PHILIPS' GLOWLAMP WORKS LTD.

GENERAL CATALOGUE

NOVEMBER 1923

Errata.

- Page 6. We do not supply the Argentalamp 25 Watts for 25-139 Volts but for 25-179 Volts. Argentalamp Type 30 Watts to be cancelled.
- Page 11. All Halfwattlamps from 200 up till 2000 Watts are delivered pipless. The dimensions remain the same.
- Page 16. Lamps of reinforced construction are now also delivered in the following types:

Volts C. P.	C D	Turns	Diam.	Total length		
		inches	Ed.	Swan		
90-130	5	320	2	4 1/4	4	
130-179	10	322	2	4 1/4	4	
180-250	10	321	2	4 7/8	4 3/4	

- Page 17. Spiralised filament lamps, Type 298 and 319 (Perfume burners) consume:
 for 100-179 V. 15 Watts,
 for 180-240 V. 20 Watts.
- Page 26. Candle lamps of form D 5 C.P. (Type 318) are manufactured for 90-129 Volts only.

 All lamps of form D are made with spiralised filament only.
- Page 31. The upper picture on this page is the reproduction of Type 192 b and 192 c.

 The lower picture represents the types 192 and 192 a (tubular shape). Instead of 193 b read 192 b.
- Page 32. Nightlamps with bulbs of Argenta-glass are indicated by Type No. 312 and 313, corresponding with 112 and 113 for the ordinary frosted Nightlamps.

 Nightlamps with globes of Argenta-glass are furnished pipless; therefore deduct ³/₁₆" from specified length.
- Page 35. Carbonlamp, Type 198, 30 C.P. read 50 C.P.
- Page 39. Fitting HIN is also supplied as Type HINA with Albasta-Bowl.

NOVEMBER 1923

Gwen out from Lules Dept by me while I worked at Clavene It necessary Lown Hall their moved to Margaret St.

PHILIPS PRODUCTS



PHILIPS'
GLOWLAMP WORKS LTD.

PHILIPS' GLOWLAMP WORKS LTD.

This new edition of our general catalogue gives full and descriptive information on all

PHILIPS' PRODUCTS

which have earned world-wide reputation in the lighting field.

We beg to notice that the following new articles have been added:

Argenta-Lamps of large sizes.

Albasta-Lamps.

Philux and Albasta lighting glass (Canopies and ceiling plates).

Tungsten Arc-Lamps for special projection purposes.

Should you be in need of any other articles in our line of manufacture, not mentioned in this catalogue, please let us have your enquiries.

PHILIPS'
GLOWLAMP WORKS Ltd.

AH Grimwood employed by Philips Lamps+Windew Jales Dept aduly from Veb 1927 to INDEX Feb 1928.

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When ordering "PHILIPS" Lamps

please give exact information as to:

- 10) number and type of lamps required.
- 20) Exact voltage of circuit remember that excess-voltage shortens the life of the lamps, whereas under-voltage impairs their efficiency.
- 30) Kind of supply (D. C. or A. C.), only when ordering Night-lamps. Savelite lamps and Tungsten Arc-lamps can only be used on A. C. supplies. All other types of lamps burn equally well both on D. C. and on A. C.
- 40) Size of lamps. Vacuum lamps with straight filament are rated in Candle-Power, gasfilled lamps and vacuum lamps with spiralised filament are rated in Watts.
- 50) Finish of bulb: clear, half frosted, full frosted or silvered.
- 6°) Cap or Lampbase: The bases or caps that can be supplied are mentioned separately with every type of lamp. The lampbases generally used are:
 - A. Edison Screw caps:

 Mogul- or Goliath Screw (G.E.S.) 39.3 mm. = $1^{9}/_{10}$ inch
 Standard Edison Screw (E.S.) 26.5 mm. = $1^{1}/_{18}$ inch
 Small Edison Screw (S.E.S.) 13.8 mm. = $9/_{18}$ inch
 - B. Bayonet Caps
 Standard Bayonet (B.C.)
 Small Bayonet (S.B.C.)
 22.5 mm. = ⁷/₈ inch
 15.0 mm. = ¹⁹/₃₂ inch
 For caps of motor-car lamps we refer to our separate catalogue 738 E.
- 70) Limits of dimensions only in case of absolute necessity. Dimensions as stated in this catalogue are true with a tolerance of about 3/16 inch.
- 80) Series burning: state the series letters on lamps of our manufacture already in use.

As we are continuously searching for further improvements, all dimensions and details of construction given are subject to change without notice.

There is a "PHILIPS" Lamp for every purpose.

Philips' Glowlamp Works Ltd. are in a position to supply an incandescent lamp for every purpose of lighting, having adapted their products to the special needs of all types, as to size of bulb, shape, concentration of filament and burningposition.

The extension in the range of the incandescent lamp is largely due to the

GASFILLED LAMPS.

Instead of the former evacuation of the bulb, these lamps are filled with an inert gas, thereby reducing the process of evaporation of the tungsten filament used. These gasfilled lamps can consequently be operated at a higher temperature, resulting in a more brilliant white light and increased efficiency.

The gas used is Nitrogen or Argon, extracted out of the air in our own up-to-date gasplants by a certain process.

The filament — drawn tungsten wire — is most uniformly coiled on special machines of our own invention, all of which machines were manufactured in our own engineering shops.

THE VACUUM LAMPS

are holding their own field of application, and their manufacture has not in the least been impaired by the extension in the range of the gasfilled-type lamps. The Vacuum Lamps are being made both with the straight and the helical filament, and in all sizes up to 100 C. P.

Philips' Lamps from 0.3 — 10,000 C.P. are used all over the world.

Philips' Argenta Lamps







REG. TRADE

Philips' Argenta Lamps have been recognised as the most remarkable improvement wherever they have been introduced.

The bulbs of these lamps are tipless, they are made of opal glass specially prepared, by virtue of which no more light is lost than with ordinary frosted lamps. Glare and sharp shadows are entirely eliminated. The surface of the bulbs being smooth, less dust collects on them and they can easily be cleaned.

