

LAMPS FOR PURPOSES SPECIAL

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TUNGSTEN HALOGEN DOCUMENT COPYING LAMPS

Single- and double-ended tungsten lamps working on the halogen regenerative cycle, specifically for use in document copying machines

Tungsten halogen document copying lamps have design features suited to the needs of machines requiring even illumination over large areas, or high heat output for machines working on the thermographic principle. Lamp life is 50,000 switchings on a cycle of 6 second 'on' and 6 seconds 'off' at rated voltage. Document copying lamps are not suitable for continuous operation.

RANGE

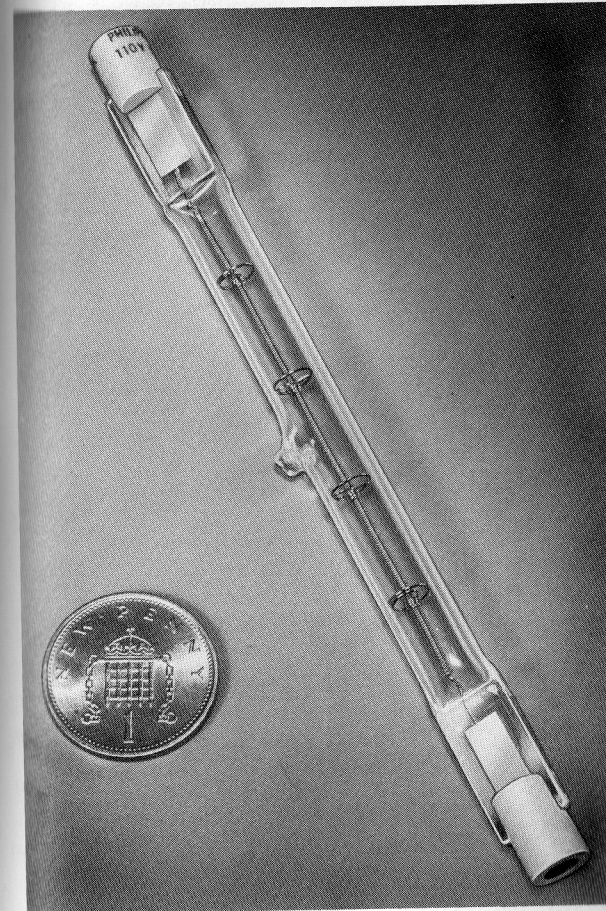
From 500W to 1800W.

APPLICATIONS

Suitable for use in document copying machines of flat bed or thermographic types.

FEATURES

- Tungsten halogen regenerative cycle maintains light output throughout working life.
- Differentially spaced segmented filaments for increased light intensity at edges of copy to give better quality.
- Externally frosted lamps provide the diffuse light needed by certain machines.



Handbook Ref

7.1.1

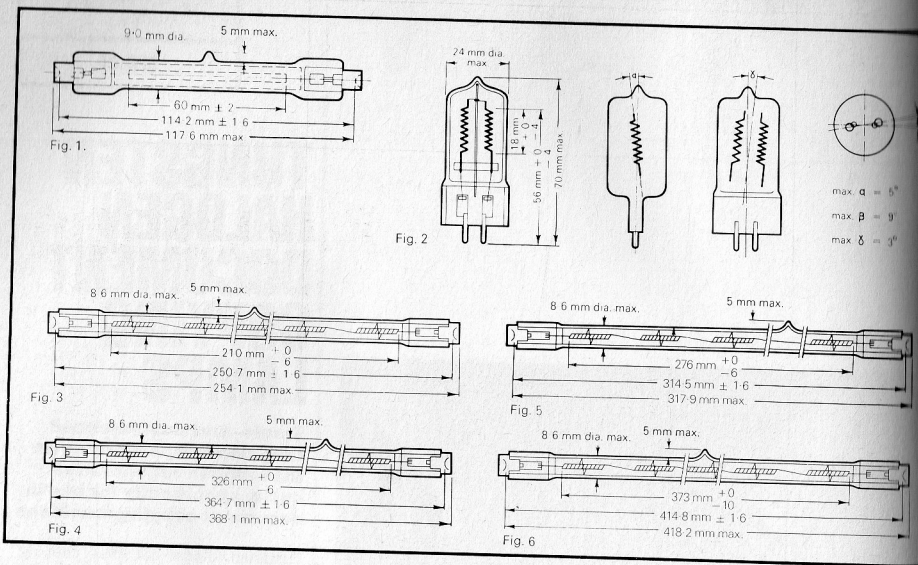
To reorder this data sheet quote

8/78 PL 1615

Replaces

PL 0842/1

DIMENSIONS



ORDERING DATA

Please order in the form given in the following example, quoting LIF Number, Type Number, Voltage and Wattage, and in multiples of the packing quantity:—
6 Philips document copier lamps DC1/7, Catalogue No. 13313R, 115/120V, 1500W.

Operating position

Tungsten halogen document copying lamps are designed to operate in the positions specified in the Lamp Data table. Any great deviation from these operating positions will cause one end of the filament to be starved of tungsten halogen, causing bulb blackening and premature failure of the lamp.

User notes:

Handling: If the quartz bulb has been handled, it should be cleaned with a solvent such as methylated spirits to remove all traces of grease before lighting.

Seal temperature: Precautions must be taken to ensure that the temperature of the quartz-metal seal does not exceed 350°C, though the bulb temperature must be greater than 250°C and less than 900°C.

LAMP DATA

Non-stock types—to special order only

LIF No.	Catalogue No.	Volts	Watts	Cap	Approximate colour temp. (K)	Operating position	Finish	Nominal Luminous Flux (lms)	Figure	Packing quantity
DC1/1	13888R	120	500	R7s	3200	Horizontal	Clear	13,000	1	200
DC1/6	13481	115/120* 220/230 240/250	1000	G6.35	3250	Horizontal or vertical	Clear	26,000	2	—
DC1/7	13313R	115/120 220/230 240/250	1000	R7s	3150	Horizontal	Clear	22,000	3	120
DC1/8	13494R	220/230 240/250	1000	R7s	3100	Horizontal	Clear	21,000	5	100
DC1/9	13623R	220/230 240/250	1500	R7s	3150	Horizontal	Clear	33,000	4	10
DC1/11	13743R/16	280	1800	R7s	3200	Horizontal	Externally frosted	45,000	6**	—
DC1/12	13624R/16	280	1800	R7s	3200	Horizontal	Externally frosted	45,000	6**	—

Other ratings can be made available to special order.

*Two coiled-coil filament sections on 220/230V and 240/250V ratings; only one on 115/120V rating.
**Type DC1/12 is designed to give extra intensity at the ends.

CI/SIB	(63.9)
UDC	696.6 : 628.94

BLACKLIGHT LAMPS

A range of four tubular fluorescent lamps with filter envelope and a mercury lamp with Woods glass envelope, for producing long-wave UV radiation for the activation of fluorescent materials.

RANGE

- TL6W/08 – tubular fluorescent lamp 225 x 16mm (9in. x 5/8in.), 6W rating.
- TL8W/08 – tubular fluorescent lamp 300 x 16mm (1ft x 5/8in.), 8W rating.
- TL20W/08 – tubular fluorescent lamp 600 x 38mm (2ft x 1 1/2in.), 20W rating.
- TL40W/08 – tubular fluorescent lamp 1200 x 38mm (4ft x 1 1/2in.), 40W rating.
- HPW 125W – mercury lamp, Woods glass ovoid envelope, 125W rating. Other ratings to special order.

APPLICATIONS

- For use wherever a long-wave UV source for phosphor activation is required, in situations such as:—
- Display work in shops, discotheques and on the stage.
 - Crack detection (e.g. in metals).
 - Revealing laundry or batch marks.
 - Detection of adulterated or contaminated foods.
 - Detection of forgeries in banks or stamp collections, for forensic science or for cleaning and restoration of paintings.
 - Mineralogy and gemmology.
 - Luminescent signs.
 - Medicine.



Handbook Ref	7.1.2
To reorder this data sheet quote	2.78PL1813/1
Replaces	PL1813

FEATURES

- Output is mainly in the long-wave UV region for response from common fluorescent materials.
- Black filter envelopes reduce radiation in the visible spectrum.
- Tubular fluorescent lamps run from same control gear as standard white lamps, and are interchangeable in standard switchstart luminaires.
- Mercury lamp HPW provides a compact, easily-directed UV source; tubular fluorescent lamps are more suitable for general UV irradiation.

RANGE OF OPERATION

240V 50Hz mains supplies (through suitable control gear).

MATERIALS & FINISH

Tubular fluorescent lamps: Mini-bipin or bipin caps, cobalt filter glass envelope.

Mercury lamp: 3-pin BC or ES cap, Woods glass envelope.

