7	BA9s	24	11	9235 473 101..
7999D	2	6	0,1	2,1	E10	24	11	9235 431 101..
8073D	1	6	0,1	2,1	E10	29	10	9235 421 101..
8008D ¹⁾	1	6,3	0,15	5,9	E10	29	10	9235 454 112..
8008N ²⁾	4	6,3	0,15	5,9	BA9s	30	10	9235 452 112..
8009N ³⁾	4	6,3	0,25	12	BA9s	30	10	9235 495 112..
8024D	1	6,3	0,3	13,1	E10	29	10	9235 512 112..
8024N	4	6,3	0,3	13,1	BA9s	30	10	9235 510 112..
8045D	1	6,3	0,32	13,1	E10	29	10	9235 534 112..
7996D	1	7	0,3	14	E10	29	10	9235 516 126..
7994N	3	7,2	0,1	2,1	BA9s	24	11	9235 433 131..
8034D	1	10	0,2	9,5	E10	29	10	9235 481 158..
8003D	1	12	0,1	4,2	E10	29	10	9235 421 171..
8089D	2	12	0,1	7,7	E10	24	11	9235 431 171..
8089N	3	12	0,1	7,7	BA9s	24	11	9235 429 171..
8004D	1	15	0,2	18,6	E10	29	10	9235 477 185..
8005D	1	18	0,1	6	E10	29	10	9235 421 193..
8097D	1	20	0,1	6	E10	29	10	9235 416 197..

¹⁾ American equivalent type 40.

²⁾ American equivalent type 47.

³⁾ American equivalent type 44.

MINIATURE INDICATOR LAMPS

T1½ WEDGE-BASE W2 x 4,6d TYPES

European technical type indication T5.
Lamp specifications in accordance
with DIN 49846.



International type number	Voltage V	Current mA	Wattage W	Average luminous flux lm	Rated average life h	Max. length	Max. dia.	Ordering number
6522	6	30	—	0,45	1000			9237 260 101..
6521	6	—	1	6	1000			9237 237 101..
6223	7	—	1	5,5	1000			9237 235 126..
12522	12	30	—	0,9	1000	20	5	9237 260 171..
12521	12	—	1	4	1000			9237 237 171..
13522	24	30	—	2	1000			9237 260 205..
13521	24	—	1	3,85	1000			9237 237 205..

4

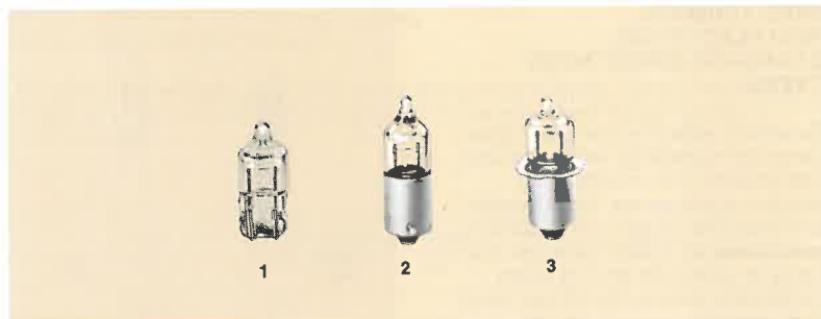


MINERS' LAMPS

The miner can rely on the proper functioning of these lamps, which he needs for performing his task.

Type	Fig.	Voltage V	Current A	Luminous flux lm	Base	Max. length	Dia.	Ordering number
—	1	2,4	1,0	17,5	E10	31	17,3	9235 760 029..
5951	2	3,95	0,8	29	E10	29	15	9235 742 062..
5953	2	4	0,67	27,3	E10	29	15	9235 725 063..
5966	1 ¹⁾	4	0,7	25,8	E10	31	17,3	9235 730 063..
5954	2	4	0,8	33	E10	29	15	9235 741 063..
5955	1	4	0,8	35,3	E10	31	17,3	9235 740 063..
5956	2	4	1,0	44,6	E10	29	15	9235 761 063..
5957	3	4	2,0	96	BA15d	42	19	9228 130 063..
5964	4	4	0,46	12,2	E10	24	11	9235 709 063..

¹⁾ L.c.l. 23,5 ± 0,5



MINIATURE HALOGEN LAMPS

Hardglass miniature halogen lamps, available in three different types of fitting:

- prefocus wedge base: W4 x 9d
- prefocus base: P13.5s
- bayonet fitting: BA9s/14
- HM types,
- HMP types,
- HMB types.

4

Type	Fig.	Voltage V	Wattage W	Average luminous flux lm	Rated average life h	Max. length	Max. dia.	Ordering number
HM 01	1	13,5	6	96	300	25	10	8222 206 845..
HM 02	1	6	3	57	20	25	10	8222 206 952..
HM 03	1	6	4	76	50	25	10	8222 206 953..
HM 04	1	6	4	56	300	25	10	8222 206 954..
HM 06	1	12	20	320	2000	26	10	8222 206 956..
HM 08	1	6	2,4	38	100	25	10	8222 206 987..
HMP 09	3	4	4	54	300	31	10	8222 206 709..
HMB 12	2	6	15	240	2000	32	10	8222 206 707..
HMB 13	2	6	3	50	100	31	10	8222 206 846..

GLOW LAMPS

WIRE-TERMINAL ROD-ELECTRODE, STANDARD-BRIGHTNESS TYPES

Extremely effective miniature glow lamps for signalling, indication and stabilization. For innumerable wired-in applications. Very reliable minimum life (under correct circuit conditions) of 25000 hours (on the basis of useful life ending when brightness reduced by 30 per cent). Can also be supplied with standard or non-standard series resistor. GL 10 type gives quadrupled light output A.C. or D.C. operation.



4

Type	Supply voltage V A.C. or D.C. ¹⁾	Recommended series resistor kΩ	Design current mA	Max. length ²⁾	Max. dia.	Ordering number
GL 2	110-130 220-250 380	56 150 330	1,1	10	4	9282 212 000..
GL 4	110-130 220-250 380	180 470 1000	0,35	12,8	6	9282 342 000..
GL 6	110-130 220-250 380	120 330 680	0,5	16	6	9282 201 000..
GL 8	110-130 220-250 380	120 330 680	0,5	19	6	9282 203 000..
GL 10	110-130 220-250 380	39 100 220	1,7	12,8	6	8222 206 338..

¹⁾ Starting voltage ≤ 65 V A.C., ≤ 90 V D.C.

²⁾ Excluding leads, lead length min. 25 mm.

WIRE-TERMINAL ROD-ELECTRODE, HIGH-BRIGHTNESS TYPES

The same dimensions and long life as the standard types, greatly increased brightness. Also available with standard or non-standard series resistors.
A.C. operation.

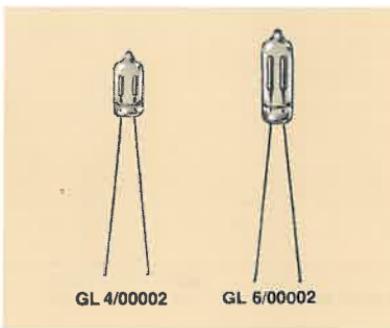
Type	Supply voltage V A.C. ¹⁾	Recommended series resistor k Ω	Design current mA	Max. length ²⁾	Max. dia.	Ordering number
GL 3	110-130	68	0,85	10	4	9282 267 000..
	220-230	180				
	380	390				
GL 5	110-130	56	1,05	12,8	6	9282 200 000..
	220-230	150				
	380	330				
GL 7	110-130	39	1,6	16	6	9282 202 000..
	220-230	100				
	380	220				
GL 9	110-130	27	2,4	19	6	9282 204 000..
	220-230	68				
	380	150				
GL 11	110-130	39	1,6	12,8	6	8222 206 339..
	220-230	100				
	380	220				

¹⁾ Starting voltage < 100 V.

²⁾ Excluding leads. lead length min. 25 mm.

WIRE-TERMINAL ROD-ELECTRODE, SUPER LONG-LIFE TYPES

Wire-terminal rod electrode glow lamps with a life of 80000 hours. Light output over 70 per cent of that of standard wire-ended rod electrode types. Can also be supplied with standard or non-standard series resistor.



Type	Supply voltage A.C. V	Recommended series resistor k Ω	Design current mA	Max. length	Max. dia.	Ordering number
GL 4/00002	110-130	56	1,15	12,8	6	8222 206 591..
	220-250	150				
	380	330				
GL 6/00002	110-130	39	1,7	16	6	9282 244 000..
	220-250	100				
	380	220				

WIRE-TERMINAL GREEN FLUORESCENT STANDARD- BRIGHTNESS TYPES

Green fluorescent miniature signal or indicator glow lamps. Minimum life 25000 hours. Can also be supplied with standard or non-standard series resistors. A.C. operation.



GL 4/01000



GL 6/01000

4

Type	Mains/Supply voltage V.A.C.	Design current mA	Min. life 1000 h	Recommended series resistor kΩ	Max. length	Max. dia.	Ordering number
GL 4/01000	110-130 220-230 380	1,05	25	56 150 330	12,8	6	9282 247 117..
GL 6/01000	110-130 220-230 380	1,6	25	39 100 220	12.8	6	9282 309 117..

BASE-FITTING RING-ELECTRODE TYPES

With built-in series resistor. Screw or bayonet fitting glow lamps for A.C. or 100-130 V D.C. operation. Available in a wide variety of sizes.



Type	Supply voltage V ¹⁾	Design current mA	Base	Max. length	Max. dia.	Ordering number
GR 25 D/1	110-130 ²⁾	1	EX10			9282 720 000..
GR 25 N/1			BA9s			9282 725 000..
GR 25 D/2	220-230 ³⁾	2	EX10			9282 721 000..
GR 25 N/2			BA9s			9282 726 000..
GR 25 D/3	380 ³⁾	0,8	EX10			9282 722 000..
GR 25 N/3			BA9s			9282 727 000..
GR 29 D/2	220-230 ³⁾	2	EX10			9282 751 000..
GR 29 N/2			BA9s			9282 756 000..
GR 29 D/3	380 ³⁾	0,8	EX10			9282 752 000..
GR 31 M/2	220-230 ³⁾	2,5	E14			9282 816 000..
GR 31 M/3	380 ³⁾	0,9	E14	30	14	9282 817 000..
GR 35 M/1	110-130 ²⁾	2	E14	54		9282 950 000..
GR 35 M/2			E14	54		9282 951 000..
GR 35 W/2	220-230 ³⁾	3,5	B15d	52	16	9282 956 000..
GR 35 M/3	380 ³⁾	2	E14	54		9282 952 000..

¹⁾ Min. starting voltage 110-130 V D.C.: 70 V; 110-130 V A.C.: 100 V; ≥ 220 V: 200 V.

²⁾ A.C. or D.C. ³⁾ A.C. only.

CHRISTMAS TREE AND ILLUMINATION LAMPS



Small, low power consumption series-burning lamps in a variety of shapes and colours. Short-circuiting device to prevent total failure when one lamp burns out. For applications including decorative designs, special effects in homes, theatres, restaurants, etc.

4

Shape	Fig.	Colour	Voltage V	Wattage or current	Base	Max. length	Max. dia.	Ordering number
Dwarf-candle ¹⁾	1-2	clear	7	1.5W	E10	47	14,1	9235 965 126..
		clear	12	3W	E10	47	14,1	9235 800 171..
	1-2	clear					9236 010 183..	
		blue					9236 011 183..	
		yellow	14	3W	E10	47	14,1	9236 012 183..
		green					9236 013 183..	
	1-2	red					9236 014 183..	
		clear					9236 010 203..	
	1-2	blue					9236 011 203..	
		yellow	23	3W	E10	47	14,1	9236 012 203..
		green					9236 013 203..	
		red					9236 014 203..	
	1-2	clear	34	0,1A	E10	47	14,1	9235 950 229..

¹⁾ Ribbed bulb.

Shape	Fig.	Colour	Voltage V	Wattage W	Base	Max. length	Max. dia.	Ordering number
Candle ¹⁾	3-4	clear					9215 050 183..	
		blue					9216 260 183..	
		yellow	14	4	E14	98,5	36	9216 261 183..
		green					9216 262 183..	
		red					9216 263 183..	

¹⁾ For outdoor illumination sets.







5 'TL' FLUORESCENT LAMPS AND ACCESSIONRIES

The development of efficient light sources has always had a high priority in Philips' research efforts. With the increased need for energy-effective lighting, these efforts have emphasized the goal of maintaining the benefits of good lighting and using as little energy as ever possible.

Fluorescent lighting is economical, efficient, pleasing. Its effect is now so natural that it can scarcely be termed 'artificial'. Philips 'TL' lamp range is also so extensive in terms of types, colours, sizes and shapes that it covers an infinite number of lighting needs.

The selection includes: Preheat, switch-start lamps. Miniature lamps. Coloured lamps. U-shaped lamps. Circular lamps.

Rapid-start lamps with adjustable light output and ignition even at low temperatures. Very high output lamps unaffected by high humidity. Instant-start lamps. Lamps for luminaires used in explosive atmospheres. And the 80 and 90 series which set new standards in fluorescent lighting, combining high light output AND excellent colour rendering, available in 'TL'D and 'TL' versions.

Finally, the new generation of highly efficient lamps operated on high-frequency gear should be mentioned.

In Philips' factories the production process and quality control are generally considered to be the most rigid in the world of lamp manufacture. Philips lamps are the result of the very latest research and technology.

'TL' FLUORESCENT LAMPS

'TL' COLOUR CHOICE GUIDE

The 'TL' fluorescent lamp range offers a very wide choice of light colours, with the unique advantage that lighting characteristics can be closely matched to particular applications. In the following pages, an extensive range of applications is listed, with recommended 'TL' light colours in each case. In many instances, several colours are indicated; the ultimate choice will depend upon the specific requirement. True colour rendering? Warm, relaxing light? High light output? Compatibility with daylight, or with other forms of artificial light? Careful choice ensures the best results.

'TL' light colours fall into three main categories, determined by colour temperature.

Warm colours /82, /83, /93, /29

Colour temperatures around 3000 K. Essentially comfortable and relaxing light colours, generally blend well with incandescent light, but not with daylight.

White colours /84,/94,/33,/25,/37

Colour temperatures around 4000 K. Bright white light colours which combine well with daylight. Generally for installations which supplement daylight or where a cool or businesslike atmosphere is required.

Daylight colours /86,/54,/47,/57

Colour temperatures around 6500 K. Very similar to daylight. Generally used for colour comparison or to create particularly cool lighting effects in warm areas.

The new generation 'TL'D 80 and 90 series offer superb colour appearance, with a high colour rendering index and a higher light output than any other light colour. In the case of the other light colours, the choice depends on the relative importance of colour rendering and light output, the one being obtained at the expense of the other.

'TL' LIGHT COLOUR CHARACTERISTICS

Colour	Efficacy lm/W ¹⁾	Colour Rendering Index	Colour temperature (approx.) K	Features
/82	90	85	2700	Best mixer with incandescent light
/83	96	85	3000	Superb quality warm light
/93	65	93	3000	Superb colour rendering and high efficacy
/29	86	52	2900	For outdoor lighting
/84	96	85	4000	Superb quality white light
/94	65	93	3800	Superb colour rendering and high efficacy
/33	86	66	4100	High economy, reasonable colour
/25	69	75	4000	Well balanced colour and light output
/37	45	96	4100	Superb colour
/47	46	98	5000	Ideal for colour slides and prints ²⁾
/86	90	85	6500	Superb quality daylight colour
/54	69	77	6200	High output for a daylight tube
/57	47	94	7500	For colour appraisal and warm areas

¹⁾ Based on 'TL'D 36 W lamps, but colours /37, /47 and /57 based on 'TL' 40 W lamps.

²⁾ Meets international recommendations.

	STANDARD			/80			DE LUXE		SPECIAL DE LUXE			
APPLICATION	29	33	54	82	83	84	86	93	94	37	47	57
Catering establishments												
Entrance halls, corridors, staircases, reception desks				•	•	•		•	•			
Bedrooms				•								
Dining rooms				•	•			•				
Conference halls				•	•	•		•	•			
Kitchens				•	•	•		•	•			
Restaurants				•	•			•				
Cafeterias					•	•						
Ice-cream parlours				•	•							
Ballrooms, bars				•								
Educational institutes												
Lecture halls					•	•						
Laboratories						•			•			
Workshops	•					•						
Assembly-halls, auditoriums					•	•						
Canteens				•	•			•				
Studies, libraries					•	•						
Staff rooms				•	•							
Classrooms						•						
Corridors				•	•							
Kindergarten classrooms				•	•							
Graphic arts rooms						•	•	•	•	•	•	•
Handicraft rooms					•	•						
Industry - general												
Warehouses	•											
Offices, drawing offices						•						
Canteens				•	•			•				
Laboratories						•			•			

Note: In warm areas colour /54 is often used instead of colour /33.

	STANDARD			/80			DE LUXE		SPECIAL DE LUXE			
APPLICATION	29	33	54	82	83	84	86	93	94	37	47	57
Washrooms		•				•						
Engine rooms		•				•						
Industry - specific												
Electrotechnical factories		•				•						
Gas, water and electricity works		•				•						
Textiles - colour appraisal							•			•	•	
Chemicals - colour appraisal							•			•	•	
Leather-working		•				•						
Furniture						•						
Bakeries						•						
Abattoirs					•			•				
Confectionery						•						
Breweries, distilleries						•						
Tobacco						•						
Food						•						
Printing						•	•			•	•	•
Bookbinding						•				•		
Newsprint		•										
Graphics - colour appraisal							•			•	•	
Ceramics						•						
Wood-working		•										
Medical institutions												
Wards			•	•	•	•		•		•	•	
Examination/treatment rooms					•			•		•	•	
Delivery rooms					•			•		•	•	
Operating theatres					•			•		•	•	
Recovery rooms					•			•		•	•	

Note: In warm areas colour /54 is often used instead of colour /33.

	STANDARD			/80			DE LUXE		SPECIAL DE LUXE			
APPLICATION	29	33	54	82	83	84	86	93	94	37	47	57
Laboratories							•		•		•	
Kitchens						•	•					
Recreation rooms, dining rooms					•							
Corridors, waiting rooms							•					
X-ray rooms, irradiation rooms							•					
Revalidation rooms				•	•	•						
Ocular examination and treatment rooms							•					
Dental surgeries							•	•		•	•	
Office buildings												
Offices, drawing offices							•		•			
Directors offices, conference rooms						•	•		•	•		
Typing pools						•	•					
Telephone exchanges						•	•					
Entrance halls, corridors, reception halls and desks						•	•		•	•		
Archives	•						•					
Canteens				•	•	•			•	•		
Computer rooms							•					
Public service buildings												
Entrance halls, reception desks, counters							•					
Interview rooms						•	•					
Council chambers, law-courts				•	•	•			•	•		
Registry offices						•	•					
Shops												
Antique				•	•	•			•	•		
Pharmacy, drugs					•	•			•	•		
Automats					•	•						

Note: In warm areas colour /54 is often used instead of colour /33.

	STANDARD			/80				DE LUXE		SPECIAL DE LUXE		
APPLICATION	29	33	54	82	83	84	86	93	94	37	47	57
Confectioners, delicatessen				•	•	•		•	•			
Florists				•	•	•			•			
Books and stationery				•	•	•		•	•			
Perfumery				•	•	•		•	•			
Electrical, radio and T.V.				•	•	•						
Photographic equipment				•	•	•		•	•			
Grocery and greengrocery				•	•	•		•	•			
Glass and porcelain				•	•	•		•	•			
Jewellery and watches				•	•	•		•	•			
Domestic appliances				•	•	•		•	•			
Hairdressers, beauty saloons				•	•			•				
Art dealers				•	•	•		•	•	•		
Leatherware and shoes				•	•	•		•	•			
Furniture				•	•			•				
Music dealers				•	•	•		•	•			
Travel agencies				•	•	•		•	•			
Tobacconists				•	•	•		•	•			
Bicycles				•	•							
Sanitary equipment					•			•	•			
Butchers				•	•			•				
Sports equipment				•	•	•		•	•			
Toys				•	•	•		•	•			
Clothing				•	•	•		•	•			
Paints and wallpapers					•			•		•		
Iron-mongery					•				•			
Dairies, fishmongers					•				•			
Furriers				•	•	•	•	•	•		•	
Supermarkets				•	•			•	•			
Department stores				•	•			•	•			

Note: In warm areas colour /54 is often used instead of colour /33.