Volts	Watts	Туре	Overall Length inches				Stand. Pack. Quan.
			Dia Bulb	E. S.	в. с.	G.E.S.	Quant
25-139 25-139 25-260 25-260 25-260 25-260 20-260 20-260 20-260 20-260 20-260	25 30 40 60 75 100 150 200 300 400 500	245 316 221 223 225 227 229 230 231 232 233	2 2 ¹ / ₈ 2 ³ / ₈ 2 ¹ / ₂ 2 ³ / ₄ 3 ¹ / ₈ 4 4 ³ / ₈ 5 ⁷ / ₅ 6 ³ / ₄ 7 ⁷ / ₈	35/8 37/8 43/8 47/8 53/8 6 83/8 93/4 115/8	3 ⁵ / ₈ 3 ⁷ / ₈ 4 ¹ / ₄ 4 ⁵ / ₈ 5 5 ⁵ / ₈ 7 ³ / ₄ 9 ¹ / ₄ 11 ¹ / ₈		500 500 500 500 250 200 * 125 * 65 * 25 * 12 *

''Philux'' Accessories for Argenta-Lamps



PHILUX CANOPY



PHILUX CEILING-PLATE

"Philux" Accessories are made from the same white glass, of which Argenta lamps are made. Therefore they perfectly match these. Philux canopies make a nice fixture out of the simple drop-cord, whereas Philux Ceiling-plates are easily fitted to the ceiling by a special spring-device.

Object	Type	To be used with lamps	Diam.	Height inches	Weight	
Canopy	500	40 60 W	13/4	41/2	0.060 kg	
"	510	75—100 W	13/4	51/2	0.070 ,,	
Ceiling-plate	520	40 – 75 W	5°/4	31/8	0.165 "	
Spring attachment	530	• _	-	- i	-	
				- F		

Philips' Albasta-Lamps

GASFILLED



Albasta-Lamps are fancy-lamps with coloured-glass bulbs of artistic design. Two tints are provided:

- a. brown
- b. olive-green and yellow.

When lighted the difference in colour practically disappears.

The glass itself being stained, all risk of fading colours is eliminated. Lamps can also be cleaned like ordinary lamps.



Albasta-lamps can replace silk-shades and similar devices, which are as a rule quickly spoiled by dust and destroyed by heat.

Volts Watts	Watts	Туре	Diam. Bulb	Overall incl	Stand. Pack. Quan.	
		inches	E. S.	B. C.		
100-250	40	259	21/2	4 ⁷ / ₈	4 ⁵ / ₈	500

Albasta Canopies and Ceiling-Plates



These lighting-accessories correspond to the Philux-Accessories as described on page 7.

They are made of Albasta-glass, to match Albasta-lamps.

When ordering, the colour should be stated as follows:

- a. brown
- b. olive green and yellow.



Albasta-accessories are specially recommended for wood-furnished interiors, wooden ceilings, etc.

Object	Туре	To be used with lamps	Diam. inches	Height inches
Albasta canopy brown	501	40 W	13/4	41/2
" " olive green	502	40 W	13/4	$4^{1}/_{2}$
Albasta ceiling plate				
brown	521	40 W	5 ⁸ / ₄	31/8
olive green	522	40 W	53/4	31/8
Spring attachement	530	_	_	_

Philips' Arga Lamps



A LAMP OF HIGH EFFICIENCY



A long experience in the manufacture of small gasfilled lamps for the most usual voltages of electric supplies (110-220 V) is incorporated in the Philips' Arga Lamps.

Their efficiency, their brilliant white light as well as their small dimensions, which make them suit in any fixture, have earned for the Philips' Arga Lamp a high reputation.

Where the lamps are suspended in such a way as to be visible, preference should be given to the Argentalamp (page 6)

Volts Watts		Туре	Diam. of Bulb	Overall inc	Stand. Pack.	
		inches	E. S.	В. С.	Quan.	
20179	25	29	2	4	4	500
180-230	30	29a	21/8	$4^{1}/_{4}$	41/8	500
20-260	40	30	23/8	$4^{3}/_{4}$	45/8	500
20-260	60	. 31	21/2	51/8	5	500
20-260	75	32	23/4	51/2	53/8	500

Philips' Halfwatt Lamps

GASFILLED



The gasfilled lamp has completely ousted the arc-lamp for interior and exterior lighting purposes, owing to its high efficiency and its white light of a uniform intensity. Moreover it does not require any supervision.

Special fixtures have been designed by us to prevent glare and to produce the most suitable distribution of light (see page 38 and 39).

Wherever the lamps remain visible, Argenta-Lamps should be used, which can be supplied up to 500 Watts.

Volts	Volts Watts		Watts	Туре	Diam. of Bulb	Ov	erall L inche	-	Stand. Pack. Quan.
			inches	E. S.	в. с.	G. E. S.	Qualit		
20-260	100	33	31/8	6 ¹ / ₈	57/8	_	250		
20-260	150	34	31/2	$7^{1}/_{8}$	$6^{3}/_{4}$		250		
20-260	200	35	4	85/8	77/8	81/8	200*		
30-260	300	36	43/8	-	_	91/2	125 *		
30-260	400	37a	43/4		_	97/8	100*		
30-260	500	37	51/8	<u>-</u>		10 ³ / ₈	90*		
50- 95	750	38	57/8	· .—=		121/2	65 *		
96-260	750	38	57/8	_	_	$11^{5}/_{8}$	65 *		
50 95	1000	39	$6^{3}/_{4}$	_	emilion.	133/8	25*		
96-260	1000	39	63/4	-	-	123/8	25*		
60-260	1500	40	77/8	_	-	151/2	12 *		
80—260	2000	212	91/2	-	_	187/8	6 * * barrel packing		

Philips' Street-series Lamps

Series lamps are much in favour for street-lighting on account of their high efficiency, even with low intensity lamps, and on account of the simplification of the wiring. The current intensity has been standardised at the following values: 4-5.5-6.6-7.5-9.6-15 and 20 Amp. Automatic cut-outs should be provided for every lamp in the circuit, in order to prevent an interruption of the lighting of the whole series in case one lamp should burn out.