Caution

Actinic and blacklight sources are designed to emit energy primarily in the long-wave UV region. Minor quantities of medium-wave UV of erythral wavelengths (those that cause sun burning) may affect persons of high sensitivity, so that direct irradiation by UV should be avoided. In particular, the sources should be screened from direct view, and persons should not work for long periods in conditions where no light is present other than that activated by these sources. Particular care should be taken to protect eyes.

LAMP DATA

Catalogue No.	Description	Length L (mm)	Diameter D (mm)	Cap	BS Lamp Voltage (V)	BS Lamp Current (A)	UV Depreciation % per thousand hours
TL4W/08*	4W 150mm (6in.) miniature fluorescent	136	16	Mini bi-pin	30	0.15	5
TL6W/08	6W 225mm (9in.) miniature fluorescent	212	16	Mini bi-pin	45	0.16	5
TL8W/08	8W 300mm (12in.) miniature fluorescent	288	16	Mini bi-pin	58	0.17	5
TLD15W/08*	15W 460mm (18in.) fluorescent	438	26	Bi-pin	56	0.31	5
TL20W/08	20W 600mm (2ft) fluorescent	589.8	40.5 (max.)	Bi-pin	57	0.37	5
TL40W/08	40W 1200mm (4ft) fluorescent	1199.4	40.5 (max.)	Bi-pin	103	0.43	5
HPW 125W	125W mercury	172	75	3-pin BC or ES	125	1.2	15

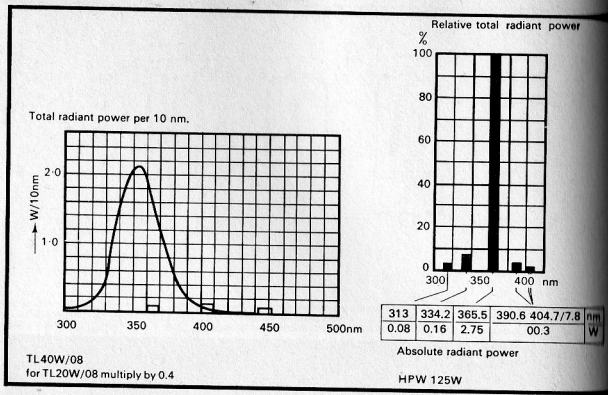
*To special order only.

CONTROL GEAR COMPONENTS

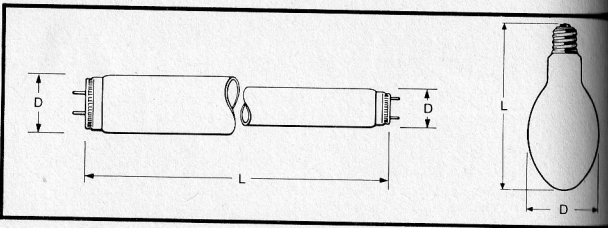
Note: Blacklight sources are mercury discharge lamps, and MUST be operated in conjunction with suitable current-limiting control gear.

Lamp type	Ballast	Starter
1 x TL6W/08	BAS 8	S2
2 x TL6W/08	BAS 13	2 x S2
1 x TL8W/08	BAS 8	S2
2 x TL8W/08	BAS 13	2 x S2
1 x TL20W/08	BCS 20	S2
2 x TL20W/08	BCS 40	2 x S2
TL 40W/08	BCS 40	S10
HPW 125W	L5125BX	—

SPECTRAL POWER DISTRIBUTION



DIMENSIONS



Replacement Period

It is recommended that UV lamps should be group replaced and with a shorter period than for white lamps. A guide to UV depreciation is in the Lamp Data table.

Made in Holland

C/S/B	(63.9)
UDC	696.6:628.94

TUV GERMICIDAL LAMPS

A range of lamps with sharply-defined output at 253.7 nm, very close to the wavelength most effective in inhibiting bacteria and moulds.

Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to avoid harm to personnel, especially to skin and eyes.

RANGE

TUV 6W: Single-ended lamp, for operation direct from 220/240V 50 Hz supplies.

TUV 15W: Linear discharge lamp, for use with normal fluorescent control gear.

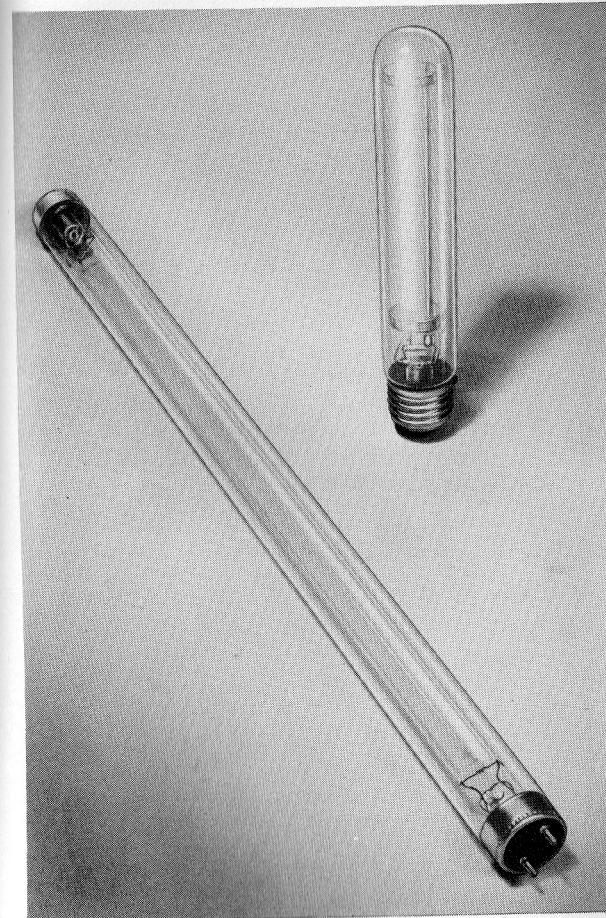
TUV 30W: Linear discharge lamp, for use with normal fluorescent control gear.

TUV 40W: Linear discharge lamp, for use with normal fluorescent control gear.

APPLICATIONS

Suitable for inhibiting bacteria and moulds in many situations, including:

- Sterilisation in hospitals
- Bacteriological research
- Pharmaceutical manufacture
- Dairies
- Breweries
- Cold storage rooms
- Air conditioning systems



ORDERING DATA

Catalogue No.	Packing Qty.
TL6W/08	25
TL8W/08	25
TL20W/08	6
TL40W/08	6
HPW 125W*	12

*Please state 3-pin BC or ES Cap.

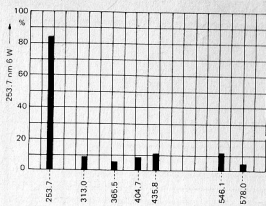
Please order lamps in the form given in the following example, in multiples of the packing quantity:—
36 Philips blacklight lamps TL40W/08.

Handbook Ref	7.13
To reorder this data sheet quote	6/78 PL 1834
Replaces	NEW

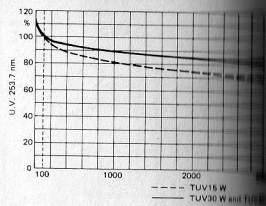
FEATURES

- Majority of output occurs at 253.7 nm line, making the lamps an efficient source of germicidal radiation
- Type TUV 6W runs from normal a.c. power supplies without control gear; provides an inexpensive and convenient source of UV radiation
- Linear lamps can be used in conventional fluorescent switch start circuits
- Negligible ozone formation

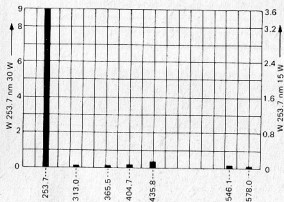
RELATIVE SPECTRAL POWER DISTRIBUTION



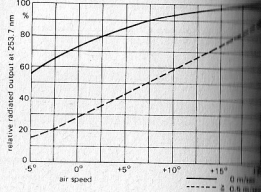
ULTRA-VIOLET RADIATION



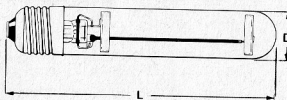
ABSOLUTE SPECTRAL POWER DISTRIBUTION



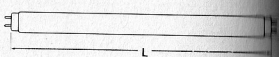
RELATION BETWEEN: AIRSPEED, AIRTEMPERATURE AND OUTPUT 253.7 nm



DIMENSIONS



DIMENSIONS



LAMP DATA

Catalogue No.	Lamp Voltage V	Lamp Current A	Cap	UV 253.7 nm W/cm²*	UV 253.7 nm W
TUV 6W	220/240	0.027	ES	0.85	0.085
TUV 15W	56	0.31	Bi-pin	37	3.5
TUV 30W	96	0.36	Bi-pin	83	9.0
TUV 40W	103	0.43	Bi-pin	94	12.6

