



studio & theatre

STUDIO, THEATRE & LOCATION LIGHTING

INTRODUCTION

GEC is an international lighting company established since 1893.

The objective of GEC is to provide a comprehensive range of quality hi-tec lamps to meet the needs of Stage, Film and Television lighting.

This publication provides relevant technical information for Lighting Directors, Studio and Stage Electricians, Film Gaffers and Luminaire Manufacturers.

Further information available on request.

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THEATRE LAMPS

Class T

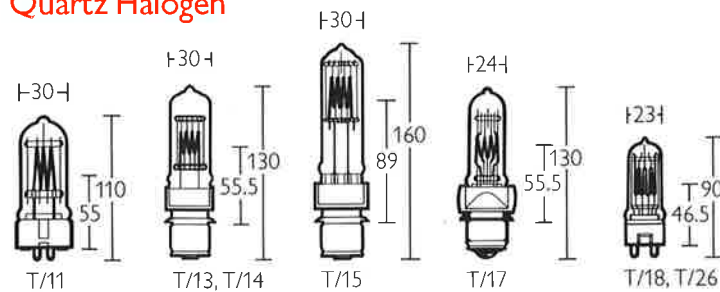
Applications: Theatre, Cinema, Conference Centres, Art and Leisure Centres, Lecture and Educational Halls.

GEC offers a comprehensive range of lamps for the stage, with high light output and long life, and an average colour temperature of 3000K.

The lamps are made with a robust monoplane filament construction, which offers reliable performance.

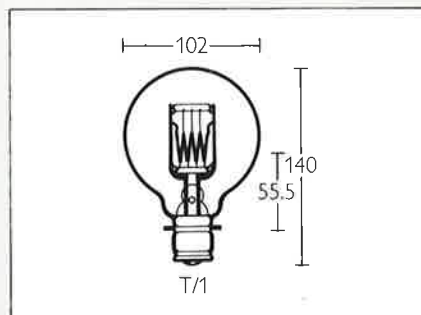
These lamps are highly suitable for most stage luminaires and ensure an overall even light distribution on spot or flood position.

Quartz Halogen



Lamp Type	Ansi Code	Watts	Volts	Cap	Nominal Lumens	Colour Temp. (K)	Objective Life (Hrs)	Operating Position	Replaces
T/17	BTL	500	115/120	P28s	9500	2950	750	VBD ± 90°	T1
	FKF		220, 240	P28s	9500	2950	750	VBD ± 90°	T1
T/18	-	500	115/120	GY9.5	11000	3050	300	VBD ± 90°	
			220, 240	GY9.5	11000	3050	300	VBD ± 90°	
T/13	FKB	650	220, 240	P28s	13500	3050	750	VBD ± 90°	
T/26		650	115/120	GY9.5	15000	3100	400	VBD ± 90°	
			220, 240	GY9.5	15000	3100	400	VBD ± 90°	
T/11		1000	220, 240	GX9.5	23000	3100	750	VBD ± 90°	
T/14	FKD	1000	115/120	P28s	23000	3100	750	VBD ± 90°	T6
	FKC		220, 240	P28s	23000	3100	750	VBD ± 90°	T6
T/15	EXA	1000	115/120	P28s	23000	3100	750	Any	T4
	FKE		220, 240	P28s	23000	3100	750	Any	T4

Non Halogen



Lamp Type	Ansi Code	Watts	Volts	Cap	Nominal Lumens	Objective Life (Hrs)	Operating Position
T/1	DNW	500	230, 240	P28s	9750	200	VBD ± 90°

STUDIO PROJECTOR

Class CP

Applications: TV, Video and Film Studios where controlled colour temperature for sensitised material balanced for 3200K is required