All street-series lamps are supplied with G.E.S. caps.

		Voltag	e at 1	amp i	in a c	ircuit o	f			ter
Nominal C P	4 amp.	5,5 атр.	6 6 amp.	7.5 amp.	9.6 атр.	15 amp.	20 ашр.	length inches	diam. inches	light center length.
40	8,7	_	_		_	-		71/4	3	5 ³ / ₈
60	11,9	8,5	7,1	6,4	_	-	_	"	"	2)
80	15,1	10,8	9,1	8,0	-	_		"	"	"
100	18,9	13,0	10,9	9,6	-	-	_	"	"	"
150	_	- 1	15,3	_	-		-	"	"	"
200	_	-	18,3	17,5				91/4	43/4	7
250	50,0	29,7	23,5	19,6	-	. –	-	"	"	"
300	_	<u>-</u>	25	_		_	_	22.	"	"
350	-	-	29	-	-	_	_	"	**	"
400	71,5	47,4	37,1	30,5	24,0	15,3*)	11,5*)	27	22	22
600	107,3	-	55,7	45,8	35,9	_	15,5*)	"	"	"
1000		_	75 .	_	60,0	-	26,0	$12^{3}/_{8}$	51/8	91/2
1500	- 1	_	-	_	-	_	37,8	"	"	"
2000	- 5	-	-	-	-	-	50,0	77	"	"

^{*)} dimensions for these three lamps are $12^3/_8-5^1/_8-9^1/_2$ resp.

Philips' Daylight Lamps



By the use of bulbs of a specially prepared blue glass that acts as a filter retaining superfluous red rays, the colour of the light of these lamps is changed until it closely resembles daylight.

Artificial daylight as produced by Philips' Daylight Lamps ensures accurate comparison of colours at any time. Preference to Philips' Daylight Lamps is therefore given for the lighting of millinery-stores, flower-shops, printing works, studios, mills, dyeworks, etc.

Volts	Watts	Туре	Diam. of Bulb inches	Ov E.S.	erall L inches	S =	Stand. Pack. Quan.
20-179	60	48	21/2	47/8	43/4	_	500
180—260	75	48a	23/4	- 5 ¹ / ₄	5	_	500
20-260	100	49	3¹/ ₈	6	5 ¹ / ₂	_	250
20—260	150	50	31/2	61/2	61/8		250
20—260	200	51	4	81/2	77/8	81/4	200 *
30—260	300	52	48/8	_		91/2	125 *
30-260	400	53	43/4	-	_	11	100 *
30-260	500	54	5 ¹ / ₈	-	_	11 ⁸ / ₈	90 *
50-260	750	55	5 ⁷ / ₈	_	_	113/8	65 *
50-260	1000	56	68/4		-	121/8	25 *
60-260	1500	57	77/8	=	. –	15 ¹ / ₂ * barrel p	12 *

Philips' metal filament Lamps



VACUUM LAMPS PEAR - SHAPE BULBS



Volts C. P		Туре	Diam. of Bulb inches		Length hes	Stand. Pack. Quan.
			inches	E. S.	B. C.	Quan.
25-129 130-179 180-230	5	1	1 ³ / ₄ 2 2 ¹ / ₄	4 ¹ / ₈ 4 ¹ / ₄ 4 ⁷ / ₈	4 4 ¹ / ₈ 4 ³ / ₄	500 500 500
25-129 130-179 180-260	10	2	1 ³ / ₄ 2 2 ¹ / ₄	4 ¹ / ₈ 4 ¹ / ₄ 4 ⁷ / ₈	4 4 ¹ / ₈ 4 ³ / ₄	500 500 500
25-179 180-260	16	3	2 2 ¹ / ₄	4 ¹ / ₄ 4 ⁷ / ₈	4 ¹ / ₈ 4 ³ / ₄	500 500
25-179 180-260	25	4	2 2 ¹ / ₄	4 ¹ / ₂ 5 ¹ / ₈	4 ¹ / ₄ 5	500 500
25-179 180-260	32	5	2 2 ¹ / ₄	4 ⁵ / ₈ 5 ¹ / ₈	4 ¹ / ₂ 5	500 500
25-129 130-179 180-260	50	6	2 ¹ / ₄ 2 ¹ / ₄ 2 ¹ / ₄	5 4 ⁷ / ₈ 5 ¹ / ₄	4 ⁷ / ₈ 4 ³ / ₄ 5 ¹ / ₄	500 500 500
25-260	100	6a	27/8	61/2	61/4	250

Philips' metal filament Lamps



VACUUM LAMPS ROUND BULBS



Volts	C. P. Type		Diam. of Bulb inches			ll Length iches	l Length ches		
		5	Bulk	E. S.	B. C.	S.E.S.	S.B.C.	Stand. Pack. Quan.	
25-179	5	7	21/8	31/2	31/4	31/2	38/8	600	
25—179 180—260	10	8	2 ¹ / ₈ 2 ³ / ₄	3 ¹ / ₂ 4 ¹ / ₈	3 ¹ / ₄	3 ¹ / ₂	3³/ ₈	600 500	
25—179 180—260	16	9	2 ¹ / ₈ 2 ³ / ₄	3 ¹ / ₂ 4 ¹ / ₈	3 ¹ / ₄ 4	3 ¹ / ₂	3³/ ₈	600 500	
25—179 180—260	25	10	3 3 ¹ / ₈	4 ¹ / ₂ 4 ³ / ₄	4 ¹ / ₄ 4 ⁵ / ₈	_ *	-	500 400	
25-179 180-260	32	11	3 3 ¹ / ₈	$\frac{4^{1}/_{2}}{4^{3}/_{4}}$	4 ¹ / ₄ 4 ⁵ / ₈	=	-	500 400	
25-260	.50	12	31/8	43/4	45/8	****		400	
25-260	100	13	43/6	61/2	61/8	_	_	100	

Philips' Lamps of Reinforced Construction. Mill-Type Lamps



VACUUM-LAMPS PEAR - SHAPE BULBS

(ROUND BULBS WILL BE SUPPLIED ON REQUEST)



Philips' Mill-Type Lamps of Reinforced Construction give entire satisfaction even when subjected to continuous vibrations or repeated mechanical shocks. They should therefore be used for the lighting of factories, mills, ships, lifts, etc. as well as for tram- and trainlighting service.