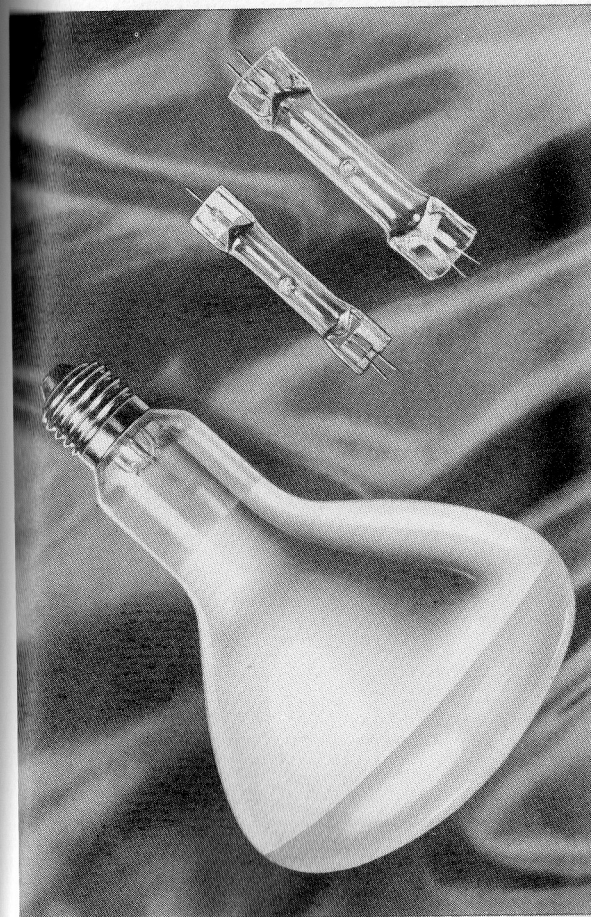
*at 1m from centre.

DIMENSIONS & WEIGHTS

Catalogue No.	L (mm)	D (mm)	Weight (g)	Packing quantity
TUV 6W	150	26	40	10, 100
TUV 15W	460	26	75	6
TUV 30W	920	26	140	6
TUV 40W	1220	37	292	6

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:
12 Philips germicidal lamps TUV 30W



CI/SIB	(63.9)
UDC	696.6:628.94

HPQ 80, HPQ 125, HPQ160, HPQ 250 & MLU 300

Sunlamps

A range of linear discharge burners for use as original equipment or spares in proprietary sunlamps, and a mercury tungsten reflector lamp for domestic use.

Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to avoid harm to personnel, especially to the skin and eyes.

RANGE

HPQ 80W, 125W, 160W, 250W: linear discharge burners.
MLU 300W: Mercury tungsten lamp.

APPLICATIONS

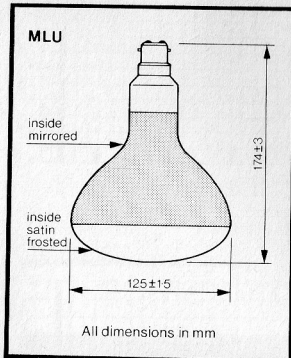
Suitable for use as original equipment and as replacement lamps in proprietary sunlamps of suitable design.

Handbook Ref	7.1.4
To reorder this Data Sheet quote	PL1051
Replaces	NEW

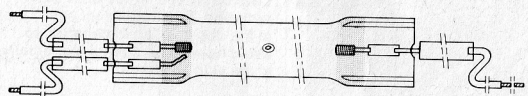
FEATURES

- HPQ lamps run from normal mains supplies via simple resistive ballasts.
- Tungsten filament of MLU lamp acts as ballast; lamp operates directly from mains supply.
- Reflector of MLU lamp concentrates into a homogeneous beam; hard glass bulb cuts out radiation below 280 nm.

DIMENSIONS



HPQ



LAMP DATA

Catalogue No.	Lamp Voltage V	Lamp Current A	Total Circuit Watts	Cap	Minimum Supply Voltage
HPQ 80W	90	1.2	90	Strip	198
HPQ 125W	90	1.7	138	Strip	198
HPQ 160W	90	2.1	174	Strip	198
HPQ 250W	110	3	265	Strip	198
MLU 300W	110-130 220-240	2.5 1.4	300	3-pin BC or ES	—

DIMENSIONS

Catalogue No.	Nom. Length (mm)	Nom. Diameter (mm)	Packing quantity
HPQ 80W	77	15	100
HPQ 125W	77	15	100
HPQ 160W1	92	15	100
HPQ 250W	100	19	100
MLU 300W	174	125	9

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:—
200 Philips sunlamps HPQ 125W.

Made in Holland.

CI/SIB	(63.9)
UDC	696.6:628.94

XOP

Low-pressure pulsed Xenon lamps

A range of discharge lamps of the low-pressure xenon type, with spectral characteristics approximating to those of normal daylight.

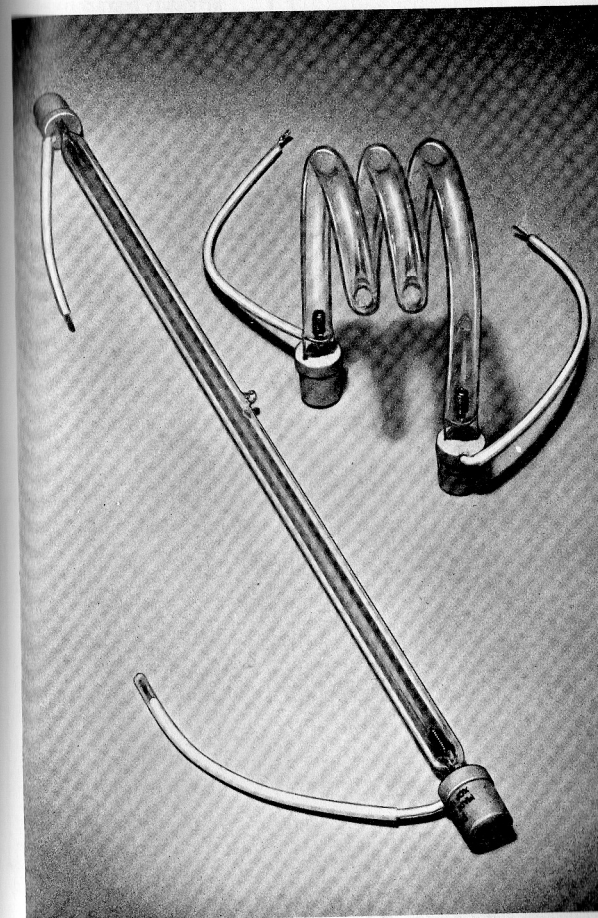
Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to prevent harm to personnel, especially to the skin and eyes.

RANGE

- XOP 7: Linear lamp, arc length 158mm, 750W.
- XOP 15: Linear lamp, arc length 312mm, 1500W.
- XOP 25: Linear lamp, arc length 457mm, 2000W.
- XOP 30: Linear lamp, arc length 615mm, 3000W.
- XOP 40: Compact-source lamp, 4000W.
- XOP 80: Compact-source lamp, 8000W.

APPLICATIONS

- Eminently suitable for the lighting of horizontal and vertical copy-boards in the graphic arts industry.
- Since the lamps strike instantly, they are also suitable for use in stop-and-repeat copying machines.



Handbook Ref.

7.1.6

To reorder this data sheet quote

6/78 PL 1837

Replaces

NEW

FEATURES

- Immediate start and re-start – no warm-up time required.
- Full light output is obtained immediately.
- Colour temperature and efficacy remain constant throughout working life.
- Small diameter simplifies the design of efficient reflector systems.
- High efficacy.
- Spectral characteristics approximate to daylight; the lamps are suitable for both colour and black-and-white reproduction.
- 300 hour working life.
- Ozone-free quartz envelopes.