STUDIO LAMPS

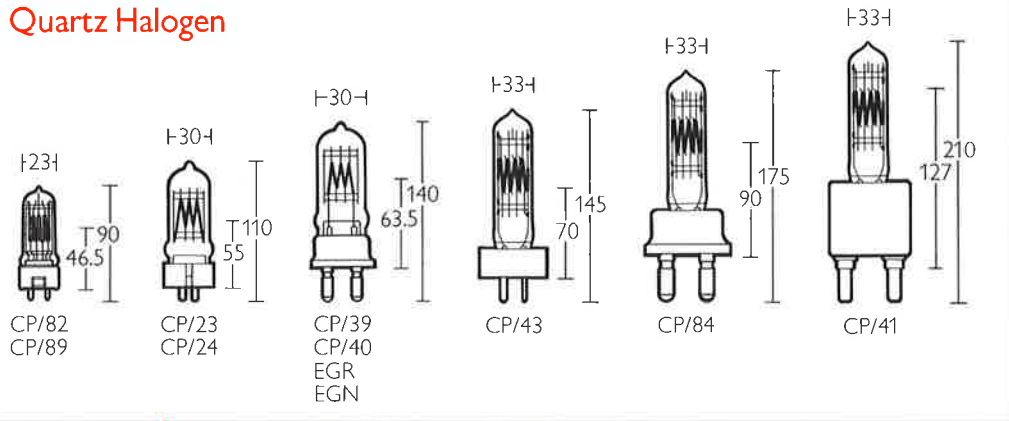
Class CP

All CP class studio lamps are tungsten halogen, which eliminates bulb blackening, giving almost 100% lumen maintenance throughout life.

GEC's range of high wattage, hard glass halogen lamps are smaller than the old-fashioned non-halogen incandescent lamps and can be installed without the special handling precautions necessary with quartz lamps.

These lamps are also balanced for a colour temperature of 3200K, for use in TV, Video and Film Studios.

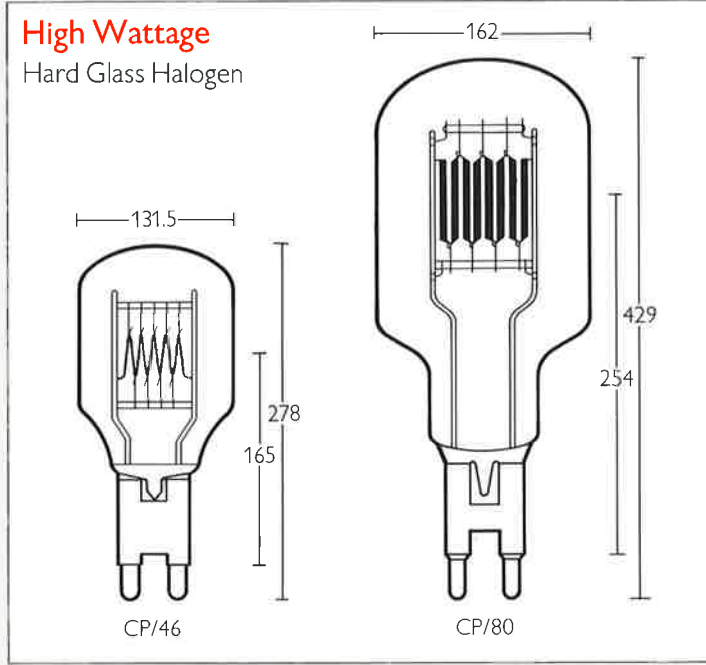
Quartz Halogen



Lamp Type	Ansi Code	Watts	Volts	Cap	Nominal Lumens	Objective Life (Hrs)	Operating Position
-	EGR	500	120	G22	13000	100	VBD ± 90°
CP82		500	115/120	GY9.5	12500	150	VBD ± 90°
			220, 240	GY9.5	12500	150	VBD ± 90°
CP89		650	120	GY9.5	16900	200	VBD ± 90°
			220, 240	GY9.5	16250	150	VBD ± 90°
CP39	FKG	650	115/120	G22	16900	100	VBD ± 90°
	FKH	650	220, 240	G22	16900	100	VBD ± 90°
CP23		650	220, 240	GX9.5	16900	100	VBD ± 90°
-	EGR	750	120	G22	20000	200	VBD ± 90°
CP24		1000	115/120	GX9.5	27000	200	VBD ± 90°
			220, 240	GX9.5	26000	200	VBD ± 90°
CP40	EGT	1000	115/120	G22	27000	200	VBD ± 90°
	FKJ		220, 240	G22	26000	200	VBD ± 90°
CP41	CYX	2000	115/120	G38	55000	400	VBD ± 90°
	FKK		220, 240	G38	53000	400	VBD ± 90°
CP43		2000	115/120	GY16	55000	400	VBD ± 90°
			220, 240	GY16	53000	400	VBD ± 90°
CP84		2000	115/120	G22	55000	400	VBD ± 90°
			220, 240	G22	53000	400	VBD ± 90°

Operating Temperature: Quartz pinch not to exceed 400°C.

