

## Introduction

Thorn Lighting control gear and accessories have achieved a reputation for consistently high quality at economical prices by a policy of close co-operation between research and engineering departments and the factory where the equipment is made.

The factory has been granted a British Standard Licence (No. 5567) for the manufacture of mercury and low pressure sodium ballasts to BS.4782 and most discharge lamp ballasts within this range bear the Kitemark emblem. This emphasises the high standard of quality and inspection at the factory and ensures maximum performance with long life. Manufacture is carried out at Spennymoor, Co. Durham, in what is probably the largest control gear factory in Europe. A high proportion of its output is exported.

## Index

- 10:2-10:6** Theatre lighting
- 10:7** Installation notes
- 10:8, 10:9** 2400mm 125W Fluorescent tube control gear
- 10:10, 10:11** 2400mm 85W Fluorescent tube control gear
- 10:12, 10:13** 1800mm 85W Fluorescent tube control gear
- 10:14, 10:15** 1500mm 80W Fluorescent tube control gear
- 10:16, 10:17** 1500mm 65W Fluorescent tube control gear
- 10:18, 10:19** 1500mm 50W Fluorescent tube control gear
- 10:20, 10:21** 1200mm 40W Fluorescent tube control gear
- 10:22, 10:23** 32W Circular and 900mm 30W Fluorescent tube control gear
- 10:24, 10:25** 600mm 40W Fluorescent tube control gear
- 10:26, 10:27** Twin 600mm 20W Fluorescent tube control gear
- 10:28, 10:29** Twin 450mm 15W Fluorescent tube control gear
- 10:30, 10:31** Single 22W Circular, 600mm 20W and 450mm 15W Fluorescent tube control gear
- 10:32, 10:33** 525mm 13W, 300mm 8W, 225mm 6W and 150mm 4W Fluorescent tube control gear
- 10:34** Circuit components for 50W, 80W, 125W and 250W MBF, MBFR and MBF Kolorlux mercury discharge lamps
- 10:35** Circuit components for 400W, 700W and 1000W MBF, MBFR and MBF Kolorlux mercury discharge lamps
- 10:36** Circuit components for 250W 400W and 1000W metal halide discharge lamps
- 10:37** Circuit components for M1 and M2 miniature mercury discharge lamps
- 10:38, 10:39** Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps
- 10:40, 10:41** Circuit components for CSI compact source and MBI/L linear metal halide discharge lamps
- 10:42, 10:43** Circuit components for XB and XE/D compact source xenon discharge lamps
- 10:44** Circuit components for SOX and SLI sodium discharge lamps
- 10:45** Circuit components for 250W and 400W SON high-pressure sodium discharge lamps
- 10:46** Capacitors for fluorescent tube circuits
- 10:47** Capacitors for mercury and sodium discharge lamp circuits
- 10:48** Voltage transformers and emergency lighting
- 10:49** Combined ballast units for fluorescent tubes
- 10:50, 10:51** Control gear boxes
- 10:52** Mini dimmer
- 10:53** Starter switches
- 10:54** Terminal blocks, fuse holders and starter switch sockets
- 10:55, 10:56** Lampholders for fluorescent tubes
- 10:57** Miscellaneous lampholders

## Dimmer Control for All Application

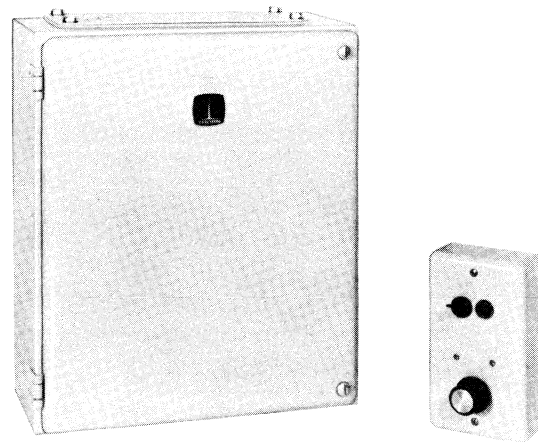
The Thorn range of dimmer systems embraces almost every conceivable lighting control requirement, and extends from the simplest industrial application to the largest theatre or television studio.

### Series H Industrial Range

A choice of four dimmer sizes will control filament lamp loads of up to 1, 2.5, 5 or 10 kilowatts respectively. Fluorescent lamp installations are served by a choice of three dimmers controlling for example, 6, 12 or 32 five foot 65 watt tubes.

All the above dimmers are available with control units offering:—

- (a) A hand operated intensity control.
- (b) Automatic fade to Off or Full with single push button control.
- (c) Automatic fade to Off, Intermediate or Full with three push button control.
- (d) Automatic continuous crossfading between two or three dimmers—particularly suitable for colour change effects.



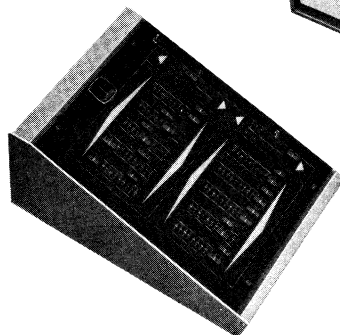
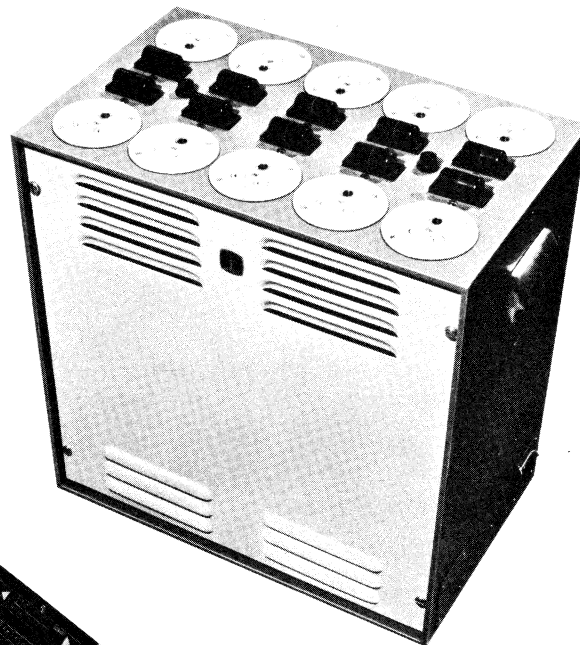
Type TH 40 Dimmer 2500W.

### Multiway Control System

Provides simple theatre type lighting control at a price which commends its use in clubs, schools, public halls, photographic studios, etc.

### Special Lighting Control Systems

In addition to the standard equipments described, the Theatre Lighting Division is prepared to consider custom-built lighting control systems of any complexity. Examples of these are auditorium and ballroom lighting, restaurants, hospitals, window displays and picture galleries. Technical sophistication includes such features as automatic brightness control including compensation for varying daylight.



## Club Series Multiway Control Systems

These are based on a compact and portable equipment which provides simple theatre type lighting control.

### Clubmaster Complete Stage Lighting

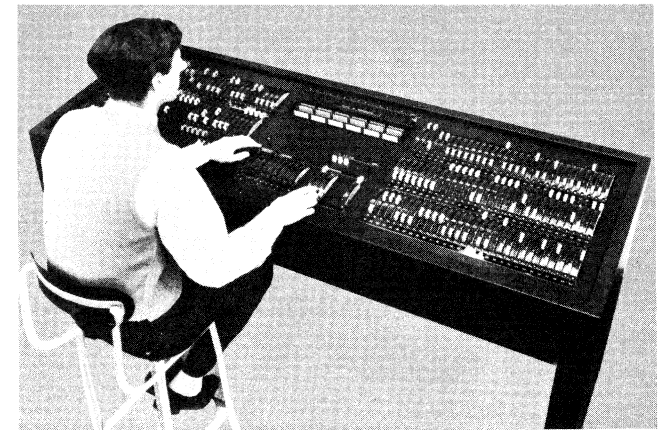
This comprises a Club 10/2 or 5/2 two preset control system together with spotlights and all the other items necessary to equip a small stage.

### Clubdisco Systems

Based on the Club 10 equipments, these systems combine manual lighting control with a three-channel sound/light modulation facility. They thus provide an ideal means of controlling lighting in discotheques or other applications where light and music can be combined in a psychedelic effect.

### Type SM and PM Systems for Stage Lighting Control

The SM systems utilise the well known manually operated arrangement involving 1, 2, 3 or 4 control levers for each lighting circuit. Simultaneous operation of two or more master faders allows control to be transferred from one row of individual levers to another and thus permits progressive changes between different combinations of lighting circuits or different intensity levels for the same circuits. The PM version combines the function of the SM system with the ability to place any required selection of lighting control levers under the group control of any one of ten group master faders. Thus, ten different combinations of lighting circuits can be prepared in advance with a choice of up to four different intensity levels for each circuit.



PM System at the Malakoff Theatre Paris.



## Q-MASTER A New and Economic Wide Range System for Smaller Stage Lighting Control Applications

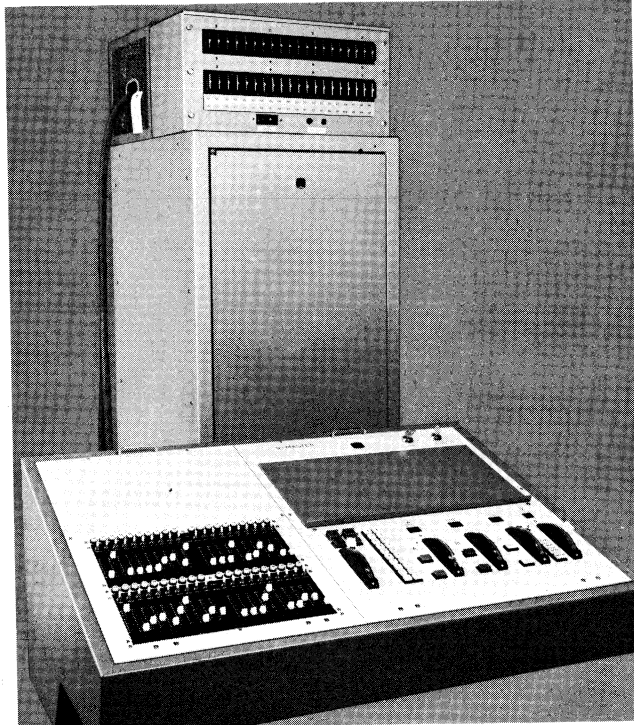
This is the very latest and most important addition to the Thorn range of theatre and television lighting control systems. By exploiting fully the vast potential of modern semiconductor devices our design team have produced an extremely flexible full facility control system which includes memorised brightness levels for all lighting circuits and can be produced at a price which commends its use in even the smaller theatre or TV studio. It thus goes a very long way towards closing the gap between simple conventional control systems and the lighting man's dream of Q-File which is ideal for larger installations but is frequently too expensive for the average small scale user. It is therefore little wonder that the arrival of Q-Master is an exciting event in the history of the Theatre Lighting Division and we trust that this system will enjoy the sort of success which enabled Q-File to place Thorn in the forefront of manufacturers of equipment of this type.

### Summary of Facilities

- Up to 160 Lighting Circuits.
- Dimmer Level Memories.
- Independent Group Master Controls.
- Automatic and/or Manual Fades.
- Fade within Fade Facilities.
- Independent Manual Control of all Lighting Circuits.
- Simple to Install — Just a Desk and the Dimmer Cabinets.
- Transportable — May be taken on tour.
- Rapid First Line Servicing by Electrical Staff — No Special Electronic Knowledge is Required.

The last feature is of particular importance to theatre users where the absence of specially trained maintenance personnel can present difficulties in the event of a breakdown.

In common with other Thorn control systems, Q-Master is used in conjunction with a choice of thyristor or triac dimmer units having load capabilities of 2.5, 5 or 10kW. These are housed in cabinets each containing up to 40 dimmers and the individual units can be supplied as plug-in modules or as cheaper wired-in versions.



40 circuit Q Master console with dimmer cabinet housing 40 x 2.5 kW dimmers

## Q-FILE Full Facility System for Theatre and Television Lighting Control

Q-FILE is the best established equipment of its type in the world with more than 40 systems in use or on order for television studios and theatres in Europe, the Middle East and North America.

A full description of all the facilities is not practical in the space available but briefly, the Q-FILE system enables the brightness level of any number of lighting circuits to be memorised instantly in 100 (optionally 200) electronic memory files which may be selected sequentially or in random order.

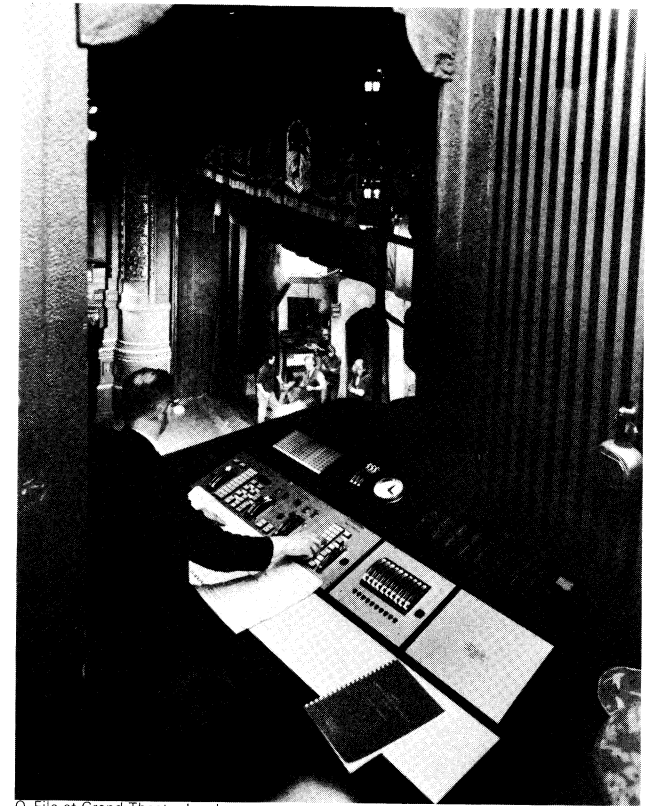
Thus, the subsequent use of these memories will provide the choice of 100 or more independent lighting plots, each of which can utilise some or all of hundreds of lighting circuits. Each plot includes a predetermined free choice of brightness level for every circuit used and any number of memories can be combined by addition or subtraction to form composite plots which may then be separately memorised if required. The recall of memorised lighting can take place either with instant effect or in sequence of up to four simultaneously available automatic and independent fade processes. Each fade process may involve the use of any single memory or any combination of memories. Both instant and fade cues may take place concurrently and once a fade action has been initiated, it proceeds automatically, leaving the operator free to introduce shorter term lighting effects.

All these actions can be easily achieved by a single operator seated at a small panel with all the controls at his finger tips.