	STANDARD			/80			DE LUXE		SPECIAL DELUXE			
APPLICATION	29	33	54	82	83	84	86	93	94	37	47	57
Discount houses, cash and carry stores		•				•						
Launderettes				•	•	•						
Sports												
Gymnasiums, sports halls		•			•	•						
Ice hockey rinks		•			•	•						
Bowling alleys				•	•							
Billiards rooms				•				•				
Covered swimming pools					•	•						
Multi-purpose halls					•	•						
Transport												
Garages		•										
Bicycle parking lots		•										
Dispatch sheds		•										
Transport depots		•										
Hangars		•										
Booking offices					•	•						
Waiting rooms					•	•						
Refreshment rooms				•	•							
Various												
Covered cattle-markets		•										
Auction rooms						•						
Covered markets		•				•						
Trade exhibition halls					•	•		•	•			
Showrooms					•	•		•	•			
Zoo houses						•	•		•			
Aquariums		•			•	•	•		•	•		
Museums									•		•	
Libraries						•	•					
Homes					•			•				
Outdoor lighting	•	•										

Note: In warm areas colour /54 is often used instead of colour /33.

'TL'D/80 HF ELECTRONIC LAMPS

The new generation of highly efficient 'TL'D lamps, to be operated specifically on Philips HF ELECTRONIC BHF gear for A.C. mains operation.

Preheat, G13 caps.

Available in the colours /83 and /84, featuring:

- a luminous efficacy of up to 104 lm/W,
- good colour rendering properties,
- perfect starting (instant, preheat),
- wide range of ambient temperatures: from -10°C up to +50°C
- no stroboscopic effect,
- suitable for light regulation/dimming applications.

For all those commercial and industrial applications, initial and conversion, where a high-quality, comfortable and energy-effective lighting system is required.



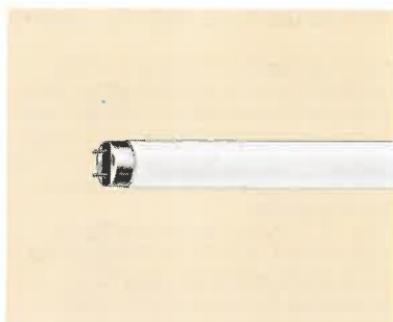
Type ¹⁾	Length	Weight	Colour	Nominal luminous flux ²⁾ lm	Ordering number
'TL'D 16W HF	600	97	/83 /84	1350 1350	8222 342 015.. 8222 342 016..
'TL'D 32W HF	1200	186	/83 /84	3200 3200	8222 342 017.. 8222 342 018..
'TL'D 50W HF	1500	229	/83 /84	5200 5200	8222 342 019.. 8222 342 020..

¹⁾ Specifically for operation on PHILIPS HF ELECTRONIC gear, BHF range.

²⁾ After 100 burning hours.

/93 AND /94 RANGE 'TL'D LAMPS

A new range of energy saving lamps in the 'TL'D 26 mm dia. concept featuring a superb colour rendering for switch-start operation on A.C. mains. Preheat, G13 caps. Specifically for those applications where colour rendering really matters, e.g. textile industry and outlets, paint industry, graphic art rooms, hospitals (operating-rooms). The more efficient solution for the 38 mm dia.'de Luxe' types, now becoming obsolete. Colour temperatures: /93: 3000K, /94: 3800K, colour rendering (CRI) 93 with a high red colour content (CRI R₉).



5

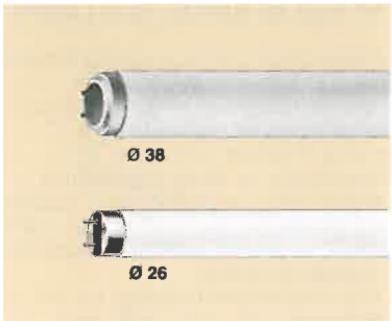
Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'D 18W	600	97	/93 /94	1000 1000	8222 342 021.. 8222 342 022..
'TL'D 36W	1200	186	/93 /94	2350 2350	8222 342 023.. 8222 342 024..
'TL'D 58W	1500	229	/93 /94	3750 3750	8222 342 025.. 8222 342 026..

¹⁾ After 100 burning hours.

/80 RANGE 'TL'D AND 'TL' LAMPS

High light output and good colour rendering in one and the same lamp. This ideal combination makes these lamps extremely suitable for energy-effective lighting schemes and for fully universal application in the indoor lighting sector.

The 'TL'D types are available for switch-start, the 'TL'M RS types for rapid-start, whilst the 'TL'RS is applicable for rapid-start (ANSI) and switch-start operation. The 'TL'D 18, 36 and 58 W versions, operating on 20, 40 and 65 W circuits, provide an immediate saving of energy.



Type	Length	Dia.	Weight	Colour ¹)	Nominal luminous flux²) lm	Ordering number
'TL'D 18W	600	26	97	/82⁴)	1300	9280 480 082..
				/83	1450	9280 480 083..
				/84	1450	9280 480 084..
				/86	1300	9280 480 086..
'TL'D 36W	1200	26	186	/82⁴)	3250	9280 485 082..
				/83	3450	9280 485 083..
				/84	3450	9280 485 084..
				/86	3250	9280 485 086..
'TL'D 58W	1500	26	229	/82⁴)	5200	9280 490 082..
				/83	5400	9280 490 083..
				/84	5400	9280 490 084..
				/86	5200	9280 490 086..
'TL'D 23W	970	26	161	/83	2050	9280 455 083..
				/84	2050	9280 455 084..
'TL'D 36W-1	970	26	161	/83	3000	9280 456 083..
				/84	3000	9280 456 084..
'TL'D 38W	1050	26	162	/83	3200	9280 457 083..
				/84	3200	9280 457 084..
'TL'M 20W RS	600	38	156	/82⁴)	1200	9280 300 082..
				/83	1250	9280 300 083..
				/84	1250	9280 300 084..
'TL'M 40W RS	1200	38	292	/82⁴)	3000	9280 305 082..
				/83	3200	9280 305 083..
				/84	3200	9280 305 084..
'TL' 40W RS³)	1200	38	292	/83	3250	9280 113 083..
				/84	3250	9280 113 084..
'TL'M 65W RS	1500	38	360	/82⁴)	4900	9280 310 082..
				/83	5200	9280 310 083..
				/84	5200	9280 310 084..

¹) For 'TL'D lamps in standard colours, see page 161.

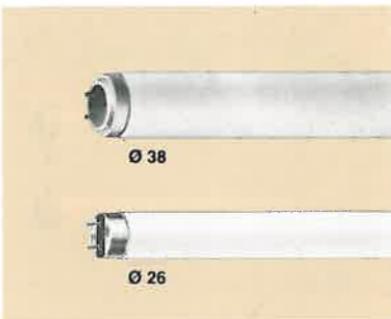
²) After 100 burning hours.

³) For RS lamps in standard colours, see page 165.

⁴) For details, see page 184 (TL*).

SWITCH-START 'TL'D AND 'TL' LAMPS

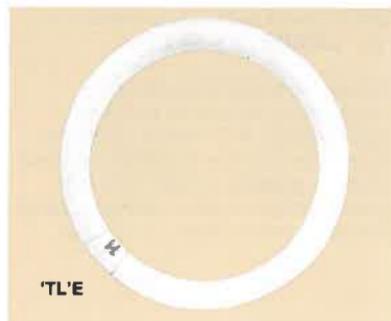
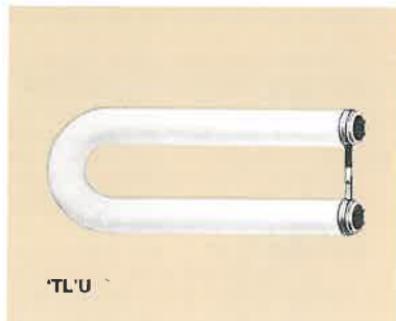
Economical, dependable and long-lasting, in a wide range of applications. A.C. mains operated fluorescent lamps. Extensive choice of white shades of light; and red, green, yellow or blue coloured lamps. Preheat, switch-start. G 13 caps.



Type	Length	Dia.	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'D 18W	600	26	97	Natural/25 Warm white/29 White/33 Cool daylight/54	1050 1150 1150 1050	9280 480 025.. 9280 480 029.. 9280 480 033.. 9280 480 054..
'TL'D 36W	1200	26	186	Natural/25 Warm white/29 White/33 Cool daylight/54	2500 3000 3000 2500	9280 485 025.. 9280 485 029.. 9280 485 033.. 9280 485 054..
'TL'D 58W	1500	26	229	Natural/25 Warm white/29 White/33 Cool daylight/54	4000 4800 4800 4000	9280 490 025.. 9280 490 029.. 9280 490 033.. 9280 490 054..
'TL'D 23W	970	26	161	White/33	1900	9280 455 033..
'TL'D 36W-1	970	26	161	White/33	2800	9280 456 033..
'TL'D 38W ²⁾	1050	26	162	White/33	3100	9280 457 033..
				White special de luxe/37 White 5000 K/47	700 710	9280 035 037.. 9280 035 047..
'TL' 20W	600	38	156	Red/15 Yellow/16 Green/17 Blue/18	60 900 1450 250	9280 035 015.. 9280 035 016.. 9280 035 017.. 9280 035 018..
				White special de luxe/37 White 5000 K/47 Daylight 7400 K/57	1820 1850 1800	9280 060 037.. 9280 060 047.. 9280 060 057..
'TL' 40W	1200	38	292	Red/15 Yellow/16 Green/17 Blue/18	160 2300 3800 650	9280 060 015.. 9280 060 016.. 9280 060 017.. 9280 060 018..

¹⁾ After 100 burning hours.

²⁾ For 3M modular building units.



U-SHAPED 'TL'U AND CIRCULAR 'TL'E LAMPS

Space-saving, stylish design, fewer connections, non-directional light. U-shaped 'TL'U and circular 'TL'E lamps offer all these advantages to widen the scope of fluorescent lighting. Ornamental and effective, both indoors and out. Minimum ignition temperature 5°C.

5

The compact 'TL'U, with its connector caps, in juxtaposition supplies more light than two single lamps occupying the same space, and halves the number of connections too. Elegant in contemporary ceiling luminaires, functional in environmental lighting luminaires, road and advertising signs.

A.C. mains operated. Preheat, switch-start. G 13 caps.
Lamp diameter 38 mm.

Type	Length (folded)	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'U 20 W	300	340	Natural/25 Warm white/29 White/33	950 1150 1150	9280 387 025.. 9280 387 029.. 9280 387 033..
'TL'U 40 W	600	680	Natural/25 Warm white/29 White/33	2400 2700 2700	9280 388 025.. 9280 388 029.. 9280 388 033..
'TL'U 65 W	750	810	Natural/25 Warm white/29 White/33	3900 4500 4500	9280 389 025.. 9280 389 029.. 9280 389 033..

¹⁾ After 100 burning hours.

The 'TL'E is an attractively styled, exceptionally pleasing indoor light source. Outdoors, too, for residential area lighting. A.C. mains operated. Preheat, switch-start. Single connection with 4-pin G 10q base.

Type	Lamp dia.	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'E 22 W ²⁾	210	183	Warm white/29 White/33 Cool daylight/54	1250 1250 1050	9280 260 029.. 9280 260 033.. 9280 260 054..
'TL'E 32 W ³⁾	305	250	Natural/25 Warm white/29 White/33 Cool daylight/54	1800 2100 2050 1750	9280 265 025.. 9280 265 029.. 9280 265 033.. 9280 265 054..
'TL'E 40 W ³⁾	406	333	Natural/25 Warm white/29 White/33 Cool daylight/54	2500 2950 2900 2500	9280 270 025.. 9280 270 029.. 9280 270 033.. 9280 270 054..
'TL'EK 60 W ³⁾	406	333	Natural/25 Warm white/29	3050 3900	9280 277 025.. 9280 277 029..

1) After 100 burning hours.

2) Tube diameter 28 mm.

3) Tube diameter 32 mm.

'TL' MINIATURE AND 'TL'D LAMPS

Small dimensions, low power consumption and low heat radiation endow 'TL' miniature lamps with extensive scope for small-scale lighting. A.C. mains operation – or D.C. with transistor ballasts. Preheat, switch-start.

G 5 caps. Diameter 15 mm.

The slender 'TL'D lamps are readily embodied in furniture or interior decoration schemes. They blend unobtrusively with commercial or domestic environments. A.C. mains operation. Preheat, switch-start.

G 13 caps. Diameter 26 mm.



Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL' 4 W	150	16,3	W/warm white/29 White/33	140 140	9280 000 029.. 9280 000 033..
'TL' 6 W	225	22	Warm white/29 White/33	280 280	9280 005 029.. 9280 005 033..
			Warm white/29 White/33	410 410	9280 010 029.. 9280 010 033..
'TL' 8 W	300	29	/82 /83 /84	450 450 450	9280 010 082.. 9280 010 083.. 9280 010 084..
			Warm white/29 White/33	930 930	9280 015 029.. 9280 015 033..
'TL' 13 W	525	45	/82 /83 /84	1000 1000 1000	9280 015 082.. 9280 015 083.. 9280 015 084..
			Warm white/29 White/33	1000 960 830	9280 245 029.. 9280 245 033.. 9280 245 054..
'TL'D 15 W	450	76	/82 /83 /84	1000 1000 1000	9280 245 082.. 9280 245 083.. 9280 245 084..
			Warm white/29 White/33	2350 2300	9280 254 029.. 9280 254 033..
'TL'D 30 W	900	145	Cool daylight/54	2000	9280 254 054..
			/82 /83 /84	2300 2400 2400	9280 254 082.. 9280 254 083.. 9280 254 084..

¹⁾ After 100 burning hours.

RAPID-START 'TL' RS LAMPS

Rapid-start, general-purpose lamps in a wide range of white shades, at ratings up to 110 W.

For starterless circuits with rapid-start ballasts.

'TL' RS lamps up to 65 W may also be used in switch-start circuits.

The 'TL' 40 W RS is specifically applicable for ANSI-circuit operation. Moisture-repellent silicone coating. A.C. mains operated. Preheat. Up to 85 W: G13 bipin caps, 110 W: R17d recessed double-contact caps.

Diameter: 38 mm.

Not for temperatures below 10°C, in which case 'TL' M RS lamps should be used. Only switch-start operated lamps up to 65 W may be used down to +5°C.



BIPIN CAP (G13)



RECESSED DOUBLE-CONTACT CAP (R17d)

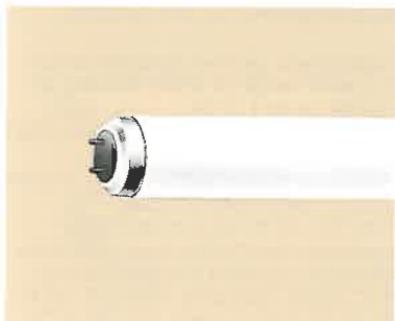
Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL' 20 W RS	600	156	Warm white/29	1150	9280 100 029..
			White/33	1150	9280 100 033..
			Cool daylight/54	1050	9280 100 054..
'TL' 40 W RS	1200	292	Warm white/29	3000	9280 113 029..
			White/33	3000	9280 113 033..
			Cool daylight/54	2500	9280 113 054..
			White 5000 K/47	1850	9280 113 047..
			Daylight 7400 K/57	1850	9280 113 057..
'TL' 65 W RS	1500	360	Warm white/29	4800	9280 114 029..
			White/33	4800	9280 114 033..
			Cool daylight/54	4000	9280 114 054..
			White 5000 K/47	2950	9280 114 047..
			Daylight 7400 K/57	2850	9280 114 057..
'TL' 85 W RS	2400	610	White/33	7300	9280 470 033..
'TL' 110 W RS ²⁾	2400	610	White/33	9000	9280 125 033..

¹⁾ After 100 burning hours.

²⁾ R17d caps.

RAPID-START 'TL'M RS LAMPS

Low-temperature ignition, adjustable light output and A.C. or D.C. operation give these rapid-start lamps a very wide application field. External ignition strip and water-repellent silicone coating ensure reliable starting without earth connection, in moist atmospheres and down to -15°C. Preheat, starterless ignition. G 13 caps. Diameter 38 mm.



Type	Length	Weight	Colour ¹⁾	Nominal luminous flux ²⁾ lm	Ordering number
'TL'M 20 W RS	600	156	Warm white/29	1200	9280 300 029..
			White/33	1200	9280 300 033..
			Cool daylight/54	1000	9280 300 054..
'TL'M 40 W RS	1200	292	Warm white/29	2900	9280 305 029..
			White/33	2850	9280 305 033..
			Cool daylight/54	2480	9280 305 054..
'TL'M 65 W RS	1500	360	Warm white/29	4800	9280 310 029..
			White/33	4750	9280 310 033..

1) For 'TL'M lamps in the colour /80 range, see page 160.

2) After 100 burning hours.

VERY-HIGH-OUTPUT 'TL'(M) RS LAMPS

5

'Cool spot' pressure-regulated rapid-start lamps. Very high (50-100 per cent increased) light output. External ignition strip and water-repellent silicone coating ensure reliable starting even without earth connection for 'TL'M RS type, in damp atmospheres and down to -18°C. Particularly suitable for high level illuminance; in high ceiling or bay locations; where the number of luminaires is restricted; in cold storage plants and other low-temperature environments. A.C. mains operation. Preheat, starterless ignition. Diameter 38 mm.



115 W and 140 W: G13 bipin caps.
215 W: R17d recessed double-contact caps.

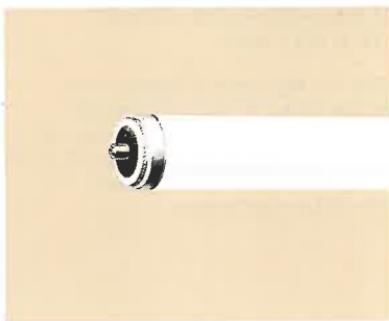
Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'M 115 W RS	1200	292	Natural/25	5500	9280 315 025..
			White/33	6850	9280 315 033..
'TL'M 140 W RS	1500	380	Natural/25	6800	9280 320 025..
			White/33	8350	9280 320 033..
'TL' 215 W RS ²⁾	2400	610	White/33	13250	9280 135 033..

1) After 100 burning hours.

2) Requires earthed metal luminaire.

SLIMLINE LAMPS

Instant-start lamps. High-voltage ignition; no preheat required. Silicone coated; reliable starting in damp atmospheres and down to -18°C. Wide choice of sizes and white shades of light. Especially suitable for industrial applications, particularly in high humidity or low temperature environments, and for tunnel lighting. Non-preheat starterless operation on A.C. mains. Single pin Fa8 caps. Diameter 38 mm.

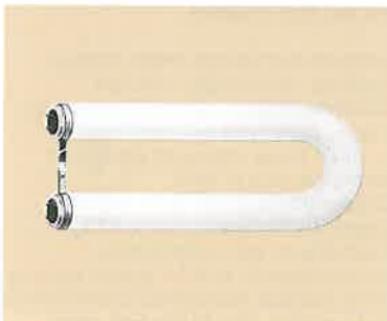


Type	Length	Weight	Colour	Power absorbed W	Nominal luminous flux ¹⁾ lm	Ordering number
S48T 12	122	292	White/33	38	2900	9280 410 033..
S72T 12	183	410	White/33	56	4200	9280 420 033..
			Cool daylight/54		3800	9280 420 054..
S96T 12	244	610	White/33	73	5600	9280 430 033..
			Cool daylight/54		5500	9280 430 054..