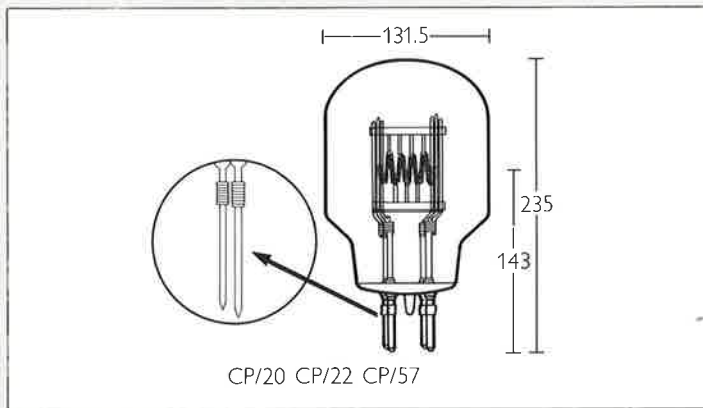
High Wattage
Hard Glass Halogen



Lamp Type	Ansi Code	Watts	Volts	Cap	Nominal Lumens	Objective Life (Hrs)	Operating Position
CP46	ECN	5000	115/120	G38	137500	400	VBD ± 45°
			220, 240	G38	130000	400	VBD ± 45°
CP80	EBA	10000	115/120	G38	290000	400	VBD ± 45°
			220, 240	G38	280000	400	VBD ± 45°

Flexi-Pin

GEC's twin filament lamps CP20, CP22 and CP57 incorporate the flexible pin principle. This construction avoids undesirable stresses on the lamp by automatically aligning the pins with the sockets in the lampholder, thereby facilitating good mechanical and electrical contact.



Lamp Type	Watts	Volts	Cap	Nominal Lumens	Objective Life (Hrs)	Operating Position
CP22	1250/1250	115/120	GX38q	29000/62500	100	VBD ± 45°
			220, 240	GX38q	27000/56000	100
CP57	1250/2500	220, 240	GX38q	26000/59000 90,000 combined	100	VBD ± 45°
CP20	2500/2500	115/120	GX38q	65000/140000	100	VBD ± 45°
			220, 240	GX38q	59000/127000	100

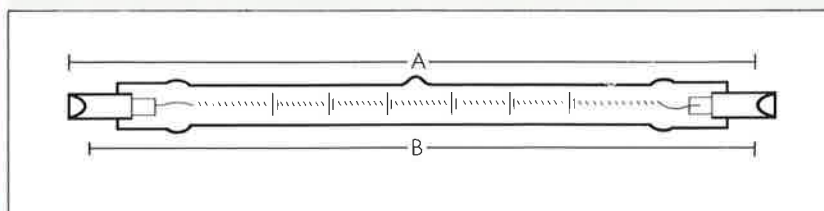
Operating Temperature: Glass base not to exceed 400°C.



STUDIO LIGHTING

Class P2 Linear

Application: For use with sensitised material balanced to 3200K in TV, Video, Film and Photographic Studios.



Type: Quartz Tungsten Halogen
Cap: R7s-15
Operating Temperature: Pinch seal not to exceed 400°C.
Max Bulb Diameter: 12mm
Recommended Fusing: Rapid Acting HBC Type

