

HPL-N MERCURY-VAPOUR FLUORESCENT LAMPS

The Philips HPL-N lamps are particularly suitable for street lighting and industrial applications, where they will result in schemes with higher illumination levels and better colour rendition with no additional running costs.

Existing HPL equipment requires no alteration to take HPL-N lamps.

Philips HPL-N high-pressure mercury-vapour lamps form the latest range of mercury lamps to be introduced. Two important features distinguish these lamps from the mercury lamps hitherto available. Firstly, the light output is approximately 10% higher than that of existing HPL lamps. In addition, an exclusive rare earth phosphor coating is applied, resulting in an 85% increase in red.

The range comprises lamps with ratings of 50 W to 2000 W and luminous flux values of 1900 lm to 120000 lm!

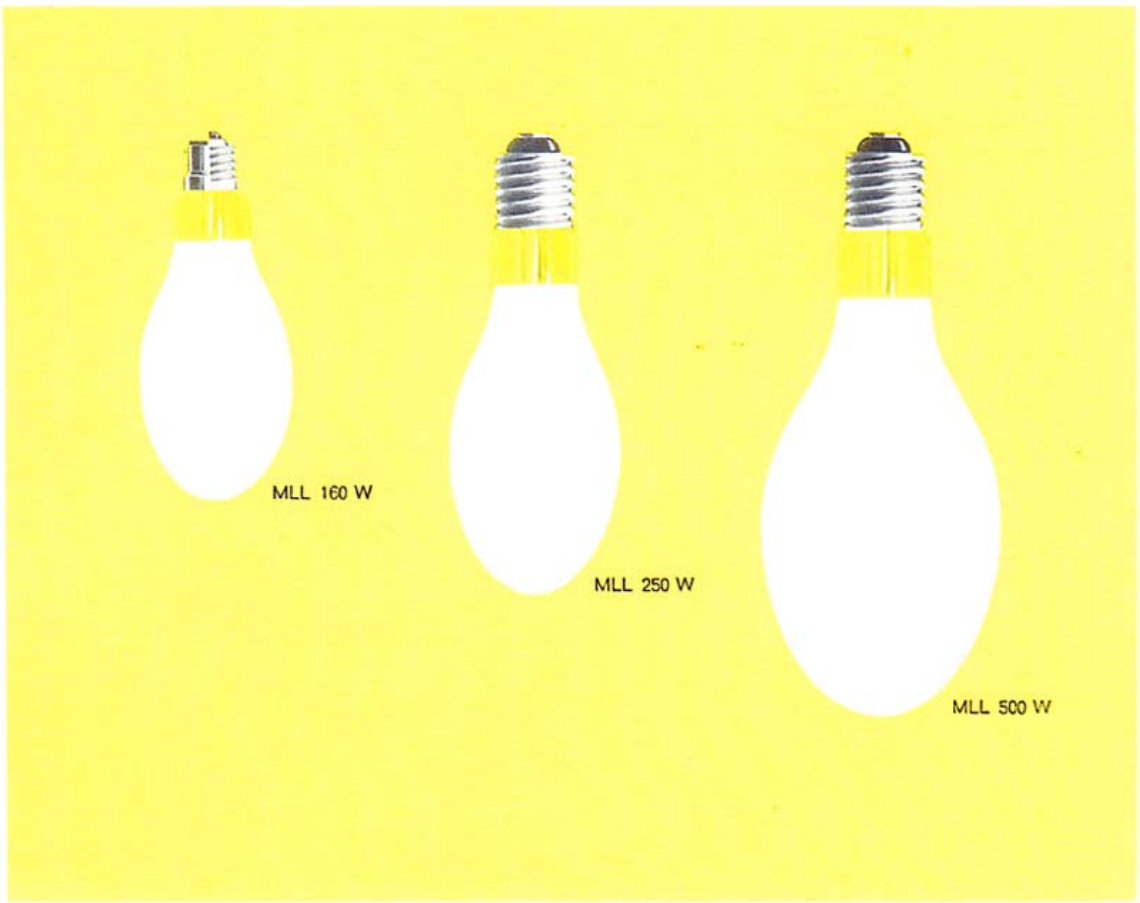
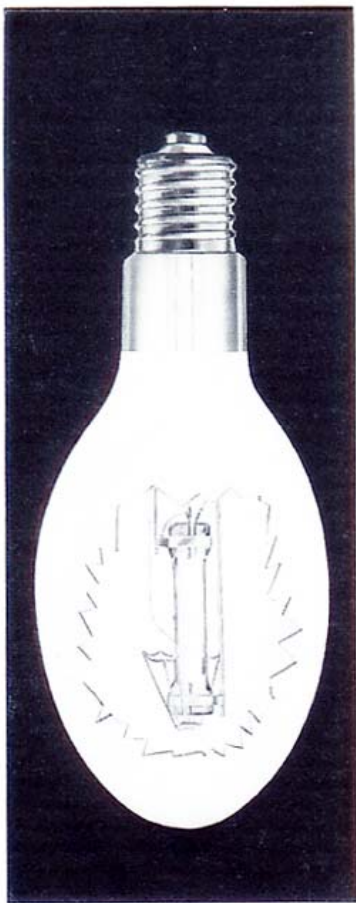
Philips HPL-N lamps thus combine excellent colour quality with very high luminous output and long service life.