¹⁾ After 100 burning hours.

U-SHAPED RAPID - START 'TL'U RS LAMP

The 'TL'RS lamp in folded form. Higher light output and simpler connections in the same space as two 'TL'RS 20 W lamps. Two 'TL'U RS lamps are ideal for a square 60 x 60 cm luminaire.



Type	Length (folded)	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'U 40 W RS	570	660	White/33	2800	9280 383 033..

¹⁾ After 100 burning hours.

CIRCULAR, RAPID-START 'TL'E(M) RS LAMPS

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Starterless fluorescent lamps, in attractive circular style. All the characteristics of 'TL'RS and 'TL'M RS lamps, with the added advantage of non-directional light. Tube diameter 28 or 32 mm. Four-pin G10q base.

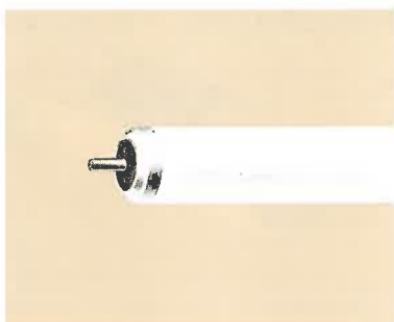


Type	Lamp dia.	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'E 22 W RS	210 ²⁾	183	White/33 Cool daylight/54	1250 1050	9280 280 033.. 9280 280 054..
'TL'E 32 W RS	305 ³⁾	250	White/33 Cool daylight/54	2050 1750	9280 285 033.. 9280 285 054..
'TL'E 40 W RS	406 ³⁾	333	White/33 Cool daylight/54	2900 2470	9280 295 033.. 9280 295 054..
'TL'EM 40 W RS	406 ³⁾	333	Warm white/29 White/33	2800 2750	9280 275 029.. 9280 275 033..

¹⁾ After 100 burning hours. ²⁾ Tube diameter 28 mm. ³⁾ Tube diameter 32 mm.

INSTANT-START 'TL'X LAMPS

Instant-start safety lamps.
Specifically designed for use in potentially explosive atmospheres. Internal ignition strip. Accurately dimensioned Fa6 caps with long, extra-thick pins. Must be used with explosion-proof ballasts in flameproof or increased-safety luminaires. A.C. mains operation. Starterless ignition. Diameter 38 mm.



Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'X 15 W	450	120	White/33	750	9280 370 033..
'TL'X 20 W	600	156	Natural/25 Warm white/29 White/33	840 1080 1060	9280 375 025.. 9280 375 029.. 9280 375 033..
'TL'X 40 W	1200	292	Natural/25 Warm white/29 White/33	2000 2550 2500	9280 380 025.. 9280 380 029.. 9280 380 033..

¹⁾ After 100 burning hours.

INSTANT-START 'TL'R LAMPS FOR D.C. OPERATION

Instant-start lamps for D.C. operation. Particularly suitable for trains, trams and ships. Twin internal ignition strips. Require stabilizing lamps or series resistors. The D.C. supply should be reversed regularly. R18s caps. Diameter 38 mm.



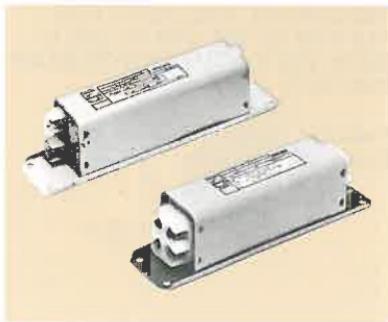
Type	Length	Weight	Colour	Nominal luminous flux ¹⁾ lm	Ordering number
'TL'R 20 W	600	156	Warm white/29 White/33	970 950	9280 340 029.. 9280 340 033..
'TL'R 40 W	1200	292	White/33	2270	9280 345 033..

¹⁾ After 100 burning hours.

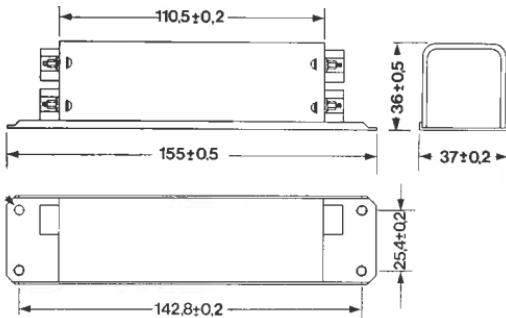
AIRCRAFT BALLASTS

Small, light-weight ballasts for fluorescent lamps at 115 V - 400 Hz. High reliability, long life, no maintenance.

Resistant to corrosion, acceleration, vibration. And all the other refinements you would expect from Philips - low losses, low working temperature, low radio and magnetic interference, but full lumen output and correct ignition. Already used in Trident, BAC 1-11, VC 10, Caravelle, Mercure, Mystere, Friendship, Fellowship, Concorde.



DIMENSIONS



5

The dimensions of all types are identical, units differ only in number of terminals.

Type	For lamps	Ordering number	Mains current mA	Total power consumption W	Power factor	Weight
126 039	1 x 'TL' 6 W or 1 x 'TL' 8 W	9135 040 090..	70	8	0,95	185
126 845	2 x 'TL' 6 W	8222 356 00861	150	16,5	0,9	215
126 333	1 x 'TL' 8 W ¹⁾	9134 990 191..	300	13	0,35	259
126 417	1 x 'TL' 13 W ¹⁾	9134 090 390..	370	18,3	0,45	259
126 419	1 x 'TL'AD 15 W	8222 209 00003	210	18,8	0,8	206
126 027	1 x 'TL'M 20 W RS	9135 150 090..	230	22,5	0,8	206
126 420	1 x 'TL' 30 W RS or 1 x 'TL'M 40 W RS	9135 240 390..	550	31,5	0,5	230
			500	40	0,7	

¹⁾ Can be used for dimming. Data on request.



TRANSISTOR BALLASTS FOR 'TL' AND 'TL'D LAMPS

High-efficiency transistor ballasts for fluorescent lamps running on D.C. supplies. Sturdy, small and silent. With polarity reversal protection and built-in mains fuse, they are unaffected by load variations, vibration or extremes of temperature. Easy to fit, with AMP 'Faston' terminals. For all mobile, transportable and emergency lighting applications.

Type	For lamps	Voltage range V (D.C.)	Current A (D.C.)	Ordering number
BRB 130	1 x 'TL' 6 W		0,85	
	1 x 'TL' 8 W	12 ± 3	1,0	
	1 x 'TL' 13 W		1,4	9134 040 521..
BRB 206	1 x 'TL' 20 W ¹⁾	12 ± 3	2	9134 380 529..
BRC 130	1 x 'TL' 6 W		0,38	
	1 x 'TL' 8 W	26 ± 6	0,45	
	1 x 'TL' 13 W		0,65	9134 040 627..
BRC 410	1 or 2 x 'TL'D 18 W		0,9	
	1 or 2 x 'TL'(S) 20 W	+ 6	1,6	
	1 x 'TL'D 36 W	26	1,6	9134 333 327..
	1 x 'TL'(S) 40 W	- 8	1,6	
BRC 416	1 x S48T 12	+ 4	1,2	
	1 x S72T 12	26 - 6	1,4	9134 380 022..
BRF 410	1 or 2 x 'TL'D 18 W	+ 24	0,45	
	1 or 2 x 'TL'(S) 20 W	72	0,60	
	1 x 'TL'D 36 W	- 22	0,60	9134 333 627..
	1 x 'TL'(S) 40 W		0,60	
BRH 410	1 or 2 x 'TL'D 18 W	+ 25	0,3	
	1 or 2 x 'TL'(S) 20 W	110	0,45	
	1 x 'TL'D 36 W	- 30	0,45	9134 333 537..
	1 x 'TL'(S) 40 W		0,45	

Note: Secondary frequency ≥ 20 kHz, maximum baseplate temperature 65°C.

Type	Length	Width	Height
BRB 130, BRC 130	226	31	28,5
BRB 206, BRC 410, BRC 416, BRF 410, BRH 410	265 ¹⁾	64	38

¹⁾ Excluding terminals.

STARTERS

Philips fluorescent lamp starters are unsurpassed for high quality and excellent reliability.

The starter produces a sufficiently high peak voltage for proper ignition of the lamp. The ample pre-heating of the lamp electrodes prior to ignition has a favourable effect on the life of the lamp with a minimum of end-blackening.

The glow-switch together with a radio-interference suppression capacitor are safely housed in a high quality white polycarbonate canister ensuring excellent insulation.

The S2 and S10 must and in fact do comply with the performance requirements of IEC 155/155A, in particular the safety aspects for class II fluorescent lamp luminaires; they are further approved by NEMKO, SEMKO, FEMKO, DEMKO, BSI, KEMA, CEBEC, VDE, IMQ, CSA.



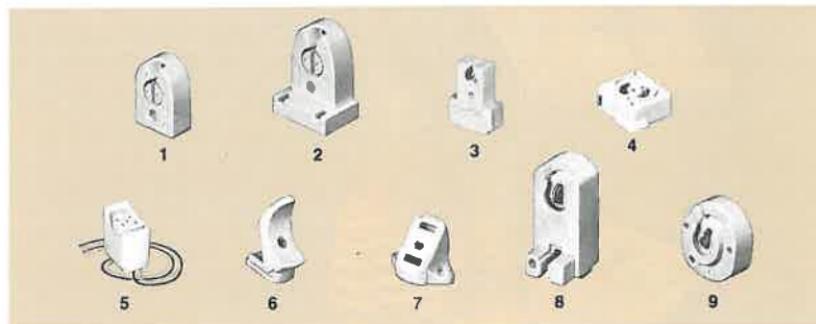
Type	Mode of operation circuit/mains voltage	For lamps	Max. length	Dia.	Weight	Ordering number
S2	single 110-130 V ~ series 220-240 V ~	4 - 6 - 8 - 14 - 15 - 18 - 20 - 22 W				9283 907 000..
S10	single 220-240 V ~	4 - 6 - 8 - 13 - 14 - 15 - 16 - 18 - 20 - 22 - 23 - 30 - 32 - 36 - 38 - 40 - 58 - 60 - 65 W	39	21,5	8	9283 922 000..
S12	single 220-240 V ~	'TL'M 115 W RS 140 W RS				9283 916 000..

ELECTRONIC IGNITOR ES 08

Immediate ignition (0,5 seconds) of standard 'TL' lamps over a wide temperature range: -20°C to +70°C.
Negligible watt losses, noiseless operation, small cross-section.
Double insert contacts for use with solid-core wire of 0,5-1 mm².



Type	For lamps	Max. length	Width	Height	Weight	Ordering number
ES 08	18 W to 125 W	102	38	28	50	9136 270 603..



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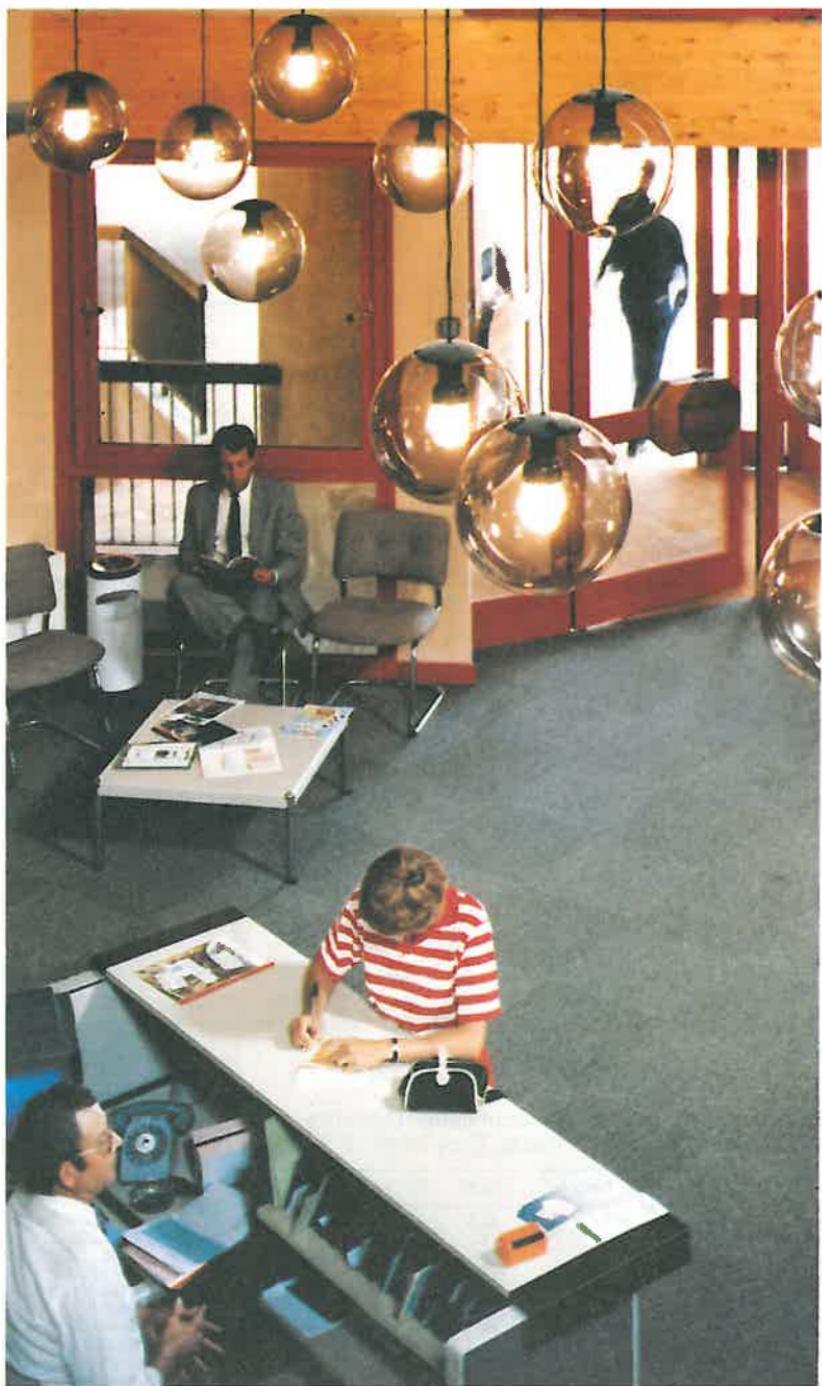
LAMPHOLDERS AND STARTERHOLDERS

Quality holders in white plastic material. Unobtrusive and touchproof.
Positive, anti-vibration contacts. Easy lamp- or starter-insertion and removal.

Type	Fig.	Height	Width	Depth	Weight	Ordering number
H03	1	44	33,5	17	22	9145 000 036..
H04	2	51	41	29	31	9145 000 058..
H02	3	31,5	25	17,5	4	9145 000 013..
H06	4	13,5	33,5	34	11	9145 000 210..
61487/02 ¹⁾	5	31	35	16,5	30	9145 000 011..
61486/02 ¹⁾	6	31	35	17,5	12	9145 000 505..
61488/02 ¹⁾	7	28,5	38	30	8	9145 000 506..
61476/12 ²⁾	8	63	30	32	35	9145 000 003..
61509/02 ²⁾	9	43	40	21	24	9145 000 025..

1) Lampholder and fixing accessories for circular lamps.

2) Lampholder for 'TL'S lamps.





Comfort, atmosphere, cosiness and safety are all aspects that are predominant in domestic and social lighting.

Philips' latest developments in gas-discharge lighting have resulted in the presentation of three new families of lamps, that combine a high efficacy and good colour characteristics (comparable to incandescent lamps) with low energy consumption.

This new range of Philips lamps comprises the following series:

- The SL* range of lamps, with their E27 and B22 bases, allowing them to be used as a direct replacement for incandescent lamps.
- The PL* range, small compact single-ended lamps, eminently suitable in a variety of small, functional and decorative luminaires, specially designed for this new type of lamp.
- The TL* range, available in a wide range of wattages and lengths.

Recommended for domestic applications, especially in the living areas, because of their strong homely atmosphere-creating aspect.

They are, however, equally suitable for energy-effective and decorative lighting in all kinds of social and utility buildings.

6 SL*, PL* AND TL* LAMPS AND ACCESSORIES



SL* LAMPS

The energy-effective SL* lamps are a direct replacement for incandescent lamps; they are available in similar versions and ranges of voltages and lamp bases. They work on the principle of low-pressure gas-discharge.

Ballast and starter are integrated in the lamp, which is fitted with a conventional incandescent E27 or B22 lamp base. Their low energy consumption of less than a quarter of a comparable incandescent lamp and their long life of 5000 hours, which is five times as long as an incandescent lamp, make them very economical in use. These benefits make SL* lamps eminently suitable to replace incandescent lamps, both in the domestic and professional application areas.

A complete programme for 220 V and 240 V/50 Hz in prismatic and opal versions is available.

Type	Wattage W	Luminous flux lm		Luminous efficacy ¹⁾ lm/W		Comparable with incandescent lamp W	Nominal length E27	Nominal dia. B22	Approx. weight 220 V/240 V	
		Prismatic	Opal	Prismatic	Opal					
SL* 9	9	425	375	47	42	40	148	147	72	465
SL* 13	13	600	525	46	40	60	158	157	72	475
SL* 18	18	900	750	50	42	75	168	167	72	565
SL* 25	25	1200	1050	48	42	100	178	177	72	610

¹⁾ Including ballast losses.

Type	Packing	Voltage V	Prismatic		Opal	
			E27	B22	E27	B22
SL* 9		220	8222 344 001..	8222 344 003..	8222 344 000..	8222 344 002..
		240	8222 344 005..	8222 344 007..	8222 344 004..	8222 344 006..
SL* 13	Luxury ¹⁾	220	8222 344 009..	8222 344 011..	8222 344 008..	8222 344 010..
or		240	8222 344 013..	8222 344 015..	8222 344 012..	8222 344 014..
SL* 18	Industrial ²⁾	220	9297 181 102..	9297 182 102..	8222 206 567..	8222 206 569..
		240	8222 206 572..	8222 206 574..	8222 206 571..	8222 206 573..
SL* 25		220	8222 344 043	8222 344 039..	8222 344 044..	8222 344 040..
		240	8222 344 045..	8222 344 041..	8222 344 046..	8222 344 042..

¹⁾ Outerbox with six single luxury-packed SL* lamps, last two digits 03, e.g. SL* 18, 220 V/50 Hz, E27, prismatic: 9797 181 10203.

²⁾ Outerbox with twenty packed SL* lamps, last two digits 15, e.g. SL* 9, 240 V/50 Hz, B22, opal: 8222 344 00615.





PL* LAMPS

The PL* lamp is a compact low-pressure mercury discharge lamp, consisting of two narrow fluorescent tubes welded together. The specially adapted starter, which provides almost instant starting characteristics, and the capacitor are built into the lamp base, which has a two-pin electrical connection. In view of its favourable colour rendering properties and warm colour impression, the PL* lamp is very suitable for use where the light contributes to the creation of a pleasant atmosphere, such as in hotels, restaurants, in the home, in theatres and so on. Also more concentrated light, necessary for local lighting, can be achieved with this light source.