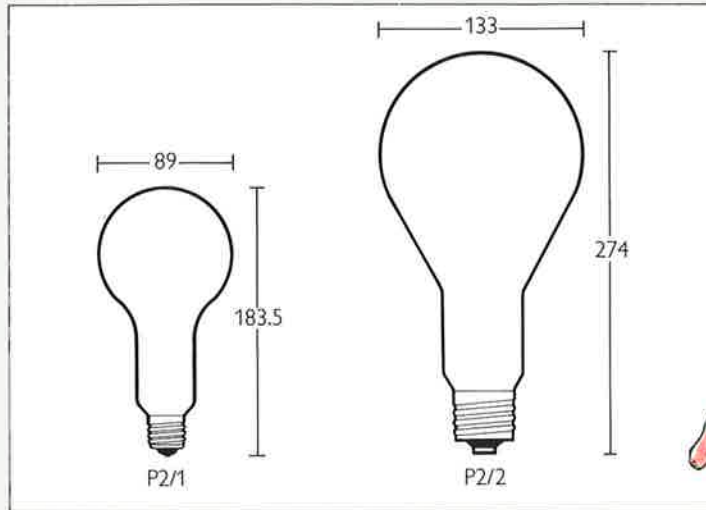
Lamp Code	Ansi Code	Watts	Volts	Finish	Nominal Lumens	Obj-Life (Hrs)	Operating Position	Contact to ceramic Max A (mm)	Contact to Contact B ± 1.6 (mm)	Recommended Fusing	
P2/10		625	115/120	Frosted	15000	200	Horiz $\pm 4^\circ$	189.1	185.7	10A	
			220/230	Frosted	15625	200	Horiz $\pm 4^\circ$	189.1	185.7	4A	
			240/250	Frosted	15625	200	Horiz $\pm 4^\circ$	189.1	185.7	4A	
P2/15		625	240/250	Frosted	16250	75	Horiz $\pm 15^\circ$	117.6	114.2	4A	
P2/11		800	115/120	Clear or Frosted	21600	150	Horiz $\pm 15^\circ$	117.6	114.2	10A	
				220/230	Clear or Frosted	21000	150	Horiz $\pm 15^\circ$	117.6	114.2	6A
				240/250	Clear or Frosted	21000	150	Horiz $\pm 15^\circ$	117.6	114.2	6A
P2/7		1000	220/230	Clear	26000	200	Horiz $\pm 4^\circ$	189.1	185.7	6A	
			240/250	Clear	26000	200	Horiz $\pm 4^\circ$	189.1	185.7	6A	
P2/28	FCM	1000	120	Clear	27000	400	Horiz $\pm 4^\circ$	117.6	114.2	10A	
P2/29	FHM	1000	120	Frosted	27000	400	Horiz $\pm 4^\circ$	117.6	114.2	10A	
-	FFT	1000	120	Clear	26000	400	Horiz $\pm 4^\circ$	165.2	161.8	10A	
P2/12		1250	115/120	Clear	33500	200	Horiz $\pm 4^\circ$	189.1	185.7	16A	
				220/230	Clear	33500	200	Horiz $\pm 4^\circ$	189.1	185.7	10A
				240/250	Clear	33500	200	Horiz $\pm 4^\circ$	189.1	185.7	10A



PHOTOGRAPHIC

Photographic Class P2

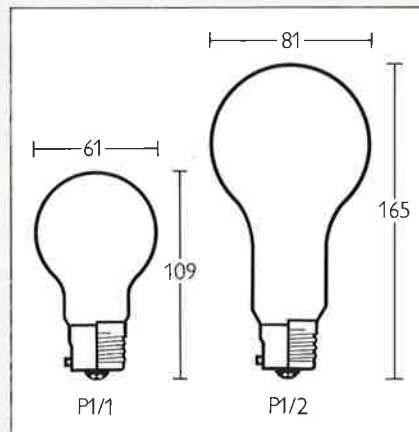
Application: Designed for use with sensitised material balanced for 3200K.



Lamp Type	Watts	Volts	Cap	Finish	Nominal Lumens	Objective Life (Hrs)	Operating Position
P2/1	500	240	E27	Pearl	11500	100	Any
P2/2	1000	240	E40	Pearl	22000	100	Any

Photoflood Class P1

Application: Indoor photography with black and white or colour film, balanced for 3400K.



Lamp Type	Watts	Volts	Cap	Finish	Nominal Lumens	Objective Life (Hrs)	Operating Position
P1/1	275	240	E27, B22	Pearl	8000	3	Any
P1/2	500	240	E27, B22	Pearl	15000	6	Any

LOCATION LIGHTING

Class MEI 5600K

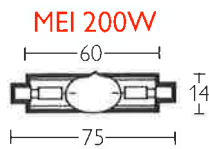
Application: Daylight Filming, Electronic News Gathering, TV Studios, Outside Broadcasts, Special Effects, Theatre Stage Lighting, Overhead Projection and for use where a colour temperature of 5600K is required to supplement daylight.