Type ¹⁾	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux ²⁾ lm	Percentage of red ³⁾ %	Diam.	Max. length	Ordering number
HPL-N 50 W	57224 E/73	E 27	95	0.60	1900	14	55	129	9280 505 073 ..
	57224 B/73	B 22						124.5	
HPL-N 80 W	57235 E/73	E 27	115	0.80	3500	14	70	156	9280 510 073 ..
	57235 B/73	B 22						151.5	
HPL-N 125 W	57236 E/74	E 27	125	1.15	6250	13.5	75	177	9280 520 074 ..
	57236 B/74	B 22						172.5	
	57236 G/74	E 40						186	
HPL-N 175 W	57248 G/74	E 40	130	1.50	8600	12.5	90	226	9280 525 074 ..
HPL-N 250 W	57220 G/74	E 40	135	2.10	13500	12.5	90	226	9280 530 074 ..
HPL-N 400 W	57221 G/74	E 40	140	3.20	23000	11.5	120	290	9280 535 074 ..
HPL-N 700 W	57226 G/74	E 40	140	5.40	42500	10.5	140	329	9280 540 074 ..
HPL-N 1000 W	57222 G/74	E 40	140	7.50	57000	10.5	165	400	9280 545 074 ..
HPL-N 2000 W	57229 G/74	E 40	270	8.00	120000	10.5	185	445	9280 555 074 ..

¹⁾ For ballasts see page C 6

²⁾ After 100 burning hours

³⁾ At 0 hours



MLL BLENDED-LIGHT LAMPS

MLL lamps consist of a quartz mercury-discharge tube connected in series with a tungsten filament. This filament functions as an incandescent light source and at the same time it operates as a ballast for the mercury-discharge tube, by limiting the lamp current. Hence, MLL lamps can be connected direct to the mains (200 - 250 V, 50 - 60 c/s), without the use of ballasts.

The outer bulb of MLL lamps is internally coated with a corrective layer, to improve the colour rendition. This coating ensures a proper blending of the light of both sources, resulting in diffused and clear white light, with the attendant feature of reduced glare. A few minutes after an MLL lamp is switched on, the performance of the two light sources reaches its optimum efficiency. Philips MLL lamps meet fully the present demands for longer life, better luminous efficiency and economical light depreciation. All ratings are ovoid in design, just as the HPL-N lamps.

They are an excellent means to improve the lighting in many fields of application including streets, factories, stores, garages, etc.

Existing lighting installations with incandescent lamps can easily be modernized without any extra cost for control gear, wiring or new fittings.