LAMP DATA

Cat. No.	Lamp Watts	Lamp Volts	Lamp Current (A)	Luminous efficiency lm/W	Colour temp. °K	Pulse frequency c/s	Light depreciation %	Pack quantity
XOP 7*	750	52 ± 3	18	20-25 ¹	5600	100-120	approx. 20 ²	4
XOP 15*	1500	105 ± 5	18					
XOP 25*	2000	115 ± 5	18					
XOP 30*	3000	210 ± 10	18					
XOP 40*	4000	210 ± 10	19					
XOP 80*	8000	420 ± 15	19					

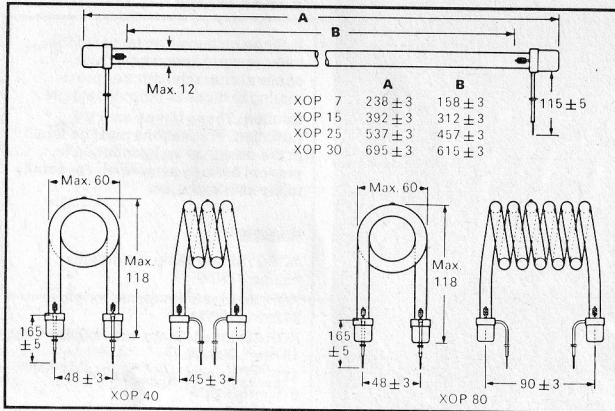
*Max temp. tube 750°C, Pinches 400°C, Av. life hours 300

ORDERING DATA

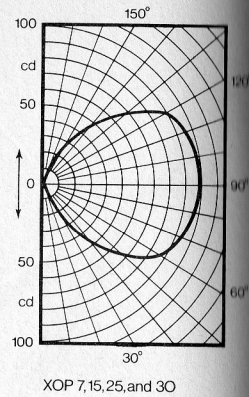
Please order lamps in the form given in the following example, in multiples of the packing quantity:

18 Philips xenon lamps XOP 25

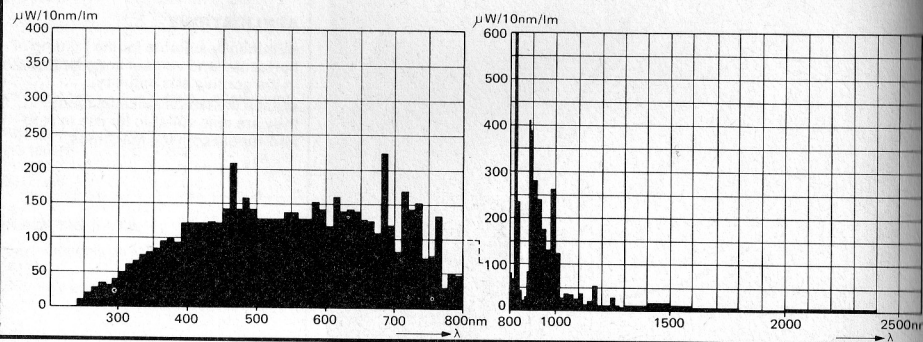
DIMENSIONS



RELATIVE LUMINOUS INTENSITY DISTRIBUTION (without reflector)



ABSOLUTE SPECTRAL ENERGY DISTRIBUTION



Made in Holland

C/S/SB	(63.9)
UDC	696.6:628.94

HPR 125W

Mercury Discharge Reprographic Lamp

A lamp with an internal reflector, producing a bluish-white light with strong actinic radiation.

RANGE

HPR 125W: Mercury discharge reprographic lamp.

APPLICATIONS

High actinic content of beam makes the lamp particularly suitable for use in equipment for black-and-white copying and reproduction.

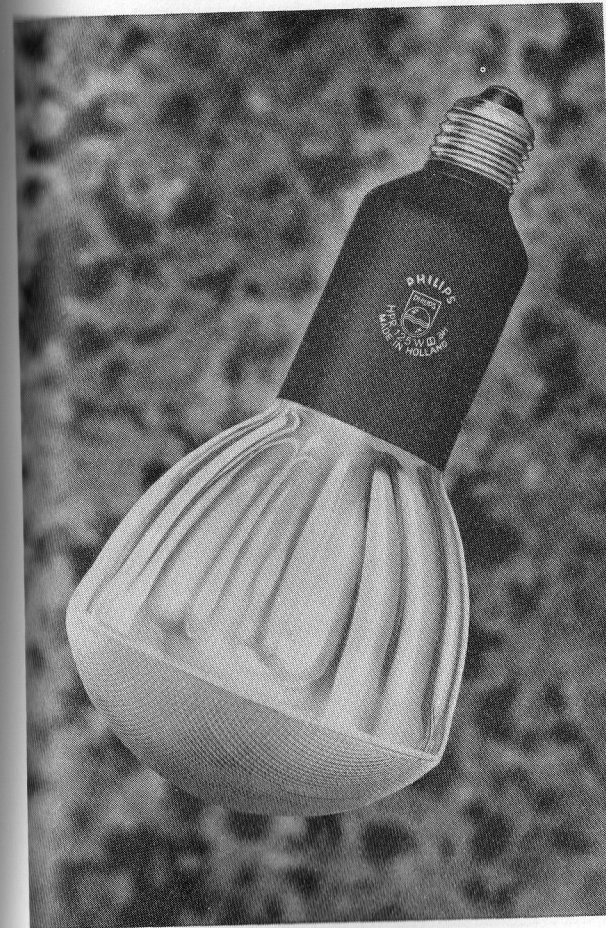
Used with a separate Woods glass filter, the lamp can be used as a 'black light' source, the internal reflector ensuring a homogeneous beam of radiation.

The lamp also has applications as a floodlight lamp.

Suitable applications include:

- Reprographic industry – particularly for copy board lighting.
- Silk screen processing.

Caution: This lamp emits UV radiation. Precautions must be taken in the design of an installation to prevent harm to personnel, particularly to the skin and eyes.

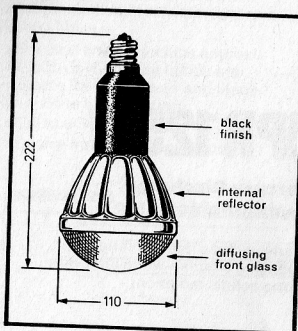


Handbook Ref.	7.17
To reorder this data sheet quote	8/78/PL1036/1
Replaces	PL1036

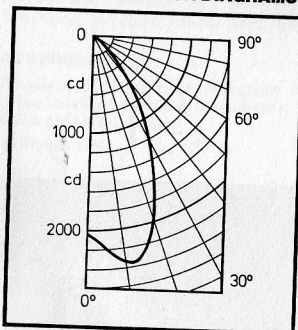
FEATURES

- High output coupled with long life reduces installation and running costs.
- Simply installed into standard ES lampholder; runs from normal mercury discharge control gear.

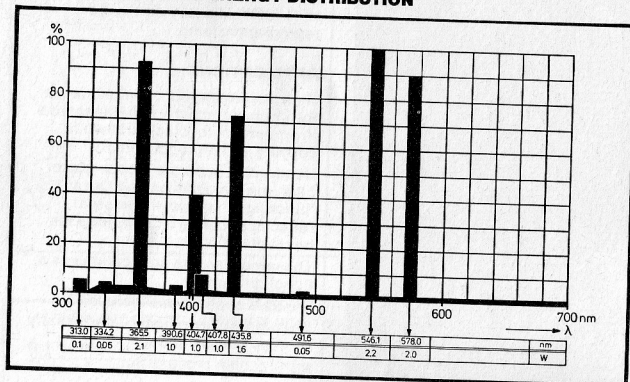
DIMENSIONS



LIGHT DISTRIBUTION DIAGRAMS



RELATIVE SPECTRAL ENERGY DISTRIBUTION



LAMP DATA

Catalogue No.	Minimum Start Volts	Lamp Volts	Lamp Current Amps	Light/energy depreciation (%)*	Cap	Burning position	Ballast	P.F.C. capacitor	Life (hrs)	Packing quantity
HPR 125W	180	125	1-15	20	ES	Any	L5125BX	L4008/07	2000	16

*The percentage by which the radiation decreases with respect to the nominal value, after 2000 hours.

Weight: 200 g.

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:

32 Philips reprographic lamps
HPR 125W

Made in Holland.

C/S/B	(63.9)
UDC	696.6:628.94

HPM 12, HPM 15, HPM 17.

Mercury halide printing lamps

A range of high-pressure mercury discharge lamps with lead and gallium iodide additives to produce an activation wavelength between 320 nm and 440 nm.

Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to prevent harm to personnel, especially to the skin and eyes.

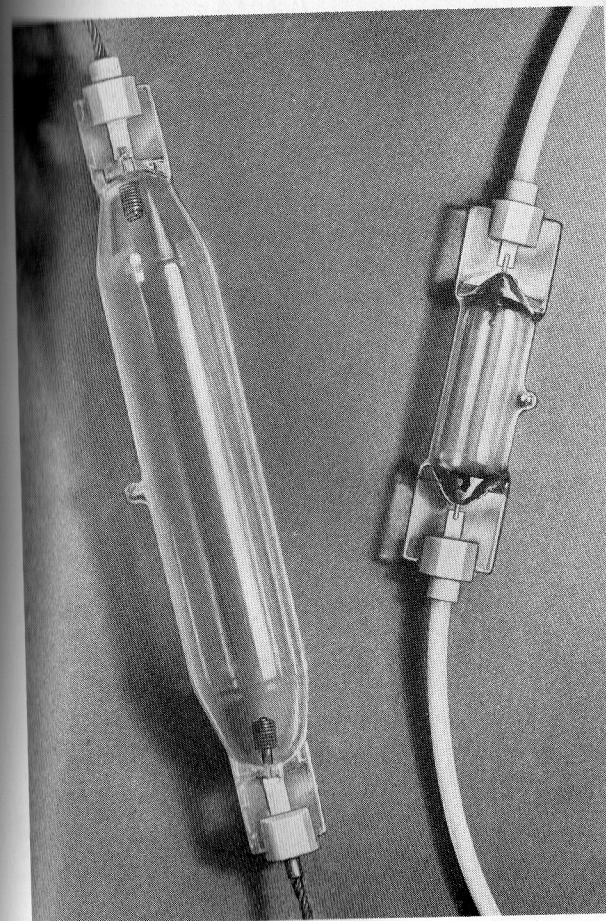
RANGE

- HPM 12: 400W rating.
- HPM 15: 1000-4000W rating.
- HPM 17: 1000-4000W rating.