Type: Metal Halide discharge lamp

Bulb: Quartz

Ballast: A suitable ballast and ignitor must be used with these lamps

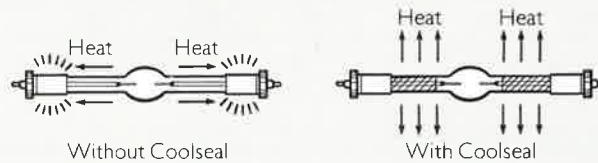
Luminaire: Lamp must be operated in a totally enclosed luminaire so avoiding exposure to ultra violet radiation.



Watts	Objective Average Life (Hrs)	Nominal Lumens	Arc Length (mm)	Lamp Current (Amps)	Dimensions in mm		
					A	B	C
200	300	16000	10	3.1	60	75	14

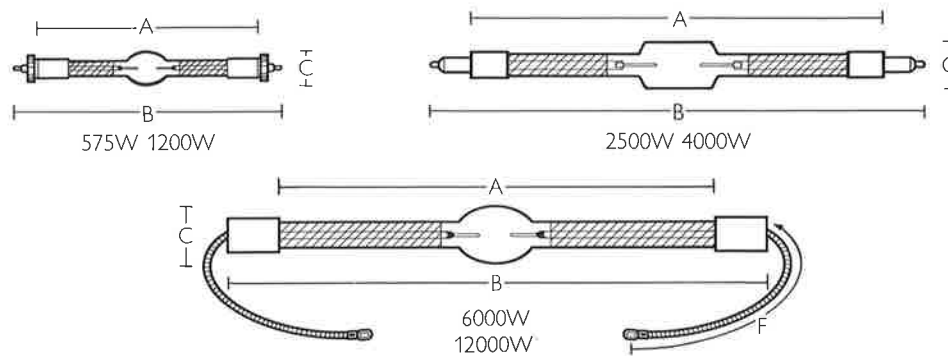
MEI COOLSEAL

GEC started manufacturing standard MEI lamps in 1977, and in 1982 invented the important Coolseal principle specifically to overcome the problems of molybdenum to quartz seals overheating within the end caps.



The Coolseal technique considerably reduces the temperature at the end of the seal, which increases the life of the seal. The surface of the seal is etched so that the heat which normally travels along the seal from the bulb to cap by the light pipe effect, is dispersed.

MEI COOLSEAL - STANDARD RANGE



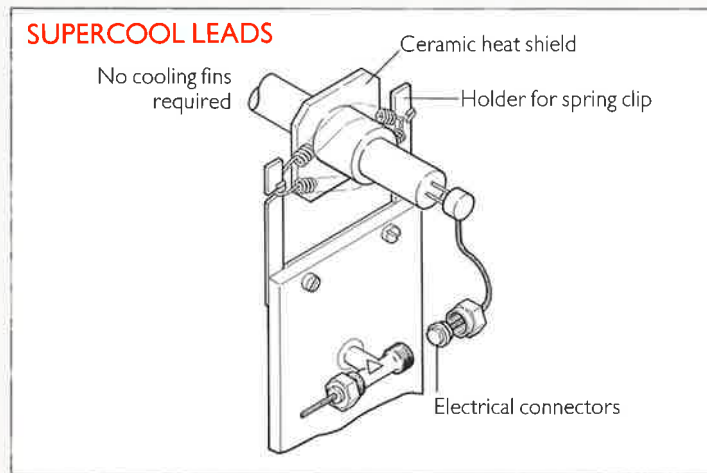
Watts	Cap	Lamp Current on Choke Ballast (Amps)	Nominal Lumens	Arc Length (mm)	Objective Average Life (Hrs)	Lamp Dimensions				Operating Position
						A	B	C	F	
575	SFC 10.5-4	7	47000	13.6	750	115	145	21	-	Any
1200	SFC 15.5-6	13.8	110000	14.3	750	180	220	27	-	Any
2500	SFA 21-12	25.6	240000	24.5	500	290	355	30	-	Horiz ± 15
4000	SFA 21-12	24.0	410000	35	500	340	405	38	-	Horiz ± 15
6000	S25.5-60	55	630000	20	350	348	450	57	170	Horiz ± 15
12000	S30.16-70	85	1100,000	25	250	330	470	65	170	Horiz ± 15