Type	Type number	Base	Nominal voltage V	Min. mains voltage ¹⁾ V	Lamp current A	Luminous flux ²⁾ lm	Diam.	Max. length	Ordering number
MLL 160 W	57503 E/25	E 27	200-210	180	0.83	2950	75	177	9280 950 515 ..
	57503 B/25	B 22						172.5	9280 951 515 ..
	57504 E/25	E 27	210-220	180	0.79			177	9280 950 516 ..
	57504 B/25	B 22						172.5	9280 951 516 ..
	57500 E/25	E 27	220-230	180	0.75			177	9280 950 517 ..
	57500 B/25	B 22						172.5	9280 951 517 ..
	57501 E/25	E 27	230-240	190	0.72			177	9280 950 518 ..
	57501 B/25	B 22						172.5	9280 951 518 ..
57502 E/25	E 27	240-250	200	0.69	177	9280 950 519 ..			
57502 B/25	B 22				172.5	9280 951 519 ..			
MLL 250 W	57508 E/25	E 27	200-210	190	1.32	5500	90	216	9280 960 515 ..
	57508 G/25	E 40						227	9280 962 515 ..
	57509 E/25	E 27	210-220	190	1.26			216	9280 960 516 ..
	57509 G/25	E 40						227	9280 962 516 ..
	57505 E/25	E 27	220-230	190	1.20			216	9280 960 517 ..
	57505 G/25	E 40						227	9280 962 517 ..
	57506 E/25	E 27	230-240	195	1.15			216	9280 960 518 ..
	57506 G/25	E 40						227	9280 962 518 ..
57507 E/25	E 27	240-250	205	1.10	216	9280 960 519 ..			
57507 G/25	E 40				227	9280 962 519 ..			
MLL 500 W	57513 G/97	E 40	200-210	180	2.60	12500	120	290	9280 970 530 ..
	57514 G/97	E 40	210-220	180	2.50				9280 970 531 ..
	57510 G/97	E 40	220-230	180	2.40				9280 970 532 ..
	57511 G/97	E 40	230-240	190	2.30				9280 970 533 ..
	51512 G/97	E 40	240-250	200	2.20				9280 970 534 ..

Burning positions



160 W



250 W
500 W

MLL 160 W: vertical $\pm 30^\circ$, cap up or down.

MLL 250 W and 500 W: although a universal burning position is possible, a vertical position $\pm 45^\circ$ cap up or down is recommended, especially when undertension is expected.

¹⁾ Data valid for vertical burning position. For other burning positions values are slightly higher.

²⁾ After 100 burning hours.

HP MERCURY-VAPOUR LAMPS

When colour rendering is not essential, this super-high-pressure mercury-vapour lamp, with its bluish-white light, is extremely suitable for public lighting, floodlighting and outdoor and indoor application in industry. These HP lamps are, moreover, very useful in photochemical processes, egg testing, microscopic examinations, etc.

The discharge tube is made of quartz. The bulb is of clear or inside-frosted soft glass for the 80 W type; of clear hard glass for the 175, 250 and 400 W types; the 125 W version is available in clear or inside-frosted soft glass and in clear hard glass.

The burning position is universal.

Ballasts

For ballasts see page C 6.



Type ¹⁾	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux ²⁾ lm	Diam.	Max. length	Ordering number
HP 80 W	57235 E/00	E 27	115	0.80	3100	70	156	9280 510 000 ..
	57235 E/21 ³⁾	E 27					156	9280 510 021 .. ⁴⁾
	57235 B/00	B 22 II					151.5	9280 511 000 ..
	57235 B/21 ³⁾	B 22 II					151.5	9280 511 021 .. ⁴⁾
	57235 F/00	B 22 III					151.5	9280 512 000 ..
	57235 F/21 ³⁾	B 22 III					151.5	9280 512 021 .. ⁴⁾
HP 125 W	57236 E/00	E 27	125	1.15	5600	75	177	9280 520 000 ..
	57236 E/21 ³⁾	E 27					177	9280 520 021 .. ⁴⁾
	57236 E/92 ⁴⁾	E 27					177	9280 520 092 .. ⁴⁾
	57236 B/00	B 22 II					172.5	9280 521 000 ..
	57236 B/21 ³⁾	B 22 II					172.5	9280 521 021 .. ⁴⁾
	57236 B/92 ⁴⁾	B 22 II					172.5	9280 521 092 .. ⁴⁾
	57236 F/00	B 22 III					172.5	9280 522 000 ..
	57236 F/21 ³⁾	B 22 III					172.5	9280 522 021 .. ⁴⁾
	57236 F/92 ⁴⁾	B 22 III	172.5	9280 522 092 .. ⁴⁾				
HP 175 W	57248 G/92 ⁴⁾	E 40	130	1.50	8000	90	226	9280 525 092 .. ⁴⁾
HP 250 W	57220 G/92 ⁴⁾	E 40	135	2.10	11500	90	226	9280 530 092 .. ⁴⁾
HP 400 W	57221 G/92 ⁴⁾	E 40	140	3.20	21000	120	290	9280 535 092 .. ⁴⁾