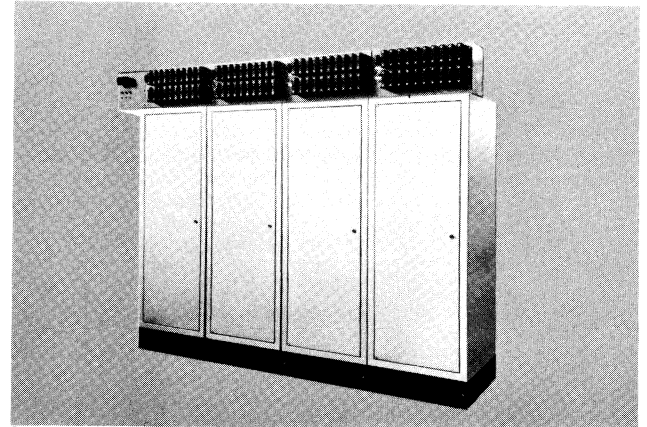
Optional Q-File facilities include a portable control unit which enables lighting to be set up and memorised from any convenient location, and a tape memory system for the long term storage of lighting information. The latter system enables the entire contents of the Q-File memory bank to be copied into a cassette of magnetic tape. On any later occasion, this cassette may be used to restore the memorised data and thus enable the original lighting programme to be repeated.

### Footnote

The latest version, Q-File 2000, offers even more user facilities and takes full advantage of modern integrated circuit techniques. This has resulted in a reduction in size of the control equipment with consequent space saving benefits.



Q-File at Grand Theatre Leeds.



Group of LAO Type Dimmer Cabinets.

# Theatre Lighting

## Son et Lumière

For many years, nationally important buildings have featured in Thorn Son et Lumière displays in which a wide range of light sources and control equipment are employed to produce a grand spectacle of colour and sound. All enquiries should be routed to your Regional Office or to: Theatre Lighting Division, Great Cambridge Road, Enfield, Middlesex.

## Technical Note

Thorn Son et Lumière employs a wide range of modern light sources which are controlled by the specially designed Aurama electronic memory system. This allows very complex lighting changes to take place automatically in response to signals from the tape recorder which also provides the commentary and sound effects.



Son-et-Lumière Canterbury Cathedral.

# Circuit components for 400W, 700W and 1000W MBF, MBFR and MBF Kolorlux mercury discharge lamps



## CONTROL GEAR FOR 240V 50Hz SUPPLY

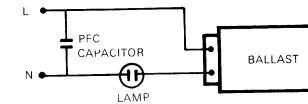
Lamp wattage Circuit diagram	400W 301	700W 306	1000W 306	
<b>Ballast</b>				
Catalogue no.	G 53193.4*†	G 53157.T +	G 53198.4*††	2 × G 53243.4*††
Weight	3.86kg	5.5kg	2.54kg	3.86kg (each)
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Illustrated type	DS	DU	DT	DS
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw
<b>Capacitor</b>				
Catalogue no.	G C2331	G C2331 +	G C2370†	2 × G C2346†
Capacitance $\mu$ F	20 $\pm$ 10%	20 $\pm$ 10%	13 $\pm$ 10%	25 $\pm$ 10% (each)
Working volts	250V	250V	250V	250V
Terminals	Flying leads	Flying leads	Flying leads	Flying leads
<b>Other ballast voltage ratings</b>				
220V 50Hz Catalogue no.	G 53193.2†	Not available	—	2 × G 53243.2††
Illustrated type	DS	—	—	DS
Can colour	White	—	—	White
Weight	3.86kg	—	—	3.86kg
200/250V 50Hz Catalogue no.	G 53157.T	G 53157.T +	G 53158.T†	2 × G 53164.T†
Illustrated type	DU	DU	DS	DU
Can colour	White	White	White	White
Weight	5.5kg	5.5kg	3.86kg	5.5kg (each)
Voltage tappings	200; 210; 220; 230; 240; 250V	210; 220; 230; 240; 250V	—	190; 200; 210; 220; 230; 240V

\*Units marked with British Standard Kitemark to BS.4782

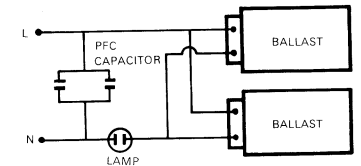
†The heat dissipation from these ballasts is extremely efficient and it is therefore necessary to ensure that cables in close proximity to the ballast surface are high temperature grade or suitably protected by high temperature sleeving  
†2 connected in parallel are used for one lamp.

## CIRCUIT DIAGRAMS

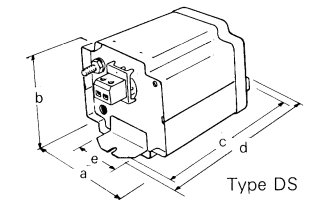
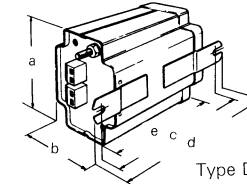
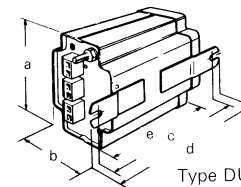
301 Circuit for MBF and MBFR mercury discharge lamps



306 Circuit for 700W and 1000W MBF and MBFR mercury discharge lamps



## CONTROL GEAR TYPES



	a	b	c	d	e
mm	105	102	158	171	140
in	4.125	4.0	6.25	6.75	5.5

	a	b	c	d	e
mm	83	76	127	140	108
in	3.25	3.0	5.0	5.5	4.25

	a	b	c	d	e
mm	98	89	146	158	45
in	3.875	3.5	5.75	6.25	1.75



# Circuit components for 250W, 400W and 1000W Kolorarc metal halide discharge lamps

## CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	250W	400W	1000W
Circuit diagram (see below)	324	324	311

### Ballast

Catalogue No. (s)	G 53251.T	G 53193.4	G 53247.4
Weight	3.8kg	3.86kg	24kg
Filling	Polyester resin	Polyester resin	Polyester resin
Illustrated type (see below)	Type DS	Type DS	Type DP
Can colour	White	White	Black
Terminals	Screw	Screw	Flying leads

### Ballast Fixing Bracket

Catalogue No.	—	—	G M6181
---------------	---	---	---------

### Capacitor

Catalogue No. (s)	G C2386	G C2331	4 × G C3246*
Capacitance $\mu$ F	30 $\pm$ 10%	20.0 $\pm$ 10%	25 $\pm$ 10% (each)
Terminals	250V	250V	250V
Working volts	Flying leads	Flying leads	Flying leads

### Ignitor

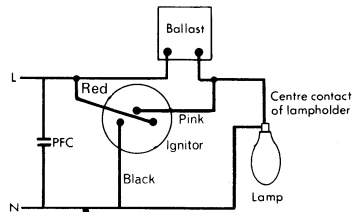
Catalogue No.	G 53283	G 53283	—
Weight	0.15kg	0.15kg	—
Illustrated type (see below)	Type DZ	Type DZ	—
Can finish	Aluminium	Aluminium	—
Terminals	Leads	Leads	—

### Other ballast voltage ratings available

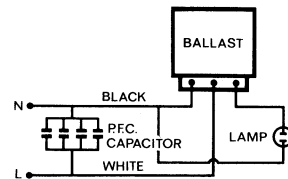
220V 50Hz	G 53251.T	G 53193.2	G 53247.2
-----------	-----------	-----------	-----------

\*Connected in parallel

**324** Circuit for 250/400W metal halide discharge lamp

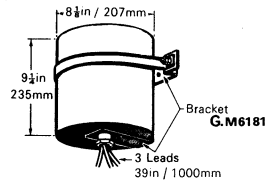


**311** Circuit for 1000W metal halide discharge lamp

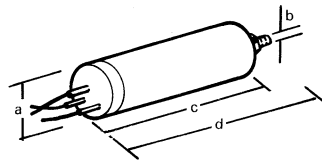


## CONTROL GEAR

### Type DP

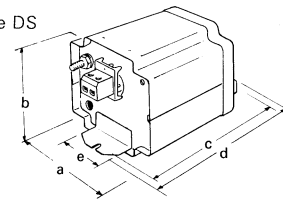


### Type DZ



	a	b	c	d
mm	53	8.0	102	115
in	2.0	0.31	4.0	4.5

### Type DS



	a	b	c	d	e
mm	98	89	146	158	45
in	3.875	3.5	5.75	6.25	1.75

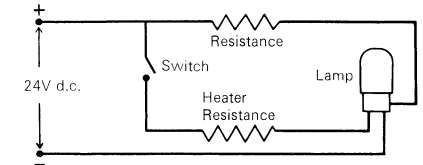
# Circuit components for M1 and M2 miniature mercury discharge lamps

## LAMP TYPE M1

### CONTROL GEAR FOR 24V d.c. OPERATION

Rating	4.5W
Supply volts	24 d.c.
Series resistance †	24 ohms
Heater resistance †	30 ohms

†Supplied by installer



## LAMP TYPE M2

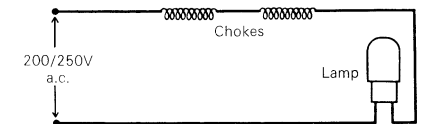
### CONTROL GEAR FOR 200/250V 50Hz. a.c. OPERATION

#### CHOKES (two required)

Catalogue no.	GC1/80	G 62825
Weight	1.9kg/4.25lb	0.57kg/1.25lb
Filling	Polyester resin	Polyester resin
Illustrated type	A2	G
Can colour	White	White
Terminals	Screw	Leads

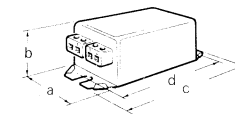
Alternatively, series resistors of values between 480 and 160 ohms may be used in place of the two series chokes to give operating currents in the range 0.5 to 1.5 amps.

#### CIRCUIT DIAGRAM



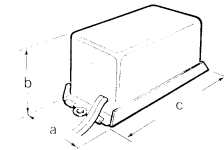
## CONTROL GEAR TYPES

### A2



	a	b	c	d
mm	64	48	172	152
in	2.5	1.875	6.75	6.0

### G



	a	b	c
mm	42	41	89
in	1.656	1.5625	3.5

# Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps

## CONTROL GEAR FOR 200/250V 50Hz SUPPLY

Lamp	125W MB/D or 125W MBL/D or 125W MBW/U	250W ME/D	1000W ME/D
Circuit diagram	301	301	316

## CHOKE

Catalogue no.	G 53159.T	G 53235	4 × G 53235
Weight	2.72kg/6lb	10.43kg/23lb (each)	10.43kg/23lb (each)
Filling	Polyester resin	—	—
Illustrated type	DT	DC	DC
Can colour	White	—	—
Terminals	Screw	Screw	Screw

## CAPACITOR

Catalogue no.	G C2234	G C2275	3 × G C2276
Capacitance $\mu$ F	8 ± 10%	60 ± 10%	80 ± 10% (each)
Working volts	250V	250V	250V
Terminals	Flying leads	Screw	Screw
Illustrated type	—	CA	CB

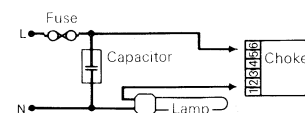
## STARTING CAPACITOR

Capacitance $\mu$ F	—	—	0.5
Working volts	—	—	1000V
Manufacturer and ref. no.	—	—	TCC type CP142W or equivalent

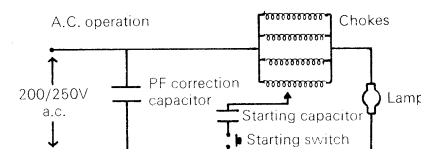
# Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps

## CIRCUIT DIAGRAMS

301 Circuit for ME/D and MB/D mercury discharge lamps

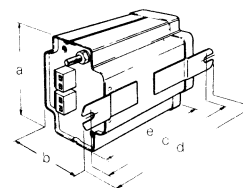


316 Circuit for 1000W ME/D lamp



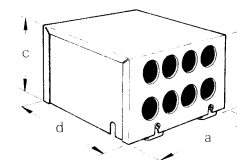
## CONTROL GEAR TYPES

DT



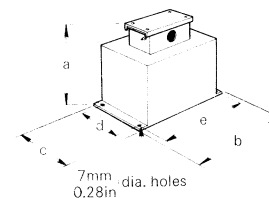
	a	b	c	d	e
mm	83	76	127	140	108
in	3.25	3.0	5.0	5.5	4.25

DC



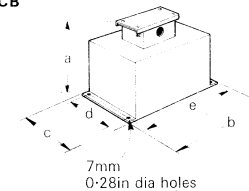
	a	b	c	d
mm	208	150	140	203
in	8.187	5.875	5.5	8.0

CA



	a	b	c	d	e
mm	178	197	114	89	178
in	7.0	7.75	4.5	3.5	7.0

CB



	a	b	c	d	e
mm	178	229	133	108	210
in	7.0	9.0	5.25	4.25	8.25

# Circuit components for CSI compact source and MBI L linear metal halide discharge lamps

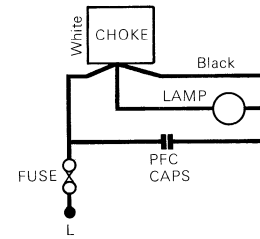
## CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp	750W MBI L	1200W or 1600W MBI L	400W CSI	1000W CSI
Circuit diagram	311	312	318	317
<b>Ballast</b>				
Catalogue no.	G 53254.4	2 × G 53254.4	G 53196.4	G 53255.T
Weight	23.2kg/51.5lb	23.2kg/51.5lb (each)	11.8kg/26lb	27.2kg/60lb
Filling	Polyester resin	Polyester resin	—	—
Illustrated type	DP	DP	DD	DE
Can colour	Black	Black	Light grey	Black/White
Terminals	Leads	Leads	Screw	Screw
<b>Ballast Fixing Bracket</b>				
Catalogue no.	G M6181	2 × G M6181	—	—
<b>Capacitor</b>				
Catalogue no.	4 × G C2346	8 × G C2346	—	8 × G C2346
Capacitance $\mu$ F	25 ± 10% (each)	25 ± 10% (each)	—	25 ± 10% (each)
Working volts	250V	250V	—	250V
Terminals	Flying leads	Flying leads	—	Flying leads
Fused or unfused	Unfused	Unfused	—	Unfused
<b>Other ballast voltage ratings</b>				
220V 50Hz	G 53254.2	2 × G 53254.2	G 53196.2	G 53255.T

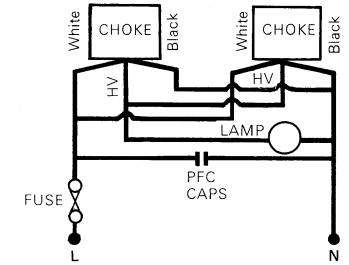
# Circuit components for CSI compact source and MBI L linear metal halide discharge lamps