Data regarding lamps for low voltage trainlighting systems will be supplied on request.

Volts	C. P.	Туре	Diam. of		Length ches	Stand.
V Ozas		- 31	inches	E. S.	В. С.	Quan.
90—179 180—260	16	25	2 2¹/4	4 ¹ / ₄ 4 ⁷ / ₈	4 4 ³ / ₄	500 500
90—179 180—260	25	26	2 2¹/₄	$\frac{4^{1}}{2}$ $5^{1}/8$	4 ¹ / ₄ 5	500 500
90—179 180—260	32	27	2 21/4	$4^{5}/_{8}$ $5^{1}/_{8}$	4 ¹ / ₂ 5	500 500
90—179 180—260	50	28	2 ¹ / ₄ 2 ³ / ₈	4 ⁷ / ₈ 5 ¹ / ₄	4 ³ / ₄ 5 ¹ / ₄	500 500

Philips' spiralised filament Lamps







Type 298

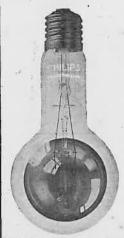
Spiralised Filament Lamps of the Vacuum Type are supplied with round bulbs only, with the exception of the lamp type 319 which is also supplied in a cylindrical bulb as no. 298. Both these lamps are not made for lighting purposes, but to heat small vaporisers, which distribute incense and perfumes.

	Watts	ъ.	1. of inch.	Ove	rall Le	ngth in	ches	Stand.
Volts	Wa	Type	Diam. Bulb i	E.S.	B.C.	S.E.S.	S.B.C.	Quan.
100-240	15	298	11/8	-		25/8	21/2	200
100-240	15	319	15/8		-	27/8	21/2	200
90—170	15	19	13/4	31/8	23/4	3	27/8	1000
90-260	20	20	2	31/4	27/8	31/4	31/8	1000
90-260	30	21	21/8	31/2	31/4	31/2	33/8	600
90-260	40	22	23/8	33/4	33/8	38/4	31/2	500
90-260	50	23	23/4	41/8	4	-	-	500
90-260	100	24	31/2	53/8	51/8		-	250

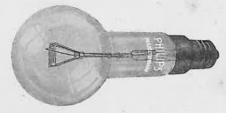
Philips' Projection Lamps

GASFILLED

Vert. type



Horizontal type



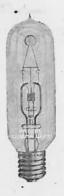
Philips' Lamps for projection or stereopticon service can be used in any lantern to replace the arc-lamp. They give as much light with A. C. as with D. C., they require no attendance and yield a constant light.

	Volts	Watts	C.P.	Туре	Diam. of Bulb	Overall Length incl		light center
					inch.	E.S.	G.E.S.	length
ā	100 - 130	60	70	287	2 ³ / ₈	41/8	_	3 ³ / ₈ 3 ³ / ₄
position or.		100 150	135 225	107 64	$\frac{2^{3}/_{4}}{3^{1}/_{8}}$	$\frac{4^{1}/_{2}}{4^{7}/_{8}}$		3°/4
	1	200	310	290	$3^{1/8}$	53/8	_	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
riz. po mirror	100-130	300	500	291	$4^{3}/_{8}$	-	91/2	1 / 2
hout y	}	500	860	66	$4^{3}/_{4}$	_	97/0	81/0
s for ho	200-250	750	1350	67	$5^{1/3}_{8}$	-	101/2	85/8
Lamps for horiz. without mir		1000	1800 2700	68 69	$\frac{5^{7}/8}{6^{3}/4}$	-	$12^{3}/_{8}$ $13^{1}/_{4}$	10 10 ³ / ₄
Lar		1500 2000	3600	309	77/8	_	137/8	$10^{3}/4$
-i	100-130	60	115*)	294	23/8	41/8	I -	1 -3
itio	. (100	230	106	$ 3^{1}/_{8} $	61/4	_	43/4
l position mirror.		150	400	58	31/2	71/4	_	$\frac{5^{1}/_{2}}{4^{1}/_{2}}$
	100-130	200 300	540 850	288 289	$\frac{3^{1}/_{2}}{4^{3}/_{8}}$	61/4	91/2	$\frac{7}{7^{1}/4}$
with	100-130	500	1550	60	$\frac{1}{4^3/4}$		97/0	$7^{1/2}$
1 20	200-250	750	2350	61	$5^{1/8}$		$10^{3}/_{8}$	$7^{7}/_{\circ}$
ps for rovide 2000		1000	3150	62	57/8	_	$12^{1}/_{4}$	93/8
Lamps pro		1500	4800	63	63/4	_	13 ¹ / ₈ 14 ¹ / ₈	$9^{7/8}$ $10^{1/4}$
تـــــــــــــــــــــــــــــــــــــ		2000	3600	310	77/8		144/8	10-/4

^{*)} The candle-power of these lamps has been measured with a silver-coated bulb. (2000 W. excepted).

Philips' Cinema Lamps

GASFILLED



Philips' Cinema lamps have highly concentrated filaments, by virtue of which they can replace the arc-lamp for moving-picture service. To get good results the voltage should not be higher than 130 volts, so a series resistance or a transformer should be used on 220 V. supplies. The low-voltage cinema-lamp (30 V. 30 A.) possesses the smallest filament (7/16 by 7/16) and the highest intrinsic brilliancy.

Once adjusted, Philips' Cinema Lamps give a constant light and

do not need any attendance.