¹⁾ For ballasts see page C 6

²⁾ After 100 burning hours

³⁾ Inside frosted; soft glass

⁴⁾ Clear; hard glass

HP/T MERCURY-VAPOUR LAMPS

HP/T lamps are non-colour-corrected high-pressure mercury-vapour lamps, consisting of a quartz discharge-tube, contained in a tubular hard glass outer envelope. These lamps have a high luminous flux and ensure excellent visual acuity. They are suitable for installations where colour rendition is of minor importance.

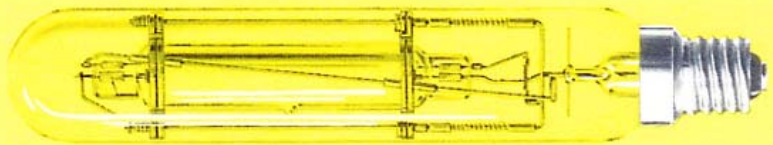
Special applications for these lamps include photography, photo-chemical processes, egg testing, microscopic examination, etc.



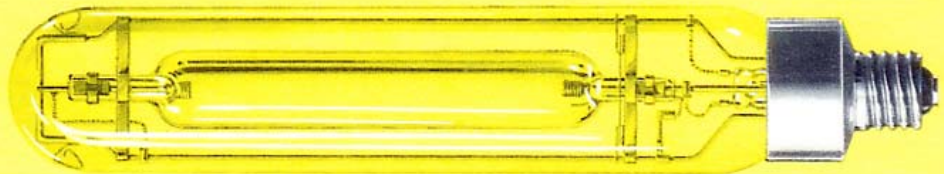
HP/T 250 W



HP/T 400 W



HP/T 1000 W



HP/T 2000 W

Type ¹⁾	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux ²⁾ lm	Diam.	Max. length	Ordering number
HP/T 250 W	57130 G/92	E 40	135	2.10	11500	46	257	9280 585 092 ..
HP/T 400 W	57131 G/92	E 40	140	3.15	21000	46	313	9280 595 092 ..
HP/T 1000 W	57213 G/92	E 40	145	7.50	52000	65	382	9280 605 092 ..
HP/T 2000 W	57214 G/92	E 40	150	14.00	118000	82	472	9280 610 092 ..