## CIRCUIT DIAGRAMS

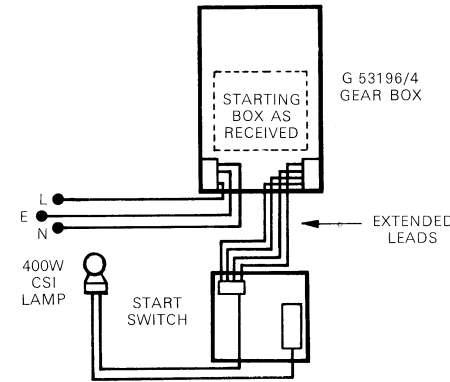
311 Circuit for 750W MBI L lamp



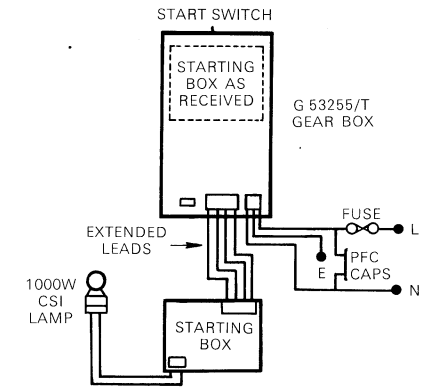
317 Circuit for 1200W or 1600W MBI L lamp



312 Circuit for 400W CSI lamp

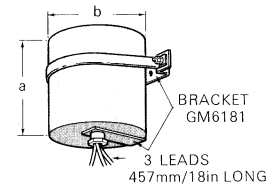


318 Circuit for 1000W CSI lamp



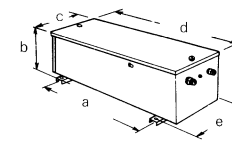
## CONTROL GEAR TYPES

DP



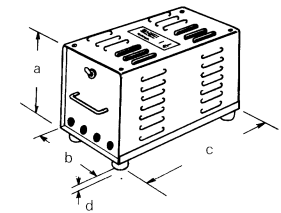
	a	b
mm	235	207
in	9.25	8.125

DD



	a	b	c	d	e
mm	279	159	159	416	178
in	11.0	6.25	6.25	16.375	7.0

DE



	a	b	c	d
mm	220	194	413	26
in	8.625	7.625	16.625	1.0



# Circuit components for XB and XE/D compact source xenon discharge lamps

## A.C. LAMPS 200/250V 50Hz

Lamp	250W XE/D	500W XE/D	1000W XB
Circuit diagram	320	320	320
<b>Ballasts</b>			
Catalogue no.	4 × G 53235	6 × G 53235	6 × G 53235
Weight	10.4kg/23lb (each)	10.4kg/23lb (each)	10.4kg/23lb (each)
Illustrated type	DC	DC	DC
Terminals	Screw	Screw	Screw
<b>Starter</b>			
Catalogue no.	G 53239	G 53239	G 53239
Weight	5.9kg/13lb	5.9kg/13lb	5.9kg/13lb
Illustrated type	DF	DF	DF
<b>Capacitors</b>			
Catalogue no.	2 × G C2276 (160 μF) or 2 × G C2275 + G C2276 (200 μF)	3 × G C2276 (240 μF) or 3 × G C2276 + G C2275 (300 μF)	3 × G C2276 (240 μF) or 3 × G C2276 + G C2275 (300 μF)
Mains current	5A (160 μF)	8.5A (240 μF)	7.5A (240 μF)
Working volts	2A (200 μF)	4.5A (300 μF)	5A (300 μF)
Terminals	250V	250V	250V
Illustrated type	CA (G C2275) CB (G C2276)	CA (G C2275) CB (G C2276)	CA (G C2275) CB (G C2276)

## D.C. LAMPS ON 200/250V 50Hz SUPPLY

Lamp	250W XE/D	500W XE/D	2000W XE/D 2 electrode	2000W XE/D 3 electrode
Circuit diagram	323	323	321	322
<b>Starter</b>				
Catalogue no.	G 53239	G 53239	G 53233	G 53234
Weight	5.9kg/13lb	5.9kg/13lb	12.7kg/28lb	4.1kg/9lb
Illustrated type	DF	DF	DG	DH
<b>Rectifier ballast</b>				
Catalogue no.	G 53236	G 53236	G 53237	G 53238
Weight	37kg/85lb	37kg/85lb	180kg/400lb	180kg/400lb
Illustrated type	DI	DI	DK	DK

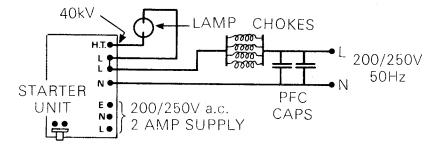
## D.C. LAMPS ON 35/65V D.C. SUPPLY

Lamp	250W XE/D	500W XE/D	2000W XE/D 2 electrode	2000W XE/D 3 electrode
Circuit diagram	323	323	321	322
<b>Starter</b>				
Catalogue no.	G 53239	G 53239	G 53233	G 53234
Weight	5.9kg/13lb	5.9kg/13lb	12.7kg/28lb	4.1kg/9lb
Illustrated type	DF	DF	DG	DH
<b>Series resistance</b>				
Resistance value (ohms)	V—16.5	V—25	V—25	V—27
Current (amps)	15 15A	23 23A	80 80A	74 74A

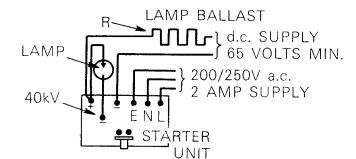
# Circuit components for XB and XE/D compact source xenon discharge lamps

## CIRCUIT DIAGRAMS

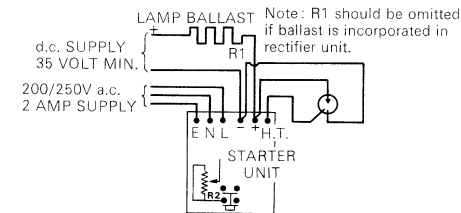
320 Circuit for a.c. lamps on 200/250V 50Hz supply



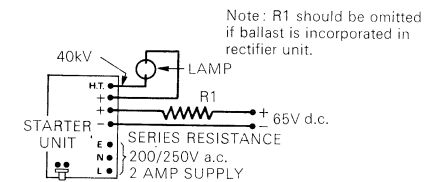
321 Circuit for 2000W 2-electrode lamp



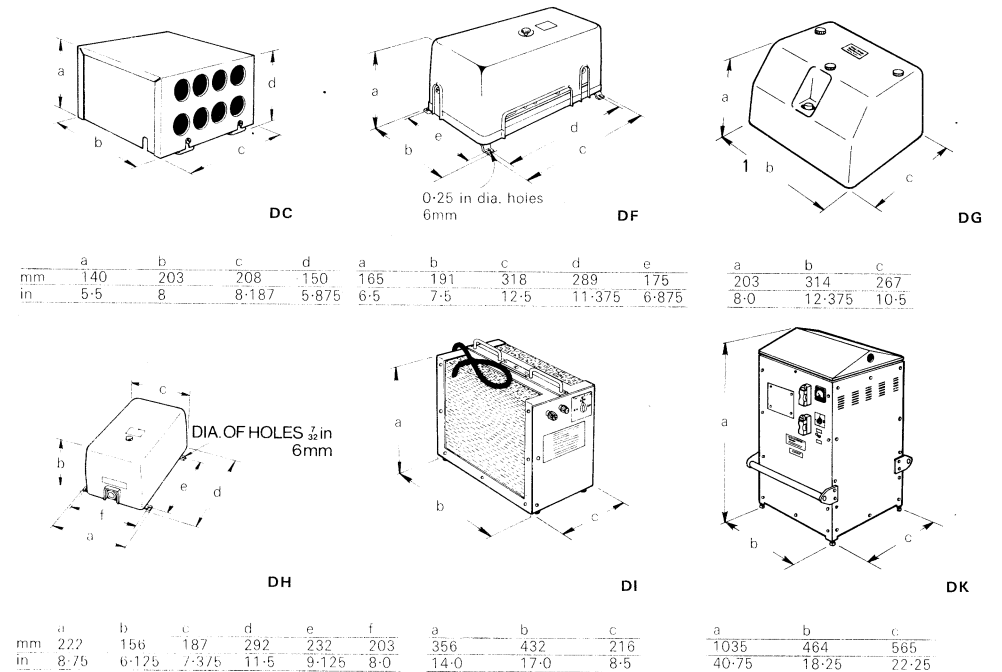
322 Circuit for 2000W 3-electrode lamp



323 Circuit for 250/500W d.c. lamps



## CONTROL GEAR TYPES



# Circuit components for SOX and SLI sodium discharge lamps



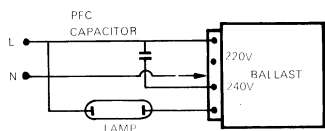
## CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp	35, 55W SOX	140W SLI/H or 90W SOX	135W SOX or 180W SOX	200W SLI/H
Circuit diagram	307	307	304	302
<b>Ballast</b>				
Catalogue no.	G 53182.4†	G 53232.4†	G 53260.T†	G 53261.T†
Weight	3.4kg/7.5lb	5.82kg/12.6lb	6.55kg/14.5lb	6.55kg/14.5lb
Filling		Polyester resin	Polyester resin	Polyester resin
Illustrated type	DR	DU	DY	DY
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw
<b>Capacitor</b>				
Catalogue no.	G C2284	G C2231 (for 140W) G C2346 (for 90W)	G C2281	G C2382
Capacitance $\mu$ F	15 $\pm$ 10%	20 $\pm$ 10% (for 140W) 25 $\pm$ 10% (for 90W)	13 $\pm$ 5%	35 $\pm$ 10%
Working volts	250V	250V	440V	250V
Terminals	Flying leads	Flying leads	Flying leads	Flying leads
<b>Other ballast voltage ratings</b>				
220V 50Hz	G 53182.T	G 53232.2	G 53260.T	G 53261.T
250V 50Hz	G 53182.T	Not available	Not available	Not available

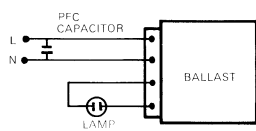
† Units marked with British Standard Kitemark to BS.4782

## CIRCUIT DIAGRAMS

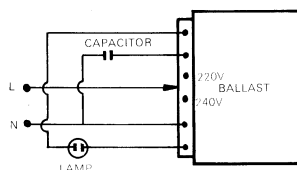
**302** Circuit for 200W SLI/H sodium discharge lamp



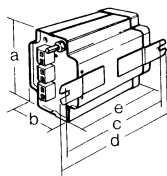
**307** Circuit for 140W SLI/H and 35W/55W/90W SOX



**304** Circuit for 135W or 180W SOX sodium discharge lamp

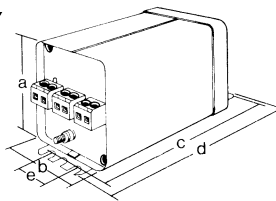


DU



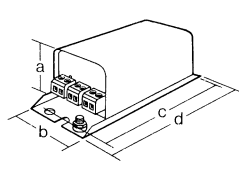
	a	b	c	d	e
mm	105	102	158	171	140
in	4.125	4.0	6.25	6.75	5.5

DY



	a	b	c	d	e
mm	114	93	165	178	67
in	4.5	3.656	6.5	7.0	2.625

DR



	a	b	c	d
mm	59	81	216	232
in	2.312	3.187	8.7	9.125

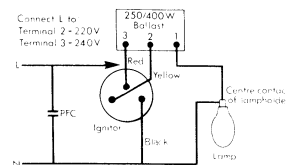
# Circuit components for 250W and 400W SON high-pressure sodium discharge lamps

## CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	250W	400W
Circuit diagram	315	315
<b>Ballast</b>		
Catalogue no.	G. 53251.T	G. 53230.T
Weight	3.8kg/8.5lb	5.7kg/12.55lb
Filling	Polyester resin	Polyester resin
Illustrated type	DS	DU
Can colour	White	White
Terminals	Screw	Screw
<b>Capacitor</b>		
Catalogue no.	G. C2235	2 x G. C2218
Capacitance $\mu$ F	30 $\pm$ 10%	20 $\pm$ 10% (each)
Working volts	300V	250V
Terminals	Flying leads	Flying leads
<b>Ignitor</b>		
Catalogue no.	G. 53282	G. 53282
Weight	0.065kg/2.3oz	0.065kg/2.3oz
Illustrated type	DB	DB
Can finish	Aluminium	Aluminium
Terminals	Flying leads	Flying leads
<b>Other ballast voltage ratings</b>		
220V 50Hz	G. 53251.T	G. 53230.T

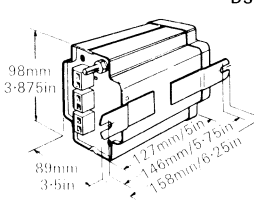
315

Circuit for 250 400W SON SONT Lamps

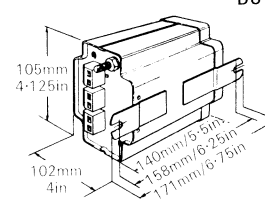


## CONTROL GEAR TYPES

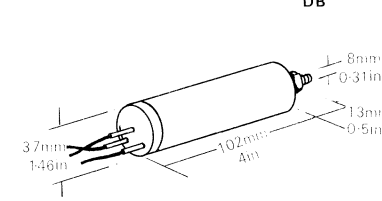
DS



DU

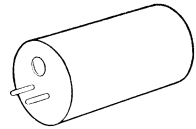


DB

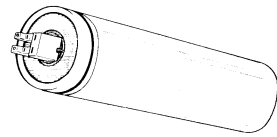


# Capacitors for fluorescent tube circuits

## STANDARD PFC AND SERIES CAPACITORS



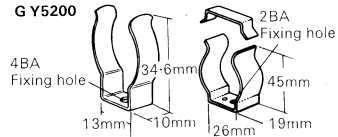
**R**  
with pin terminals



**Q** with push wire terminals

## CAPACITOR SUPPORT CLIPS

GY5244 For 38mm dia. capacitors  
GY5245 Clip for GY5244  
GY5200 For 25mm dia. capacitors



**GY5244**

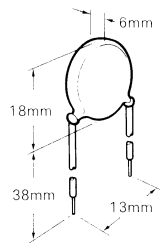
Catalogue no.	Capacitance (µF)	Fused or unfused	Rated voltage	Type	Dia. mm	Length* mm	Weight g	Use
G C2220	8.4 ± 5%	Unfused	250V	R	38	100	142	6ft 85W/5ft 65W SRS
G C2222	8 ± 10%	Unfused	250V	R	38	100	199	5ft 80W/2ft 40W SS/QS
G C2274	10 ± 10%	Fused	250V	R	38	104	199	Twin 5ft 65W SS
G C2368	5.7 ± 5%	Fused	250V	R	32	77	90	5ft 50W SRS Arrowslim fitting
G C2228	7.8 ± 5%	Unfused	440V	R	38	200	353	8ft 125W QS
G C2344**	7.2 ± 5%	Unfused	440V	Q	40	107	199	8ft 125W SS
G C2223	6 ± 10%	Unfused	250V	R	38	100	142	6ft 85W SS
G C2273	5.5 ± 10%	Unfused	250V	R	38	100	180	40W SRS
G C2226	5 ± 5%	Unfused	440V	R	38	156	227	8ft 85W QS
G C2245	5 ± 10%	Unfused	250V	R	38	100	170	5ft 65W SS
G C2224	3.5 ± 10%	Unfused	250V	R	38	54	113	20/30/40W SS/QS
G C2225	3.5 ± 10%	Fused	250V	R	38	57	113	20/30/40W SS/QS
G C2227	3 ± 10%	Fused	250V	R	32	78	99	3ft 30W Arrowslim fitting
G C2286 †	2 ± 10%	Unfused	250V	R	26	44	56	13/8/6/4W SS

All 250V types are metallised polypropylene (dry) film construction \*\*Metallised paper construction

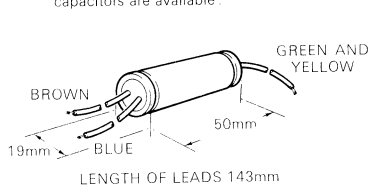
\*Length is can length only. Pin terminals project 9mm  
Push wire terminals project 23mm  
†Tag terminals project 8mm

## RADIO INTERFERENCE SUPPRESSION CAPACITORS

All starter switches and starting transformers shown in this catalogue incorporate a 0.005µF radio interference suppressor. For additional suppression the following capacitors are available:

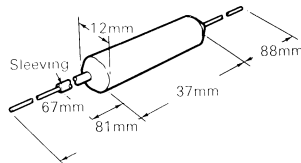


**G C2139**  
A ceramic base 0.005µF 800V a.c. capacitor to BS.4017 with high temperature PVC sleeved 38mm leads.



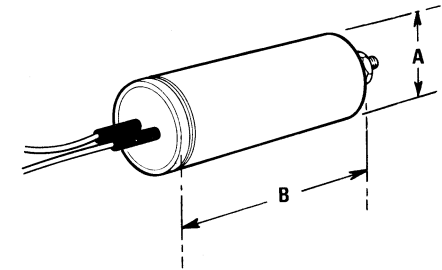
**G C2051**  
A radio interference suppression filter network comprising two 0.005µF and one 0.1µF delta connected for additional suppression where the GC2139 fails to suppress the interference.