6

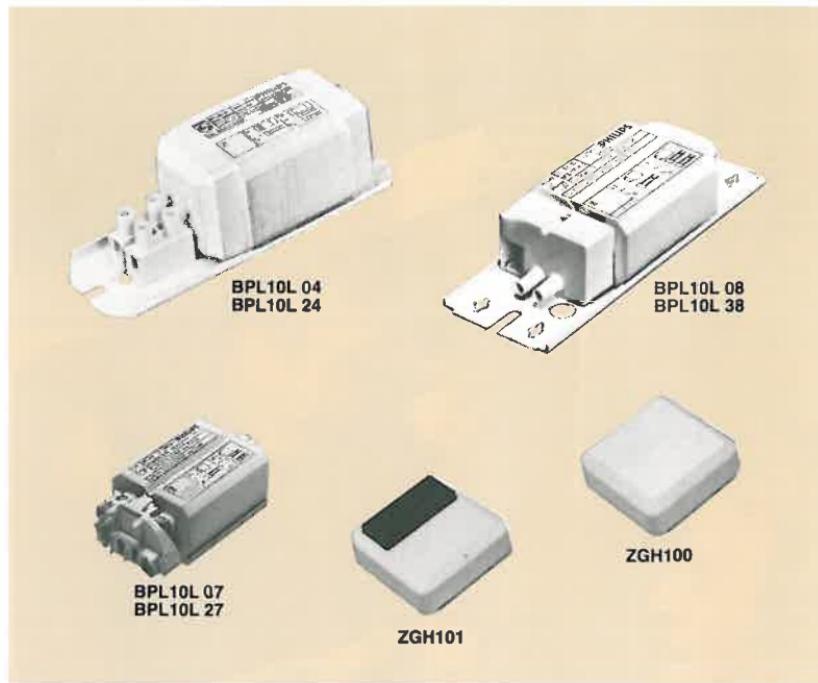
The compact size of the lamp and, in particular, its long life of at least 5000 hours make this lamp ideal for those applications where energy-effective lighting is needed over long periods, for example signs, corridor lighting and security and orientation lighting.

Type	Wattage W	Light output lm	Lamp efficacy lm/W	Comparable with incandescent lamp W	Length	Ordering number ¹⁾
PL* 5	5	250	50	25	103	—
PL* 7	7	400	58	40	133	8222 206 698..
PL* 9	9	600	69	60	165	8222 206 557..
PL* 11 ²⁾	11	900	79	75	234	8222 206 699..
PL* 13 ³⁾	13	900	69	75	188	8222 342 011..

¹⁾ Last two digits: 03 = luxury packing
15 = industrial packing.

²⁾ 220-240 V only.

³⁾ 120 V only.



BALLASTS FOR PL* LAMPS, 220 V/50 Hz AND 240 V/50 Hz

Philips offer a range of very compact ballasts for their unique single-ended fluorescent lamps PL* 5, PL* 7, PL* 9 and PL* 11, operating on 220 V/50 Hz or 240 V/50 Hz.

- BPL10L 04 } – for universal application
- BPL10L 24 } – for universal application
- BPL10L 07 } – extremely compact, for building into PL* luminaires
- BPL10L 27 } – extremely compact, for universal application
- BPL10L 08 } – extremely compact, for universal application
- BPL10L 38 } – cord ballasts, to be fitted in the supply lead of a
- ZGH100 } – cord ballasts, to be fitted in the supply lead of a
- ZGH101 } – PL* luminaire

Type	For lamps	Voltage V	Length	Width	Height	Weight kg	Ordering number
BPL10L 04		220	110	39	32	0,403	9130 070 403..
BPL10L 24		240	110	39	32	0,403	9130 070 405..
BPL10L 07	1 x PL* 5	220	77	39	24	0,33	9130 070 303..
BPL10L 27	2 x PL* 5	240	83	39	24	0,35	9130 070 305..
BPL10L 08	1 x PL* 7	220	115	39	24	–	9130 070 703..
BPL10L 38	2 x PL* 7	240	115	39	24	–	9130 070 705..
ZGH100/00 ¹⁾	1 x PL* 9						
ZGH100/01 ¹⁾	1 x PL* 11	220	92	92	43	–	9136 955 003..
ZGH100/00 ²⁾		240	92	92	43	–	9136 955 005..
ZGH101/00 ²⁾		220	92	92	43	–	9136 955 103..
ZGH101/01 ²⁾		240	92	92	43	–	9136 955 105..

¹⁾ Without switch.

²⁾ With built-in foot switch.

LAMPHOLDER FOR PL* LAMPS

Lampholder for compact single-ended fluorescent lamps PL* 5, PL* 7, PL* 9 and PL* 11. Made of Pocan 4235, a self-extinguishing thermoplastic polyester material reinforced with glass-fibre. Simple electrical connection by means of insert contacts.



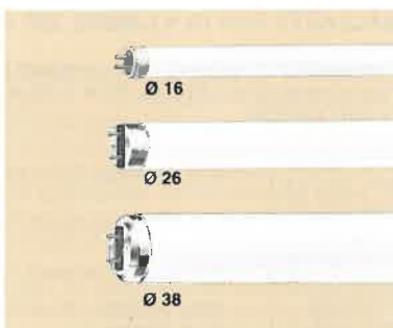
Type	Height	Width	Depth	Weight	Ordering number
H28	29,25	36,5	34,5	10	9145 000 107..

TL* LAMPS

Fluorescent lighting, offering abundance of light, energy effectiveness and long lifetime is an accepted system for domestic use, be it mainly for functional areas.

To widen their application specifically with respect to living areas, Philips have developed a lamp colour no longer distinguishable from incandescent light.

The successful combination of the advantages of incandescent and fluorescent light make the TL* lamps eminently suitable indeed for application in all rooms and areas in the home, specifically the living areas.



TL* lamps used as a replacement for fluorescent lamps with other colour aspects, strongly improve the lighting, making rooms more homely.

Type	Lamp wattage W	Length	Dia.	Weight	Luminous flux lm	Ordering number
TL * 8	8	300	16	29	450	9280 010 082..
TL * 13	13	525	16	45	1000	9280 015 082..
TL * 15	15	450	26	76	1000	9280 245 082..
TL * 18	18	600	26	97	1300	9280 480 082..
TL * 20	20	600	38	156	1200	9280 300 082..
TL * 30	30	900	26	145	2300	9280 254 082..
TL * 36	36	1200	26	186	3250	9280 485 082..
TL * 40	40	1200	38	292	3000	9280 305 082..
TL * 58	58	1500	26	229	5200	9280 490 082..
TL * 65	65	1500	38	360	4900	9280 310 082..







8 GAS-DISCHARGE LAMPS AND ACCESSORIES

When light sources are needed with a long reliable life and a high efficacy, gas-discharge lamps will generally be chosen. Philips range of gas-discharge lamps is complete, so we can meet today's wide demands superlatively well. Concern about high energy costs has focussed attention on low- and high-pressure sodium lamps.

The low-pressure sodium vapour discharge lamp has the highest known luminous efficacy. It provides bright yellow light at low cost.

Almost as efficient is the high-pressure sodium discharge lamp, which gives a very attractive golden white light. The high-pressure mercury vapour fluorescent lamps are effective and widely accepted light sources. The blended light lamp offers the possibility to give an installation with incandescent lamps the advantages of gas-discharge lamps without conversion costs.

When the requirement is for high light output, combined with excellent colour rendering, the metal halide lamps will be chosen.

There is a full range of complementary control gear, ignitors etc. for each lamp to ensure the best possible performance, most favourable circuit conditions and longest reliable life.

The choice is yours.

HIGH-PRESSURE SODIUM LAMPS

SON LAMPS

High luminous efficacy, golden white light and universal burning position: SON high-pressure sodium vapour discharge lamps are suitable for indoor or outdoor use. Their long life and excellent lumen maintenance make them first-rate light sources for all kinds of applications.



Type	Base	Luminous flux (lm ¹)	Min. supply voltage V	Max. length	Max. dia.	Weight	Ordering number
SON 50 W-I ¹)	E27	3300	200	156	72	58	9281 508 088..
SON 70 W-I ¹)	E27	5800	200	156	72	58	9281 501 088..
SON 70 W-E ²)	E27	5800	200	156	72	58	8222 341 018..
SON 100 W	E40/45	9500	200	186	76	95	9281 516 088..
SON 150 W	E40/45	13500	200	227	92	170	9281 503 098..
SON-S 150 W	E40/45	15500	200	227	92	170	9281 514 098..
SON 250 W	E40/45	25000	200	227	92	190	9281 510 098..
SON 400 W	E40/45	47000	200	292	122	250	9281 520 098..
SON 1000 W	E40/45	120000	200	400	168	430	9281 540 098..

1) After 100 burning hours.

2) E: with external ignitor, I: with internal ignitor.

Maximum short-time voltage variation: ± 5% of rated voltage.



SON-T LAMPS

Tubular high-pressure sodium-vapour discharge lamps for optical systems. Universal burning position, high luminous efficacy, golden white light.

Type	Base	Luminous flux (lm ¹)	Min. supply voltage V	Max. length	Max. dia.	Weight	Ordering number
SON-T 70 W-E ²)	E27/30	6500	200	156	38	50	8222 341 145..
SON-T 100 W	E40/45	10000	200	211	48	160	9281 517 092..
SON-T 150 W	E40/45	14000	200	211	48	170	9281 504 092..
SON-ST 150 W	E40/45	16000	200	211	48	170	9281 509 092..
SON-T 250 W	E40/45	27000	200	257	48	200	9281 515 092..
SON-T 400 W	E40/45	47000	200	283	48	200	9281 445 092..
SON-T 1000 W	E40/80x50	125000	200	390	67	450	9281 545 092..

1) After 100 burning hours.

2) E: with external ignitor.

SON-H LAMPS

Designed as a replacement for HPL-N lamps in existing installations, without the necessity of changing the ballast or adding a starter system. The 210 W version can replace the HPL-N 250 W, the 350 W version is an alternative to the HPL-N 400 W. Improvement in efficacy of 75%.



Type	Base	Luminous flux lm ¹⁾	Min. supply voltage V	Max. length	Max. dia.	Weight	Ordering number
SON-H 210 W	E40/45	18000	200	227	92	200	9281 536 098..
SON-H 350 W	E40/45	34500	200	292	122	250	9281 535 098..

¹⁾ After 100 burning hours.

LOW-PRESSURE SODIUM LAMPS



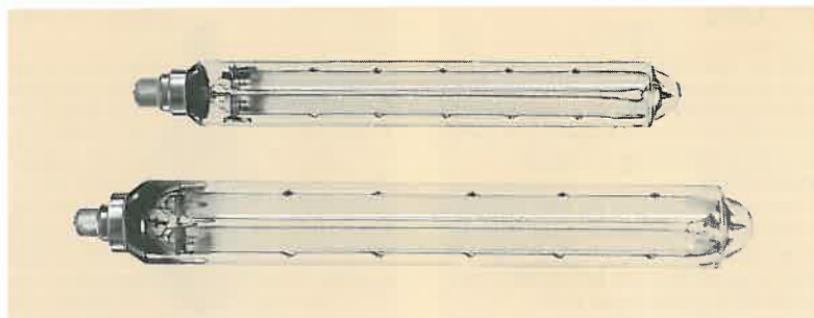
SOX LAMPS

Low-pressure sodium-vapour discharge lamps with the highest luminous efficacy of any light source in the world. High visual acuity, sharp contrast, low luminosity, little glare.

Type	Base	Luminous flux lm ¹⁾ ²⁾	Min. supply voltage V	Max. length	Max. dia.	Weight	Ordering number
SOX 18 W	BY22	1800	200	216	54	148	9281 450 000..
SOX 35 W	BY22	4500	200	310	54	235	9281 455 000..
SOX 55 W	BY22	7400	200	425	54	360	9281 460 000..
SOX 90 W	BY22	13000	200	528	68	540	9281 465 000..
SOX 135 W	BY22	21500	200	775	68	850	9281 470 000..
SOX 180 W	BY22	30500	200	1120	68	1080	9281 475 000..

¹⁾ After 100 burning hours.

²⁾ When used in combination with gear and starting device.



SOX-E LAMPS

Low-pressure sodium-vapour lamps for outdoor and indoor use, with a discharge tube enclosed in a clear tubular outer bulb.

New technologies have made it possible to increase the lamp efficacy even further, so that now the 200 lm/W barrier has been broken for the highest wattage lamp. Lamps of this new generation are called SOX-E.

The 200 lm/W can only be obtained in combination with an appropriate hybrid ballast.

The system efficacy is considerably improved, reaching 170 lm/W for the highest wattage and still more than 100 lm/W for a lamp of only 25 watt. In comparison with other artificial light sources, the lamp and system efficacy is significantly higher.

Since the objective was to obtain maximum system efficacy in the new generation SOX-E lamps, the power absorbed is kept to a minimum, resulting in lumen packages which are more in line with those of the other H.I.D. streetlighting lamps but lower than the existing SOX range.

Type	Average luminous flux lm ¹)	Lamp efficacy lm/W	System efficacy lm/W	Max. length	Max. dia.	Ordering number
SOX-E 131	26000	200	170	1120	68	8222 341 09700
SOX-E 91	17500	194	165	775	68	8222 341 19100
SOX-E 66	10700	165	135	528	68	8222 341 14900
SOX-E 36	5700	163	135	425	52	8222 341 19000
SOX-E 26	3500	140	109	310	52	8222 341 18900

¹⁾ On hybrid gear.

HIGH-PRESSURE MERCURY LAMPS

HP LAMPS

With its cold bluish light, the standard high-pressure mercury vapour discharge lamp cannot compare with the mercury vapour fluorescent lamps for colour rendering or colour appearance.

It has applications of its own including photochemical processes, microscopic examination and egg testing. HP discharge lamps are enclosed in an ovoid clear glass outer bulb.



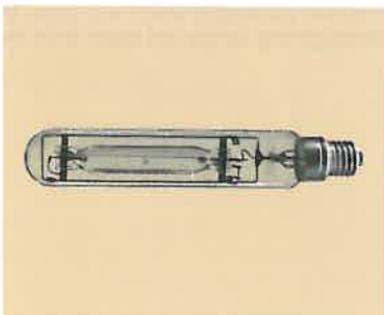
Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HP 80 W	E27	3500	156	72	55	9280 510 000..
	B22	3500	152	72	55	9280 511 000..
HP 125 W ²)	E27	5800	177	77	90	9280 520 092..
	B22	5800	173	77	90	9280 521 092..
HP 175 W ²)	E40	8100	227	92	170	9280 525 092..
HP 250 W ²)	E40	11750	227	92	170	9280 530 092..
HP 400 W ²)	E40	21000	292	122	260	9280 535 092..

¹) After 100 burning hours. ²) Hardglass.

HP-T LAMPS

A range of tubular standard mercury vapour lamps designed for high luminous efficacy, long life and reliable starting.

Their bluish light colour may give special effects in floodlighting installations.



Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HP-T 250 W ²)	E40	11500	257	47	175	9280 585 092..
HP-T 400 W ²)	E40	21000	292	47	197	9280 595 092..
HP-T 1000 W ²)	E40	52000	382	67	347	9280 605 092..

¹) After 100 burning hours. ²) Hardglass.

HPL-N LAMPS

High light output, good colour quality, long life, reliable starting and economy; with all these characteristics the HPL-N high-pressure mercury-vapour fluorescent lamp is a truly universal light source for indoor and outdoor lighting.

Applications include:
public lighting, sports grounds,
factories, garages and petrol stations,
car parks and railway stations.



Type	Base	Luminous flux (lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HPL-N 50 W	E27	1800	129	56	46	9280 505 073..
	B22	1800	125	56	46	9280 506 073..
HPL-N 80 W	E27	3700	156	72	55	9280 510 073..
	B22	3700	152	72	55	9280 511 073..
HPL-N 125 W	E27	6300	177	77	90	9280 520 073..
	B22	6300	173	77	90	9280 521 073..
	E40	6300	186	77	110	9280 523 073..
HPL-N 125 W ²⁾	E27	6300	177	77	90	9280 520 074..
	B22	6300	173	77	90	9280 521 074..
	E40	6300	186	77	110	9280 523 074..
HPL-N 175 W ²⁾	E40	8400	227	92	170	9280 525 074..
HPL-N 250 W ²⁾	E40	13000	227	92	170	9280 530 074..
HPL-N 400 W ²⁾	E40	22000	292	122	260	9280 535 074..
HPL-N 700 W ²⁾	E40	40000	329	142	380	9280 540 074..
HPL-N 1000 W ²⁾	E40	58000	400	168	550	9280 545 074..
HPL-N 2000 W ²⁾	E40	125000	445	185	650	9280 555 074..

¹⁾ After 100 burning hours. ²⁾ Hardglass.

HPL COMFORT LAMPS

With its warm and pleasant colour appearance, the HPL Comfort high-pressure mercury vapour fluorescent lamp finds particular use in public buildings, schools and commercial premises, but also in outdoor applications wherever a pleasant and warm colour appearance is asked for.

HPL
COMFORT 80 W



HPL-B
COMFORT 80 W



Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HPL Comfort 50 W	E27	2000	129	56	46	9280 505 066..
	B22	2000	125	56	46	9280 506 066..
HPL-B Comfort 50 W	E27	2050	187	129	118	9280 705 066..
HPL-Comfort 80 W	E27	3850	156	72	55	9280 510 066..
	B22	3850	152	72	55	9280 512 066..
HPL-B Comfort 80 W	E27	3900	187	129	119	9280 710 066..
HPL Comfort 125 W	E27	6500	177	77	90	9280 520 066..
	B22	6500	173	77	90	9280 521 066..
	E40	6500	186	77	90	9280 523 066..
HPL Comfort 250 W ²)	E40	14000	227	91	190	9280 530 067..
HPL Comfort 400 W ²)	E40	24000	292	122	260	9280 535 067..

¹⁾ After 100 burning hours ²⁾ Hardglass.

HPL-R AND HPL-R COMFORT LAMPS

Hard-glass high-pressure mercury vapour fluorescent reflector lamp for accurately directed light and good colour properties. Impervious to dirt, it is widely used in industrial applications where cleaning is a problem. Other applications include billboard lighting and plant irradiation.



HPL-R COMFORT 50 W



HPL-R 250 W

Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HPL-R Comfort 50 W	E27	1800	140	96	63	9280 605 085..
HPL-R Comfort 80 W	E27	3500	140	96	64	9280 610 085..
HPL-R 125 W	E27 E40	5700 5700	190 199	127 127	125 125	9280 620 086.. 9280 622 086..
HPL-R 250 W	E40	12000	260	168	260	9280 625 086..
HPL-R 400 W	E40	20000	300	184	320	9280 630 086..
HPL-R 700 W	E40	36000	328	204	440	9280 635 086..
HPL-R 1000 W	E40	54000	380	224	520	9280 640 086..

¹⁾ After 100 burning hours.

METAL HALIDE LAMPS

HPI LAMPS

High-pressure metal halide gas-discharge lamps, have a very high luminous efficacy and excellent colour rendering properties. With an internal diffusing coating on the hard-glass outer bulb, and a stable lumen output throughout their long life, HPI lamps are very suitable for:

- Industrial and commercial indoor lighting
- Public lighting
- Floodlighting
- Plant irradiation.



Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HPI 250 W BUS ²⁾	E40	17500	227	92	180	9280 760 098..
HPI 400 W	E40	27600	292	122	260	9280 731 098..
HPI 400 W BU ²⁾	E40	30600	292	122	260	9280 743 098..
HPI 400 W BUS ²⁾	E40	30600	292	122	260	9280 747 098..

¹⁾ After 100 burning hours.

²⁾ BU = Base up, BUS = Base up, self-starting.





HPI-T 400 W



HPI-T 1000 W



HPI-T 2000 W

HPI-T LAMPS

Tubular metal halide lamps for optical systems providing high illuminance levels and good colour rendering. Combined with the appropriate optical systems, they are a highly efficient source of accurately controlled light. The lamps are therefore highly suitable for the lighting of CTV broadcasts and colour filming of, for instance, sports events.

Type	Base	Luminous flux lm ¹)	Max. length	Max. dia.	Weight	Ordering number
HPI-T 250 W	E40	17000	257	47	150	9280 761 092..
HPI-T 400 W	E40	315000	283	47	180	9280 734 092..
HPI-T 1000 W	E40	81000	382	67	400	9280 740 092..
HPI-T 2000 W/220 V	E40	189000	430	102	650	9280 736 092..
HPI-T 2000 W/380 V	E40	183000	430	102	670	9280 718 092..