¹⁾ For ballasts see page C 6

²⁾ After 100 burning hours

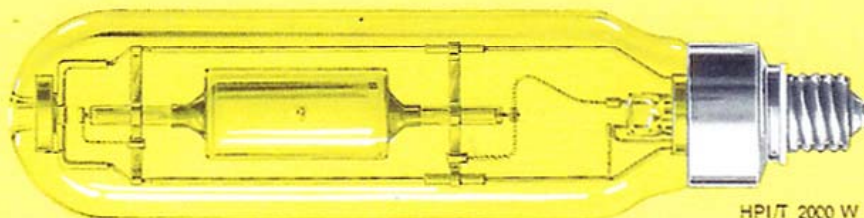




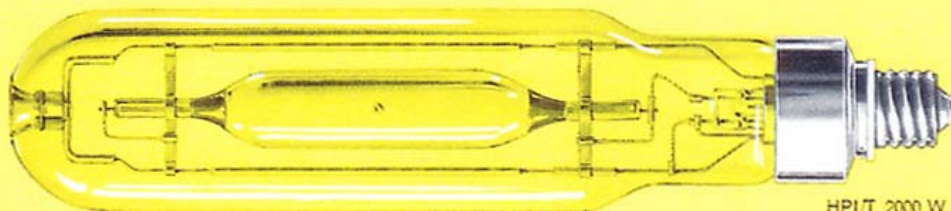
HPI 400 W



HPI/T 400 W



HPI/T 2000 W



HPI/T 2000 W

HPI - HPI/T HIGH-PRESSURE MERCURY HALIDE LAMPS

The special mixture of well chosen metal halide additives in the discharge of these lamps creates a light source with outstanding colour characteristics combined with a very high luminous efficiency. These characteristics make these lamps specially suitable for applications where the combination of good colour rendering and a high illumination level is a necessity.

Type	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux lm	Diam.	Max. length	Ordering number
HPI 400 W	126647	E 40	125	3.4	28000	120	290	9280 731
HPI/T 400 W	126633	E 40	125	3.4	30000	46	283	9280 734 092 ..
HPI/T 1000 W ¹⁾	126672	E 40	130	8.3	88000	65	382	9280 740 092 ..
HPI/T 2000 W	126656	E 40	135	16.5	180000	100	430	9280 736 092 ..
HPI/T 2000 W	126399	E 40	240	9.0	190000	100	465	9280 735 092 ..

¹⁾ Provisional data

Applications

Sports grounds with colour television broadcasting facilities, floodlighting, high-bay lighting, shipyards, etc.

BALLASTS AND IGNITORS

For ballasts see page C 6.

The ignition voltage of high-pressure mercury halide lamps is higher than the applied mains voltage. It is, therefore, not only necessary to use — as with all gas-discharge lamps — a ballast to control the current flowing through the circuit, but an ignitor must also be employed to give a sufficiently high voltage pulse to ignite the lamp.

Philips electronic thyristor ignitors, specially designed for this purpose, combine a very sturdy mechanical construction with a reliable electronic system to ensure efficient functioning of the ballast-ignitor-lamp circuit throughout a very long service life. The ignitor can be used in combination with an ordinary inductive high-pressure mercury ballast.



S 51

For lamps	Type number	Mains voltage V	Frequency c/s	Diam.	Max. length	Ordering number
HPI 400 W HPI/T 400 W	S 51	220 ... 240	50-60	40	137	9136 190 599 ..
HPI/T 1000 W HPI/T 2000 W	S 52	220 ... 240	50-60	40	137	9136 190 699 ..
HPI/T 2000 W	126689	380 ... 415	50-60	150 x 64 x 45 ¹⁾		8222 209 839 ..

¹⁾ l x b x h



HPLR 125 W



HPLR 250 W



HPLR 400 W



HPLR 700 W



HPLR 1000 W

HPLR MERCURY-VAPOUR FLUORESCENT REFLECTOR LAMPS

The Philips mercury fluorescent lamps with internal reflector provide good colour rendering and are available in a wide range of wattages.

The most important feature is the bulb with the built-in titanium dioxide reflector which directs the light precisely where it is needed and makes the lamp impervious to soiling in dirty surroundings so that high efficiency is maintained throughout the lamp's long, reliable life.

HPLR lamps may be used indoors as well as outdoors in permanent or temporary fittings, there being no need for expensive optical control fittings.

The application possibilities are legion, to name just a few: factory lighting, quarries, paper mills, iron foundries and floodlighting for advertising purposes.

Type ¹⁾	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux ²⁾ lm	Diam.	Max. length	Ordering number
HPLR 125 W	57238 E/93	E 27	125	1.15	5000	125	190	9280 620 093 ..
	57238 G/93	E 40					199	9280 622 093 ..
HPLR 250 W	57239 G/93	E 40	135	2.10	11000	165	260	9280 625 093 ..
HPLR 400 W	57240 G/93	E 40	140	3.20	19000	180	300	9280 630 093 ..
HPLR 700 W	57231 G/93	E 40	145	5.25	35000	200	328	9280 635 093 ..
HPLR 1000 W	57241 G/93	E 40	145	7.50	51000	220	380	9280 640 093 ..