## ARTIFICIAL EARTH



**G C2050**  
An artificial earth unit for connection between the tube earth strip, or a metal chassis in close proximity to the tube, and neutral when no earth is available.

# Capacitors for mercury and sodium discharge lamp circuits



Catalogue no.	Capacitance µF	Diameter A*		Height B*	
		mm	in	mm	in
G C2383	8	38	1.5	74	2.91
G C2370	13	45	1.77	104	4.10
G C2284	15	45	1.77	104	4.10
G C2345	16	45	1.77	104	4.10
G C2385	18	45	1.77	107	4.21
G C2331	20	45	1.77	107	4.21
G C2346	25	45	1.77	107	4.21
G C2386	30	45	1.77	105	4.14
G C2382	35	45	1.77	105	4.14

\*Maximum dimensions

Notes: (1) Capacitors in above table are suitable for continuous operation in the temperature range -40°C to +85°C and have a working voltage rating of 250V

(2) All types are of metallised film construction and have an earth stud at one end of the capacitor.

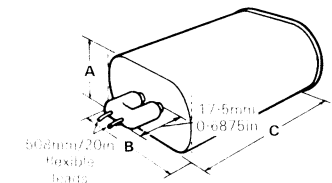
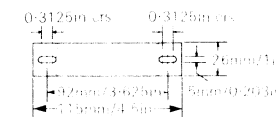
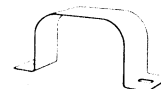
(3) Fixing is by means of a clip supplied with the capacitor.

Catalogue no.	Capacitance µF	Working voltage	Depth A		Width B		Height C	
			mm	in	mm	in	mm	in
G C2281	13	440	51	2	76	3	105	4.125
G C2278	15	350	51	2	76	3	121	4.75
G C2288	17.5	350	51	2	76	3	137	5.375

Capacitors are suitable for continuous operation in the temperature range of -40°C to +70°C.

## CAPACITOR CLIP

**G Y5279**  
For 20µm (3in) x 51mm (2in) capacitor



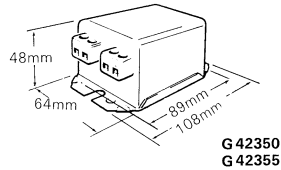


## Voltage transformers and emergency lighting

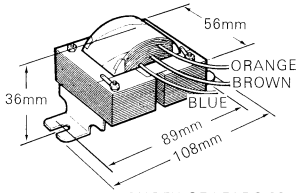
### SUPPLY VOLTAGE STEP-UP TRANSFORMERS

Used in conjunction with 240V circuits

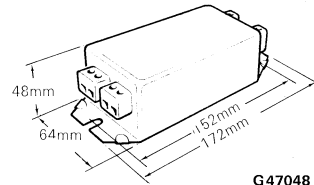
Catalogue no.	G42343	G42350	G42355	G47048
Voltage input	220V	220V	200/210V	110V
Max. tube length wattage and circuit	8ft 125W SS	8ft 125W SS 8ft 125W QS	8ft 125W QS 8ft 85W QS 6ft 85W SRS	5ft 80W SS 5ft 65W SS/SRS 4ft 40W SS/QS
Weight	0.45kg	0.9kg	0.9kg	1.86kg
Insulation	Varnish	Polyester resin	Polyester resin	Polyester resin
Can colour	Natural	White	White	White
Terminals	Leads	Screw	Screw	Screw



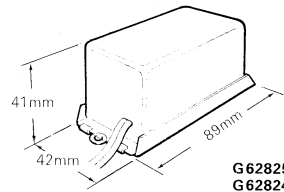
G 42350  
G 42355



LENGTH OF LEADS 305mm  
G 42343



G 47048



G 62825  
G 62824

### CONVERSION CHOKES (50Hz supply)

Used in series with 200/210V choke on 240/250V supply

Catalogue no.	Tube	Weight kg	Insulation	Can colour	Terminals
G 62825	5ft 80W	0.57	Polyester resin	White	Leads
G 62824	4ft 40W	0.57	Polyester resin	White	Leads

### EMERGENCY LIGHTING SYSTEM FOR USE WITH TRANSISTORISED FLUORESCENT FITTINGS

Automatic emergency lighting prevents hazards and panic should the mains supply fail. Transistorised miniature fittings with an efficiency three to four times greater than the corresponding tungsten lamps make the maximum use of standby batteries.

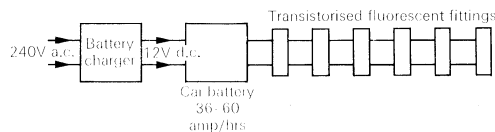
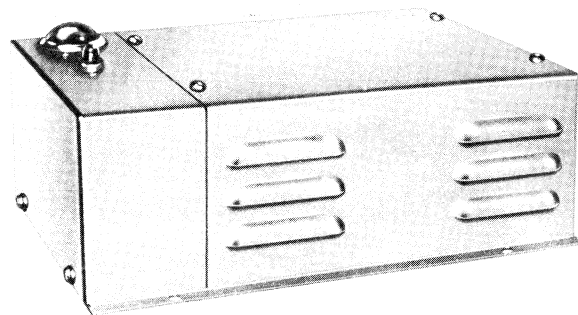
Catalogue no. G R2463

A fully automatic 12V battery charger complete with mains hold-off relay. Suitable for use with

- 6 - 13W 525mm/21in Transistorised miniature fittings or
- 8 - 8W 300mm/12in Transistorised miniature fittings

Dimensions - Length 289mm  
Height 197mm  
Depth 124mm

See Section 1 for details of miniature fluorescent fittings.



## Combined ballast units for fluorescent tubes

A range of 240V 50Hz HPF and LPF ballasts incorporating all necessary circuit components in one can.

These ballasts provide completely self-contained units ideal for mounting at some distance away from the tube or, alternatively, for use adjacent to the tube when shortage of space prevents the use of a complete fluorescent fitting.

These units are ideal for mounting within interior signs, or within suitably designed exterior signs, and are also used for some showcase lighting and in certain architectural features such as alcoves, pelmets, etc.

All ballasts have screw terminal connections.

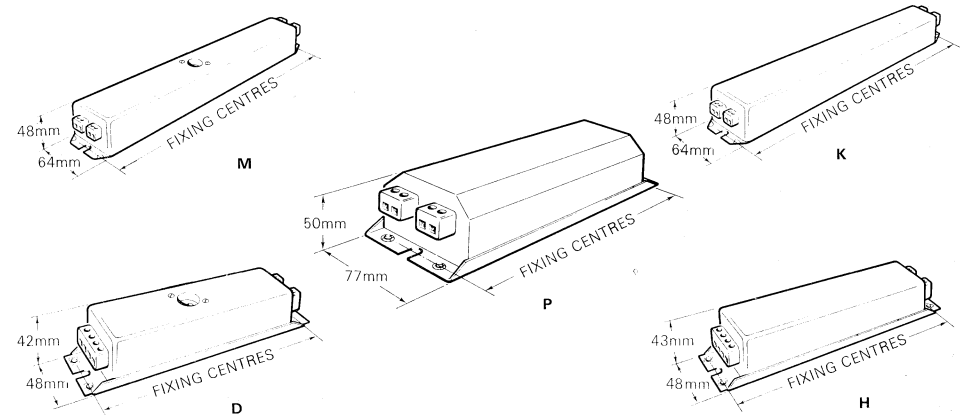
When required, starter switches must be ordered separately.

Catalogue no.	Use	Can colour	Illustrated type	Fixing centres mm	Weight kg
G CBS/125	2400mm 125W LPF SS	White	M	317	2.6
G CBQ/125	2400mm 125W HPF QS	White	P	406	4.5
G CBS/685	1800mm 85W, 1500mm 80W, 2 x 600mm 40W* HPF SS	White	M	292	2.4
G CBR/80	1500mm 80W HPF SRS	White	K	229	3.0
G CBS/65	1500mm 65W HPF SS	White	M	229	1.8
G CBR/65	1500mm 65W HPF SRS	White	K	229	2.9
G CBS/40	1200mm 40W, 2 x 600mm 20W* HPF SS	White	D	216	1.1
G CBR/40	1200mm 40W HPF SRS	White	K	229	1.8
G CBS/30	900mm 30W, 2 x 450mm 15W* LPF SS†	White	D	166	1.1
G CBQ/30	900mm 30W LPF QS†	White	H	166	1.6
G CBQ/2240	2 x 600mm 40W LPF QS†	White	K	229	2.7
G CBQ/220	2 x 600mm 20W LPF QS†	White	H	190	1.4
G CBS/20	600mm 20W, 450mm 15W LPF SS†	White	D	166	1.0
G CBQ/20	600mm 20W, 450mm 15W LPF QS†	White	H	166	1.1

SS=Switchstart QS=Quickstart SRS=Semi-resonant start

\*An additional starter switch socket will be required when these units are used for series pair operation.

†Low power factor: use separate capacitor for HPF correction



## Control gear boxes

### WEATHERPROOF BOXES FOR EXTERIOR USE

These boxes are made of zinc coated sheet steel finished stove enamel acrylic grey to BS 4800 18B 25. A weatherproof seal is effected between lid and box by means of a closed cell neoprene sponge gasket. Two 20mm/0.78in diameter holes are provided in one end of each box for supply and lamp connections. A wooden baseboard is fitted for control gear mounting and an earth terminal is available on one end. These boxes are not supplied complete with control gear or terminal blocks.

#### G M6174

1000W HPMV or 400W MBI

##### Internal dimensions

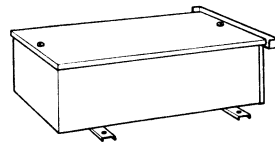
Length 425mm/16.75in  
Width 244mm/9.625in  
Height 130mm/5.125in

##### External dimensions

Length 437mm/17.25in  
Width 247mm/9.75in  
Height 155mm/6.125in

##### Fixing centres

279 x 279 x 7.92mm diameter/  
11 x 11 x 0.31in



##### Weight

5.84kg/12.875lb

#### G M6172

90-400W HPMV or 35-200W SLI/H or SOX

##### Internal dimensions

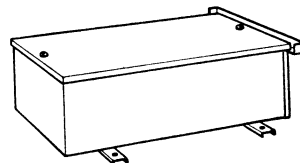
Length 406mm/16in  
Width 144mm/5.68in  
Height 130mm/5.125in

##### External dimensions

Length 420mm/16.53in  
Width 168mm/6.625in  
Height 163mm/6.438in

##### Fixing centres

279 x 178 x 7.92mm diameter/  
11 x 7 x 0.31in



##### Weight

3.74kg/8.25lb

#### G M6169

This box is made of high quality aluminium designed to accommodate a larger range of control gear for exterior use. It can accommodate either:

1. 80W or 125W MBF type control gear with time switch and fuses.
2. 35W SOX or 55W SOX type control gear with time switch and fuses.
3. 250V or 400V MBF type control gear with time switch and fuses only, or
4. 140/200W SLI control gear only. No time switch.

##### Internal dimensions

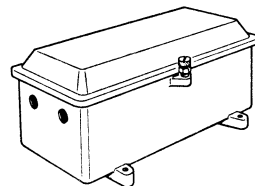
Length 337mm/13.25in  
Width 127mm/5in  
Height 121mm/4.75in

##### External dimensions

Length 425mm/16.75in  
Width 244mm/9.625in  
Height 130mm/5.125in

##### Weight

Weight 3.45kg/7.6lb



## Control gear boxes

### REMOTE BOXES FOR INTERIOR USE

These boxes are made of sheet steel finished stove enamel acrylic light grey to BS 4800. Two 20mm/0.78in diameter holes are provided in one end of each box for supply and lamp connections to two-way 10A porcelain terminal blocks. A separate earth terminal is close to these blocks. Boxes are wired complete with 240V 50Hz HPF control gear.

**RB G1000-4** Gear box complete with 1000W MBF control gear

**RB G700-4** Gear box complete with 700W MBF control gear

##### External dimensions

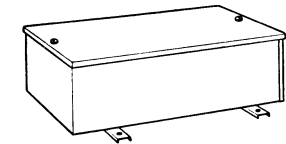
Length 425mm/17.06in  
Width 247mm/9.75in  
Height 149mm/5.875in

##### Weights

RB G1000 17.92kg/32.5lb  
RB G700 13.95kg/30.75lb

##### Fixing centres

279 x 279 x 7.92mm diameter/11 x 11 x 0.31in



**RB G400-4** Gear box complete with 400W MBF control gear

**RB IG400-4** Gear box complete with 400W MBI control gear

\* **RB SG400-4** Gear box complete with 400W SON control gear

\* **RB SG250-4** Gear box complete with 250W SON control gear

**RB G250-4** Gear box complete with 250W MBF control gear

##### External dimensions

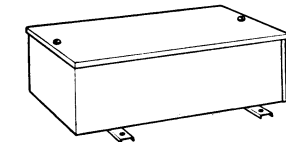
Length 416mm/16.375in  
Width 157mm/6.18in  
Height 149mm/5.875in

##### Weights

RB G400 8.05kg/17.6875lb  
RB IG400 8.59kg/18.9375lb  
RB SG400 8.17kg/18lb  
RB G250 6.35kg/14.0625lb  
RB SG250 6.8kg/15lb

##### Fixing centres

279 x 178 x 7.92mm/11 x 7 x 0.31in diameter



### CONTROL GEAR BOXES FOR INTERIOR USE WITH 80 or 125W MBF KOLORLUX LAMPS

Enclosed gear trays fitted with 240V 50Hz HPF control gear wired to a fused terminal block for incoming mains supply and a two-way terminal block for lamp connection. Boxes finished gloss white externally.