APPLICATIONS

Suitable for any application requiring an activation wavelength between 320 nm and 440 nm, including:

- Photochemical processes
- Plate-making for lithographic printing
- Exposure of photo-resists for chemical milling and printed circuit etching



Handbook Ref.

7.1.8

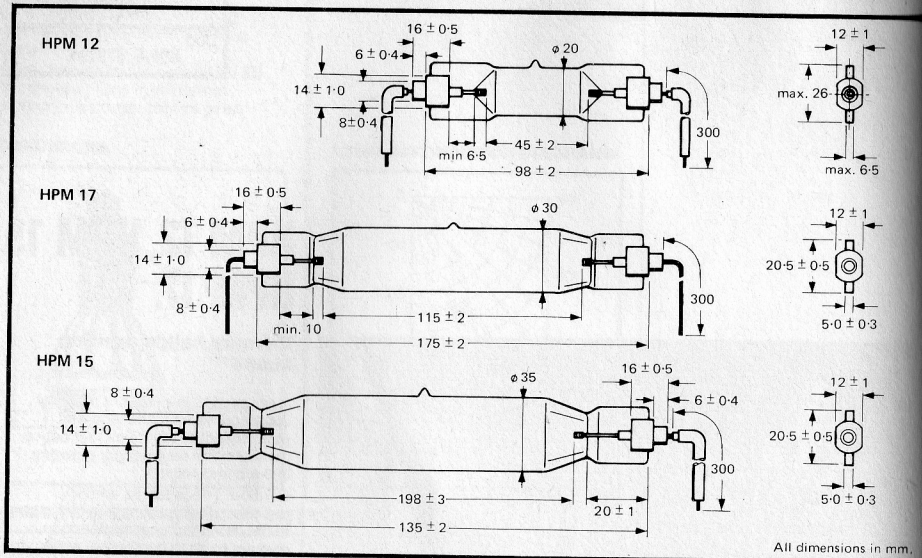
To reorder this Data Sheet quote

PL1850

Replaces

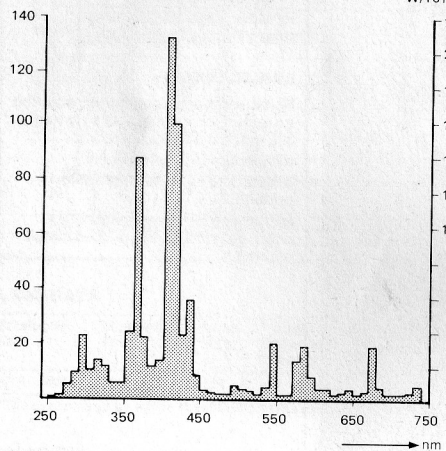
NEW

DIMENSIONS



HPM 15 and HPM 17
W/10nm

ABSOLUTE SPECTRAL ENERGY DISTRIBUTION



FEATURES

- Ozone-free quartz glass envelopes
- Short run-up time – only three minutes
- High output coupled with long life reduces installation and running costs

CONTROL GEAR

Supplied by equipment manufacturers – details on request.

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:–
4 Philips mercury halide lamps HPM 15

Made in Holland.

LAMP DATA

Catalogue No.	Lamp Wattage W	Lamp Voltage V	Starting Voltage kV	Run-up time (minutes)	Output between 330 & 440 nm at 1m distance uW/cm ²	Light/energy depreciation (%)*	Average life (H)	Weight g	Packing quantity
HPM 12	400	120 ± 15	3	3	710 (400W)	30	500	50	4
HPM 15	1000-4000	240 ± 20**	5	3	4200 (2kW)	15	750	92	4
HPM 17	1000-4000	220 ± 20**	1	3	4500 (2kW)	15	750	82	4

*After 500 hours' burning **Measured at 2000W

CI/SIB (63.9)
UDC 696.6:628.94

HTQ 7 & HTQ 14

High-pressure mercury discharge lamps

A range of linear lamps of the high-pressure mercury vapour discharge type, with outputs suitable for light printing applications and for the polymerisation of photo-sensitive additives in polyester lacquers.

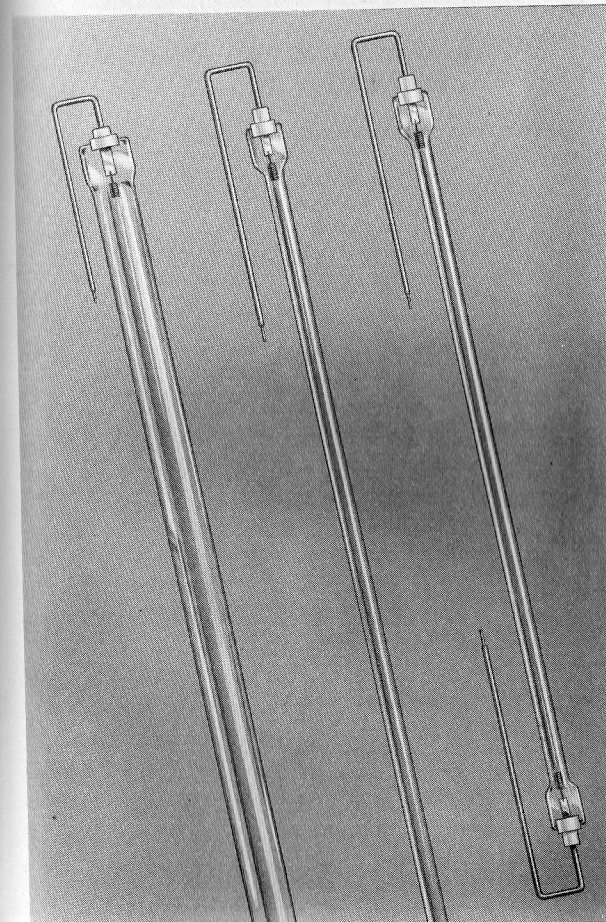
Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to prevent harm to personnel, especially to the skin and eyes.

RANGE

HTQ 7: Nominal rating 2000W.
HTQ 14: Nominal rating 4000W.

APPLICATIONS

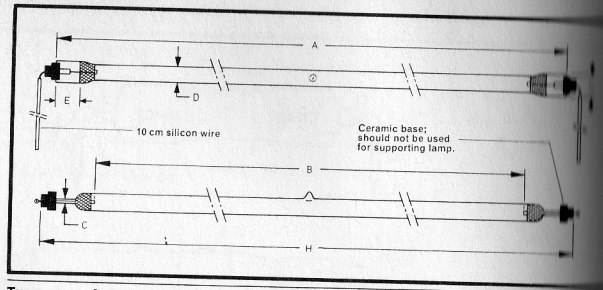
Although originally developed for light-printing purposes, the lamps now find major application in the hardening of synthetic lacquer coatings in considerably shorter times than can be achieved using conventional drying processes.



Handbook Ref. **7.19**
To reorder this Data Sheet quote 6.77 PL1846
Replaces NEW

FEATURES

- Lamps do not produce ozone in operation.
- High output coupled with long life reduces installation and running costs.



Type	A	B	C (max)	D	E	G	H
HTQ 7	755 ± 2	700 ± 2	3.4	12.5 ± 1	18 ± 1	15 ± 1	700 ± 1
HTQ 14	1460 ± 2	1400 ± 2	4.0	24 max	17 ± 1	23 ± 1	1400 ± 1

CONTROL GEAR

Lamp type	Ballast
HTQ 7	139.1095 (2 off)
HTQ 14	139.1095 (4 off)

DIMENSIONS, WEIGHTS & ELECTRICAL DATA

Catalogue No.	Lamp Wattage (W)	Lamp Voltage (V)	Minimum Starting Voltage (V)	Lamp Current (A)		Permissible Load (W)	Run-up time (minutes)	Average Life (hours)	Weight (g)	Burning Position	Packing quantity
				(A)	(A)						
HTQ 7	2000	1400 ± 50	1,700	2.4	1.7	1500-2600	5	1000	85	Horizontal	4
HTQ 14	4000	1400 ± 50	1,500	4.6	3.35	3000-5000	5	1000	158	Horizontal	4

*At 4 burning hrs. per switching. Max. Pinch Temperature 300°C

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:-
12 Philips mercury discharge lamps HTQ 14.