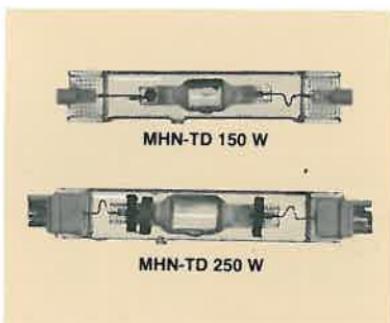
¹⁾ After 100 burning hours.

MHN LAMPS

MHN lamps, with their very high colour rendering index, are the ideal light sources for a wide range of commercial indoor applications. The MHN-TD, the double-ended version, may be used for accent lighting, such as shop-window lighting.



MHN 150 W



MHN-TD 150 W

MHN-TD 250 W

Type	Base	Luminous flux (lm ¹)	Max. length	Max. dia.	Weight	Ordering number
MHN 150 W	E27	12000	177	77	80	8222 341 147..
MHN-TD 150 W	R7s	11250	138	23	30	9280 762 000..
MHN-TD 250 W	FC2	20000	163	25	50	9280 763 000..

¹) After 100 burning hours.

BLENDED LIGHT LAMPS

ML LAMPS

Blended-light lamps for indoor and outdoor use. Needing no external ballast, they are directly interchangeable with incandescent lamps, and combine the high luminous efficacy of high-pressure mercury vapour lamps with the good colour rendering of tungsten filaments. ML blended-light lamps are designed for specific voltage operation in the ranges 110 to 130 V and 200 to 250 V. The lamps listed here are for 220-230 V operation.



Type ¹⁾	Base	Luminous flux ¹⁾ lm	Min. supply voltage V	Max. length	Max. dia.	Weight	Ordering number
ML 100 W	E27	1100	198	156	72	52	9280 900 572..
	B22	1100	198	152	72	52	9280 901 572..
ML 160 W	E27	3150	198	177	77	90	9280 950 572..
	B22	3150	198	173	77	90	9280 951 572..
ML 250 W	E27	5500	198	216	92	115	9280 960 572..
	E40	5500	198	227	92	145	9280 962 572..
ML 500 W ²⁾	E40	14000	198	292	122	250	9280 970 577..

¹⁾ After 100 burning hours. ²⁾ Hardglass.

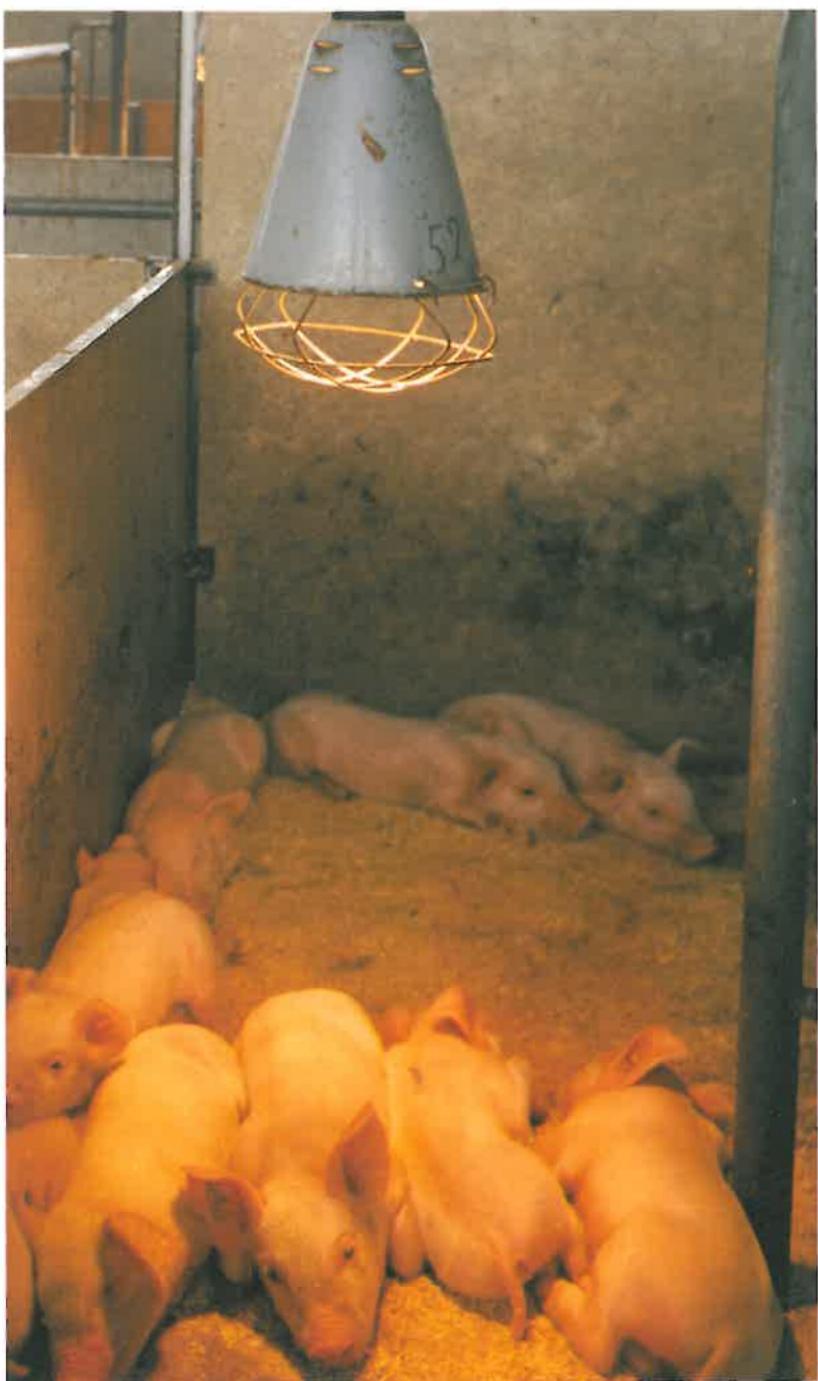
MLR LAMPS

High-pressure mercury vapour fluorescent reflector lamps, which need no external ballast and can be installed directly in existing incandescent lamp circuits. It is a simple and effective means of changing to modern dirt-impervious reflector lighting.



Type	Base	Nominal supply voltage V	Luminous flux ¹⁾ lm	Max. length	Max. dia.	Weight	Ordering number
MLR 160 W	E27	220-230	3100	190	127	105	9280 975 597..
		240-250	2750				9280 975 599..

¹⁾ After 100 burning hours.



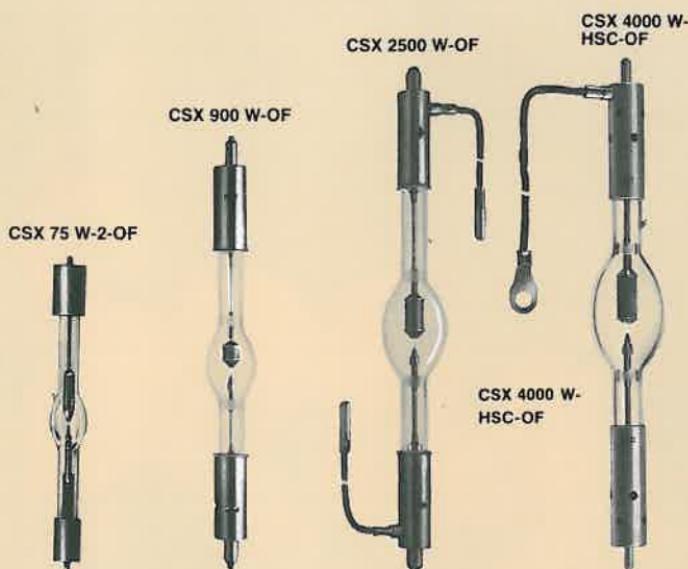
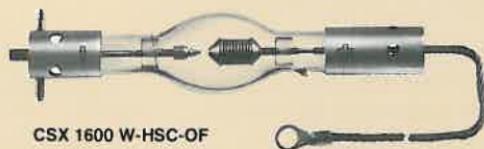


Philips special purpose lamps and associated products are designed to meet many specialised needs of modern society. Industrial heating, drying and curing. Agriculture and horticulture.

Photo-chemical processes, copying, graphic art and cinema projection. Spectral analysis. Relief of pain, health promotion and cosmetic treatment. Spectacular theatrical effects and more besides.

These products all use, to maximum effect, one or other of the characteristics of modern light sources. They could hardly be more diverse. But they have a common feature: they carry the Philips shield. Which means suitability, quality and reliability as high as modern technology can make them.

9 LAMPS AND LUMINAIRES FOR SPECIAL PURPOSES



COMPACT SOURCE LAMPS CS, CSI, CSX

CS compact source mercury lamps have a very high energy concentration in the smallest possible space and provide exceptionally high luminance in the ultraviolet and visible spectral regions. Designed for sophisticated optical systems requiring maximum speed and good image quality. CSI compact source mercury lamps with iodide additives provide perfect colour rendering. They are ideally suited for professional slide projectors and microscope lighting. Ozone-free CSX compact source xenon lamps are sources of exceptional brightness with a colour temperature and colour rendering that closely approximate daylight. Unaffected by voltage fluctuation and with maximum arc stability, they are ideally suited to the most sophisticated optical systems used in projection and instrumentation.

Type	Wattage W	Supply voltage V	Luminous flux lm	Length	Dia.	Weight	Ordering number
CS 50 W-3	50	55 D.C.	1300	53	8,3	5	9281 725 05103
CS 100 W-2	100	50 D.C.	2000	87	10	11	9281 700 05103
CS 150 W-2	150	150 D.C.	7500	140	35,5	70	9281 705 09203 ¹⁾
CS 150 W-4	150	200 D.C.	7500	140	35,5	70	9281 706 09203 ¹⁾
CS 200 W	200	200 A.C.	9500	108	45	32	9281 712 05103
CS 200 W-2	200	120 D.C.	10000	124	17	32	9281 711 05103
CS 200 W-4	200	200 A.C.	9500	124	17,5	32	9281 713 05103
CS 500 W-2	500	150 D.C.	29000	167	28,2	70	9281 716 05103
CS 500 W-4	500	200 A.C.	29000	167	28,2	70	9281 715 05103
CSI 250 W	250	220 A.C.	15000	147	33	66	9281 730 09202 ¹⁾
CSI 150 W-1	250	220 A.C.	15000	124	12,5	32	9281 731 05102
CSX 75 W-2-OF	75	50 D.C.	1000	90	10	10	9281 780 05103
CSX 150 W-1-OF	150	65 D.C.	3000	150	20	30	9281 752 05103
CSX 150 W-1 AS-OF	150	65 D.C.	2900	150	20	30	9281 754 05103
CSX 450 W-OF	450	70 D.C.	12000	250	27	130	9181 755 06003
CSX 900 W-OF	900	70 D.C.	30000	325	40	300	9281 760 06003
CSX 1600 W-OF	1600	70 D.C.	60000	370	47	460	9281 765 06003
CSX 2500 W-OF	2500	85 D.C.	100000	428	56	800	9281 770 06003
CSX 6500 W-OF	6500	110 D.C.	325000	482	60	1100	9281 790 05103
CSX 500 W-HC-OF	500	65 D.C.	14500	170	32	90	8222 206 39403
CSX 500 W-H-OF	500	65 D.C.	14500	190	32	90	8222 206 36503
CSX 700 W-HSC-OF	700	70 D.C.	20000	233	40	290	9281 761 06003
CSX 1000 W-HSC-OF	1000	70 D.C.	33000	233	40	290	9281 762 06003
CSX 1600 W-HSC-OF	1600	70 D.C.	60000	233	46	390	9281 763 06003
CSX 700 W-HS-OF	700	70 D.C.	20000	233	40	290	9281 777 00003
CSX 1000 W-HS-OF	1000	70 D.C.	33000	233	40	290	9281 778 00003
CSX 1600 W-HS-OF	1600	70 D.C.	60000	233	46	350	9281 779 00003
CSX 2000 W-HC-OF	2000	85 D.C.	80000	365	56	630	9281 781 00003
CSX 3000 W-HC-OF	3000	85 D.C.	130000	428	56	640	8222 206 46803
CSX 2000 W-HTP-OF	2000	85 D.C.	80000	365	56	520	9281 782 00003
CSX 3000 W-HTP-OF	3000	85 D.C.	130000	400	56	730	8222 206 48303
CSX 4000 W-HTP-OF	4000	100 D.C.	180000	423	56	730	8222 206 47803
CSX 4000 W-HSC-OF	4000	100 D.C.	180000	408	56	730	8222 206 49903

¹⁾ P28 base.



SP LAMP IN LAMPHOLDER



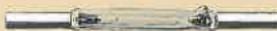
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SPP LAMP



NIPPLE



SP LAMP

SUPER-HIGH-PRESSURE MERCURY LAMPS SP, SPP

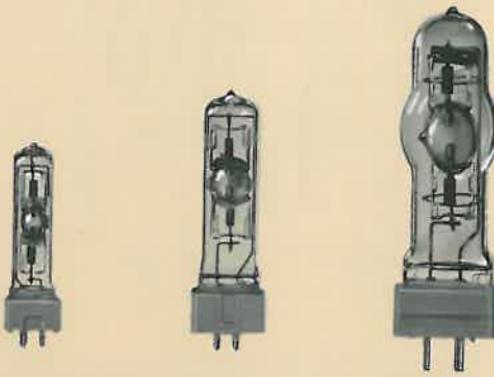
Photography, photo-chemical processes, cinema projection, profile scanning systems and precision optical measurement equipment. These are some of the highly critical applications of Philips super-high-pressure mercury lamps. SPP 800 W and 1000 W pulsed, SP 900 W forced air cooled, and SP 500 W and 1000 W water cooled.

Type	Wattage W	Ignition voltage V	Efficacy lm/W	Length	Width or dia.	Height	Weight	Ordering number
SPP 800 W ¹⁾	800	1100	55	80	5	—	5	9283 721 05103 ²⁾
SPP 1000 W ¹⁾	1000	1200	55	80	5	—	5	9283 726 05103 ²⁾
SP 900 W	900	800	55	81,5	13	—	6,3	9283 705 05102
SP 900 W-1	900	800	55	81,5	13	—	6,3	9283 706 05102
SP 500 W	500	550				66	9283 700 00003	
SP 500 W-Q	500	550	30	155 ³⁾	48,5 ³⁾	40,5 ³⁾	66	9283 700 05103
SP 1000 W	1000	700 D.C.				70	9283 710 00003	
SP 1000 W-Q	1000	700 D.C.				70	9283 710 05103	

¹⁾ Pulse rate 72-100 Hz.

²⁾ Including two reflectors.

³⁾ Dimensions of lamp cooling jacket.



SN250-505

SN500-507

SN1000-511

TIN-HALIDE LAMPS SN

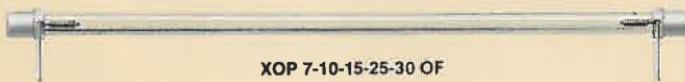
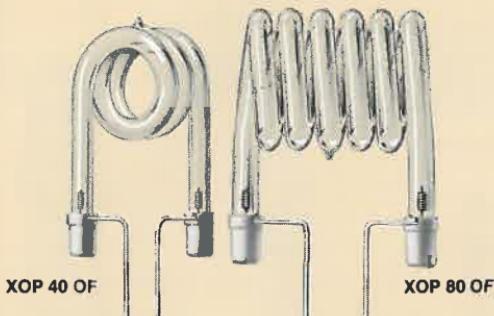
The SN tin-halide short-arc lamps are light sources with excellent colour rendering properties. The molecular radiation gives rise to a quasi-continuous spectrum.

Applications are many: cinema projection, overhead and daylight slide projection, studio and stage lighting, microscopy, copy board lighting etc.

DIMENSIONS

Type	Max. length	Dia.
SN250-505	103	22
SN500-507	125	29
SN1000-511	190	55

Type	Lamp wattage W	Lamp voltage V	Luminous flux lm	Colour temp. K	Base	Ordering number
SN250-505	220	75	13000	5500	GY9,5	9281 600 05102
SN500-507	440	75	26000	5500	GX9,5	8222 206 42902
SN1000-511	880	75	57000	5500	GY16	8222 206 43002



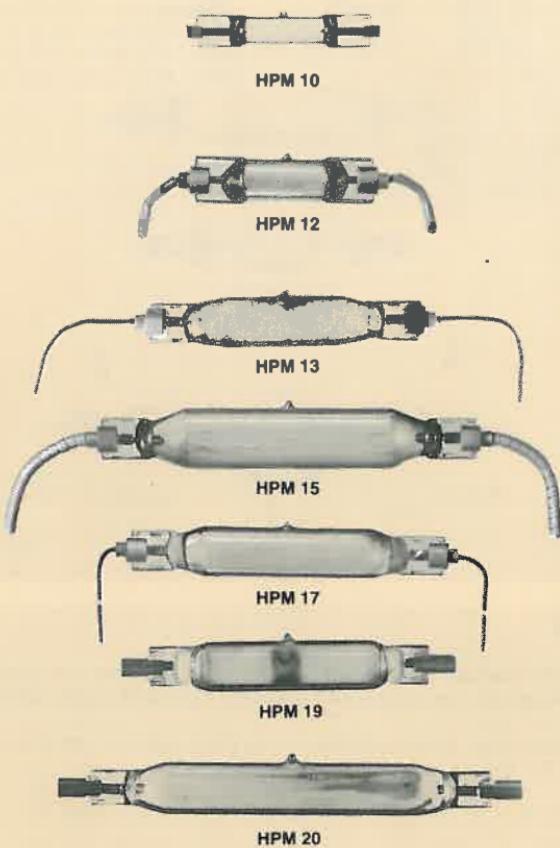
REPROGRAPHIC LAMPS XOP

XOP low-pressure pulsed xenon discharge lamps specially developed for the graphic art industry, ideally suited for copyboard lighting.

Colour temperature 5600 K.

Pulse frequency 100/120 Hz.

Type	Wattage W	Voltage V	Max. length	Width or dia.	Height	Weight	Ordering number
- XOP 7-OF	750	52	241	16,2	-	38	9283 768 05102
- XOP 10-OF	800	54	265	16,2	-	43	9283 776 05102
- XOP 15-OF	1500	105	395	16,2	-	50	9283 769 05102
- XOP 25-OF	2000	115	540	16,2	-	70	9283 775 05102
- XOP 30-OF	3000	210	698	16,2	-	75	9283 772 05102
- XOP 40-OF	4000	210	64	67	118	70	9283 774 05102
- XOP 80-OF	8000	420	109	67	118	90	9283 777 05102

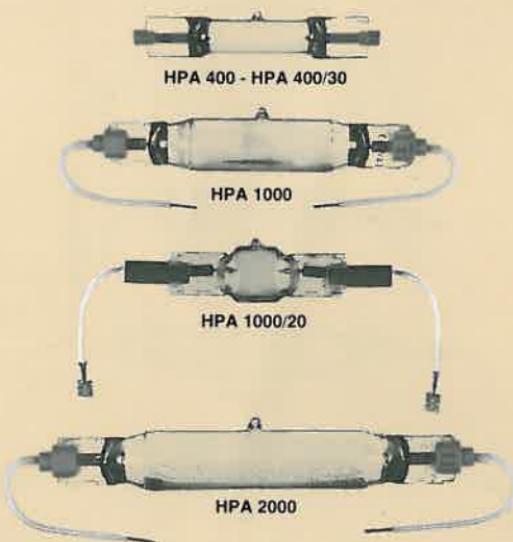


HPM AND HP/AB LAMPS

High-pressure mercury discharge lamps, with lead and gallium iodide additives, designed for all kinds of photochemical processes.

Type	Wattage W	Voltage V	Length	Dia.	Weight	Ordering number
HPM 10	400	125	97	17	15	8222 206 54602
HPM 12	460	120	98	22	50	9280 729 05102
HPM 13	1000	135	149	27,5	87	9280 744 05102
HPM 15	1000-4000	240	201	35	92	9280 728 05102
HPM 17	1000-4000	220	177	30	82	9280 727 05102
HPM 19/BT	2000	210	153	26	87	8222 206 54702
HPM 20	3000	350	209	30	117	9280 746 05102
HP/AB 400 W	400	125	290	53	230	9280 732 09202 ¹⁾

¹⁾ P40 base.