An adjustable lampholder with G. E. S. fitting and spherical mirror can be supplied in which the lamp burns with the tip up-

For further particulars, see special list 730 E.

Volts	Watts	Туре	Diam. of bulb	total length	light center length
1	300	295	21/8	$7^5/_8$	35/a
100-130	600	296	21/2	91/4	43/4
	1000	297	23/4	91/4	43/4
30	900	75	23/4	91/4	43/4

Philips' Floodlighting Lamps

GASFILLED



These lamps are specially made for floodlighting-projectors, searchlights and headlights whose mirror has a central opening through which the neck of the lamp can pass. These lamps are specially designed to burn in a horizontal position and in any position except tip down within 45 degrees of vertical position. For floodlight projectors with vertical axis of lamp we recom-

For floodlight projectors with vertical axis of lamp we recommend the use of projection lamps for vertical burning (see page 18).

Low voltage floodlighting lamps are used for locomotive headlight service.

Volts	Watts	Туре	Diameter of Bulb inches	Overall Length with E.S. cap inches	light center length
25 - 40 } 100 - 130 }	100	120	31/8	47/8	3
	150	121	. 31/2	5 ¹ / ₈	3
25 — 40 100 — 130	250	123	4	5 ³ / ₈	3
200-240	500	125	51/8	71/4	41/4

The 500 W. lamp can also be supplied with G. E. S.

Philips' Photo-Studio Lamps

GASFILLED.



Gasfilled lamps in general may replace arc-lamps for photo-studio work, although on account of their lower actinic value the time of exposure should be prolonged. A considerable shortening of the exposure can, however, be obtained by the use of

PHILIPS' PHOTO-STUDIO LAMPS.

These lamps are enclosed in large frosted bulbs in order to soften shadows and to prevent glare. They can be supplied with "Daylight" bulbs, which do not cause an increase of actinic value, but tend to make the bright light less objectionable to the eye.

Volts	Volts Watts		Diameter Bulb inches	Length with G. E. S. cap inches.	
90-260	300	116	8	131/4	

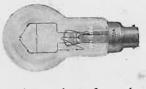
The average life of these supercharged lamps being about 50 hours, it is recommended to use them on full voltage during the exposure only. During the remainder of the time the voltage should be reduced by a suitable resistance, for which purpose we can supply specially selected carbon filament lamps of 25 V. 2.4 A. for supplies from 110–125 V. and of 50 V. 1.2 A. for 220 V. supplies. To use one carbon lamp in conjunction with every photostudio lamp.

Philips' Tungsten Arc-lamp

(SELF-STARTING)



vertical type



Horizontal type (seen from above)



resistance

The tungsten-arc lamp is a real point source of light, which has proved very useful for microphotography, dark-ground illumination in microscopy, for micro-projection and optical experiments, as well as for small moving-picture apparatus for domestic use.

Philips' tungsten arc-lamp is self-starting. Its light is produced by two tiny spheres of tungsten, placed closely together and heated by the arc to a very high temperature.

Like every arc-lamp Philips' tungsten arc-lamp should always be used in series with a resistance. The use of our special resistances is strongly recommended, as they keep the current to the right value. The current intensity should never drop under its normal value, as this will cause blackening of the bulb.

see special bulletin 733 E.

Tungsten-Arc-lamp for 220 V. AC. only	Intensity of current	Total length inch	Light center length inch	Diam. of bulb inch.
Vertical type Horizontal type """	1.3 amp 2.5 amp 1.3 amp 2.5 amp	4 ¹ / ₈ 5 ¹ / ₈ 4 ¹ / ₈ 5 ³ / ₈	2 ³ / ₈ 2 ³ / ₄ 3 ¹ / ₂ 4 ³ / ₄	$ \begin{array}{c c} 1^{1}/_{4} \\ 1^{1}/_{2} \\ 2^{1}/_{8} \\ 2^{1}/_{2} \end{array} $

Philips' Projector Lamps

WITH SPIRALISED FILAMENT



The spiralised (helical) tungsten filament, mounted in a circle, has been placed as close as possible to the opal shade, thereby assuring a more effective and even distribution of light, without those awkward spots directly underneath the lamp.

More than $^3/_4$ of the flux of light of the Philips' Projector Lamps with opal shade is thrown in downward direction. With other incandescent lamps, on the contrary, the flux of light is equally distributed between the upper and the lower hemisphere.

Philips' Projector Lamps should be applied in all those instances, where light thrown in downward direction is needed, but where for one reason or another a separate shade or reflector cannot be used. Philips' Projector Lamps are particularly effective when used in silk-shaded fixtures.

These lamps can be supplied with white or green opal shades.

Volts	Watts	Type	Diameter inches	Overall inc	Stand Pack.	
				E. S.	В. С.	Quan.
90-260	20	187	27/8	33/4	31/2	500
90—260	30	188	27/8	33/4	31/2	500
90—260	40	189	27/8	33/4	31/2	500
90-260	50	190	27/8	33/4	31/2	500

Philips' Illumination Lamps



SUPPLIED WITH PEAR-SHAPE BULB OR WITH ROUND-BULB



As lamps for low-tension series-lighting are of great mechanical strength and easily wired, illumination lamps are usually made for 14 V. Lamps with a luminous intensity of 3 C. P. are preferred for this purpose. They are placed into a series circuit, in such a number, that their total voltage corresponds with the supply voltage.

For decorative purposes these lamps can be supplied with a frosted-coating of the following colours: red, blue, green, orange, white.

Volts			Diameter of Bulb inches		Ove	ches			
Volts	1		Pear	Pear Round		Pear Shape		Round Bulb	
•			shape	bulb	S.E.S.	S.B.C.	S.E.S.	S.B.C.	
10-25	3	108	11/8	15/8	25/8	23/8	25/8	23/8	

Standard Packing Quantity 1000

Philips' X-mas-tree lighting-sets





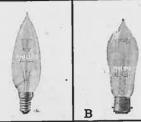
Everybody can light up electrically a X-mas-tree by means of our lighting sets, containing lamps (incl. spare lamps for renewals), lamp-holders with swivel-clamps, flexible green leads and plug in neat cardboard boxes, everything connected and ready for use.