Made in Holland.

CI/SIB (63.9)
UDC 696.6:628.94

SUPER-ACTINIC LAMPS

Actinic 03

Fluorescent lamps for use as long-wave UV sources

A range of linear fluorescent lamps, identical in dimensions and electrical characteristics to the corresponding standard white lamps, for providing highly efficient sources of actinic (long-wave UV) radiation.

Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to avoid harm to personnel, especially to skin and eyes.

RANGE

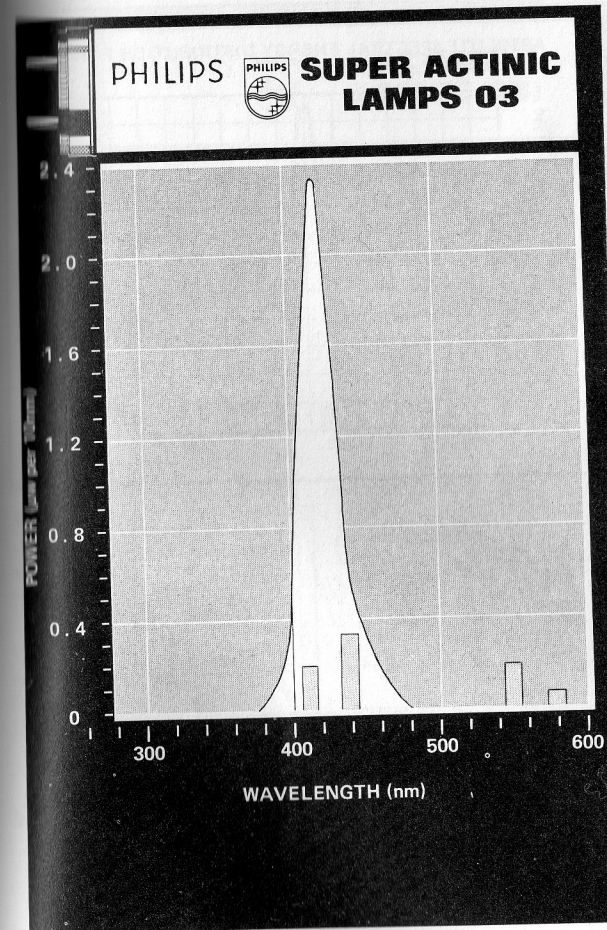
TL 20W/03T	- 600mm (2ft)
TLADK 30W/03	- 450mm (18in)
TL 40W/03RS	- 1200mm (4ft)
TLAK 40W/03	- 600mm (2ft)
TLM 120W/03RS	- 1500mm (5ft)
TL 140W/03RS	- 1500mm (5ft)

APPLICATIONS

Applications include:-

- Printing and copying processes
- Lacquer prehardening
- Photochemical processes

Note: The output of Actinic 03 lamps peaks at approximately 420nm. Details of Actinic 05 and Actinic 09 lamps, which are intended for applications requiring radiation peaking at rather shorter wavelengths, are given on Data Sheets PL 1830 and PL 1853.



Handbook Ref.

7.1.10

To reorder this data sheet quote 3.78 PL 1829

Replaces NEW

FEATURES

■ Low installation, running and maintenance costs make possible inexpensive apparatus with short run-up times and simple cooling arrangements.

■ Spectral power distribution suits spectral sensitivity of most diazo papers used in photo-printing machines.

Temperature dependence

The output of these lamps is at a maximum when the temperature of the coldest part of the glass (usually central, underneath) is 40-50°C. In enclosed machines, it is usually necessary to employ forced-air cooling. This applies especially to the high-loaded lamps TLADK 30W, TLAK 40W and TLM 120W/140W.

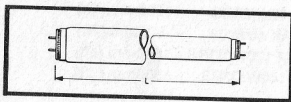
Note:

TL...T lamps - Silicone coated (as MCFE).

TLAK, TLADK lamps - with external strip, to be connected to earth.

TL...RS lamps - with 3V electrodes.

TLM...RS lamp - with 3V electrodes and internally-connected external strip, not to be earthed.



DIMENSIONS & WEIGHTS

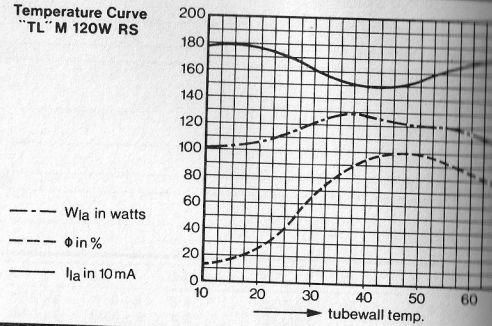
Catalogue No.	Dimension L (mm)	Diameter (mm)	Cap	Weight (g)	Packing quantity
TL 20W/03T	590-0	38	Bi-pin	156	25
TLADK 30W/03	437-6	26	Bi-pin	76	25
TL 40W/03RS	1199-6	38	Bi-pin	292	25
TLAK 40W/03	590-0	38	Bi-pin	156	25
TLM 120W/03RS	1500-25	38	Bi-pin	380	25
TL 140W/03RS	1500-25	38	Bi-pin	402	25

LAMP DATA

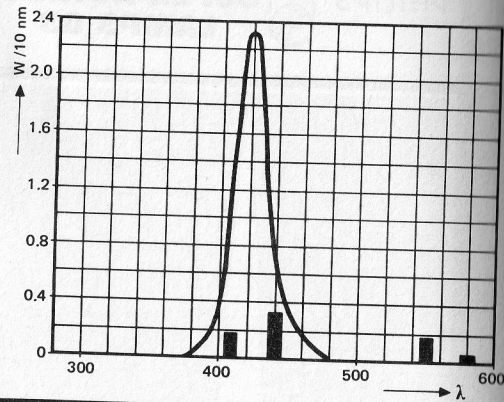
Catalogue No.	Lamp Voltage V	Lamp Current A	For circuits	Depreciation (%)†
TL 20W/03T	57	0-37	Switchstart & 10V XS	15
TLADK 30W/03	44	0-84	Special circuit	30
TL 40W/03RS	103	0-43	Switchstart & 3V XS	15
TLAK 40W/03	47	0-88	Switchstart & 10V XS	30
TLM 120W/03RS	100	1-50	Special circuit	40
TL 140W/03RS	125	1-40	Special circuit	40

† Measured after 2000 hours' operation, compared with output at 100 hours. All data are averages, measured under standard conditions. Conventional lamp circuits are shown on Data Sheet PL 1830.

Temperature Curve
"TL" M 120W RS



ABSOLUTE SPECTRAL ENERGY DISTRIBUTION FOR TL40W/03 RS*



W/10nm applies to TL 40W/03RS, and must be multiplied by the following factors for the other lamp types:-

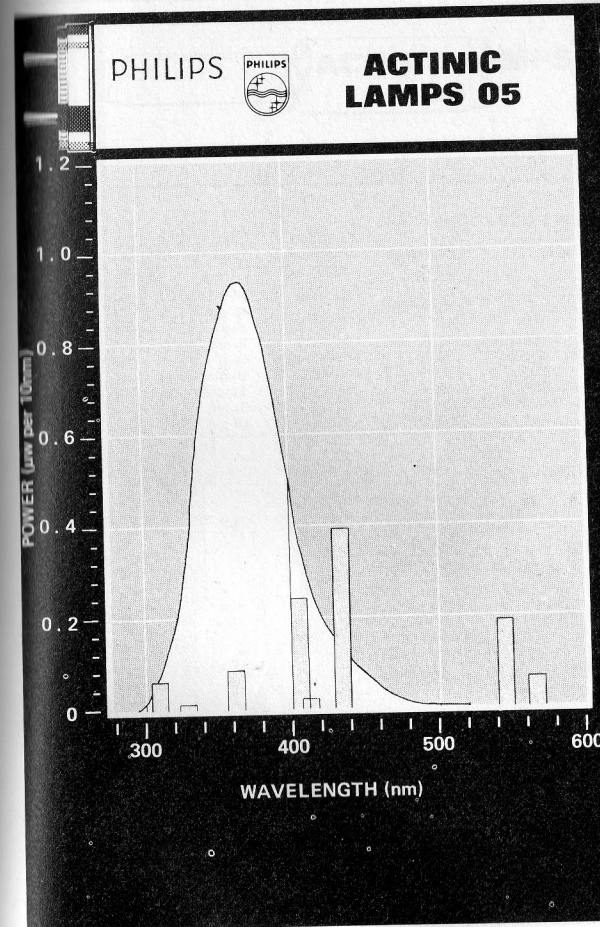
Catalogue No.	Factor
TL 20W/03T	0-4
TLADK 30W/03	0-45
TLAK 40W/03	0-6
TLM 120W/03RS	2-2
TL 140W/03RS	2-5

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:-

50 Philips fluorescent lamps
TL 40W/03RS

Made in Holland.