**RB G125-4** Gear box complete with 125W MBF control gear

**RB G80-4** Gear box complete with 80W MBF control gear

##### External dimensions

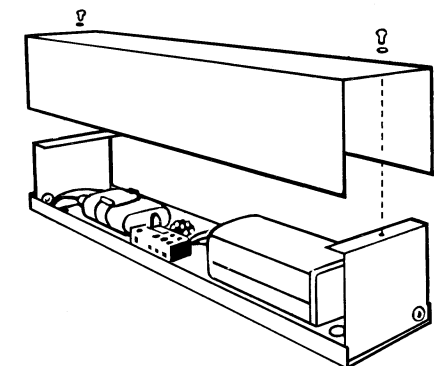
Length 337mm/13.25in  
Width 92mm/3.625in  
Height 83mm/3.25in

##### Fixing centres

292 x 51mm/11.5 x 2in

##### Weights

RB G125 3.63kg/8lb  
RB G80 3.18kg/7lb



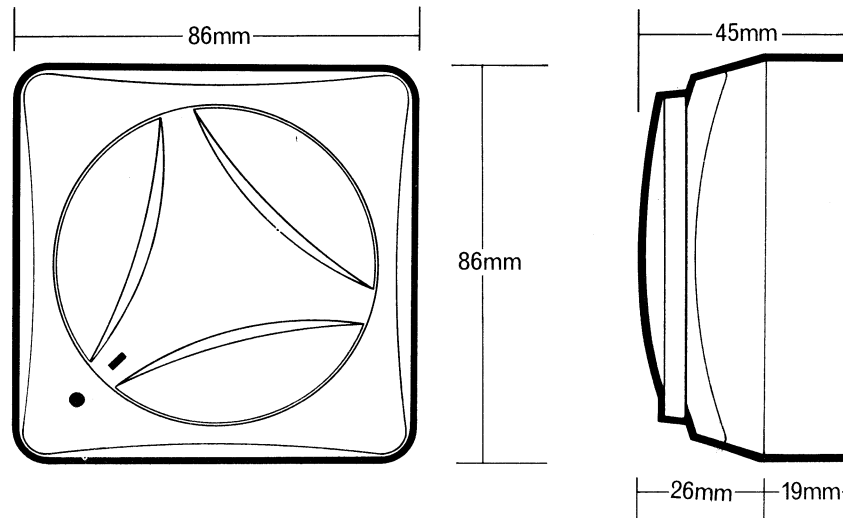
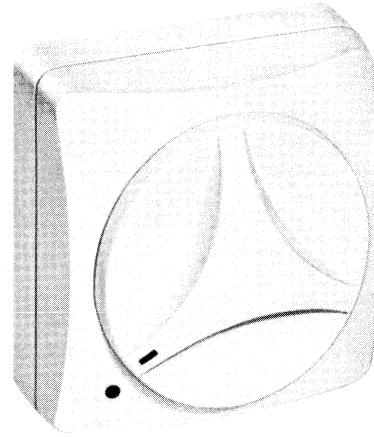
\*To special order only

## Mini-dimmer for incandescent lamps

The Mini-Dimmer is a solid state device designed to produce smooth, reliable, and economic dimming of incandescent lamps up to 300W total load on 200/250V 50 Hz supplies.

This dimmer may be substituted directly for any single pole on-off switch mounted on a standard 3 $\frac{3}{8}$ " square switch plate. A special mounting frame is supplied with each dimmer for use with "plaster-depth" or other shallow switch boxes.

Suppression against interference on radio and television is provided within the unit.



Cat. no.	Rating
SS300	300W

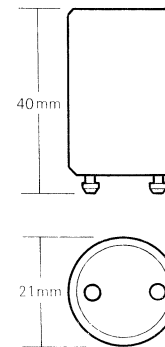
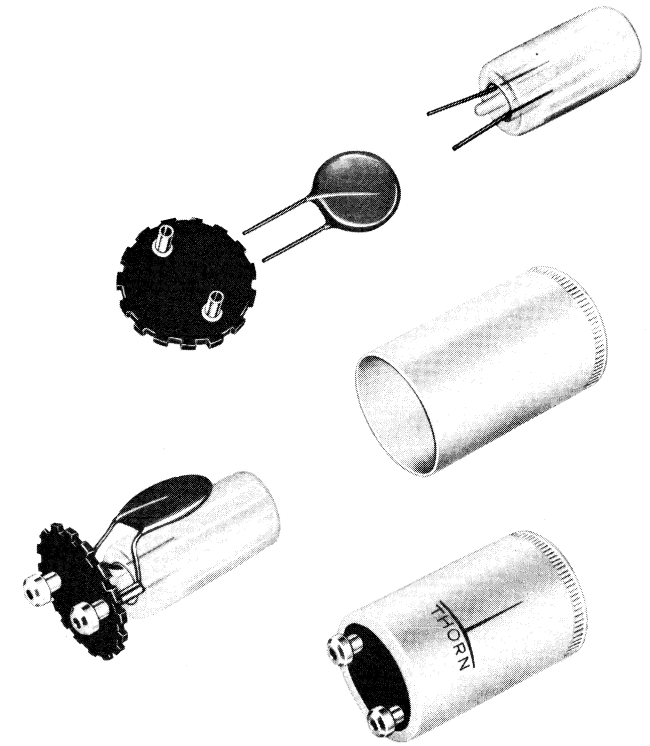
## Starter switches

This range of starter switches in plastic canisters incorporates constructional features resulting in switches of high quality, reliability and appearance.

### CONSTRUCTIONAL FEATURES

- A** A high temperature grade of matt white plastic is used for the canister with brand detail in distinctive black ink. The canister is inherently electrically safe and non-corrodible. The plastic moulding is tremendously tough, difficult to squash, virtually unbreakable and cannot be dented. Plastic can switches are electrically and mechanically interchangeable with metal can types of equivalent rating.
- B** Solid pins are secured to the insulated base disc and solderless junctions connect these pins to the interior wiring.
- C** A ceramic disc type radio interference suppression capacitor is fitted internally to each canister. This type of RIS capacitor is far superior to the "waxed paper and foil" type, since short circuit faults have been eliminated as a possible cause of failure.

The various stages in the production of standard Glowswitch starter switches are summarised in the illustration. Individual components are welded together to form the bimetal contact assembly. After the completed glow-bottle is sealed off the lead wires of the bottle and ceramic disc suppressor are clamped inside the terminals. The plastic canister is then shrunk on to the insulated base disc. The serrated edge of the base disc combines with the plastic canister to give a strongly bonded seal.



RANGE 2 pin; small can; a.c. glow switch		
Catalogue no.	Application	Operating voltage
155/800	2400mm 125W leading circuit or 1800mm 75/85W	230/250V
155/501	1500mm 50W leading circuit	240V
155/500	4W, 6W, 8W, 13W, 30W, 32W, 1200mm 40W, 65W or 80W	200/250V
155/400	4W, 6W, 8W, 30W, 32W or 1200mm 40W	200/250V
155/200	Single 15W, 20W, 22W or 600mm 40W	105/250V
	Series pair 15W, 20W or 600mm 40W (two 155/200)	200/250V
155/100	Single 4W, 6W or 8W	110/130V
	Series pair 4W, 6W or 8W (two 155/100) †	230/250V

*†Due to the asymmetrical construction of these switches, they must be placed in the starter switch sockets correctly orientated (i.e. if the switches refuse to operate, one must be removed and rotated 180 degrees)*



# Terminal blocks, fuse holders and starter switch sockets

## FUSES

### G T1268, G T1299

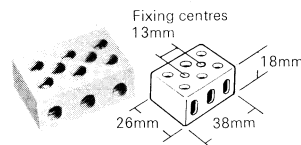
All fuses comply with BS.1362 dimensions and must be used with T1265, A5079 and T1304 fuseholders.

Catalogue no.	Rating	Colour
G T1299	3A	Blue
G T1268	5A	Black



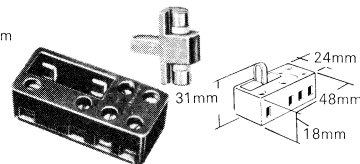
### G T1306

A 10A 250V 3-way white porcelain terminal block. Inserts are of extruded brass with 0.125in x 0.118in o.d. round bore barrels and pinch screw terminals. These inserts give facility for loop-in cables. Line, earth and neutral terminals clearly marked on terminal block.



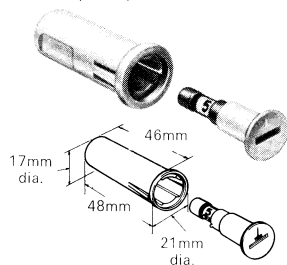
### G T1265

A mains circuit terminal block incorporating a fuse in the line circuit. Black phenolic moulded body with clear alkathene fuse carrier and pinch screw terminals. Earth and neutral connections are of the through barrel type and two lines connections are provided for mains input and circuit feed. Back fixing is achieved by means of screw and shakeproof washer provided. For front fixing a 12mm 6BA screw must be used which is not provided. Either method of fixing provides earth connection to chassis. Fuses to be ordered separately.



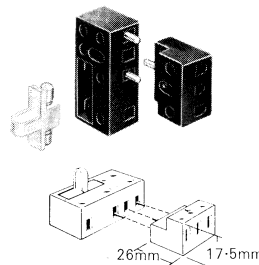
### G T1334

White nylon end entry fuse holder which enables control units to be disconnected before maintenance. Fuse loading cap has bayonet-catch fixing and is finger or coin operated. Push wire terminals for single incoming and double outgoing. Fuses to be ordered separately.



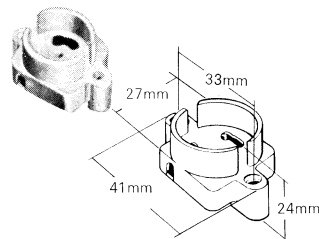
### G A5079

Combined fused terminal block with mains plug. Comprises fused block similar to G T1265, above, but with pins in line and neutral barrels, and a black phenolic moulded plug with a pin in the earth barrel. Fuses to be ordered separately. G A5037—replacement mains plug.



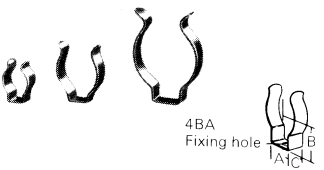
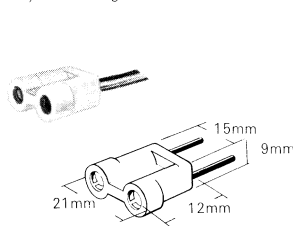
### G A5019/X

White urea moulding with paxolin backplate. Side pressure switch contacts. Draw nut terminals giving side and rear cable entries. Optional extra earth clips (Catalogue no. G Y5267) are held by the holder fixing screws and pass through gaps in the holder skirt. When mounted on 22mm distance pieces behind fitting chassis the starter switch projects enough for easy removal.



### G M6064/12/Loop

White PVC moulding enclosing starter switch contacts crimped to 305mm loop 16/0.2mm white PVC cable which can be cut at a point to suit wiring layout. This holder does not support the starter switch and the G Y5274 black oil dipped spring steel clip can be supplied. The clip latches into a square hole (5.6mm min. to 5.6mm max.) in the fittings chassis.

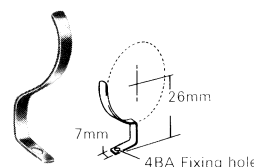


Catalogue no.	Tube dia. mm	A mm	B mm	C mm
G Y5204	16	7.5	10.3	7.9
G Y5200	26	12.7	17.8	9.5
G Y5201	38	16.7	26.2	9

### G Y5257

A nickel plated spring steel support clip for circular fluorescent tubes. Three clips are required per tube, mounted inside the tube circumference. Note: Fixing details are approximate and must be adjusted to suit lamp used because of variation in lamp size from different manufacturers.

**Fixing details**  
 22W tube: 149mm radius  
 32W tube: 232mm radius  
 40W tube: 333mm radius

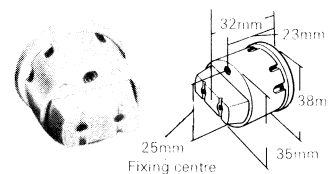


# Lampholders for fluorescent tubes

## For T12 (38mm diameter) bi-pin fluorescent tubes

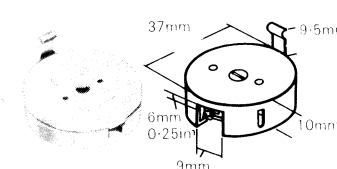
### G B1502

White urea moulding with double-sided independently sprung tube pin contacts and pinch screw terminals for incoming cables. 6BA tubular tapped nuts are provided for fixing. Earth contact (Catalogue no. G Y5420) is available as an optional extra. This holder is not suitable for use with 2400mm tubes which have large tolerances in length.



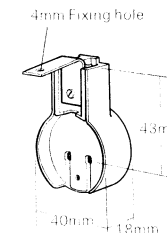
### G B1512

A white urea two-piece moulding with earth clip and double-sided lamp pin contacts. Pinch screw cable terminals. A recess allows a neat termination of 2-core or 3-core flexible cable.



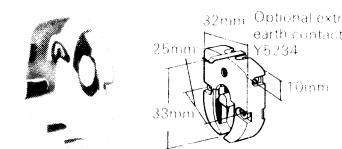
### G B1580/A4

White polycarbonate mouldings with shroud, to give tube cap support, and side pressure lamp pin contacts, push-wire terminals for single conductor cables. Lampholder is vertical with a nominal length tube.



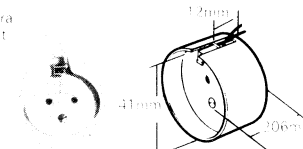
### G B1524

White urea moulding with paxolin backplate. Single-sided tube contacts with pinch screw terminal for incoming cables. Earth contact G Y5234 is available as an optional extra. 6BA tubular tapped nuts are provided for fixing. This lampholder is not suitable for use with 2400mm tubes which have large tolerances in length.



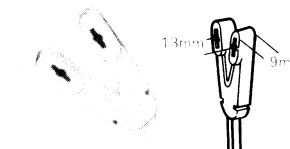
### G B1573

A white urea two-piece moulding with an earth spring and deep skirt which covers the tube cap giving additional support. Double-sided side pressure contacts are crimped to 305mm loop of high temperature 16/0.2mm white PVC flexible cable. Earth lead connection is to lamp pin terminal.



### G B1529

A high temperature white PVC moulding with double-sided brass contacts crimped to 1220mm flat twin 23/0076mm white high temperature PVC flexible cable. The extra fine contact gaps make this holder suitable for vertical tubes subjected to vibration. No earth clip is available.



## FIXING DETAILS

Dimensions below are distances between backs of lampholders. The dimensions given for G B1512 and G B1573 are for lampholders which fitted to the standard tube.

The dimensions for G B1524 are recommended for distances between backs of lampholders when mounted on standard twin PVC. Distances for G B1580/A4 are recommended distances between fixing centres.