HPA LAMPS

HPA lamps are medium-pressure metal halide lamps with iron and cobalt additives. The lamps are ozone-free and emit radiation mainly between 300 and 400 nm.

HPA lamps have their main radiation in the UV-A wavelength and therefore are very suitable for suntanning.

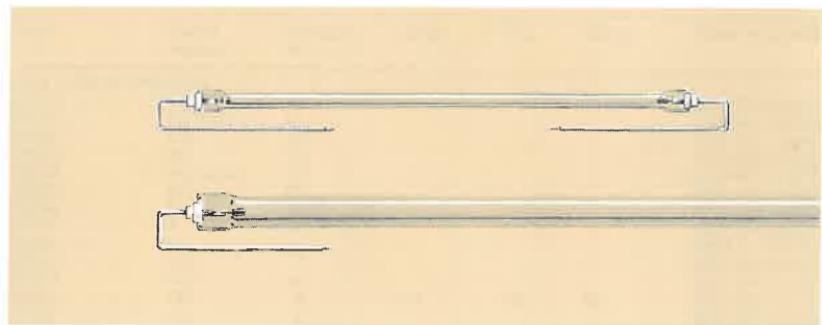
Type	Wattage W	Voltage V	Length	Dia.	Ordering number
HPA 400	380	135	108,5	17	9280 750 060..
HPA 400/30	380	135	93	18	9280 755 051..
HPA 1000	930	133	149	28,5	9280 753 051..
HPA 1000/20	1100	120	132	28,5	9280 756 060..
HPA 2000	1750	265	177	28,5	9280 754 051..

HPR 125 W LAMP

Mercury vapour lamp with internal reflector. Particularly suitable for black and white reproduction and copying processes, it is also used as a floodlight lamp and, fitted with a Wood's glass filter, as a black-light lamp.



Type	Lamp voltage V	Base	Length	Dia.	Weight	Ordering number
HPR 125 W	120	E27	222	110	200	9280 645 09902



ULTRA-VIOLET DRYING AND CURING LAMPS HTQ

Tubular high-pressure mercury vapour lamps for rapid and complete polymerisation of polyester lacquers. Suitable for many other chemical processes, too.

Type	Nominal wattage W	Lamp voltage V	Max. length	Max. dia.	Weight	Ordering number
HTQ4	1000	700	506	16	54	9281 870 06002
HTQ7	2000	1400	766	16	85	9281 875 06002
HTQ14	4000	1400	1488	24	158	9281 880 06002



HOK LAMPS

HOK lamps are high-pressure mercury vapour lamps, which are mainly used in the hardening of lacquer coatings containing photosensitive additives. These lamps are also suitable for other chemical processes where ultraviolet plays an important role.

Type	Wattage W	Lamp voltage V	Arc length	Dia.	Caps	Ordering number
HOK 2	2000	245	195	24	cap	8222 206 47902
HOK 6	5000	840	650	24	SK32	9281 886 05102
HOK 10	8400	1300	1065	24	SK32	9281 887 05102
HOK 14	11000	1870	1415	24	SK32	9281 888 05102

STANDARD SPECTRAL LAMPS

A range of discharge lamps producing monochromatic visible or UV radiation of known wavelengths. With identical light centres and physical dimensions, the lamps are fully interchangeable. Outer bulbs of glass for visible spectra, quartz for UV spectra. The use of a Philips auto-leak transformer is recommended.



Type	Gas or Vapour	Wattage W	Length	Dia.	Weight	Ordering number
FOR VISIBLE SPECTRA						
93123	Hg (l.p.)	12				9281 950 00002
93136	Hg (h.p.)	90				9281 951 09202
93162	Cd	16				9281 960 09202
103137	Zn	16				9281 940 09202
93145	Hg, Cd, Zn	75				9281 975 09202
93098	He	60				9281 900 00002
93099	Ne	20				9281 905 00002
93100	A	16				9281 910 00002
93101	Kr	11				9281 915 00002
93102	Xe	7				9281 920 00002
93122	Na	18				9281 945 00002
93104	Rb	8	174	30	60	9281 930 00002
93105	Cs	8				9281 935 00002
93103	K	10				9281 925 00002
FOR UV SPECTRA						
93109	Hg (l.p.)	12				9281 952 05102
93110	Hg (h.p.)	90				9281 953 05102
93107	Cd	16				9281 961 05102
93106	Zn	16				9281 941 05102
93146	Hg, Cd, Zn	75				9281 976 05102

AUTO-LEAK TRANSFORMERS

Type	Mains voltage V	Primary current A	No-load voltage V	Length	Height	Width	Ordering number
BSX 90L/02	220	2,00	490	205	100	117	9136 500 103..
59003 BT/02	110 125	4,10 3,80	470	175	130	104	9136 210 101..



HOGK-HOQ



HOKI 850 W - 3000 W(-S)



HOKI 2000 W - 5000 W - 6500 W

DIAZO COPYING LAMPS HOGK, HOQ, HOKI

HOGK, HOQ and HOKI high-voltage quartz lamps for diazo printing. The envelopes of the HOQ and HOKI types prevent external ozone formation.

Type	Lamp voltage V	Length	Dia.	Weight	Ordering number
HOGK 700 W	190	567	39	236	9281 806 05102
HOGK 2000 W	550	1367	39	357	9281 816 05102
HOGK 2500 W	550	1504	39	400	9281 820 05102
HOQ 700 W	190	567	39	236	9281 806 06002
HOQ 2000 W	550	1367	39	357	9281 816 06002
HOQ 2500 W	550	1504	39	400	9281 820 06002
HOKI 850 W	740	539	47	370	9281 835 06502
HOKI 2000 W	550	715	62	650	9281 845 06502
HOKI 2500 W	550	1481	54	980	9281 850 06502
HOKI 3000 W	1250	1495	47	980	9281 855 06502
HOKI 3000 W-S	1250	925	47	740	9281 856 06502
HOKI 5000 W	1800	1495	62	1350	9281 860 06502
HOKI 6500 W	1770	1495	62	1400	9281 863 06502



ACTINIC LAMPS 'TL'/05, 'TL'/03, 'TL'/09

Actinic 'TL'/05 and Super Actinic 'TL'/03 lamps are highly efficient ultraviolet radiation sources with radiation peaks of 375 nm and 420 nm, respectively. The spectral energy distributions match the sensitivity of many of the diazo papers used in photoprinting. Actinic 'TL'/09 lamps emit a highly concentrated radiation between 350 and 390 nm. This makes the lamps very effective for the treatment of skin diseases such as psoriasis. They are also used for direct pigmentation of the skin, in insect traps and in photochemical processes.

Type	Lamp voltage V	Length	Dia.	Cap	Weight	Ordering number
'TL' 4 W/05	30	150	16	G5	15	9280 000 00503
'TL' 6 W/05	44	230	16	G5	22	9280 005 00503
'TL' 8 W/05	56	300	16	G5	31	9280 010 00503
'TL' 11 W/05	39	230	16	G5	22	8222 206 59303
'TL'D 15 W/05	56	460	25	G13	76	9280 245 00503
'TL' 20 W/05	57	610	38	G13	156	9280 035 00503
'TL'DK 30 W/05	44	460	25	G13	76	9280 195 00503
'TL' 36D25/05	36	360	25	G13	75	8222 206 51503
'TL' K 40 W/05	47	610	38	G13	156	9280 291 00503
'TL' 40 W/05	103	1220	38	G13	292	9280 060 00503
'TL' 65 W/80 W/05	110/99	1520	38	G13	360	9280 083 00503
'TL'M 120 W/05 RS	100	1520	36	G13	380	9280 319 00503
'TL' 140 W/05	100	1500	38	G13	402	9280 127 00503
'TL' 20 W/03	57	600	38		156	9280 157 00303
'TL'DK 30 W/03	44	450	25		76	9280 195 00303
'TL' 40 W/03 RS	103	1200	38		292	9280 113 00303
'TL' K 40 W/03	47	600	38	G13	156	9280 291 00303
'TL' 60 W/03	86	1200	38		292	8222 206 25803
'TL'M 120 W/03 RS	99	1500	36		380	9280 319 00303
'TL' 140 W/03	123	1500	38		402	9280 127 00303
'TL' 29D16/09N	46	300	16	G5	31	8222 206 57543
'TL'D 15 W/09N	56	440	25	G13	76	9280 245 00903
'TL' 44D 25/09N	50	440	25	G13	76	8220 206 52703
'TL' 36D 25/09N	36	360	25	G13	75	8222 206 59203
'TL' 20 W/09N	57	610	38	G13	156	9280 035 00903
'TL' K 40 W/09N	52	610	38	G13	156	9280 291 00903
'TL' 40 W/09N	103	1220	38	G13	292	9280 060 00903
'TL' 65-80 W/09N	110/100	1500	38	G13	400	9280 083 00903
'TL' 85-100 W/09N	125/115	1760	38	G13	453	9280 179 00903
'TL' 85-100 W/09N RS	125/115	1760	38	G13	453	8222 206 52003



INFRARED-R95E



IR-PAR38E

INFRARED LAMPS FOR HEALTH CARE

Blown-bulb and pressed-glass infrared heat lamps with internal reflector and E27 base.

Skin penetrating warmth for therapy and healing. These red-fronted blown-bulb and pressed-glass infrared reflector lamps are specially designed for heat radiation equipment used in medicine and health promotion. The prismatic characteristics of the pressed-glass version give a particularly beneficial concentration of deep radiant heat. Infrared lamps provide instant pain relief for people suffering from ailments like rheumatism, lumbago, aching muscles, colds, neuralgia, etc.

These lamps are also available in Philips 'Inraphil' versions for replacement in Philips 'Inraphil' equipment.

Type	Wattage W	Voltage V	Average life h	Base	Bulb	Burning position	Ordering number
Infrared-R95E	150	220-230	300	E27	blown-bulb red front	Any	9232 242 432..
IR-PAR38E	150	125-130 220-230 240	300	E27	pressed-glass red front	Any	9238 066 356.. 9238 066 432.. 9238 066 455..



PRESSED-GLASS INFRARED HEAT LAMPS

Pressed-glass infrared heat lamps with internal reflector and E27 base. Since no loss of light occurs in the neck of the lamp, pressed-glass lamp types have a much higher level of efficiency than blown-bulb types. Red-fronted lamps are mainly used in applications where little or no visible light is preferred, such as chicken and pig rearing.

Type	Wattage W	Voltage V	Average life h	Base	Bulb	Ordering number
IR 100R-PAR	100	220/230	5000	E27	red front	8222 340 044..
IR 100R-PAR	100	240/250	5000	E27	red front	8222 340 045..
IR 100C-PAR	100	220/230	5000	E27	clear front	8222 340 050..
IR 100C-PAR	100	240/250	5000	E27	clear front	8222 340 051..
IR 175R-PAR	175	220/230	5000	E27	red front	8222 340 070..
IR 175R-PAR	175	240/250	5000	E27	red front	8222 340 071..
IR 175C-PAR	175	220/230	5000	E27	clear front	8222 340 068..
IR 175C-PAR	175	240/250	5000	E27	clear front	8222 340 069..

BLOWN-BULB INFRARED HEAT LAMPS FOR INDUSTRY AND AGRICULTURE

9

These reflector infrared heat lamps supply instantaneous and accurately controlled radiant heat. Penetrating. Safe. Clean. Mobile. In industrial drying processes, instant beamed heat is produced at low initial cost, readily assembled into lightweight, easily transportable ovens and heat batteries. Great advances in animal rearing techniques are due in no small part to increasing use of infrared radiant heat.

Available in soft and hard glass, satin-frosted or red-fronted. All are designed for high efficiency, long life and complete safety.



Type	Bulb front	Wattage W	Voltage V	Length	Dia.	Weight	Base ¹⁾	Ordering number ²⁾
IR150 S	Satin-frosted	150	220-230					9232 208
IR150 R	Red		230-250					9232 206
IR250 CH	Clear, hard glass		110-120					9232 219
IR250 S	Satin-frosted	250	125-130					9232 216
IR250 R	Red		220-230					9232 222
			230-250					
IR250 SH	Satin-frosted Hard glass	250	220-230 230-250	185	125	110	E27	9232 220
IR250 RH	Red, hard glass	250	220-230					9232 224
IR375 CH	Clear, hard glass	375	110-120 220-230 230-250					9232 235
IR375 SH	Satin-frosted, hard glass	375	220-230					9232 236

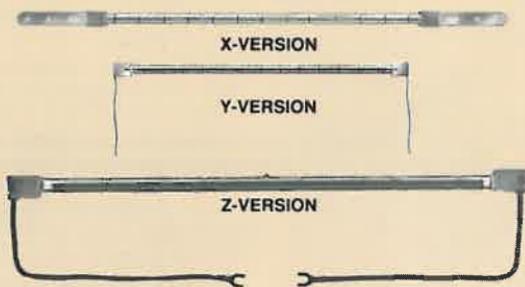
¹⁾ Mechanically attached.

²⁾ For 110-120 V:.....32203

125-130 V:.....35603

220-230 V:.....43203

230-250 V:.....43803



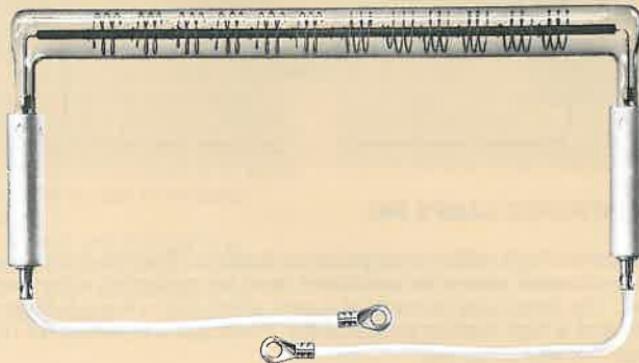
QUARTZ INFRARED LAMPS IRK

IRK lamps permit high radiant energy concentrations. Precise control is possible for critical processes where temperatures must be controlled within narrow tolerances. The lamp tube is made of quartz which has a low coefficient of expansion and a high melting temperature. There are IRK lamps for horizontal and vertical burning positions.

All lamps have a life in excess of 5000 hrs and a colour temperature of approx. 2450 K, with a peak wavelength of 1200 nm.

Type	Wattage W	Voltage V	Burning position	Caps	Ordering number
13169 X	500	110-130	P4	Metal clips	9238 500 323..
13169 Y	500	110-130	P4	Metal base with leads	9238 501 323..
13169 X/98 ¹⁾	500	110-130	P4	Metal clips	9238 502 323..
13169 Z/98	500	220-250	Any	Metal base with leads	8222 206 644..
13195 X	1000	220-250	P4	Metal clips	9238 510 439..
13195 Y	1000	220-250	P4	Metal base with leads	9238 511 439..
13195 X/98 ¹⁾	1000	220-250	P4	Metal clips	9238 514 439..
13713 X	1000	220-250	Any	Metal clips	9238 515 439..
13713 Z	1000	220-250	V75	Metal base with leads	9238 952 445..
13713 Z/98 ¹⁾	1000	220-250	V75	Metal base with leads	9238 535 439..
13168 X	2000	220-250	V75	Metal clips	9238 525 439..
13168 Z	2000	220-250	V75	Metal base with leads	9238 953 445..
13168 Z/98 ¹⁾	2000	220-250	V75	Metal base with leads	9238 536 439..
13213 X	2000	220-250	P4	Metal clips	9238 526 439..
13245 X	2000	380-420	P4	Metal clips	9238 530 579..
13245 X/98 ¹⁾	2000	380-420	P4	Metal clips	9238 529 579..
13765 X	2000	380-420	V75	Metal clips	9238 531 579..
13215 X	3000	380-420	P4	Metal clips	9238 542 579..
13230 X	3000	380-420	V75	Metal clips	9238 540 579..
13230 X/98 ¹⁾	3000	380-420	V75	Metal clips	9238 541 579..

¹⁾ The /98 versions are provided with a white reflector strip of 180° which has a length slightly greater than the length of the filament.



13478K

TUBULAR QUARTZ INFRARED HEAT LAMPS IRH

These 12 and 20 kW infrared lamps are the most powerful produced to date. For use in water-cooled reflectors to obtain product temperatures well over 1000°C, or for very fast temperature rises.

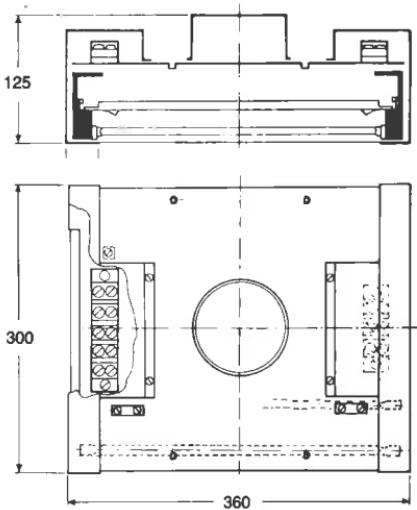
Type	Wattage W	Voltage V	Filament length	Burning position	Weight	Ordering number
13478K	12000	220-250	375		600	9238 728 44502
13785K	20000	380-420	665	horizontal		9238 731 57902

INFRARED MODULE REFLECTOR UNIT IMR 020/6

A short-wave infrared unit for industrial heating and drying applications. With a battery of six 1 or 2 kW IRK heat lamps, it is an ideally dimensioned 'building brick' for heating arrays in conveyor belt or static operations. Clean, square and completely functional, the IMR 020/6 is lightweight yet rigid, with integral cooling system. The quartz heat lamps, with internal titanium reflectors, are backed by an efficient polished aluminium plane reflector. Simple four-screw mounting in any plane; easy electrical connection, fast access for servicing. Powerful infrared heating in simply constructed form.



DIMENSIONS



Type	Lamp type	Total wattage W	Voltage V	Length	Width	Height	Ordering number
IMR020/6	13713 Z/98 13168 Z/98	6 kW 12 kW	220	360	300	125	9141 000 02703



INFRARED REPROGRAPHIC LAMPS IRK

Tubular quartz infrared copying lamps. Very efficient radiant heat sources for dry heat copying. Colour temperature 2800 K.

Type	Wattage W	Voltage V	Filament length	Overall length	Caps	Weight	Ordering number
13381/99	1350	115 220	257	322	With ceramic, flexible leads	60	9238 608 34402 9238 608 42902

BLACKLIGHT BLUE AND BLACKLIGHT LAMPS 'TL'08, TW, HPW, MLW

Fluorescent and high-pressure mercury lamps to excite luminescence. For testing, inspection and analysis in many applications including textiles, food, metallurgy, chemistry, medicine, archaeology and criminology. They also offer great scope for publicity signs and for spectacular lighting effects in night clubs and theatres.



Type	Fig.	Lamp voltage V	Length	Base/caps	Dia.	Weight	Ordering number
'TL'4 W/08	1	30	150	G5	16	22	9280 000 00803
'TL'6 W/08	1	44	230	G5	16	33	9280 005 00803
'TL'8 W/08	1	56	300	G5	16	44	9280 010 00803
'TL'20 W/08	1	57	610	G13	37	230	9280 035 00803
'TL'40 W/08	1	103	1220	G13	37	450	9280 060 00803
TW 6 W	2	220 ¹⁾	160	E27	28	61	9283 779 00802
HPW 125 W	3	125	177	E27	77	100	9280 520 07002
MLW 160 W	3	220 ¹⁾	177	E27	77	100	9281 041 59402

¹⁾ For operation without ballast.



HALOGEN COPYING LAMPS

Lamps for electrostatic copying machines. Also used for copyboard lighting.
Average colour temperature 3150 K.