¹⁾ For ballasts see page C 6

²⁾ After 100 burning hours



SON 250 W



SON 400 W



SON 700 W



SON 1000 W



SON/T 250 W



SON/T 400 W

SON - SON/T HIGH-PRESSURE SODIUM LAMPS

The development of high-pressure sodium-vapour discharge lamps has been greeted by light users as a major breakthrough in technology and is regarded as the most important and spectacular single step forward for thirty years.

By utilizing materials new to lamp technology such as sintered aluminium oxide and advanced techniques in manufacture, Philips have produced a range of sodium lamps with pleasant colour appearance, improved colour rendering, high luminous efficiency, excellent lumen maintenance, long reliable life and rugged construction.

Hardly ever have all these features been available in one type of lamp to meet so many applications. Both indoors and outdoors these lamps have gained wide acceptance.

Applications

- Lighting of city centres
- Street lighting
- Dock lighting
- Floodlighting
- Airport lighting
- High-bay lighting
- Lighting of container depots

Philips high-pressure sodium lamps, their ballasts and ignitors are the result of perfect integration in design. Hence, their use ensures trouble-free service with subsequent saving in maintenance costs.

Type	Type number	Base	Lamp voltage V	Lamp current A	Luminous flux lm	Diam.	Max. length	Lcl.	Ordering number
SON 250 W	126645	E 40	100	3.000	19000	90	226	—	9281 510 098 ..
SON 400 W	126631	E 40	105	4.400	38000	120	290	—	9281 520 098 ..
SON 700 W ¹⁾	126719	E 40	110	7.400	63000	140	329	—	9281 530 085 ..
SON 1000 W ¹⁾	126720	E 40	115	9.800	90000	165	400	—	9281 540 085 ..
SON/T 250 W	126632	E 40	100	3.000	20000	46	257	158 ± 4	9281 515 092 ..
SON/T 400 W	57030 G/92	E 40	105	4.400	40000	46	283	175 ± 5	9281 445 092 ..
SON/T 700 W ¹⁾	126675	E 40	110	7.400	70000	50	330	205 ± 5	9281 535 092 ..
SON/T 1000 W ¹⁾	126676	E 40	115	9.800	100000	65	382	240 ± 5	9281 545 092 ..

¹⁾ Provisional data



SOX 35 W



SOX 55 W



SOX 90 W



SOX 135 W
SOX 180 W

SOX INDIUM-OXIDE SODIUM LAMPS

The range of low-pressure sodium SOX lamps is definitely the most efficient and economical solution for public lighting. The outstanding features of these SOX lamps are as follows: exclusive, optimum heat-reflecting coating of indium-oxide providing new standards of super-high efficiency - up to 175 lm/W; optimum lumen maintenance throughout life (95 %); long, reliable life; interchangeable with the previous SOI and tin-oxide-coated SOX low-pressure sodium lamps as they are identical in regard to mechanical and electrical characteristics.

Type	Type number	Lamp voltage V	Lamp current A	Luminous flux ¹⁾ lm	Diam.	Max. length	Ordering number
SOX 35 W	57031 B/00	70	0.60	4650	51	310	9281 455 000 ..
SOX 55 W	57032 B/00	105	0.59	7700	51	425	9281 460 000 ..
SOX 90 W	57033 B/00	115	0.94	12500	66	528	9281 465 000 ..
SOX 135 W	57034 B/00	160	0.95	21500	66	775	9281 470 000 ..
SOX 180 W	57035 B/00	245	0.91	32000	66	1120	9281 475 000 ..

¹⁾ After 100 burning hours.

LAMPHOLDER

The striking voltage of SOX lamps is above 250 V. It is, therefore, advisable not to use the normal bayonet lampholder for 220 V, but exclusively that of our own make, specially designed for sodium lamps. The lampholder is suitable for a voltage up to 750 V - 4 Amps.

Type number: 61085/00; ordering number: 9145 000 600 ..

Dimensions: 53 x 42 x 33 mm.