Dimensions for G B1502 are recommended distances between backs of lampholders when mounted on support brackets.

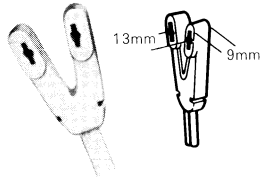
Tube size mm	G B1512 mm	G B1573 mm	G B1524 mm	G B1580/A4 mm	G B1502 mm
2400	2395.5	2398		2329	
1800	1784	1786	1784	1718	1827
1500	1521	1523	1520	1454	1563
1200	1220	1222	1220	1154	1263
900	915	916	915	849	958
600	610	613	610	544	653
450	458	460	458	392	501

## Lampholders for fluorescent tubes

For T8 (26mm diameter) bi-pin fluorescent tubes

### G B1529

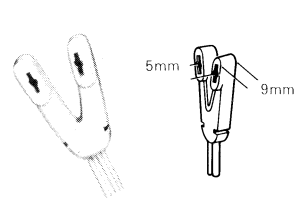
The G B1529 tube holder shown for T12 tubes is also suitable for T8 tubes.



For T5 (15mm diameter) miniature bi-pin fluorescent tubes

### G B1529

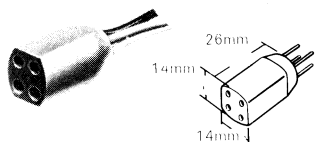
A high-temperature PVC moulding with double-sided brass contacts crimped to 1220mm flat twin 28/0-15mm white high-temperature PVC flexible cable. No earth contact available.



Lampholder for circular fluorescent tubes

### G B1535

A single moulding high-temperature white PVC body with 305mm PVC 16/0-2mm leads (one pair, yellow, for starter holder connection, one lead, white, for choke connection and one lead, blue, for connection to neutral supply terminal). Split cylinder grip pin brass contacts crimped to leads.



### G B1555/Z

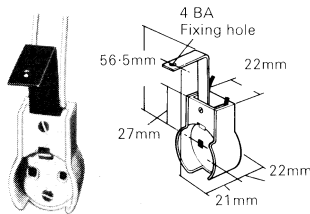
White urea mouldings with shroud to give tube cap support. Side pressure lamp pin contacts with incoming cable crimped to contacts. Cable is high temperature 16/0-2mm white PVC flexible in 305mm loop which can be cut at any point to suit the wiring layout. Other loop lengths available on request. This holder has no current carrying springs or moving parts. The bracket enables the holder to be mounted on a fixed or detachable bridge across the channel.

A locating notch or other means must be provided to stop rotation. Lampholder is vertical with a nominal length tube.

### Fixing details

Dimensions below are recommended distances between fixing centres.

Tube size	mm
1500mm	1444-2
900mm	840
450mm	381-8



### G B1561

White PVC moulding with paxolin insert. Plated brass contacts with solder tag connections. This holder is assembled by threading the incoming cables through the PVC moulding and soldering them to the solder tags on the paxolin insert. This insert is then pressed into the PVC moulding.

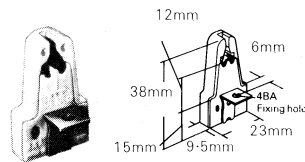
### G B1556/2

White urea mouldings with bright steel bracket. Single-sided lamp pin contacts with pinch screw cable entry terminals.

### Fixing details

Dimensions below are recommended distances between fixing centres.

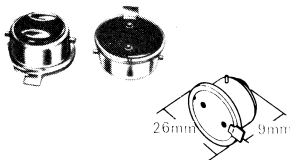
Tube size	mm
525mm	504
300mm	275
225mm	199
150mm	123



Bi-pin to BC adaptor

### G B1515

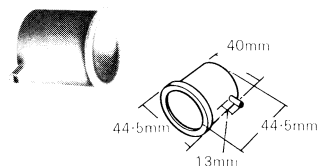
Bi-pin/BC adaptor with earth contact. A pair of these adaptors enables modern bi-pin tubes to be used where BC lampholders are fitted in a fitting. Two adaptors required per tube.



Weatherproof sleeve (for T12 38mm diameter) bi-pin fluorescent tubes

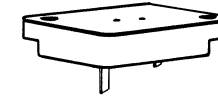
### G M6028

White neoprene moulding suitable for use with G B2512 lampholder. It is recommended that AC 1981 circular flex be used for connection to lampholder and the cable entry into the cap be made waterproof with silicone grease.

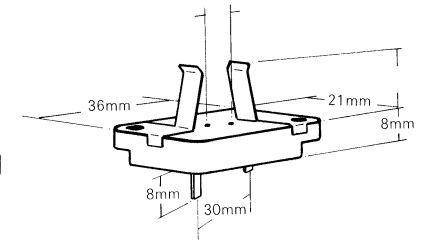


## Miscellaneous Lampholders

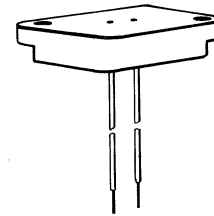
The L 1079 series are for use with miniature tungsten halogen L.V lamps having G6.35 caps, e.g. M28, M32, M36, M37 (see section 5). Both tab and lead wire versions are available. The basic flat holder is suitable where the lamp is not subject to any vibration and is unlikely to sag. Where extra support for the lamp is necessary the versions with springs which support the lamp pinch are recommended.



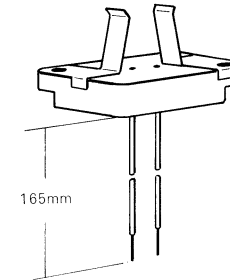
L 1079



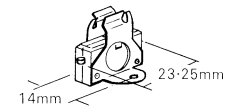
L 1079 S - for bulb dia. 10mm - 12mm  
L 1079 L - for bulb dia. 13mm - 15mm  
Lampholder suitable for use with 96-35 caps.



L 1079 LW

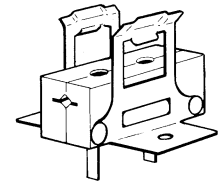


L 1079 W



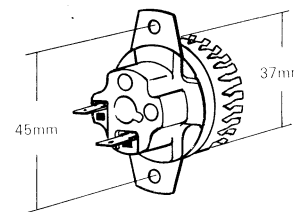
L 1123/A

Suitable for use with low volt miniature tungsten lamps having G.4 caps. eg. M29, M30, M34, M35



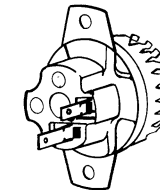
L 1105

Suitable for tungsten halogen lamps having GY9.5 cap. e.g. A1/233 and A1/247



L 1042/LV

for lamp voltages up to and including 21.5V



L 1042/HV

for lamp voltages over 21.5V

Suitable for use with lamps having G.17q caps. For the many projector lamps with this cap see section 5.

# Fittings Applications Index

TYPE OF INSTALLATION	LAMP	FITTING	RANGE	PAGE			
<b>Commercial</b> Shops, offices, hotels, banks	Fluorescent	Surface-mounted diffuser	Pop Pack	1:3 -- 1:20			
			New Arrow-slim	1:21 -- 1:26			
			Minipack	1:27 -- 1:28			
			Atlantic 4	1:46 -- 1:62			
			London Line	1:63			
		Modular (recessed and surface-mounted)	New Format	1:71 -- 1:75			
			Pop-in troffer	1:69 -- 1:70			
			New Recessed troffer	1:76 -- 1:83			
			Cofferlight	1:95 -- 1:98			
			Airhandling	1:64 -- 1:65			
Incandescent and discharge	Glass (s/m)	Low brightness	Airlume	1:64 -- 1:65			
			Atlantic A4L	1:54			
		Isora Ceiling Systems	Nova	3:41 -- 3:42			
			Aluminium louvers	1:103			
			Architectural	1:106			
			Arena	1:87 -- 1:92			
			Cancan	1:102			
			Celestial	1:108			
			Circlgrid	1:104			
			Isora-grid	1:110			
Leafite	1:101						
Light-frame	1:108						
Offices, shops and hotels	Discharge	Kolorlux Pack	Metrilux	1:93 -- 1:94			
			Paragrid	1:104			
			Polirized panels	1:108			
			Spaceliner grid	1:109			
			Thermalucet	1:105			
			Kolorlume	3:43 -- 3:44			
			Kolorlume	3:45 -- 3:48			
			Shops and hotels	Incandescent	Pendant	Modern	3:49 -- 3:52
						Swedish	3:53
						Linklite	3:54 -- 3:55
Cube light	3:56						
Scatter light	3:57						
Chelsea	3:58 -- 3:59						
Shops, offices and hotels	Incandescent	Surface-mounted and recessed				Display lighting	3:30 -- 3:37
						Shaver unit	4:18
Shop windows	Incandescent, discharge and tungsten-halogen	Display				Hi-Spot	3:15 -- 3:26
						Swivelling EU750	3:27 3:38
<b>Hospitals</b>	Fluorescent	Ward lighting	OF Fitting	1:85			
	Incandescent	Bedhead fitting	OEO 1060	3:39			
		Pendant	OG 1150	3:39			
<b>Industrial</b> Normal situations	Fluorescent	Reflector fittings	Atlantic A4	1:56 -- 1:62			
			Pop Pack	1:12 -- 1:14			
		Corrosion resistant	Sentinel	1:15			
			Invincible	1:33 -- 1:34			
		Special and Division 2 areas	Fluorescent	Corrosion resistant	Invincible	1:35	
					Glendale	1:42	
					Ribble	1:43	
					Invincible	1:36 -- 1:37	
					Invincible	1:38	
					Invincible	1:39	
Food factory	1:40						
Angled	1:41						
High-bay	Incandescent and discharge	High-bay	New Hipak	3:4 -- 3:10			
			Graph-X	3:13			
Trunking		Commercial	Trakline	1:112 -- 1:114			
			New Lightweight	1:115 -- 1:116			
		Industrial	Liteline	1:117 -- 1:118			
			Atlantic	1:119 -- 1:120			
Suspension		Commercial and Industrial	1:90				
<b>Domestic</b>	Fluorescent	Surface diffuser	Home-lite	4:17			
			New Arrow-slim	1:21 -- 1:26			
			Minipack	1:27 -- 1:28			
			Au Pair	4:19			
			Netaline	4:19			
			Circline	4:20 -- 4:22			

# Fittings Applications Index

TYPE OF INSTALLATION	LAMP	FITTING	RANGE	PAGE	
		Shaver unit	Viewpoint	4:18	
	Incandescent	Pendant and surface-mounted	Junior Star	4:2	
			Junior Modern	4:3	
			Droplette	4:4	
			Dolly light	4:5	
			Modern adjustable	4:6 - 4:7	
			Show-off	4:8	
			Spot-on	4:9 - 4:11	
			Pin-up	4:12	
			Pan	4:13	
			Ceramic and Yo-Yo	4:15	
			Modern cylinders and Novelle	4:16	
			Oyster	3:60	
			Pumpkin	4:14	
<b>Exterior</b>					
Floodlighting	Tungsten-halogen	Open Enclosed Projector	Sunflood	2:10 - 2:11	
			New Haline	2:12 - 2:13	
			M25 Junior	2:14	
			M25 Senior	2:15	
	Incandescent and discharge	General	M28	2:17	
			Area flood	2:18	
			M30	2:19	
			MBIL flood	2:20	
	Discharge	General	CSI flood	2:21	
			Miniflood	2:9	
	Incandescent	Projector Projector	Escort OLG 1100	2:5	
			Patio	2:8	
	General	Incandescent	Bulkhead Domestic	Escort OB	2:6
				Kolorlux bulkhead	2:4
Fluorescent		Bulkhead	Escort wellglass	2:7	
			Wellglass		
Incandescent and discharge		Wellglass			
Division 2 areas		Incandescent and discharge	Bulkhead	Dreadnought	2:3
				Kolorlux bulkhead	2:4
	Renown			2:2	
	M25 Junior			2:14	
	Sentinel			1:15	
	Fluorescent	Projector flood	Invincible LU	1:33	
			Invincible LW	1:35	
			Invincible DT	1:38	
			Glendale	1:42	
			Ribble	1:43	
<b>Street lighting</b>					
Group A	Low pressure sodium	Alpha	Alpha 1	2:23	
			Alpha 5	2:26	
			Alpha 6	2:27	
			Alpha 9	2:28	
			A4B.46		
			A4B.48		
			A4.B265		
			A4.B2685		
			A4B/Q2885		
	Discharge	Alpha 3	Alpha 3	2:24 - 2:25	
			A4.B265		
			A4.B2685		
			A4B/4685		
			A4B/Q2885		
			A4B/Q4885		
			A4C.24		
			A4C.25		
			A4C.26		
Group B	Low pressure sodium	Beta	Beta 5	2:30	
			Beta 8	2:33	
			Beta 4	2:29	
	Incandescent and discharge	Beta	Beta 6	2:31	
			A4C/A/40		
			A4C/A/65		
	Fluorescent	Beta	A4C/A/685		
			A4C/A/885		
			A4C/A/125		
Group B/G	Incandescent and discharge	Gamma	Gamma 5	2:36	
			Gamma 6	2:37 - 2:38	
			Gamma 7	2:39	
			Gamma 8	2:40	
			Gamma 8	2:40	
			HT1000	2:41	
	Discharge	High tower Columns and brackets	HT1000	2:42 - 2:47	

# Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
A.30	1:111	A4D.28	1:50	A4P.28	1:55	AME Y5288	1:62
A4.40	1:49	A4D/A/40	1:50	A4P.46	1:55	AS 30	1:21
A4.65	1:49	A4D/A/65	1:50	A4P.48	1:55	AS 4600	1:30
A4.685	1:49	A4D/A/685	1:50	A4P/B265	1:55	AS 4601	1:30
A4.885	1:49	A4D/A/885	1:50	A4P/B2685	1:55	AS 4610	1:23
A4.125	1:49	A4D/A/125	1:50	A4P/B2885	1:55	AS 4611	1:30
A4.2125	1:49	A4D/A/240	1:50	A4P/B/4685	1:55	AS 4612	1:30
A4.240	1:49	A4D/A/265	1:50	A4P/B/Q4885	1:55	ASA/30	1:24
A4.265	1:49	A4D/A/2685	1:50	A4V.28	1:56	ASA 3	1:24
A4.2685	1:49	A4D/A/Q2885	1:50	A4V/885	1:56	ASA 5	1:24
A4.Q2885	1:49	A4D/A/2125	1:50	A4V/125	1:56	ASB 3	1:24
A4.4660	1:47	A4E.24	1:51	A4V/Q2885	1:56	ASB 5	1:24
A4.4661	1:47	A4E.25	1:51	A4V/2125	1:56	ASB/30	1:24
A4.4662	1:47	A4E.26	1:51	A4W.16	1:57	ASC 3	1:22
A4.4663	1:62	A3E.28	1:51	A4W/685	1:57	ASC/30	1:22
A4.4664	1:62	A4E/A/240	1:51	A4X.26	1:58	ASC 3	1:26
A4.4665	1:62	A4E/A/265	1:51	A4X.28	1:58	ASD 5	1:26
A4.4666	1:62	A4E/A/2685	1:51	A4X/685	1:58	ASD/30	1:26
A4.4667	1:62	A4E/A/Q2885	1:51	A4X/885	1:58	ASF 5	1:23
A4.4668	1:62	A4E/A/2125	1:51	A4X/125	1:58	ASG 3	1:22
A4.4669	1:62	A4FAC.26	1:52	A4X/2685	1:58	ASG/30	1:22
A4.4670	1:62	A4FAC.28	1:52	A4X/Q2885	1:58	ASK 3	1:25
A4.4671	1:62	A4FAC.46	1:52	A4X/2125	1:58	ASK/30	1:25
A4.4672	1:62	A4FAC.48	1:52	A4Y.25	1:59	ASO/30	1:22
A4.4673	1:62	A4FAC/B2685	1:52	A4Y.26	1:59	ASQ/50	1:21
A4.4674	1:62	A4FAC/B2885	1:52	A4Y.28	1:59	ASQA/50	1:24
A4.4675	1:62	A4FAC/B/4685	1:52	A4Y/65	1:59	ASQB/50	1:24
A4.4676	1:62	A4FAC/B/Q4885	1:52	A4Y/685	1:59	ASQD/50	1:26
A4.4679	1:62	A4FAD.26	1:52	A4Y/885	1:59	ASQF/50	1:23
A4.4685	1:49	A4FAD.28	1:52	A4Y/125	1:59	ASQR/50	1:24
A4.Q4885	1:49	A4FAD/B2685	1:52	A4Y/265	1:59	ASR 3	1:24
A4.4690	1:62	A4FAD/B2885	1:52	A4Y/2685	1:59	ASR 5	1:24
A4.4691	1:62	A4FAL.26	1:52	A4Y/Q2885	1:59	ASR/30	1:24
A4.4692	1:62	A4FAL.28	1:52	A4Y/2125	1:59	ASU 3	1:23
A4A.24	1:49	A4FAL/B2685	1:52	A4Z.24	1:60	ASU/30	1:23
A4A.25	1:49	A4FAL/B2885	1:52	A4Z.25	1:60		
A4A.26	1:49	A4FHC.26	1:53	A4Z.26	1:60		
A4A.28	1:49	A4FHC.28	1:53	A4Z.28	1:60		
A4A/40	1:49	A4FHC.46	1:53	A4Z/40	1:60		
A4A/65	1:49	A4FHC.48	1:53	A4Z.46	1:61		
A4A/685	1:49	A4FHC/B2685	1:53	A4Z.48	1:61		
A4A/885	1:49	A4FHC/B2885	1:53	A4Z/65	1:60	CAR series	1:90
A4A/125	1:49	A4FHC/B/4685	1:53	A4Z/685	1:60	CCG series	1:104
A4A/240	1:49	A4FHC/B/Q4885	1:53	A4Z/885	1:60	CDO series	1:99
A4A/265	1:49	A4FHD.26	1:53	A4Z/125	1:60	CEL series	1:87
A4A/2685	1:49	A4FHD.28	1:53	A4Z/240	1:60	CFA 60	4:22
A4A/2125	1:49	A4FHD/B2685	1:53	A4Z/265	1:60	CF/LSG.60	4:21
A4A/B265	1:49	A4FHD/B2885	1:53	A4Z/2685	1:60	CF/OV.60/0	4:20
A4A/B2685	1:49	A4FHL.26	1:53	A4Z/Q2885	1:60	CF/SPG.60	4:21
A4A/B2885	1:49	A4FHL.28	1:53	A4Z/2125	1:60	CF/WHG.60	4:22
A4A/Q2885	1:49	A4FHL/B2685	1:53	A4Z/4685	1:61	CFR series	1:108
A4B.46	1:49	A4FHL/B2885	1:53	A4Z/Q4885	1:61	CGA series	1:110
A4B.48	1:49	A4FTC.26	1:54	A4ZB.25	1:61	CHA series	1:106
A4.B265	1:49	A4FTC.28	1:54	A4ZB.26	1:61	CHD 2000	1:106
A4.B2685	1:49	A4FTC.46	1:54	A4ZB.28	1:61	CHD 2424	1:106
A4.B2885	1:49	A4FTC.48	1:54	A4ZB/B265	1:61	CHD series	1:104
A4B/4685	1:49	A4FTC/B2685	1:54	A4ZB/B2685	1:61	CKP series	1:95-1:98
A4B/Q2885	1:49	A4FTC/B2885	1:54	A4ZB/B2885	1:61	CL series	1:100, 1:101
A4B/Q4885	1:49	A4FTC/B/4685	1:54	AA series	1:119, 1:120	CMT series	1:94
A4C.24	1:50	A4FTC/B/Q4885	1:54	AC.4674	1:62	COA/B/C/D	1:87
A4C.25	1:50	A4FTD.26	1:54	AC.4861	1:62	COT series	1:87
A4C.26	1:50	A4FTD.28	1:54	AC.4895	3:52	CPG 4140	1:104
A4C.28	1:50	A4FTD/B2685	1:54	AC.5656	1:62	CPZ series	1:107
A4C/A/40	1:50	A4FTD/B2885	1:54	AC.5768	1:62	CRW	1:103
A4C/A/65	1:50	A4FTL.26	1:54	AHP/R/2685	1:68	CSP series	1:109
A4C/A/685	1:50	A4FTL.28	1:54	AHP/R/3685	1:68	CTH series	1:105
A4C/A/885	1:50	A4FTL/B2685	1:54	AHP/R/4685	1:68	CVT series	1:105
A4C/A/125	1:50	A4FTL/B2885	1:54	AL series	1:117, 1:118	CVS/X	1:105
A4C/A/240	1:50	A4O.25	1:55	AME 6077	7:33	CWA series	1:103
A4C/A/265	1:50	A4O.26	1:55	AME 6078	7:33	CWC	1:103
A4C/A/2685	1:50	A4O.28	1:55	AME B1580/A4	1:62	CWG	1:103
A4C/A/Q2885	1:50	A4O/B265	1:55	AME B1580/A4T	1:62	CWL series	1:103
A4C/A/2125	1:50	A4O/B2685	1:55	AME C2235	10:45	CWQ	1:103
A4D.24	1:50	A4O/B2885	1:55	AME M6116	1:35	CWR	1:103
A4D.25	1:50	A4P.25	1:55	AME T1334	1:62	CWS series	1:103
A4D.26	1:50	A4P.26	1:55	AME T1338	1:62	CWT series	1:103



# Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
PPA/Q685	1:6	PPL 4	1:8	PSP 150Y	3:28	SCA	3:57
PPA/125	1:6	PPL 5	1:8	PTP 150W	3:28	SCC	3:57
PPC 2	1:7	PPL 6	1:8	PTP 150Y	3:28	SCR	3:57
PPC 22	1:7	PPL 8	1:8	SK 220	4:19	SK 220	4:19
PPC 4	1:7	PPL/40	1:8	SK 4600	4:19	VJ 200	3:30, 3:37
PPC 24	1:7	PPL/Q40	1:8	SK 4610	4:19	VJ 200ES	3:30, 3:37
PPC 5	1:7	PPL/65	1:8	QA1 series	2:23	VK 40BN	4:12
PPC 25	1:7	PPL/Q65	1:8	QA3 series	2:24, 2:25	VK 40R	4:12
PPC 6	1:7	PPL/675	1:8	QA5 series	2:26	VK 40W	4:12
PPC 26	1:7	PPL/Q685	1:8	QA6 series	2:27	VKF 40R	4:12
PPC 8	1:7	PPL/125	1:8	QA9 series	2:28	VKF 40W	4:12
PPC 28	1:7	PPM 4	1:10	QB4 series	2:29	VKT 40R	4:12
PPC/20	1:7	PPM 5	1:10	QB5 series	2:30	VKT 40W	4:12
PPC/220	1:7	PPM 6	1:10	QB6 series	2:31	VL 100	3:30
PPC/40	1:7	PPM 8	1:10	QB7 series	2:32	VL 200	3:30
PPC/Q40	1:7	PPM/40	1:10	QB8 series	2:33	VL 2100	3:30
PPC/240	1:7	PPM/Q40	1:10	QCB.1075	2:44	VNF 60RD	4:13
PPC/Q240	1:7	PPM/65	1:10	QCB.1125	2:44	VNF 60W	4:13
PPC/65	1:7	PPM/Q65	1:10	QCB.1200	2:44	VNT 60RD	4:13
PPC/Q65	1:7	PPM/675	1:10	QCB.1300	2:45	VNT 60W	4:13
PPC/265	1:7	PPM/Q685	1:10	QCB.2150	2:45	VO 200	3:30, 3:36
PPC/Q265	1:7	PPM/125	1:10	QCB.2250	2:45	VP 100	3:30
PPC/675	1:7	PPO 4	1:12	QCB.2400	2:46	VR 100	3:30, 3:35
PPC/2675	1:7	PPO 5	1:12	QG3 series	2:35	VR 100ES	3:30, 3:35
PPC/Q685	1:7	PPO 6	1:12	QG5 series	2:36	VR 200	3:30, 3:36
PPC/Q2685	1:7	PPO 8	1:12	QG6 series	2:37, 2:38	VRL 100	3:35
PPC/125	1:7	PPO/Q40	1:12	QG7 series	2:39	VRL 200	3:36
PPC/2125	1:7	PPO/Q40	1:12	QG8 series	2:40	VRO 200	3:35
PPD 2	1:9	PPO/65	1:12	QLCA	2:47	VRP 100	3:35
PPD 22	1:9	PPO/Q65	1:12	QLCB	2:47	VRSA 100	3:35
PPD 4	1:9	PPO/675	1:12	QLCB1	2:47	VRSC 100	3:35
PPD 24	1:9	PPO/Q685	1:12	QLCB2	2:47	VRSR 100	3:35
PPD 5	1:9	PPO/125	1:12	QLCB3	2:47	VRX 100	3:35
PPD 25	1:9	PPR 4	1:13	QLCB4	2:47	VRX 100ES	3:35
PPD 6	1:9	PPR 24	1:13	QLCB5	2:47	VRX 200	3:35
PPD 26	1:9	PPR 5	1:13	QLCB6	2:47	VRY 100	3:35
PPD 8	1:9	PPR 25	1:13	QLCB7	2:47	VRY 100ES	3:35
PPD 28	1:9	PPR 6	1:13	QLCB8	2:47	VRY 200	3:35
PPD/20	1:9	PPR 26	1:13	QLCB9	2:47	VRZ 100	3:35
PPD/220	1:9	PPR 8	1:13	QLCC	2:47	VRZ 100ES	3:35
PPD/40	1:9	PPR 28	1:13	QLCD	2:47	VS 1060R	4:15
PPD/Q40	1:9	PPR/40	1:13	QLCE	2:47	WG 1060W	4:15
PPD/240	1:9	PPR/Q40	1:13	QLCF	2:47	WH 100	4:16
PPD/Q240	1:9	PPR/240	1:13	QLCG	2:47	WJB 1040	4:2
PPD/65	1:9	PPR/Q240	1:13	QLCS	2:47	WJD 1040	4:2
PPD/Q65	1:9	PPR/65	1:13	QLCT	2:47	WJP 1040	4:2
PPD/265	1:9	PPR/Q65	1:13	QLCO	2:42	WJP 3040	4:2
PPD/Q265	1:9	PPR/265	1:13	QLC1	2:42	WLC 1060A	3:54
PPD/675	1:9	PPR/Q265	1:13	QLC3A	2:43	WLC 1060S	3:54
PPD/2675	1:9	PPR/675	1:13	QLC4	2:43	WLP 1100A	3:54
PPD/Q685	1:9	PPR/2675	1:13	QLC5A	2:43	WLP 1100S	3:54
PPD/Q2685	1:9	PPR/Q685	1:13	QLC 8	2:44		
PPD/125	1:9	PPR/Q2685	1:13	QLC.10S	2:45	VA.100	3:27
PPD/2125	1:9	PPR/125	1:13	QLC.10D	2:45	VA.150	3:27
PPE 4	1:11	PPR/2125	1:13	QLC.12S	2:46	VC 100A	3:30, 3:34
PPE 24	1:11	PPT 24	1:14	QLC.12D	2:46	VC 100AES	3:30, 3:34
PPE 5	1:11	PPT 25	1:14	QLCT	2:47	VC 100B	3:30, 3:34
PPE 25	1:11	PPT 26	1:14	QLD 0-12	2:47	VC 100BES	3:30, 3:34
PPE 6	1:11	PPT 28	1:14	QLD.10	2:45	VCB 100	3:30, 3:33
PPE 26	1:11	PPT/240	1:14	QLD.12	2:46	VCB 150	3:30, 3:33
PPE 8	1:11	PPT/Q240	1:14	QLK.D	2:47	VCL 100A	3:34
PPE 28	1:11	PPT/265	1:14	QLK.Y	2:47	VCL 100B	3:34
PPE/40	1:11	PPT/2675	1:14	QWB 34	2:48	VCM 100	3:30
PPE/Q40	1:11	PPT/Q265	1:14	QWB 42	2:48	VCR 100	3:33
PPE/240	1:11	PPT/Q2685	1:14	QWBC 34	2:48	VCR 150	3:33
PPE/Q240	1:11	PPT/2125	1:14	QWB 42	2:48	VCX 100A	3:34
PPE/65	1:11	PPTA/240	1:6			VCX 100AES	3:34
PPE/Q65	1:11	PPTA/Q240	1:6	RB G80.4	10:51	VCX 100B	3:34
PPE/265	1:11	PPTA/265	1:6	RB G125.4	10:51	VCX 100BES	3:34
PPE/Q265	1:11	PPTA/Q265	1:6	RB G400.4	10:51	VCZ 100A	3:30, 3:34
PPE/675	1:11	PPTA/2675	1:6	RB G700.4	10:51	VCZ 100BES	3:30, 3:34
PPE/2675	1:11	PPTA/Q2685	1:6	RB G1000.4	10:51	VE 150B	3:37
PPE/Q685	1:11	PPTA/2125	1:6	RB IG400.4	10:51	VE 150W	3:27
PPE/Q2685	1:11	PPUQ 685	1:15	RB SG250.4	10:51	VEL 150	3:27
PPE/125	1:11	PPUQ 2685	1:15	RB SG400.4	10:51	VEL 50B	3:27
PPE/2125	1:11	PSP 150W	3:28			VE LV50W	3:27

# Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
VG.100	3:27	VSL 2060A	3:31	WM 60A	3:56	WZC 100B	4:6
VG.150	3:27	VSL 2060B	3:31	WM 60T	3:56	WZC 100S	4:6
VGTK 100	3:27	VSL 2100A	3:32	WM 100A	3:56		
VGTK 150	3:27	VSL 2100B	3:32	WM 100T	3:56		
VJ 200	3:30, 3:37	VSX 2060A	3:31	WM 150A	3:56	XAT	3:50
VJ 200ES	3:30, 3:37	VSX 2060B	3:31	WM 150T	3:56	XBC	3:50
VK 40BN	4:12	VSZ 2060A	3:31	WMT	3:56	XC3	3:51, 3:52
VK 40R	4:12	VSZ 2060B	3:31	WN 1060W	4:8	XC5	3:51, 3:52
VK 40W	4:12	VSZ 2100A	3:32	WN 1060Y	4:8	XDC	3:50
VKF 40R	4:12	VSZ 2100AES	3:32	WN 1060BN	4:8	XDO	3:50
VKF 40W	4:12	VSZ 2100B	3:32	WO 1060R	4:15	XDS	3:49
VKT 40R	4:12	VSZ 2100BES	3:32	WO 1060W	4:15	XFL	3:50
VKT 40W	4:12	VU 150	3:30, 3:33	WPA	2:8	XJ 2040	3:49
VL 100	3:30	VW 150	3:30, 3:33	WPC 1060 BC	2:8	XK 2040	3:49
VL 200	3:30	VX 100	3:30	WPC A 1060 BC	2:8	XLI	3:51, 3:52
VL 2100	3:30	VX 200	3:30, 3:36	WPC R 1060 BC	2:8	XL2	3:51, 3:52
VNF 60RD	4:13	VY 100	3:30	WPC S 1060 BC	2:8	XL100	3:53
VNF 60W	4:13	VY 200	3:30, 3:36	WPR	2:8	XL150	3:53
VNT 60RD	4:13	VZ 100	3:30, 3:36	WPS	2:8	XP1	3:51, 3:52
VNT 60W	4:13	VZ 200	3:30, 3:36	WPA 1060 BC	2:8	XP1 8 Kit	3:51, 3:52
VO 200	3:30, 3:36	VZ 2100	3:30	WPW 1060 BC	2:8	XP3	3:51, 3:52
VP 100	3:30			WPW A 1060 BC	2:8	XPP 240	1:5
VR 100	3:30, 3:35			WPW R 1060 BC	2:8	XPPQ 240	1:5
VR 100ES	3:30, 3:35			WPW S 1060 BC	2:8	XPP 265	1:5
VR 200	3:30, 3:36	WAM 1100A	4:7	WR 100	4:16	XPPQ 265	1:5
VRL 100	3:35	WAM 1100LB	4:7	WW 1060W	4:8	XPP 2675	1:5
VRL 200	3:36	WAM 1100W	4:7	WW 1060Y	4:8	XPPQ 2685	1:5
VRO 200	3:35	WAM 1100P	4:7	WW 1060BN	4:8	XPP 2125	1:5
VRP 100	3:35	WAM 1100S	4:7	WW 1060W	4:8	XR1	3:51, 3:52
VRSA 100	3:35	WDB 1B	4:4	WW 1060Y	4:8	XS3	3:51, 3:52
VRSC 100	3:35	WDB 1CP	4:4	WW 1060BN	4:8	XS5	3:51, 3:52
VRSR 100	3:35	WDP 1CP	4:4	WX B1	4:3	XT 1100R	3:53
VRX 100	3:35	WDP 3CP	4:4	WXC1	4:3	XT 1100W	3:53
VRX 100ES	3:35	WDP 5CP	4:4	WXGA	4:3	XU 100R	3:53
VRX 200	3:35	WDP 1B	4:4	WXGC	4:3	XU 100W	3:53
VRY 100	3:35	WDP 3B	4:4	WXGY	4:3	XU 150R	3:53
VRY 100ES	3:35	WDP 5B	4:4	WXGO	4:3	XU 150W	3:53
VRY 200	3:35	WEC 1150	3:55	WXGR	4:3	XUO	3:49
VRZ 100	3:35	WEP 1150	3:55	WXP1	4:3	XW1	3:51, 3:52
VRZ 100ES	3:35	WG 1060R	4:15	WXP3	4:3	XYO	3:49
VS 1060R	4:15	WG 1060W	4:15	WXYO	4:3	XZO	3:49
VS 2100A	3:30	WH 100	4:16	WXYR	4:3		
VS 2100B	3:30	WJB 1040	4:2	WXZO	4:3		
VS 2100AES	3:30	WJD 1040	4:2	WXZR	4:3		
VS 2100BES	3:30	WJP 1040	4:2	WY 1060RD	4:15	155/100	10:53
VS 2060A	3:30, 3:31	WJP 3040	4:2	WY 1060W	4:15	155/200	10:53
VS 2060B	3:30, 3:31	WLC 1060A	3:54	WZA 100C	4:6	155/400	10:53
VSA 100	3:30	WLC 1060S	3:54	WZA 100B	4:6	155/500	10:53
VSC 100	3:30	WLP 1100A	3:54	WZA 100S	4:6	155/501	10:53
VSR 100	3:30	WLP 1100S	3:54	WZC 100C	4:6	155/800	10:53



## GENERAL CONDITIONS OF SALE

- 1 GENERAL. All orders are accepted and executed on the understanding that the Purchaser is bound by the following General Conditions of Sale. Where there is any inconsistency between these General Conditions of Sale and any Conditions which the Purchaser seeks to impose these General Conditions of Sale shall prevail.
- 2 VALIDITY OF QUOTATIONS. The Company reserves the right to refuse the Purchaser's acceptance of a quotation unless such quotation is stated to be open for a specific period and is not withdrawn in such period.
- 3 PRICES AND DISCOUNTS. The published prices of and the discounts applicable to the Company's products are those ruling on the date of publication and are subject to alteration without notice.
- 4 PAYMENT. Unless otherwise agreed in writing, payment in full is due in respect of any goods delivered. 2½ per cent settlement discount will be allowed off accounts (excluding the amount of any tax on the supply or purchase of the goods) paid by the end of the month following that in which the invoice is dated. No other settlement terms will be granted.
- 5 NEW ACCOUNTS. Where a credit account is desired, a Bank and two trade references are required.
- 6 CARRIAGE. Unless otherwise specified by the Company, goods are delivered carriage free to any part of Great Britain and Northern Ireland. Special fittings and dimming equipment are offered ex-works carriage extra. When special delivery arrangements are requested, the difference between standard delivery and special rates will be charged.
- 7 PACKING. A charge is made when it is necessary to despatch goods in crates or cases but this amount will be credited in full on the return, within one month, of the crates or cases in good condition carriage paid. No charge is made for any other form of packing and no credit will be allowed for its return.
- 8 LOSS OR DAMAGE IN TRANSIT. Clear receipts should be given only if goods have been examined, as an unqualified signature may react to the disadvantage of the Purchaser if the consignment should become the subject of a claim. In the event of short delivery or damage in transit, it is essential that the Company's despatching depot and the Carriers be advised within three days of receipt of goods. Irrespective of condition of packing, goods and packing should be held for inspection by Carriers before return. After inspection, Carriers should accept goods or return to sending depot, carriage free.  
The following details should be sent to the Company:—

Advice note number.	Condition of package.	Date Carrier advised.
Carrier's name.	Date consignment received.	Extent of damage or shortage.

In the event of non-delivery, Carriers and the Company's despatching depot should be advised within ten days of date of advice packing note. The Company will not be responsible for goods lost or damaged in transit unless the above conditions are observed.
- 9 LIABILITY FOR DELAY. Any times quoted for despatch, repair or replacement are to be treated as estimates only and the Company shall not be liable for failure to despatch, repair or replace within such time unless the Purchaser has suffered loss thereby and the amount payable in respect thereof shall have been agreed in writing as liquidated damages, in which case the Company's liability shall be limited to the amount so agreed to be paid. In all cases, whether a time for despatch, repair or replacement be quoted or not, the time for despatch, repair or replacement shall be a time for despatch, repair or replacement by a reasonable period if delay in despatch, repair or replacement is caused by instructions or lack of instructions from the Purchaser or by industrial dispute or by any cause whatsoever beyond the Company's reasonable control.
- 10 DEFAULT. The Company shall have the right to discontinue delivery and also at its discretion to determine the contract in respect of any undelivered goods if the Purchaser defaults in payment.
- 11 DEFECTS AFTER DELIVERY. The Company will make good, by repair or at the Company's option, by the supply of replacement, defects which, under proper use, appear in the goods within a period of 12 calendar months after the goods have been delivered and arise solely from faulty design (other than a design made, furnished or specified by the Purchaser for which we have disclaimed responsibility in writing), materials or workmanship. Provided further that in respect of parts or components not of the Company's manufacture, the Company will give the Purchaser a guarantee equivalent to the guarantee (if any) which the Company may have received from the supplier of such parts or components in respect thereof but not so as to impose on the Company in respect of such parts or components a liability greater than that imposed on it by the aforesaid period of this clause. Save as aforesaid and as provided in Clauses 8 and 9, the Company shall not be under any liability in respect of defects in goods delivered or for any injury, damage or loss resulting from such defects or from any work done in connection therewith and its liability under this clause shall be in lieu of any warranty or condition implied by law as to the quality or fitness for any particular purpose of such goods.
- 12 SPECIAL ORDERS. All orders for lamps of non-standard voltages or for types not included in catalogues are considered to be "Special Types"—the production of which is undertaken on the understanding that the Purchaser will accept under or over delivery to the extent of 10 per cent at the price quoted per unit.
- 13 RETURN OF GOODS. In no circumstances may goods supplied against a firm order be returned without the customer having first applied for and obtained the written consent of the Company. A handling charge amounting to not more than 10 per cent of the invoice value of the returned goods may be deducted from any credit allowed where it is established that the reason for their return is not subject to the provision of Clause 8 or 11 hereof or through any error on the part of the Company.
- 14 DESCRIPTIVE MATTER AND ILLUSTRATIONS. All descriptive and forwarding specifications, drawings and particulars of weights and dimensions issued by the Company are approximate only, and are intended only to present a general idea of the goods to which they refer and shall not form part of a contract.
- 15 EXPORT. Goods purchased on the Home Market must not without previous consent be offered or sold for Export outside the European Economic Community and any enquiries or orders for such export must be placed directly with the Export Department of the Company with indication of the Country of Destination.
- 16 PATENTS. In the event of any claim being made or action being brought against the Purchaser in respect of infringement of British patents by the use or sale of goods supplied hereunder, the Purchaser is to notify the Company immediately and the Company shall be at liberty with Purchaser's assistance if required, but at the Company's expense, to conduct through the Company's own Lawyers and Experts all negotiations for the settlement of the same or any litigation that may arise therefrom; subject to such notifications and provided that no such goods, or any part thereof, shall be used for any purpose other than that for which the Company supply them, the Company will indemnify the Purchaser in respect of any such claims.
- 17 LEGAL CONSTRUCTION. These General Conditions of Sale shall be construed in accordance with the law of England and if any question, dispute or difference shall arise between the parties in respect of their interpretation or their rights or duties heretofore, the same shall be referred to a single arbitrator in London in case the parties can agree upon one. Otherwise it shall be referred to arbitration in London under the provision of the Arbitration Acts 1889 to 1950 or any statutory modification or re-enactment thereof which provisions shall also apply to the case of a reference to a single arbitrator.

# Thorn Lighting Order Offices

## ZONE ONE

### North East

Headquarters and Order Office:  
Thorn House,  
3 Ring Road,  
Lower Wortley,  
Leeds LS12 16J.  
Telephone: 0532-636321  
Telex: Thornlite Leeds 55110

### North West

Headquarters and Order Office:  
Thorn House,  
2 Claytonbrook Road,  
Clayton,  
Manchester M11 1BP.  
Telephone: 061-223 1322  
Telex: Thornlite Manchester 668642

### Scotland

Headquarters and Order Office:  
Thorn House,  
Lawmoor Street,  
Glasgow G5 0TT.  
Telephone: 041-429 6222  
Telex: Thornlite Glasgow 77630

## ZONE TWO

### Midlands

Headquarters and Order Office:  
Thorn House,  
Aston Church Road,  
Saltley Trading Estate,  
Birmingham 8.  
Telephone: 021-327 1535  
Telex: Thornlite Birmingham 33235

### South West

Headquarters and Order Office:  
Thorn House,  
Penarth Road,  
Cardiff CF1 7YP.  
Telephone: 0222-44200  
Telex: Thornlite Cardiff 49334

### Northern Ireland

Headquarters and Order Office:  
Thorn House,  
Prince Regent Road,  
Belfast BT5 6QR.  
Telephone: 0232-54122  
Telex: Thornlite Belfast 74695

## ZONE THREE

### London

Headquarters and Order Office:  
Victoria Trading Estate,  
Victoria Way,  
Charlton SE7.  
Telephone: 01-858 3281  
Telex: Thornlite Charlton 896171

### Eastern

Headquarters and Order Office:  
Angel Road Works,  
402 Angel Road,  
Edmonton,  
London N18.  
Telephone: 01-807 3050  
Telex: Thornlite Edmonton 23157

### South-East

Headquarters and Order Office:  
Thorn Industrial Estate,  
Homesdale Road,  
Bromley,  
Kent BR1 2QP.  
Telephone: 01-460 9966  
Telex: Thornlite Bromley 25823

## GOVERNMENT SALES UNIT

Atlas House,  
Great Cambridge Road,  
Enfield,  
Middlesex.  
Telephone: 01-363 5353

## HEAD OFFICE and SHOWROOM

Thorn House,  
Upper Saint Martins Lane,  
London WC2H 9ED.  
Telephone: 01-836 2444  
Telex: Thorn London 24184/5

*Handwritten:*  
NEW / (A)SSA /  
SALE /

# Thorn Overseas Subsidiaries

## AUSTRALIA

Thorn Lighting Industries (Pty) Limited,  
Maldon Street,  
P.O. Box 74,  
Broadmeadows,  
Victoria 3047.

## AUSTRIA

Thorn Electrical Industries G.m.b.H.,  
Erzherzog-Karl-Strasse 57,  
1220 Vienna.

## CANADA

Thorn Lighting Canada Limited,  
2763 Thamesgate Drive,  
Mississauga,  
Ontario L4T 1G5.

## DENMARK

Thorn Electric A/S,  
Fabriksparken 4,  
2600 Glostrup.

## IRE

Thorn Lighting Limited,  
Grand Canal Place,  
Dublin 8.

## FRANCE

Thorn Electrique,  
26 Rue de La Baisse,  
69100—Villeurbanne.

## GERMANY

Thorn Licht Beleuchtungsger. m.b.H.,  
2000 Hamburg 61  
Borsteler Chaussee 287.

## ITALY

Societa Industriale Vicentina,  
Illuminazione SpA,  
Casella Postale 604,  
36100 Vicenza.

## NEW ZEALAND

Thorn Electrical Industries (NZ) Limited,  
P.O. Box 15150,  
New Lynn,  
Auckland 7.

## NORWAY

Norske Thorn A/S,  
Postbox 7065,  
Oslo 3.

## SOUTH AFRICA

Thorn Lighting (S.A.) Limited,  
P.O. Box 43075,  
Industria,  
Transvaal.

## SWEDEN

Thorn Belysning AB,  
Ballstavagen 30-32,  
Box 200 75,  
161 20 Bromma 20.

**Thorn Lighting Limited,  
International Division,  
Thorn House,  
Upper Saint Martin's Lane,  
London WC2H 9ED.  
Telex: Thorn London 24185  
Cables: Eleclampo WC2  
Telephone: 01-836 2444.**