Type	Fig.	Wattage W	Voltage V	Filament length	Overall length	Base	Weight	Ordering number
13868R	1	500	120	60	117,6		16	9238 611 36302
13912R	1	550	110	65	117,6		16	9238 613 31902
13313R	2	1000	115 220 245	210	254,1		19	9238 613 34402
							19	9238 613 42902
							19	9238 613 45902
13494R	2	1000	90 115 220 245	273	317,9	R7s	19	9238 628 29902
							19	9238 628 34402
							19	9238 628 42902
							19	9238 628 45902
13746R	2	1500	230	320	368,1		23	9238 624 44202
13623R	2	1500	230	320	368,1		21	9238 623 44202
13624R/16	3	1800	280	375	418,2		21	9238 626 46802

HPK 125 W MERCURY LAMP FOR PHOTOCHEMICAL PROCESSES

9

High-pressure mercury vapour lamp. Emits a high degree of ultraviolet radiation. For photochemical processes.

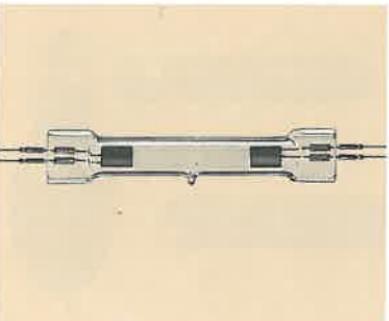


Type	Wattage W	Lamp voltage V	Base	Length	Dia.	Weight	Ordering number ¹⁾
HPK 125 W	125	125	BA 15d	101	15	18	9280 701 05103

¹⁾ For 220 V operation, use ballast BHL 125L06, ordering number 9136 020 803..

HUV 5 MERCURY LAMP FOR DEODORIZATION AND STERILIZATION

Low-pressure mercury lamp emitting very-short-wave UV. Produces ozone to eliminate odours or sterilize small cabinets. The radiation produced is dangerous to eyes and skin.



Type	Wattage W	Lamp voltage V	Length	Dia.	Weight	Ordering number
HUV5	4	150	100	20	11	9281 890 05102



TUV 6 W



TUV 15 W - 30 W



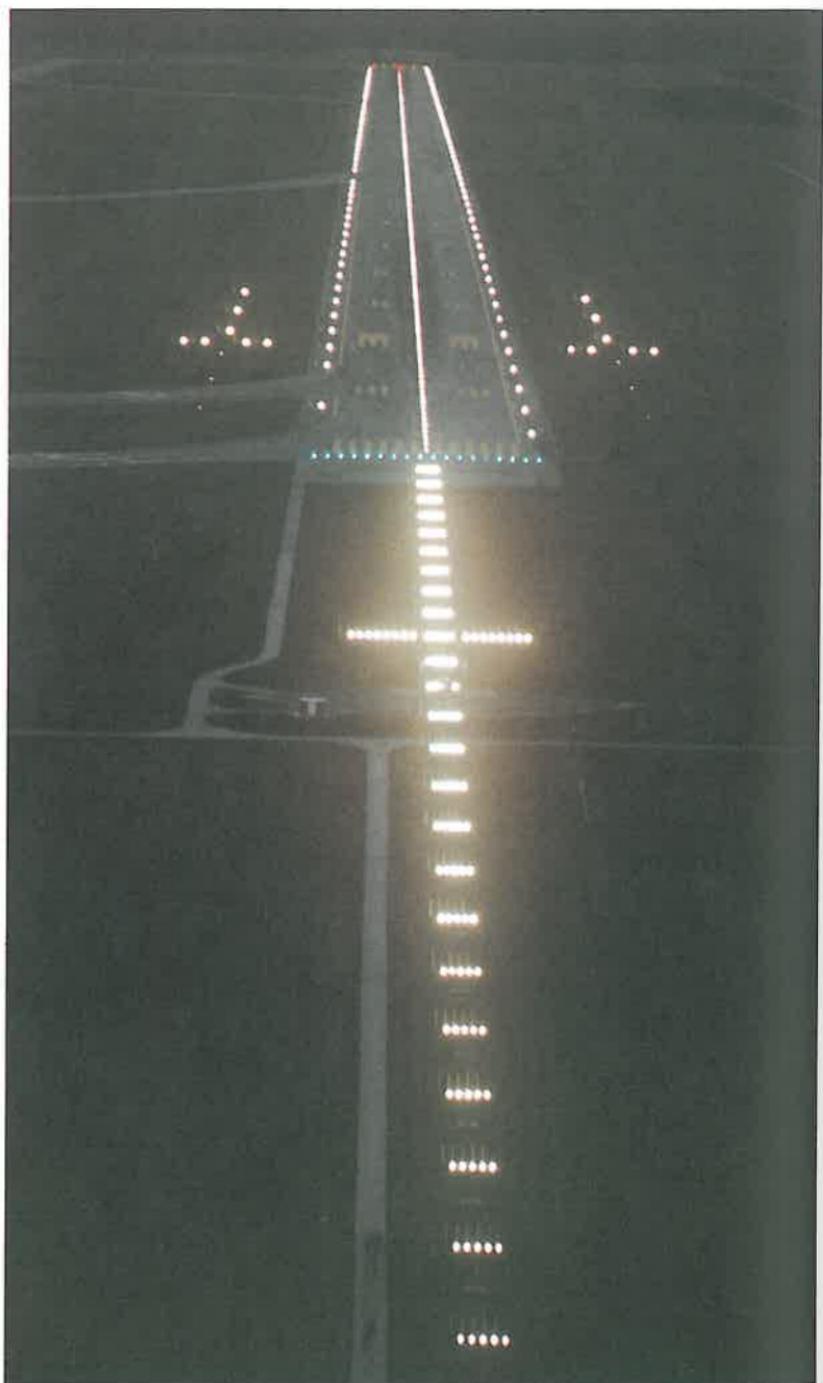
TUV 40 W

TUV GERMICIDAL LAMPS FOR AIR AND WATER STERILIZATION

TUV lamps are widely used for sterilization in hospitals, in bacteriological research and pharmaceutical manufacture, and in dairies, breweries, cold storage rooms, air-conditioning systems, etc.

Type	Lamp voltage V	Length	Base	Dia.	Weight	Ordering number
TUV 6 W	220 ¹⁾	150	E27	26	40	9283 781 04002
TUV 15 W	56	460	G13	26	75	9280 390 04003
TUV 30 W	100	920	G13	26	140	9280 395 04003
TUV 40 W	105	1220	G13	38	280	9280 369 04003

¹⁾ Mains (lamp operates without ballast).



For over 45 years, Philips have been supplying equipment for airport lighting. The present range of marker lights and lamps is the distillation of that long experience. It includes markers for all purposes on all categories of airfield. And with a standardized range of electrical and mounting accessories, remarkable flexibility is offered in the installation of new systems, or the improvement of existing ones.

Of course, the lighting of terminal buildings, aprons, vehicle parks, roads is Philips' business too. Very much so. Suitable products will be found throughout this catalogue.

All around the world, Philips lighting equipment serves aviation.

The information given here is necessarily very brief. For full details of all Philips airport lighting equipment, please ask your national Philips organization.



AIRPORT LIGHTING EQUIPMENT

AIRFIELD LAMPS

17



6287



5981



6281



5980



6292



6283



5979



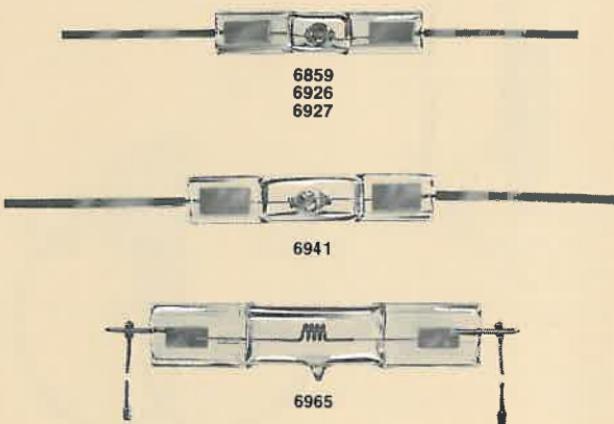
6372

QUARTZ HALOGEN AIRFIELD LAMPS WITH BI-PIN BASE

Quartz halogen airfield lamps with bi-pin base for series circuits. These lamps are used in all kinds of flush-mounted and elevated runway lighting luminaires.

Type	Wattage W	Current A	Filament dimensions b x h	Luminous flux lm	Average life ¹⁾ h	Base	Ordering number
6287	36	6	1.2 x 3.2	650	750	G 6.35	8222 206 734..
5981	45	6.6	1.7 x 3.3	900	500	G 6.35	8222 206 767..
6281	100	6.6	2.8 x 7.0	2100	600	PG 16 x 20/6.35	8222 206 998..
5980	100	6.6	4.5 x 3.5	2500	1000	G 6.35	8222 206 766..
6292	150	6.6	5.5 x 4.0	3750	500	GY 9.5 ²⁾	8222 206 745..
6283	200	6.6	4.1 x 9.0	4800	600	PG 16 x 20/6.35	8222 206 999..
5979	200	6.6	7.8 x 4.0	5000	300	G 6.35	8222 206 765..
6372	200	6.6	5.0 x 4.0	5000	750	GY 9.5 ²⁾	8222 206 613..

¹⁾ Depending on switching cycle. ²⁾ Interchangeable with GZ 9.5.



QUARTZ HALOGEN DOUBLE-ENDED AIRFIELD LAMPS

Double-ended quartz halogen lamps.

These lamps cannot as such be built into an airfield luminaire but must be cemented in a holder by the supplier of the aviation lighting systems.

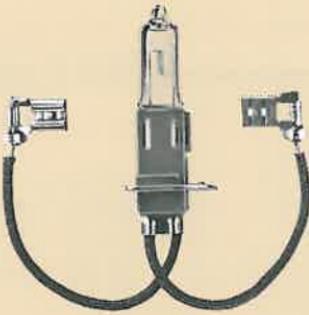
These lamps are used in all types of flush-mounted runway lights such as: centre line, threshold runway edge, and runway approach lights.

Type	Wattage W	Current A	Filament dimensions b x h	Luminous flux lm	Average life ¹⁾ h	Base	Ordering number
6859	30	6,6	3,2 x 1,0	540	700	MnN strips	8222 341 137..
6926	45	6,6	4,1 x 1,22	900	1000	MnN strips	9238 741 859..
6927	65	6,6	4,8 x 1,76	1300	1000	MnN strips	9238 742 859..
6941	100	6,6	6,0 x 2,1	2200	1000	MnN strips	8222 206 749 ..
6965	200	6,6	6,0 x 3,8	5500	700	Stranded wire	8222 341 110..

¹⁾ Depending on switching cycle.



6367C



6371C

QUARTZ HALOGEN AIRFIELD LAMPS WITH CABLE CONNECTION

Quartz halogen airfield lamps for series circuits.

The Philips quartz halogen airfield lamps are high quality lamps used in many airfield centre line and touch-down zone lighting systems.

Type	Wattage W	Current A	Filament dimensions b x h	Luminous flux lm	Average life ¹⁾ h	Base	Ordering number
6367C	45	6,6	5 ± 1	850	1000	P 18s	9238 703 859..
6371C	100	6,6	5,5 ± 1	2500	1000	PK 18d	8222 206 934..

¹⁾ Depending on switching cycle.



QUARTZ HALOGEN DICHROIC MIRROR REFLECTOR AIRFIELD LAMPS

Quartz halogen lamps with an integral reflector.

The reflector has a dichroic coating which reflects only about 25% of the generated heat; the remaining 75% is radiated backwards. This results in cooler lenses and colour filters.

The lamp 5971 is for use in Visual Approach Slope Indicator Systems (VASIS). The lamp 5996 is for the T-VASIS systems. The purpose of the Visual Approach Slope Indicator System is to give a pilot of an aircraft on a final approach, in reasonable to good visibility conditions, an easily interpreted visual indication of his position in relation to the fixed glide path. VASIS is not an instrument landing system and is of limited value in poor visibility.

Note:

The lamp type 5996 replaces type 5978. In the case of replacement remove and connect leads to terminal block.

Type	Nominal wattage W	Current A	Mirror	Average life h	Base	Ordering number
5971	50	6,6	Dichroic	1000	GZ 6,35	9238 736 859..
5996	53	6,6	Dichroic	1000	Fly leads	9238 962 859..



INCANDESCENT AIRFIELD LAMPS

Incandescent airfield lamps with bayonet base for series circuits.
 Philips incandescent airfield lamps are extensively used in many important
 airfield installations due to their reliable operation.
 This reliability is the result of advanced production techniques and rigid quality
 control standards.
 These lamps are used in elevated lights like:
 approach, runway, taxiway and obstruction lights.

Type	Wattage W	Current A	Filament dimensions b x h	Luminous flux lm	Average life ¹⁾ h	Base	Ordering number
7669 C	30	6,6	5 x 3,5	450	1000	P28s	9224 000 859..
6326 V	35	5,83	6,4 x 2,2	530	1000	BA20s	9224 011 855..
7654 C	45	6,6	5 x 4	730	1000	P28s	9224 020 859..
7668 C	100	6,6	9,2 x 9	1850	1000	P28s	9224 049 859..
6936 C	210	6,6	7 x 7	4500	300	P28s	9224 185 859..
7670 C	200	6,6	6,9 x 4,2	4600	200	P28s	9224 062 859..

¹⁾ Depending on switching cycle.



ALPHABETICAL INDEX

To locate a listing, check first under main key word, then under possible alternative words. Wherever applicable, products are listed both under key word of general description and under commercial designation.

A

A-30 Christmas tree illumination set	51
A 60, A 65 clear bowl reflector lamps	60
A 60, A 65, A 80, A 90 inside-frosted bowl reflector lamps	60
Accessories for Direct Contact System	340
Accessories to Philips flashguns	103
Accessories, System 2000	125
ACS 20, 40, 42	335
Actinic lamps 'TL'/05, 'TL'/03, 'TL'/09	227
Adjustable plug-in night light	52
AG3B flash bulb	126
AGS 20, 40, 42	342
Air and water sterilization, TUV germicidal lamps for	237
Air-supply diffusers, linear, ZGN 400	288
Air-supply diffusers, linear, ZGN 401	290
Aircraft ballasts	174
Airfield lamps	474-478
Airfield lamps, incandescent	478
Airfield lamps, quartz halogen dichroic mirror reflector	477
Airfield lamps, quartz halogen double-ended	475
Airfield lamps, quartz halogen with bi-pin base	474
Airfield lamps, quartz halogen with cable connection	476
Alkaline-manganese dioxide batteries	485
Anti-insect lamps	50
Approach lights	458-461
'Argaphoto' lamps	110
'Argenta' lamps	28-30
Attachments GTX 100-101-102-103 to TMX 200 battens and	
TTX 100 trunking	311
Automotive lamps	132-135
Auxiliary lamps – European standardized	133
Auxiliary lamps – standard types, interior	135
Auxiliary lamps – standard types, exterior	134

B

Ballasts for HP lamps	206
Ballasts for HPI and HPI-T lamps	207
Ballasts for PL* lamps, 220 V/50 Hz and 240 V/50 Hz	183
Ballasts for SON and SON-T lamps	209
Ballasts for SOX lamps	212
Ballasts for 'TL' fluorescent lamps	170
Base-fitting ring-electrode glow lamps	147
	493

Basic battens TMS 012	300
Basic unit for PL* lamps, FWX	370
Battens TMW 065	316
Battens TMX 100 'SLIM' empty (non-prewired)	309
Battens TMX 100 'SLIM' with through-wiring	307
Battens TMX 100 'WIDE' empty (non-prewired)	309
Battens TMX 100 'WIDE' with through-wiring	308
Batteries	481-489
Battery rechargers PRU 010	104
Battery tester	490
Bicycle lamps	140
Bicycles with auxiliary motor, lamps for	140
Black-and-white analyser/timer PDT 2020	123
Blacklight blue and blacklight lamps, 'TL'/08, TW, HPW, MLW	234
Blended light lamps	205
Blown bulb reflector lamps	56-59
Bollards	420-421
Bounce panel PFB 507	103
Bowl reflector lamps	60-62
Building-related modules, TBS 100 luminaires for ceilings with	276

C

Candle lamps – 'Argenta'	29
Candle lamps – clear	33
Candle lamps – coloured	37
Candle lamps – flame	35
Candle lamps – inside-frosted	31
Carbon filament lamps	42
Carrying bags PFB 501-502-503-504	104
Ceiling luminaires, FBS 233, FCS 233	374
Ceiling suspension system GPS 100	280
Ceiling suspension system GPS 200	284
Ceilings with building-related modules, luminaires for	276
CGH 060-062-066 patient room system	293
Chargers for nickel-cadmium rechargeable batteries	487
Christmas tree and illumination lamps	148
Christmas tree illumination sets	51
Circuit breakers, electronic, for SON and SON-T lamps	211
Circular 'TL'E lamps	162
Circular rapid-start 'TL'E (M) RS lamps	168
Clear bowl reflector lamps	60
Clear lamps	32-33
'Colorenta' lamps	39
Colour analyser PCA 2060	124
Colour enlarger PCS 2000	116
Colour enlargers, universal, PCS 130 and PCS 150	115
Coloured lamps	36-37
Coloured reflector lamps	58
Coloured Spot and Flood pressed-glass reflector lamps PAR 38	64
Compact source lamps CS, CSI, CSX	217
Computerised flashguns P522C, P526C, P526TC, P526TCX	92
Consumer Spot Series DCN 200	337
Control panels LPS 1 and LPS 81	189
Cool Spot and Flood pressed-glass reflector lamps PAR 38	64
Copying lamps, halogen	235
CS, CSI, CSX compact source lamps	217

D

Darkroom enlarger accessories	117
Darkroom equipment	114-125
Darkroom lamps	111
Daylight blue lamps	49
DBN 101	362
DBS 282 Directional downlighters	363
DBS 420, 421, 422	360
DBS 430, 431, 432	356
DCN 120	339
DCN 200 Consumer Spot Series	337
DCN 350	336
DCN 490-491	338
DCN 600 Professional Spot Series	331
DCS 420, 421, 422	360
DCS 430, 431, 432	357
Decorative lamps	38-42
Dedicated flashguns	101
Deodorization and sterilization, HUV5 mercury lamp for	236
DGN 120	347
DGN 350	343
DGN 451	341
DGN 490	346
DGN 491	346
DGN 550	344
DHF 012	448
DHF 016	450
DHF 017	449
Dial/signalling lamps	141
Diazo copying lamps HOGK, HOQ, HOKI	226
Diffuser GMS 176	303
Diffuser, wall-mounting, GMS 102	304
Dimming ballasts for SON and SON-T lamps	211
Direct Contact System	330
Direct Contact System, luminaires for	331-340
Directional downlighters DBS 282	363
Disco lamps	59
Double-ended halogen floodlight lamps	71
Downlighter FBS 320/109	373
DRN 457	355
DRN 554	354
DSS 420, 421, 422	360
DSS 430, 431, 432	356
Dust-proof and jet-proof battens and luminaires	316-321
DVF 102	450

E

Economy Coloured Spot and Flood pressed-glass reflector lamps PAR 38	66
Economy Cool Spot and Flood pressed-glass reflector lamps PAR 38	66
Economy Spot and Flood pressed-glass reflector lamps PAR 38	66
Electro-mechanical ceiling system RPS 100	65
Electronic flashguns P532TC, P536TCLX, P536TCLS, P536TCLSX	351
Electronic lamps 'TL'D/80 HF	95
Enlarger with incorporated electronic timer, PCS 1000	158
	114
	495