C/S/B	(63.9)
UDC	696.6:628.94

ACTINIC 05

Fluorescent lamps for use as long-wave UV sources

A range of linear fluorescent lamps, identical in dimensions and electrical characteristics to the corresponding standard white lamps, for providing highly efficient sources of actinic (long-wave UV) radiation.

RANGE

- TL 6W/05 - 225mm (9in.) mini bi-pin cap.
- TLD 15W/05 - 450mm (18in.) bi-pin cap.
- MCFE 20W/05 - 600mm (2ft) bi-pin cap.
- TLADK 30W/05 - 450mm (18in.) bi-pin cap.
- MCFE 40W/05 - 600mm (2ft) bi-pin cap.
- MCFE 40W/05 - 1200mm (4ft) bi-pin cap.
- TLS 40W/05 - 1200mm (4ft) single-contact cap.
- MCFE 65/80W/05 - 1500mm (5ft) bi-pin cap.
- TLM 120W/05RS - 1500mm (5ft) bi-pin cap.

APPLICATIONS

Suitable for any application where a low-cost, linear source of long-wave UV radiation is required, such as:-

- Printing and copying processes
- Lacquer prehardening.
- Insect traps

Note:- The output of Actinic 05 lamps peaks at approximately 370nm. Details of Actinic 03 lamps, which are intended for applications requiring radiation peaking at rather longer wavelengths, are given on Data Sheet PL 1829.

Caution:- These lamps emit UV radiation. Precautions must be taken in the design of an installation to avoid harm to personnel. Particularly to the skin and eyes.

Handbook Ref.

7.1.11

To reorder this data sheet quote

3.78 PL 1830

Replaces

NEW

FEATURES

■ Low installation, running and maintenance costs make possible inexpensive apparatus with short warm-up times and simple cooling arrangements.

■ Suitable for use with Woods glass or similar filters to provide black light sources.

■ Identical in dimensions and electrical characteristics to standard white fluorescent lamps; can operate in the same luminaires and on the same control gear.

Note:

TL and TLD lamps – switchstart circuits only.

TLADK lamps – with external strip, to be connected to earth.

TLS lamps – with internal starting strip; single-contact cap. For replacement only.

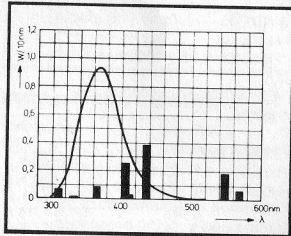
TLM...RS lamps – with 3V electrodes and internally-connected external strip, not to be earthed.

MCFE lamps – with silicone coat.

Temperature dependence

The output of these lamps is at a maximum when the temperature of the coldest part of the glass (usually central, underneath) is 40-50°C. In enclosed machines, it is usually necessary to employ forced-air cooling. This applies especially to the high-loaded lamps TLADK 30W, MCFE 40W 600mm, TLM 120W.

Absolute spectral energy distribution for MCFE 40W/05



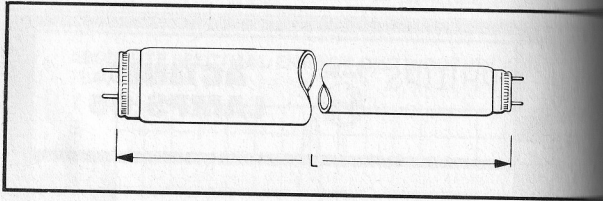
*W/10nm applies to MCFE 40W/05, and must be multiplied by the following factors for the other lamp types:-

Catalogue No.	Factor
TL 6W/05	—
TLD 15W/05	0.3
MCFE 20W/05	0.4
TLADK 30W/05	0.45
MCFE 40W/05 600mm	0.6
TLS 40W/05	1.0
MCFE 65/80W/05	1.6 (65W circuit)
TLM 120W/05RS	2.2

LAMP DATA

Catalogue No.	BS Lamp Voltage V	BS Lamp Current A	For circuits	Depreciation (%)*
TL 6W/05	44	0.16	Switchstart	25
TLD 15W/05	56	0.31	Switchstart	15
MCFE 20W/05	57	0.37	Switchstart & 10V XS	15
TLADK 30W/05	44	0.84	Special circuit	25
MCFE 40W/05 600mm	47	0.88	Switchstart & 10V XS	25
MCFE 40W/05	103	0.43	Switchstart & 10V XS	15
TLS 40W/05	109	0.42	Special circuit	15
MCFE 65/80W/05	110	0.67	Switchstart & 10V XS	20
TLM 120W/05RS	100	1.50	Special circuit	30

*Measured after 2000 hours' operation, compared with output at 100 hours. All data are averages, measured under standard conditions. Data for MCFE 65/80W/05 measured in 65W circuit. Conventional lamp circuits are shown on Data Sheet PL 1839.



DIMENSIONS & WEIGHTS

Catalogue No.	Dimension L (mm)	Diameter (mm)	Cap	Weight (g)	Packing quantity
TL 6W/05	212.1	16	Mini bi-pin	22	25
TLD 15W/05	437.6	26	Bi-pin	76	25
MCFE 20W/05	590.0	38	Bi-pin	156	25
TLADK 30W/05	437.6	26	Bi-pin	76	25
MCFE 40W/05	600.0	38	Bi-pin	156	25
MCFE 40W/05	1199.6	38	Bi-pin	292	25
TLS 40W/05	1199.6	38	Single-contact	292	25
MCFE 65/80W/05	1500.25	38	Bi-pin	360	25
TLM 120W/05RS	1500.25	38	Bi-pin	380	25

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:-
50 Philips fluorescent lamps TLADK 30W/05.

Made in Holland.

CI/SIB	(63.9)
UDC	696.6:628.94

ACTINIC 09

Fluorescent lamps with long-wave UV output

A range of linear fluorescent lamps, identical in dimensions and electrical characteristics to the corresponding standard white lamps, with high efficiency output of actinic (long-wave UV) radiation.

RANGE

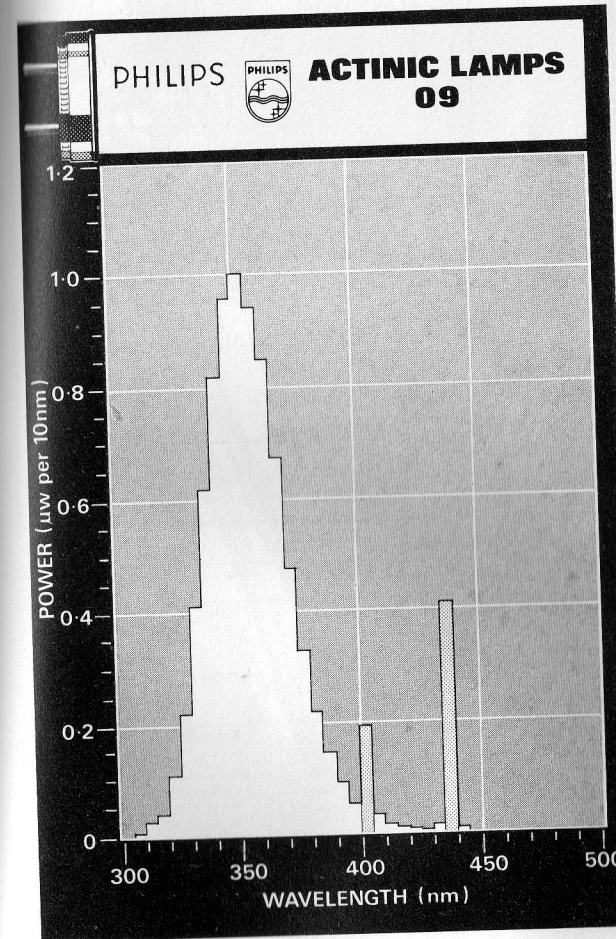
TLD 15W/09 450mm (18in.) bi-pin cap.
TL 20W/09 600mm (2ft) bi-pin cap.
TL 40W/09 1200mm (4ft) bi-pin cap.
TL 65/80W/09 1500mm (5ft) bi-pin cap.
TL 85W/09 1800mm (6ft) bi-pin cap.

APPLICATIONS

A low-cost, linear source of long-wave UV radiation, used in applications such as:-

- Printing and photo-copying
- Photo chemical processes
- Insect traps
- Medical treatment of skin diseases such as psoriasis
- Solaria/sun baths

Caution: These lamps emit UV radiation. Precautions must be taken in the design of an installation to avoid harm to personnel, particularly to skin and eyes.