Class MEI 5600K

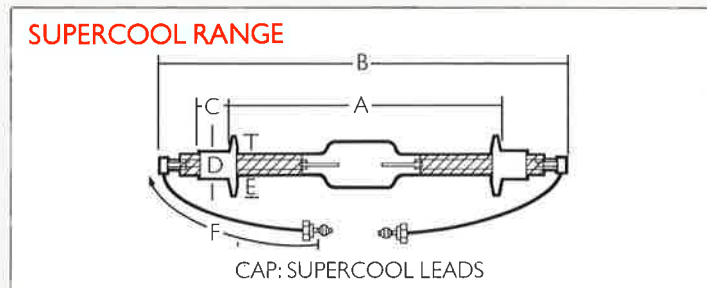
MEI COOLSEAL WITH SUPERCOOL LEADS

The lamp is designed for luminaires which operate with standard choke ballasts and is also suitable for operation on the new generation of square wave electronic ballasts.

As a result of the Coolseal development and the consequent reduction of temperature of each seal, the need for expensive cooling fins can be eliminated. The MEI lamp with Supercool leads may now be held in position by simple clips fixed to a flexible mounting which helps to protect the lamp from mechanical damage if the luminaire is jolted. The lamp caps have been replaced by Supercool leads so that the electrical contacts can be made in a low temperature area of the luminaire away from the lamp seals.



Supercool leads allow for a simple fixing of the lamp within the luminaire.



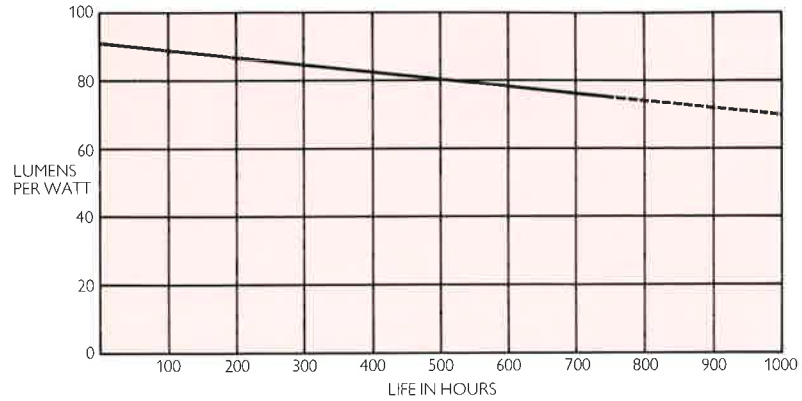
Watts	Nominal Lamp Volts	Objective Average Life (Hrs)	Nominal Lumens 1	Arc Length (mm)	Lamp Current (Amps) on Choke Ballast	Dimensions in mm						Terminals All 1mm Pitch
						A	B (Max)	C	D	E	F	
575	95	750	49000	13.6	7.0	80	125	8	15	26	70	8mm Dia
1200	100	750	110000	14.5	13.8	116	179	14	20	35	70	8mm Dia
2500	115	500	240000	24.5	25.6	190	303	25	25	50	70	12mm Dia
2500 HV*	190	500	240000	25.0	14.9	190	303	25	25	50	72.5	8mm Dia
4000	200	500	410000	35.0	24.0	240	365	25	25	50	70	12mm Dia
8000	180	250	800000	30.0	52.0	311	535	25	41	65	120	12mm Dia
12000**	180	250	1100000	25.0	-	311	535	25	41	75	90	12mm Dia