Enlarging exposure meter/analyser and timer PDT 1020	120
Enlarging exposure meter/analyser PBA 1030	119
ES 08 electronic ignitor	177
Extended luminaires TBS 300/305/312 for ceilings with building-related modules	277
Extra-low-voltage lamps	43
F	
Fantasie lamp	30
FBD 234, FCD 234 wall-washers	376
FBS 233, FCS 233 ceiling luminaires	374
FBS 320/109 downlighter	373
FCN 305 for Direct Contact System	367
FCS 310, 311, 320, 321, 312, 322 light tiles	368
FGC 100 PL* Kombi	427
FGC 200 PL* Kombi	427
Film and slide projectors, halogen lamps for	82
Flame lamps	34-35
Flash bulbs	126-129
Flash cubes PFC 4 and Magicube	127
Flashbar	129
Flash bulbs PF1B and AG3B	126
Flashguns	90-105
Flashguns P516 and P518C	91
Flashlights	138
Flatlight luminaires TCS 605, 607, 608	372
Floodlights for halogen lamps	444-446
Floodlights for HID lamps	432-442
Floodlights for pressed-glass reflector lamps	448-450
Fluorescent lamps	152-169
FPP post-top luminaires	423
FWN 229 task lights	377
FWX basic unit	370
G	
G95 de Luxe globe lamps	41
G126 de Luxe globe lamps	41
GCB polystyrene louvre attachments to TMS battens	303
GCS 101 and GCS 102 louvre attachments to TMS battens	302
GDL reflectors for TMS battens	301
Gear for gas-discharge lamps	206-213
GGA 115 and GGA 130 reflectors for TGC 115 and TGC 130 mounting channels	239
GGB 130 reflector for TGC 130 mounting channel	240
GGZ 430, 431, 432 wall-washers for DBS/DSS 430, 431, 432	358
GKD reflectors for TMS battens	301
GKH reflectors for TMS battens	301
Glow lamps	144-147
GMS 102 wall-mounting diffuser	304
GMS 176 diffuser	303
Golden-mirrored bowl reflector lamps	61
GPS 100 ceiling suspension system	280
GPS 200 ceiling suspension system	284
GTX 100 attachments to TMX 100 battens and TTX 100 trunking	311
GTX 101 and GTX 102 attachments to TMX 100 battens and TTX 100 trunking	311
GTX 103 attachments to TMX 100 battens and TTX 100 trunking	311

H

Halogen floodlight lamps	71-73
Halogen reflector lamps	68-70
HDK 100/101/102/103/106 high-bay lighting luminaires	324
HDS 201/208-212 G	386
HDS 201/250 G	386
HDS-SDS 201/150-250	381
Headlight lamps	132
Hearing aids, MINICELL batteries for	489
HGC 130, HGC 131	420
HGC 133, HGC 134	421
HGS 201 Kombi	383
HGS 201/080-125 (G)	382
HGS 201/208-212 G	384
HGS 201/225 G*	385
HGS 201/250 (G)	384
HGS 201/400 (G)	385
HGS 203/080 G/125 G	387
HGS-SGS 201/250	380
HGS-SGS 201/400	380
High-bay lighting, luminaires for	322-326
High-pressure mercury lamps	198-201
High-pressure sodium lamps	194-195
HNF 001	432
HNF 002	433
HNF 003	434
HNF 013	436
HNF 206	435
HOGK diazo copying lamps	226
HOK lamps	224
HOKI diazo copying lamps	226
Hoogkant ballasts for 118V/50 Hz, 118V/60 Hz, 220V/60 Hz, 240V/50 Hz switch-start circuits	173
Hoogkant ballasts for switch-start operation of 'TL', 'TL'D, 'TL'E	
fluorescent lamps	170
HOQ diazo copying lamps	226
Hospital lighting	292-206
HP lamps	198
HP lamps, ballasts for	206
HPA lamps	222
HP/AB lamps	221
HPC 143, 144, 145	422
HPI lamps	202
HPI-T lamps	203
HPI and HPI-T lamps, ballasts for	207
HPI and HPI-T lamps, ignition devices for	208
HPK 125 W mercury lamp for photochemical processes	236
HPL Comfort lamps	200
HPL-N lamps	199
HPL-R and HPL-R Comfort lamps	201
HPM lamps	221
HPP post-top luminaires	423
HPR 125 W lamp	223
HP-T lamps	198
HPW blacklight lamp	234
HRP 010 G	388
HRP 011 (G)	389
HRP 012 (G)	390
HTQ ultraviolet drying and curing lamps	223
HUV 5 mercury lamp for deodorization and sterilization	236

Ignition devices for HPI and HPI-T lamps	208
Ignition devices for SON and SON-T lamps	210
Ignition devices for SOX lamps	213
Ignitor, electronic, ES 08	177
IMR 020/6 infrared module reflector unit	233
Incandescent floodlight lamps	74
Industrial battens and trunking systems	300-315
Infrared heat lamps for industry and agriculture, blown-bulb	230
Infrared heat lamps, pressed-glass	229
Infrared heat lamps, tubular quartz, IRH	232
Infrared lamps for health care	228
Infrared lamps, quartz, IRK	231
Infrared module reflector unit IMR 020/6	233
Infrared reprographic lamps IRK	234
Inset lights	467-471
Inside-frosted bowl reflector lamps	60
Inside-frosted lamps	31
Instant-start 'TL'R lamps for D.C. operation	169
Instant-start 'TL'X lamps	169
Integrated ceiling systems	280-290
IRH tubular quartz infrared heat lamps	232
IRK infrared reprographic lamps	234
IRK quartz infrared lamps	231

K

K lamps – 'Argenta'	28
---------------------	----

L

Lamp tester	54
Lampholder for PL* lamps	184
Lampholders for 'TL' lamps	177
Lens-end lamps	138
Lenslite lamps	139
Light Point	70
Light tiles FCS 310, 311, 320, 321, 312, 322	368
Lighting regulation equipment	187
Lighting regulator LR 248 for incandescent lamps	190
Lighting regulators LR 242 and LR 247 for fluorescent lamps	189-190
Louvre attachments, polystyrene, to TMS battens, GCB	303
Louvre attachments to TMS battens, GCS 101 and GCS 102	302
Low watts-loss ballast for 'TL' 45 W and 'TL'D 36 W	171
Low-brightness luminaire TBN 284	278
Low-pressure sodium lamps	196-197
LPB 81 control panel	189
LPS 1 control panel	189
LR 241 lighting regulator for fluorescent lamps	189
LR 247 lighting regulator for fluorescent lamps	190
LR 248 lighting regulator for incandescent lamps	190
LRP 10N manual potentiometer	188
LRP 23 electronic potentiometer unit	188
Lustre lamps – 'Argenta'	29
Lustre lamps – clear	33
Lustre lamps – coloured	36
Lustre lamps – flame	34
Lustre lamps – inside-frosted	31

M

M/SNF 201	439
Magicube	127
Marine lighting, floodlights for	452-454
Marker light accessories	466
Marker light replacement parts	466
MDK 051 and MDK 031 luminaires for indoor plant irradiation	365
MDK 100/101/102 high-bay lighting luminaires	326
Metal halide lamps	202-204
MGR 102/103/104 luminaires for plant irradiation	327
MHN lamps	204
Micro-bowl reflector lamps	62
Micrographic equipment, halogen reflector lamp for	81
Miners' lamps	142
Mini-bowl reflector lamps	62
Miniature 'TL' lamps	164
Miniature halogen lamps	143
Miniature indicator lamps	142
Miniature lamps	138-143
MINICELL batteries	489
MINICELL batteries for hearing aids	489
Mirror condenser lamp for film projectors	80
ML lamps	205
MLR lamps	205
MLW blacklight lamp	234
MNF 200	438
Modular strip-ceilings, luminaires for	269
Mounting channels TGC 115 and TGC 130 for TUV	
germicidal lamps	238
Movie and video lights, halogen photolamps for	112
Movie light PSG 125	107
Multiflash PMF 500	104
Multiple flash	128

N

Narrow-gauge film and slide projectors, lamps for	78
Nickel-cadmium rechargeable batteries	486
Night lamps	50
NNF 010	442
NPP post-top luminaires	423
NWG 135-16 'Philinea' luminaires	364

O

Obstruction light PS 14	473
Oven lamps	44
Overhead projector, double-ended halogen lamps for	82
Overhead projector, halogen lamps for	80

P

P 35 christmas tree illumination set	51
P 516 and P 518 C flash guns	91
P 532 GTC, P 536 GTCL, P 536 GTCLS, P 536 GTCLSX,	98
P 546 GTCLX professional flashguns	98
P 532 TC, P 536 TCLX, P 536 TCLS, P 536 TCLSX	
electronic flashguns	95
P522, P526 C, P526 TC, P 526 TCX computerized flashguns	92
PAR 38 lamps	63-66
PAR 56 lamps	67
Patient room system CGH 060-062-066	293
PBA 1030 enlarging exposure meter/analyser	119
PC 35 micro-bowl reflector lamps	62
PC 45 mini-bowl reflector lamps	62
PCA 2060 colour analyser	124
PCS 1000 enlarger with incorporated electronic timer	114
PCS 130 and PCS 150 universal colour enlargers	115
PCS 2000 colour enlarger	116
PDC 1010 electronic timer	118
PDC 2010 digital timer	121
PDT 1020 enlarging exposure meter/analyser and timer	120
PDT 2015 process timer	122
PDT 2020 black-and-white analyser/timer	123
PF1B flash bulb	126
PF8P topflash	128
PFB 104 power pack	103
PFB 501-502-503-504 carrying bags	104
PFB 507 bounce panel	103
PFC4 flash cube	127
'Philinea' lamps	38
Philux lamps	59
Photochemical processes, HPK 125 W mercury lamp for	236
'Photocrescenta' lamps	111
Photolamps	109-112
'Photolita' lamps	109
Pilot lamps	48
Pilot lamps – coloured	37
Pilot lamps – flame	35
Pin-base projector lamps for narrow-gauge film projectors	79
PL * lamps	182
PL * lamps, 220V/50 Hz and 240V/50 Hz, ballasts for	183
PL * lamps, luminaires for	367-377
Plant irradiation, luminaires for	327
Plant irradiation, MDK 051 and MDK 031 indoor luminaires for	365
Plaster, wood and other non-modular ceilings, TBS 212 and	
TBS 185 luminaires for	279
Plug-in night lights	52
PMF 500 multiflash	104
Post-top luminaires	422-426
Potentiometer unit, electronic, LRP 23	188
Potentiometer, manual LRP 10N	188
Power pack PFB 104	103
Power track system RCS 655 for surface mounting	348
Prefocus flashlight lamps	138
Preheating transformer	172
Pressed-glass reflector lamps	63-67
Process timer PDT 2015	122

Professional flashguns P 532 GTC, P 536 GTCL, P 536 GTCLS, P 536 GTCLSX, P 546 GTCLX	98
Professional Spot Series DCN/QCN 600	331
Projection and cine lighting, lamps for	77-86
PRU 010 battery rechargers	104
PS 14 obstruction light	473
PS 16 runway edge light	462
PS 22 omni-directional approach light	458
PS 22 taxiway edge light	465
PS 24 approach light	459
PS 27/04 taxiway centre line light	467
PS 28 approach light	460
PS 29/04 touch-down zone light	468
PS 31/04 runway centre line light	469
PS 34/04 taxiway curve centre line light	470
PS 37/04 approach, runway threshold or runway end light	471
PS 45 runway edge light	463
PS 116 runway edge light	464
PS 124 approach light	461
PSG 125 movie light	107
PSU 100 and PSU 110 slave units	104
PVL 125 video light	108

Q

QBN 282 directional downlighter	363
QCN 210	332
QCN 220	334
QCN 600 Professional Spot Series	331
QKF 101 Flood-Kombi	446
Quick selection guide, flashguns	105
QVF 410	444
QVF 411	444
QVF 412	444

R

R39, R50, R63, R80 reflector lamps	56
R50, R63, R95 coloured reflector lamps	58
R95, R125 reflector lamps	57
Rapid-start 'TL' RS and 'TL'M RS lamps	165-166
RCS 655 power track system for surface mounting	348
Recessed and close-ceiling mounting, luminaires for	356
Recessed mounting, luminaires for	257-279
Reflector GGB 130 for TGC 130 mounting channel	240
Reflectors GDL for TMS battens	301
Reflectors GGA 115 and GGA 130 for TGC 115 and TGC 130 mounting channels	239
Reflectors GKD for TMS battens	301
Reflectors GKH for TMS battens	301
Reinforced construction lamps	43
Reprographic lamps XOP	220
Road lighting luminaires for 'TL' fluorescent lamps	405-407
Road lighting luminaires for high-pressure mercury lamps	382-390
Road lighting luminaires for high-pressure sodium lamps	391-397
Road lighting luminaires for low-pressure sodium lamps	398-404
Road lighting luminaires without integral gear	380-381
RPS 100 electro-mechanical ceiling system	351
Runway edge lights	462-464

S

SDK 100/101/102 high-bay lighting luminaires	325
SDP 253	404
SDP 252	404
SDS 201/150 G	395
SDS 201/207 G	395
SDS 201/250 G	395
Security and orientation lighting, luminaires for	427-428
Sewing machine lamps	47
SGR 102/103/104 luminaires for plant irradiation	327
SGS 201/050 G	391
SGS 201/070 G	391
SGS 201/100 G	391
SGS 201/150 G	393
SGS 201/207 G	393
SGS 201/215 G	394
SGS 201/250 (G)	393
SGS 201/400 G	394
SGS 201/KOMBI	392
SGS 203/050 G	396
SGS 203/070 G	396
SGS 203/100 G	396
SGS 203/100 TG	397
SGS 203/150 TG	397
Single-ended halogen floodlight lamps	73
SL * lamps	180
Slave units PSU 100 and PSU 110	104
Slimline lamps	167
SN tin-halide lamps	219
SNF 026	440
SNF 200	438
SNT 001	452
SNT 003	454
SNT 001/Zone 2	453
SNT 003/Zone 2	454
SON lamps	194
SON-H lamps	195
SON-T lamps	194
SON and SON-T lamps, ballasts for	209
SON and SON-T lamps, dimming ballasts and electronic	
circuit breakers for	211
SON and SON-T lamps, ignition devices for	210
SOX lamps	196
SOX-E lamps	197
SOX lamps, ballasts for	212
SOX lamps, ignition devices for	213
SP and SPP lamps	218
SPC 143, 144, 145	422
Special applications, luminaires for	278
Special incandescent lamps	43-50
Special products	51-54
Special purposes, lamps and luminaires for	215-240
Spot and Flood pressed-glass reflector lamps PAR 38	63
Spot, Flood and Wide Flood pressed-glass reflector lamps	
PAR 56	67
Spots for RCS 655 and RPS 100 systems	352
Spots for RCS 655 power track	354

SPP post-top luminaires	423
SRM 120	400
SRM 120 X	400
SRS 201	401
SRS 202/90 G	402
SRS 202/90-135	402
SRS 202/135 G	402
SRS 202/135-180	402
SRS 202/205-209	403
SRS 202/209 G	403
SRX 001/002/003	416
Standard lamps – 'Argenta'	29
Standard lamps – clear	32
Standard lamps – coloured	36
Standard lamps – flame	34
Standard lamps – inside-frosted	31
Standard modular ceilings, luminaires for	257
Standard spectral lamps	225
Starter holders	177
Starterless operation of 'TL'M RS/'TL' RS lamps, ballast for	171
Starters	176
Step-up transformer	172
Striplite lamps	40
Studio lamps, double-ended halogen	85
Studio lamps, halogen	84
Super 8 film, halogen reflector lamps for	83
Super Lux lamps – 'Argenta'	28
Super-high-pressure mercury lamps, SP, SPP	218
Surface mounting, luminaires for	244-255
Suspension system, TGH 237 multi-version stem	305
Switch-start 'TL'D and 'TL' lamps	161
Switch-start operation of 'TL' miniature lamps, ballasts for	171
Switch-start operation of 'TL'M 140 W RS lamps, ballasts for	171
System 1000	118
System 2000	121
System 2000 accessories	125

T

Task lights FWN 229	377
Taxiway edge light PS 22	465
TBN 284 low-brightness luminaire	278
TBS 100 luminaires for ceilings with building-related modules	276
TBS 185/285 luminaires for modular strip-ceilings	269
TBS 261 luminaires for modular strip-ceilings	274
TBS 300/305/312 extended luminaires for ceilings with building – related modules	277
TBS 300/305/312 luminaires for standard modular ceilings	257
TBS 312, TBS 185 luminaires for plaster, wood and other non-modular ceilings	279
TCH 220 luminaire for 'TL' fluorescent lamps	321
TCH 327 surface-mounted luminaire	320
TCH 328 vandalproof luminaire	320
TCK 101/102/103/104 'TL' KOMBI'S	315
TCS 029 luminaires for surface mounting	246
TCS 129 luminaires for surface mounting	247
TCS 232 luminaires for surface mounting	244
TCS 312 luminaires for surface mounting	248

TCS 444 luminaires for surface mounting	255
TCS 605, 607, 608 Flatlight luminaires	372
TCW 075 luminaires for 'TL' fluorescent lamps	318
Television lamp	49
TGC 115 and TGC 130 mounting channels for TUV	
germicidal lamps	238
Theatre lamps, quartz halogen	86
Three-light lamps	30
Timer, digital, PDC 2010	121
Timer, electronic, PDC 1010	118
Tin-halide lamps SN	219
'TL' (M) RS very-high-output lamps	166
'TL' colour choice guide	152-157
'TL' fluorescent lamps	152-169
'TL' light colour characteristics	152
'TL' RS and 'TL'M RS rapid-start lamps	165-166
TL * lamps	184
'TL'/05, 'TL'/03, 'TL'/09 actinic lamps	227
'TL'/08 blacklight lamps	234
'TL'D and 'TL' lamps, /80 range	160
'TL'D lamps, /93 and /94 range	159
'TL'D/80 HF electronic lamps	158
'TL'E (M) RS circular rapid-start lamps	168
'TL'E circular lamps	162
'TL'R instant-start lamps for D.C. operation	169
'TL'U RS U-shaped rapid-start lamp	168
'TL'U U-shaped lamps	162
'TL'X instant-start lamps	169
TMS 012 'TL' KOMBI	306
TMS 012 basic battens	300
TMW 065 battens for 'TL' fluorescent lamps	316
TMX 100 'SLIM' battens with through-wiring	307
TMX 100 'SLIM' battens, empty (non-prewired)	309
TMX 100 'WIDE' battens with through-wiring	308
TMX 100 'WIDE' battens, empty (non-prewired)	309
Topflash	128
Torches	490
TPP 140 post-top luminaires	426
Traffic signal lamps, halogen	136
Traffic signal lamps, normal	136
Transformers, series isolating	472
Transistor ballasts for 'TL' and 'TL'D lamps	175
Transparent coloured disco-lamps	59
TRC 026	405
TRC 027	405
TRK 220	406
TRL 320	407
Trunking system TTX	313
TRX 001/002/003	412
TTX trunking system	313
Tubular lamps	45
Tunnel lighting, luminaires for	409-416
TUV germicidal lamps for air and water sterilization	237
TW blacklight lamp	234
Twisted candle lamps – clear	33

U

U-shaped 'TL'U lamps	162
U-shaped rapid start 'TL'U RS lamp	168
Ultraviolet drying and curing lamps HTQ	223

V

Vandalproof luminaire TCH 328	320
Very-high-output 'TL' (M) RS lamps	166
Video light PVL 125	108
Voltage indicator screwdrivers	53

W

W10, W15, W20, W35, WA-15 christmas tree illumination sets	51
Wall and ceiling mounting, luminaires for	331-347
Wall-washers FBD 234, FCD 234	376
Wire-terminal green fluorescent glow lamps	146
Wire-terminal rod-electrode glow lamps	144-145

X

XGC 001 KOMBI	428
XGS 201 KOMBI	399
XGS 201/018 G	398
XGS 201/035 G	398
XGS 201/218 G	398
XNF 003 G	441
XOP reprographic lamps	220
XPP 140 post-top luminaire	426
XRX 001/002/003	416

Z

ZGN 400 linear air-supply diffusers	288
ZGN 401 linear air-supply diffusers	290
Zinc-manganese dioxide batteries	482

Lighting Division
1030 924 00111



Printed in the Netherlands
1/84



PHILIPS