Handbook Ref.

7.1.12

To reorder this Data Sheet quote

6.77 PL1853

Replaces

NEW

FEATURES

- High efficiency, low running costs.
- Operate on standard switch start fluorescent control gear.
- Short run-up times and simple cooling arrangements.

Note:-

TL and TLD lamps - for switchstart circuits only.

Temperature dependence

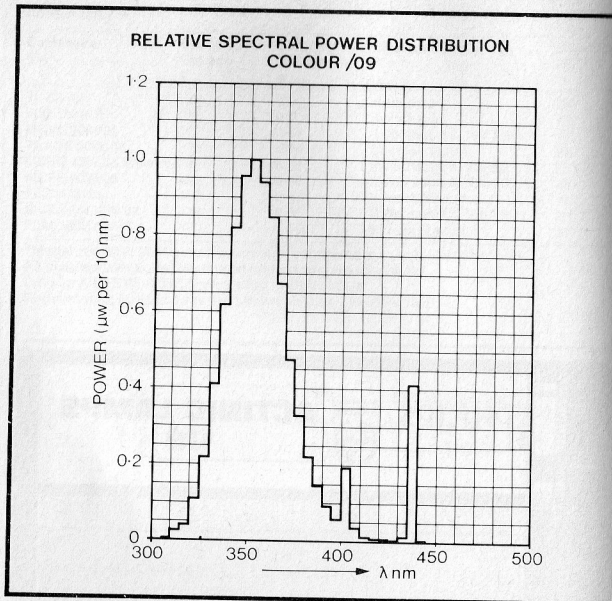
The output of these lamps is at a maximum when the temperature of the coldest part of the glass (usually central, underneath) is 40-50°C. In enclosed equipment, it is usually necessary to employ forced-air cooling.

Note:-

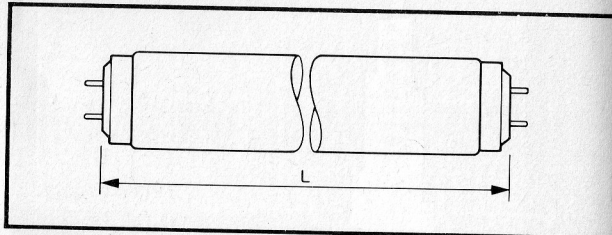
The output of Actinic 09 lamps peaks at about 355 nm. Details of Actinic 03 lamps, which are intended for applications requiring radiation peaking at rather longer wavelengths, are given in Data Sheet PL 1829.

ORDERING DETAILS

Please order lamps in the form given in the following example, in multiples of the packing quantity:-
50 Philips fluorescent lamps
TL 20W/09.



DIMENSIONS



DIMENSIONS & WEIGHTS

Catalogue No.	Dimension L (mm) Max	Diameter (mm) Nom	Cap	Weight (g)	Packing quantity
TLD 15W/09	437	26	Bi-pin	76	25
TL 20W/09	590	38	Bi-pin	156	25
TL 40W/09	1199	38	Bi-pin	292	25
TL 65/80W/09	1500	38	Bi-pin	360	25
TL 85W/09	1764	38	Bi-pin	451	12

ELECTRICAL DATA

Catalogue No.	BS Lamp Voltage V	BS Lamp Current A	For circuits	Depreciation (%)*
TLD 15W/09	56	0.31	Switchstart	30
TL 20W/09	57	0.37	Switchstart	25
TL 40W/09	103	0.43	Switchstart	25
TL 65/80W/09	110	0.67	Switchstart	30/35
TL 85W/09	120	0.80	Switchstart	30

*Measured after 2000 hours' operation, compared with output at 100 hours.
All data are averages, measured under standard conditions.
Data for TL 65/80W/09 measured in 65W circuit.
Conventional lamp circuits are shown on Data Sheet PL 1839.

Made in Holland.

C/5/B	(63.9)
UDC	696.6:628.94

LL

Spectral lamps

A range of light sources with identical dimensions and interchangeable electrical characteristics, for producing monochromatic lines of known wavelength for physical and chemical research.

Caution: Certain lamps emit UV radiation down to 300 nm, and may generate ozone. Precautions must be taken in the design of an installation to avoid harm to personnel, especially to the skin and eyes.

RANGE

Twenty-five lamps, containing high-purity gases or vapour as follows:

Glass envelopes

Hg (low pressure)	A
Hg (high pressure)	Kr
Cd	Xe
Zn	Na
Hg, Cd, Zn	Rb
He	Cs
Ne	K

Quartz envelopes

In	*Hg, Cd, Zn
Tl	*In
Ga	*Tl
*Hg (low pressure)	*Ga
*Hg (high pressure)	
*Cd	
*Zn	

*These lamps are primarily intended for producing ultra-violet spectra.

APPLICATIONS

- Biology
- Chemistry
- Interferometry
- Polarimetry
- Spectroscopy



Handbook Ref.

7.1.13

To reorder this data sheet quote

8/78 PL 1839

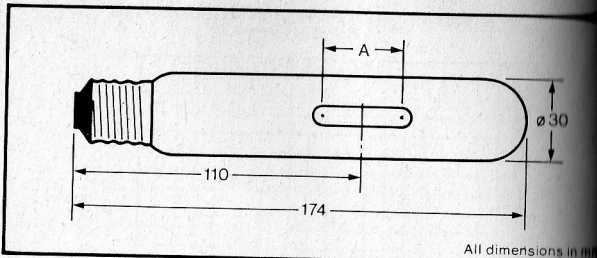
Replaces

NEW

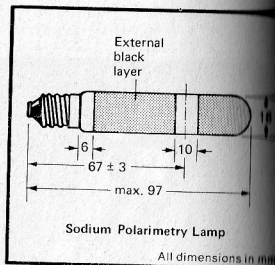
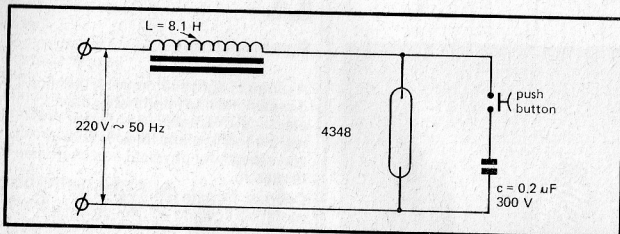
FEATURES

- Combination of ultra-pure gas/vapour filling and electrodes that permit a very high current density produce light sources capable of emitting high energy in a single line, or in a few lines.
- Lamps are physically identical and electrically interchangeable to permit comparative tests.
- Lamps with quartz discharge tubes and outer envelopes permit UV investigations.
- All lamps are fitted with standard ES cap.

DIMENSIONS



CIRCUIT DIAGRAM



LAMP DATA

Catalogue No.	Gas or vapour filling	Outer bulb	Wattage W	Useful arc length A (mm)	Main use
93123	Hg (low pressure)	Glass	12	38	1
93136	Hg (high pressure)	Glass	90	25	1
93162	Cd	Glass	16	24	1
103137	Zn	Glass	16	24	1
93145	Hg, Cd, Zn	Glass	75	24	1
93098	He	Glass	60	32	1
93099	Ne	Glass	20	27	1
93100	A	Glass	16	27	1
93101	Kr	Glass	11	27	1
93102	Xe	Glass	07	27	1
93122	Na	Glass	14	19	1
93104	Rb	Glass	08	33	1
93105	Cs	Glass	08	33	1
93103	K	Glass	10	33	1
103778	In	Quartz	25	25	2
126162	Tl	Quartz	20	30	2
126121	Ga	Quartz	20	30	2
93109	Hg (low pressure)	Quartz	12	40	3
93110	Hg (high pressure)	Quartz	90	25	3
93107	Cd	Quartz	16	24	3
93106	Zn	Quartz	16	24	3
93146	Hg, Cd, Zn	Quartz	75	24	3
103778	In	Quartz	25	25	3
126162	Tl	Quartz	20	25	3
126121	Ga	Quartz	20	20	3

Main uses

- 1:- Primarily for investigations of visible spectra.
- 2:- For investigations of visible and UV spectra.
- 3:- Primarily for investigations of UV spectra.

Common characteristics

- Cap:- ES
Lamp current:- approx. 0-9A
Weight:- 60 g
Burning position:- Any

SODIUM POLARIMETRY LAMP

Type No.	Minimum supply voltage V	Lamp voltage V	Lamp current mA	Average life H*	Base
4348	200	50	82	100	MES

* On an average of 1 burning hour per switching.

ORDERING DATA

Please order lamps in the form given in the following example, in multiples of the packing quantity:

4 Philips spectral lamps 93104

Packing quantity for all lamps: 4

Made in Holland.