* On Electronic Ballast 180V/13.5A

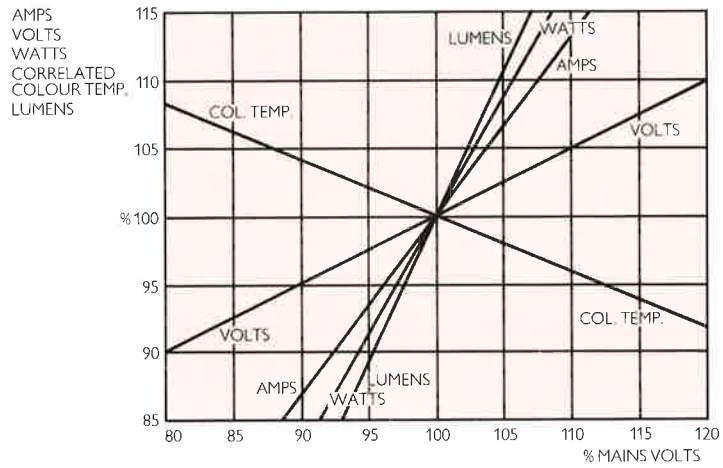
** On Electronic Ballast 180V/67A

PHOTOMETRIC DATA - MEI

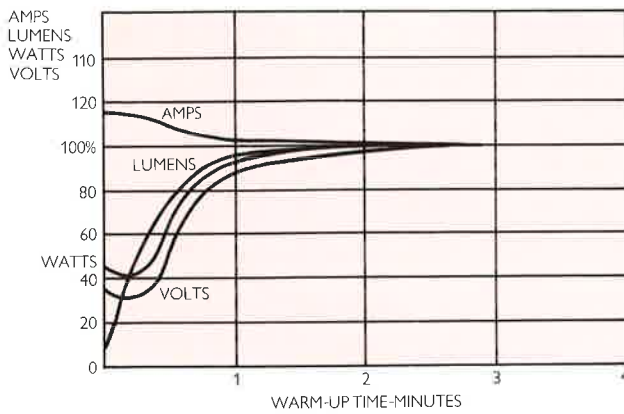
TYPICAL LUMINOUS EFFICACY OF MEI AS A FUNCTION OF OPERATING TIME



ELECTRICAL AND PHOTOMETRIC DATA FOR MEI LAMPS

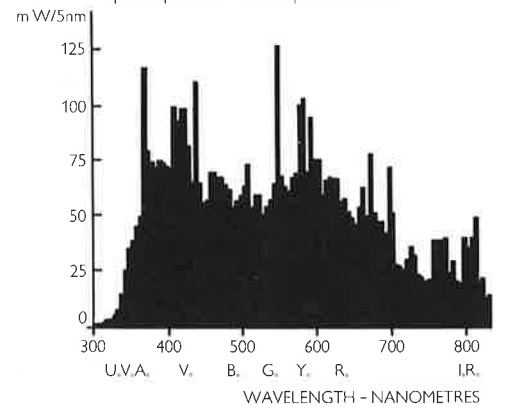


TYPICAL RUN UP TIME FOR MEI LAMPS



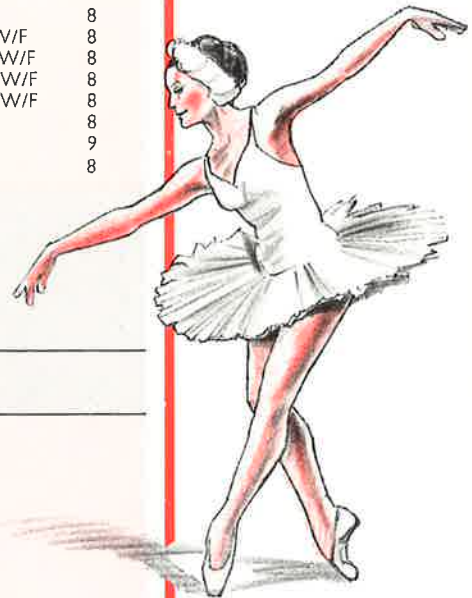
MEI AT 5600K

Spectral power distribution per 1000 lumens



CROSS REFERENCE GUIDE – STUDIO, STAGE AND LOCATION LIGHTING

GEC Ref	OSRAM Ref	Ansi Code	UK Ref	Other Ref	Page No
T1	577593E	DNW	T1	559C	3
T11	64744	-	T11/T19	6996P	3
T13	64722	FKB(HV)/FKA	T13/T22	6998C	3
T14	64746	FKD(HV)/FKC	T14/T20	6996C	3
T15	50055	FKE(HV)/EXA	T15/T23	6997C	3
T17	64682	FKF(HV)/BTL	T17/T28	6800C	3
T18	64684	-	T18/T25	6820P	3
T26	-	-	T26/T27	6823P	3
CP20	54795	-	CP32	-	5
CP22	-	-	CP30	-	5
CP23	64720	-	CP23/CP67	6993P	4
CP24	64745	-	CP24/CP70	6995P	4
CP39	51235	FKH(HV)/FKG	CP39/CP68	6993Z	4
CP40	64747	FKJ(HV)/EGT	CP40/CP71	6995Z	4
CP41	64789	FKK(HV)/CYX	CP41/CP73	6994Z	4
CP43	64788	-	CP43/CP79	6994P	4
CP46	51703	ECN/DPY	CP29	6963Z	5
CP57	54793	-	CP58	-	5
CP80	51805	DTY/EBA	CP83	13111P	4
CP82	-	-	CP82	-	4
CP84	-	-	-	-	4
CP89	-	-	CP89	-	4
P1/1	NITRAPHOT S	-	-	PF207	7
P1/2	NITRAPHOT B	-	-	PF208	7
P2/1	-	-	P2/1	-	7
P2/2	-	-	-	-	7
P2/7	64741	EKM	P2/7	13989R	6
P2/10	64715	-	P2/10	777SR/16	6
P2/11	-	EME(HV) CLEAR EMF(HV) FROSTED	P2/11	13477R	6
P2/12	64751	-	P2/12	6358R	6
P2/15	-	-	-	-	6
P2/28	64578	FCM CLEAR	P2/28	7786R	6
P2/29	-	FHM FROSTED	P2/29	7786R/16	6
EGR	-	EGR	EGR	6827Z	4
EGN	-	EGN	EGN	-	4
FFT	-	FFT	FFT	-	4
MEI	HMI	HMI	MEI	MSI	8
200W	200W	200W	200W	-	8
575W	575W/CS	575W	575W	575W/F	8
1200W	1200W/CS	1200W	1200W	1200W/F	8
2500W	2500W/CS	2500W	2500W	2500W/F	8
4000W	4000W	4000W	4000W	4000W/F	8
6000W	6000W	6000W	6000W	-	8
8000W	-	-	8000W	-	9
12000W	12000W	12000W	12000W	-	8



ANSI CROSS REFERENCE

Ansi Code	GEC Ref	Page No.