Lamps are supplied in different colours, and are very much alike wax-candles. They avoid any risk of wax dropping on to the floor and any danger of fire.

A special advantage of electric lamps when used on big trees lies in the fact that they can be lighted at once.

Volts	Туре	Number of lamps	Spare lamps	Diam. of lamps
100-135		2 × 8	2	
140170	317	12	4	1/2"×4"
200—250	4.5	16	2	

Philips' Candle Lamps







These fancy-lamps are supplied with the following bulbs:

A. Plain candle.

B. Conical shape.
C. Twisted candle.
D. New type candle.

The bulbs of these lamps have a neck of small diameter, which permits the insertion of the lamp into the porcelain tubes of candelabrum fittings.

candelabrum fittings.									
Form	Volts	C. P.	Type	Diam. of Bulb		Length hes			
			1	inches	S. E. S.	S. B. C.			
A	90-179 180-260 90-179 180-260	25 25 32 32	137	$egin{array}{c} {f 1^3/_8} \ {f 1^1/_2} \ {f 1^3/_8} \ {f 1^1/_2} \end{array}$	$egin{array}{c} m{4^1/_2} \ m{4^7/_8} \ m{4^1/_2} \ m{4^7/_8} \end{array}$	4 ³ / ₈ 4 ⁵ / ₈ 4 ⁵ / ₈			
В	90-129 90-240 90-240	5 10 16	139	1 ¹ / ₈ 1 ¹ / ₈ 1 ¹ / ₈	3 ⁵ / ₈ 3 ⁵ / ₈ 3 ⁵ / ₈	3 ³ / ₈ 3 ³ / ₈ 3 ³ / ₈			
C	90-129 90-129 130-240 90-129 130-260 90-179 180-260 90-179 180-260	5 10 10 16 16 25 25 32 32	110	13/8 13/8 13/8 13/8 13/8 13/8 11/2 13/8	$\begin{array}{c c} 4 \\ 4 \\ 4^{1}/_{2} \\ 4^{1}/_{2} \\ 4^{7}/_{8} \\ 4^{7}/_{8} \\ 4^{7}/_{8} \end{array}$	33/4 43/8 33/4 43/8 43/8 43/8 45/8 45/8			
D	90—260	5 10 16 25 32	318 .	1	45/8	43/8			

Lamps of 5, 10 and 16 C.P. and 90-129 Volts are supplied with straight tungsten filament, whereas all other lamps mentioned above are supplied with spiralised filament.

Standard Packing Quantity: for lamps of 90-179 Volts 1000. 180 - 260

Philips' Candelabrum Lamps

The distinguishing feature of these lamps is that the lower part of same is enclosed in a tube of white opal glass, giving them the appearance of ordinary candles. Therefore no special fittings with loose porcelain tubes are needed. Edison fittings are recommended to hold these lamps in a perfectful straight position.

Philips' Candelabrum Lamps are noticeable for their stylish appearance and their beautiful finish.



Volts	G D	C. P. Type	Diam. of Tube inches	Overall Length inches			
Volts	Ç, P.			E.S.	в. с.	S.E.S	S.B.C.
90260	10	133	1	75/8	75/8	8	73/4
90-260	16	133	- 1	75/8	7 5/ ₈	8	73/4
90 260	25	133	1	75/8	7 5/8	8	73/4

Philips' Tubular Lamps



On account of their small dimensions, notably of their small diameter, Tubular Lamps can be used as fancy lamps in lighting fixtures or also as a source of light in such places where only a very restricted space is available e. g. in showcases, transparent signs, as signal lamps on switchboards, for the lighting of musicians' desks etc.



	The state of the s		Diameter	Overall Le	rerall Length inches	
Volts	C. P.	Type	of Bulb inches	S. E. S.	S. B. C.	
90—260	10	109	11/8	41/8	4	
90—260	16	109	11/8	41/8	4	
90-260	25	109	11/4	43/8	41/8	

Lamps of 5, 10 and 16 C. P and 90—129 Volts are supplied with straight tungsten filament, whereas all other lamps mentioned above are supplied with spiralised filament.

Standard Packing Quantity: for lamps of 90-179 Volts 1000

,, ,, ,, ,, ,, 180–260 ,, 50

Philips' Show-window Lamps



Show-window lamps are tubular lamps with a spiralised filament, stretched from one end to the other. Caps are attached on both ends. Special fittings to suit these lamps will be supplied on request. Half-silvered show-windowlamps do not require any further special reflector.



Volts	C. P.	Туре	Diam. of Tube inches	Overall Length inches	Diam. of caps inches
90—129 90—129 130—260	16	142 213 144	7/8 7/8 11/8	8 ⁵ / ₈ 10 10 ¹ / ₄	5/8 5/8 3/4
90260	25	142 152	7/8 1 ¹ / ₂	8 ³ / ₄ 11	5/ ₈ 3/ ₄
90-260	32	154	11/2	121/8	3/4
90-260	50	154	11/2	121/8	3/4
90260	100	156	17/8	13	8/4



A special lampholder can be supplied with these lamps (No. 275).

Philips' Turn-down Lamps

FULL LIGHT. 25 C. P.



LIGHT DIMMED 5 C. P.

A pull of the string with the black bead instantly changes the light emitted by a Philips' Turn-Down Lamp from a full bright to a subdued one. Philips' Turn-Down Lamps bring about a considerable saving in electric current and as no special fittings are required they can be used on any outlet.

The absence of a resistance in the fitting prevents undue heating of same.

Volts C. P.		Туре	Diameter of Bulb	Overall Length inches	
			inches	E. S.	В. С.
100-230	25/5	163	21/4	53/4	5³/ ₈

Philips' Savelite Lamps



There has always been a big demand for lamps for continuous lighting purposes, consuming as little electric current as possible as e. g. for the lighting of corridors, stair-cases, hotels as well as hospitals, W.C.'s, cupboards etc. In all these instances a lamp of 1-2 C.P. provides ample supply of light.

This demand is now entirely met by the PHILIPS' SAVELITE-LAMP

a lamp that saves money by preventing waste of light. Hereby is brought within the reach of the users of alternating current a lamp of $1^{1}/_{2}$ C. P. only, which may be used on the ordinary voltages (100–260 Volts).

ordinary voltages (100-260 Volts).

No special apparatus has to be installed, the lamp itself carrying in its own socket a suitable condensor to reduce the voltage of the supply without loss of energy to the voltage of the filament in the lamp.

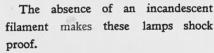
Volts	C. P.	Type	Diam. of Bulb		Length ches
Voits	C. P.	Type	inches	E. S.	В. С.
Alternating current of 40-100 cycles (specify voltage and number of cycles). 100-250 200-250	1.5 1.5	192 192a	13/a 11/8	5 ³ / ₈ 4 ⁵ / ₈	4 ³ / ₄
100-250 200-250	1.5 1.5	193b 192c	2 ¹ / ₈ 2	5 ¹ / ₈ 4 ³ / ₈	$\frac{4^{1}/_{2}^{4}}{4^{1}/_{2}}$

Philips' Nightlamps



The luminous discharge of electricity in Neongas produces a soft subdued light of a warm orange colour, which is very suitable for nightlighting in bed-rooms, nurseries, infirmaries etc.

The current consumed by our nightlamps of this type being extremely small, nightlighting is rendered very cheap by these lamps.





Nightlamps are supplied with frosted bulbs a well as with white bulbs, like the Argenta-lamps. A photograph of a lamp taken before frosting is reproduced to show the stout helical wire between which the luminous discharge is produced.

77-14-	Terms	Overall inch			
Volts	Туре	inches	E. S.	B. C.	
100-260 A. C. 150-260 D. C.	112 113	2 ³ / ₈ 2 ³ / ₈	4 ³ / ₄ 4 ³ / ₄	43/4 43/4	

Philips' Photolamps





Ruby lamps for use in darkrooms should give sufficient light to see and yet not cause any veil on the plates. Most kinds of glass, though apparently red, cannot be used for photographic purposes. The glass used for the bulbs of Philips' Photolamps has stood a spectrometer test. The spiralised tungsten wire radiates less heat than the carbon filament, which is an advantage for the use of Philips' Photolamps in hot climates or in ill-ventilated darkrooms.

For treating gaslight papers photolamps are made with bulbs of a bright red colour. If these lamps are wanted, please mention the word "bright" in

your order.

Volts Type		Diameter inches	Overall Length inches	
		inches	E. S.	B. C.
100-150 200-240	117 118	2 ¹ / ₄ 2 ¹ / ₄	5 ³ / ₈ 5 ¹ / ₂	5 ¹ / ₈ 5 ¹ / ₈

Philips' Frostcoloured Lamps

It is generally recognised that alcoholic lacquers cannot provide a permanent coloured coating of electric lamps. Heat and light tend to destroy these colours within a short time.

The search for a more permanent coloured coating of lamps has resulted in the production of frost-coloured lamps.

These lamps are treated in such a way, that the colours appear exactly the same during daytime, when the lamps are not lighted, as they do during the night, when lamps are lighted.

This offers a great advantage as far as the use of these lamps for decorative purposes is concerned.

Only these colours, which are standard, can be supplied:

white, red, green, blue and orange on the following lamps:

pearshape and spheri-	vacuum- lamps only	pearshape and spherical bulb illumination lamps projector lamps tubular and candleshape lamps carbon filament lamps up to 16 C. P.	page 14 & 15 " 24 " 23 " 26 & 28 " 35
	lamps	illumination lamps projector lamps	" 24
vacuum- lamps lamps lamps illumination lamps projector lamps tubular and candle-	only ·	shape lamps	" 26 & 28
vacuum- lamps only illumination lamps projector lamps tubular and candle- shape lamps ,, 24 ,, 23 ,, 23 ,, 26 & 28		up to 16 C. P.	,, 35

Philips' Carbon Lamps

22.00	Volts	C. P.	Туре	Diam. of Bulb inch.	Ove Length	
	i e s			D M	E.S.	B. C.
	50-260	5	193	21/8	4	38/4
	50-260	10	194	21/8	4	33/4
(*\	50-260	16	195	21/4	43/8	41/8
	50-260	25	196	21/2	43/4	$4^{1}/_{2}$
	50-260	32	197	25/8	47/8	$4^{5}/_{8}$
, , , , , , , , , , , , , , , , , , ,	50-260	30	198	23/4	5 ⁸ / ₈	51/4
	50-260	5	200	13/4	3	27/8
Round Bulb	50-260	10	201	13/4	3	27/8
	50-260	16	202	21/8	35/8	31/4
	50-260	5	203	11/8	33/4	31/2
Plain Candle	50-260	10	204	11/8 .	33/4	31/2
	50-260	16	205	11/8	33/4	31/2
	50—260	5	206	11/2	4 ⁵ / ₈	41/2
Twisted Candle	50260	10	207	11/2	45/8	$\dot{4}^{1}/_{2}$
	50-260	16	208	11/2	45/8	41/2
	50260	5	209	7/8	41/2	41/8
Tubular Lamps	50-260	10	210	7/8	41/2	$4^{1}/_{8}$
t in par	50-260	16	211	7/8	41/2	$4^{1}/_{\theta}$

Philips' Automobile Head Lamps PIPLESS. GASFILLED



Diam. Bulb: 2" Cap: 833 P (D.C.)

FOR	FOR AMERICAN CARS			EUROPE	AN CARS
Volts	C. P.	diam. inch.	Volts	C. P.	diam. inch.
	15 18 21 27 32 50 18 21 27 16 21 27 32 50 27 With cap (834 P) or D	. C. (833 P)	6 8 12 8 12	12 12 16 16 16 25 25 25 25 32 32 32 32 50 50 75 75 75 100 100	1 ¹ / ₄ 1 ⁵ / ₈ 2 2 ³ / ₈
D	OUBLE FILA	MENT			
6-8 6-8			834 P	With car	p: 3 P or special
* With	Cap D. C.	only		caps.	