DNW	T1	3
DTY	CP80	4
ECN	CP46	5
EGN	EGN	4
EGR	EGR	4
EKM	P2/7	6
EME (HV) CLEAR	P2/11	6
EMF (HV) FROSTED	P2/11	6
FCM	FCM	6
FHM	FHM	6
FFT	FFT	4
FKB	T13	3
FKD	T14	3
FKE	T15	3
FKF	T17	3
FKH	CP39	4
FKJ	CP40	4
HMI	MEI	8
200W	200W	8
575W	575W	8
1200W	1200W	8
2500W	2500W	8
4000W	4000W	8
6000W	6000W	8
12000W	12000W	8

TECHNICAL NOTES

A) In line with international standardisation the quoted lamp lives have been established in open rack conditions.

B) The operating angles quoted are recommended maximum values for these conditions. Operation, where there is insufficient ventilation around the lamps may result in some reduction in quoted lives, especially where lamps are burnt at the extreme angles.

Operating angles are measured from the cap in a vertical plane, at right angles to the plane of the filament.

C) Lamp dimensions in mm show maximum length, maximum bulb diameter, nominal light centre length (L.C.L.), and in the case of linear lamps, maximum clearance length and maximum diameter excluding pips.

D) Where ANSI codes are shown, the GEC lamps will have at least the same cap, wattage and light centre position as the ANSI type, but there may be small differences with other parameters.

E) For safe and reliable operation, refer to instruction leaflet packed with each lamp.

The company undertakes a continuous programme of research, development and product improvement. This means that products may be subject to change without prior notice or public announcement. All descriptions, illustrations, dimensions and drawings in this catalogue are typical of the products to which they refer, and must not be interpreted as a guarantee of individual performance or characteristics, and shall not form any part of any contract.

P.O. Box 17, East Lane, Wembley HA9 7PG England.
Telephone: 01-904 4321 Telex: 22418 Fax 01-904 1178

OSRAM GEC Limited

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