Philips' Side and Taillamps

PIPLESS, VACUUM

Volts C. P. Diam. inch. 3-4 2 8/4 6-8 6-8 6 1 9 9 4 12-16 12-16 12-16 12-16 12-16 18-24 2 3/4	For AMERICAN CARS			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Volts	C. P.	Diam. inch.	
	6-8 6-8 6-8 9 9 12-16 12-16 12-16 12-16	6 12	3/4	



Diam. Bulb: 8/4" Cap: 833 P (D.C.) Tail-lamp

For EUROPEAN CARS

Volts*	C. P.	Diam. inch.
6	4	3/4
6	6	1
8	4	3/4
8	8	1
12	4	3/4
12	6	1
12	12	1

Diam. Bulb: 1" Cap: 834 P (C.P.) Side-lamp



Diam. Bulb: 1". Cap: 833 P (D.C.)
Mushroom-Tail-lamp

	MUSHROO.	M _.
Volts	C. P.	Diam. inch.
6	6	
12	6	(1



Diam.: 11/16". Total length: 2". Cap 847. Tubular for Fiat Cars

	TUBULAR	
6 8 12	6 6 6	5/8

Total length 2".

With Cap: S.C. (834 P) or D.C. (833 P)

TUBULAR FOR FIAT CARS 12 Total length 2". Cap: 847

TUBULAR FOR CARS WITH BOSCH LIGHTING SYSTEM 6 8/4

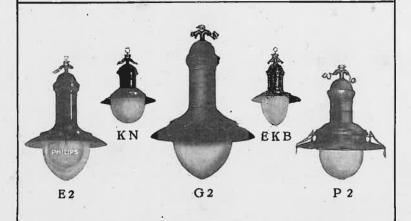
12 Total length 23/18". Cap: 863 **FESTOON**



Diam. : 5/8". Total length : 13/4". Festoonlamp

Philips' Lanterns

FOR IN- AND OUTDOOR LIGHTING



Philips' Lanterns for gasfilled lamps are black fire-enameled and absolutely weatherproof. The Lanterns E.K.B. & E.B. are furnished in blued brass with bands of polished brass. All lanterns are as a rule furnished with opalescent-globes, unless "clear-glass" is specified when ordering. If possible, it should be stated what size of lamp will be used in the lantern. Lanterns are supplied complete with wired suspension-device and lampholder. Please state when ordering lanterns to take lamps up to 200 Watts, whether E.S. or B.C. lampholders are required.

Туре	Suitable for gas- filled lamps of these sizes:	Lanterns are supplied with these fittings:	Overall Length inch.	Diam. of globe inch.	Туре	Diam. of Reflect. inch.
KN E 1 E 2 P 1 P 2 G 1 G 2 EKB EB	60— 200 Watts 300— 750 " 300— 750 " 300— 750 " 300— 750 " 1000—2000 " 1000—2000 " 60— 200 " 300— 750 "	E. S. or B. C. G. E. S. " " " " E. S. or B. C.	13 ¹ / ₂ 24 24 23 23 29 29 13 24	6 ³ / ₄ 8 ⁵ / ₈ 9 9 11 ³ / ₈ 11 ³ / ₈ 5 ⁷ / ₈	GL	11 none 15 ³ / ₄ none 17 ³ / ₄ none 19 ⁸ / ₄ 11

Philips' Fittings

FOR SEMI INDIRECT LIGHTING







HIK 2

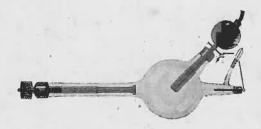
HIN

Semi-indirect lighting has become the favourite form of interior lighting with gasfilled lamps on account of the even distribution of the light and the absence of glare. The fixture H. I. N. is made of polished or oxidised brass, whereas the other fixtures are made of oxidised brass only. H. I. N. fittings can also be supplied with albasta bowls of slightly different form.

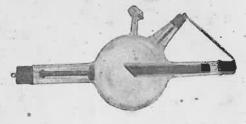
Туре	Suitable for gasfilled lamps of the following size	Extures are supplied with the following fittings	Overall Length inch.	Diameter of Glass Bowl inches	Type of Glass Bowl used	Diameter of reflector inches
HIKK	60—150 Wat	ts E. S. or B. C.	18	10	cover A 3	none
HIKK 2	60—150 "	<i>"</i>	20	10	bowl O 5	14
HIK I	200-500 Wat 200-500 "	ts G. E. S.	28 30	13 ¹ / ₄ 13 ¹ / ₄	cover A 1 bowl O 3	none 18
HIN 10 HIN 12 HIN 16 HIN 18	150— 200	none	27 ¹ / ₂ 31 ¹ / ₂ 33 ¹ / ₂ 39 ¹ / ₂ 41 ¹ / ₂	10 12 14 16 18	10 12 14 16 18	none

Philips' X-Ray Tubes

Tube for Therapeutics T III



Radiography Tube R III



RADIOGRAPHIC TUBES WITH RADIATOR WATER COOLED RADIOGRAPHIC TUBES HEAVY ANODE RADIOGRAPHIC TUBES TUBES FOR THERAPEUTICS VALVE TUBES OSCILLOSCOPE TUBES

FOR PARTICULARS SEE BULLETIN 736 E

Philips' Thermionic Valves

For wireless telegraphy and telephony we supply

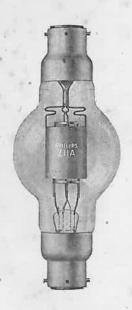
PHILIPS' RECEIVING VALVES
PHILIPS' TRANSMITTING VALVES
PHILIPS' RECTIFYING VALVES



Receiving Valve, Type D



Receiving Valve, Type E



Transmitting Valve, Type Z II A

FOR PARTICULARS SEE BULLETIN 732 E

