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**TECHNICAL
INFORMATION**





High Frequency Electronic Control Gear

Electronic control gear operating at 40–100kHz, has numerous advantages over conventional electromagnetic ballasts, the greatest of which being energy conservation.

- Reduction in energy consumption of up to 30%
- Increase in lamp life by ensuring optimum running conditions
- Reduced energy and maintenance costs, enables quick pay back period
- End user comfort is ensured by rapid, quiet, flicker free operation and automatic switch off of lamp at end of life
- Our HF version products incorporate only quality branded components selected for efficiency and reliability
- Power factor > 0.95

High Frequency Dimming Gear

Digital Electronic regulating or dimming ballasts provide the means to optimise energy use within the working environment.

By enabling lighting to compensate for the availability of natural daylight, the task in hand and occupancy levels, we can go some way towards this optimisation.

We offer two 'standard' methods of lighting control:



HFD High Frequency Dimming

/HFD versions are fitted with a digital electronic ballast capable of reacting to simple signals from any standard reactive or push-to-make switch enabling the user to select, store and change the lighting level to suit, literally by the press of a switch.

Easy to install, simple to use and ideal for small offices, restaurants, multi-use conference rooms etc.

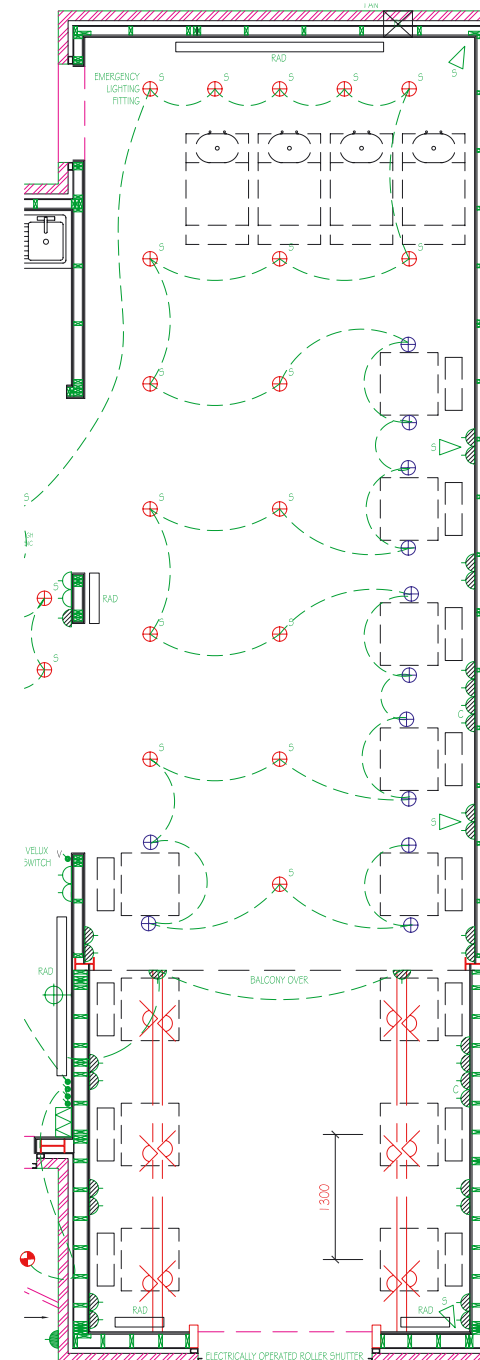


DALI Digital Addressable Lighting Interface

/DALI versions are fitted with a digital addressable electronic ballast, which react to signals from a variety of integrated control devices including:

- P.I.R. (passive infra red) - movement detectors, which provide control, based on the occupancy of the detection zone
- Daylight linking – combined with occupancy detection can produce energy savings of up to 60%
- Maintained illuminance - where the level can be set to suit the tasks, the age group and personal preferences of the occupants and where light loss factors need not be applied
- Remote control – control, flexibility and avoidance of vertical (switch) wiring for easier installation

We can advise on the best system to suit your requirements. Please contact our technical department.



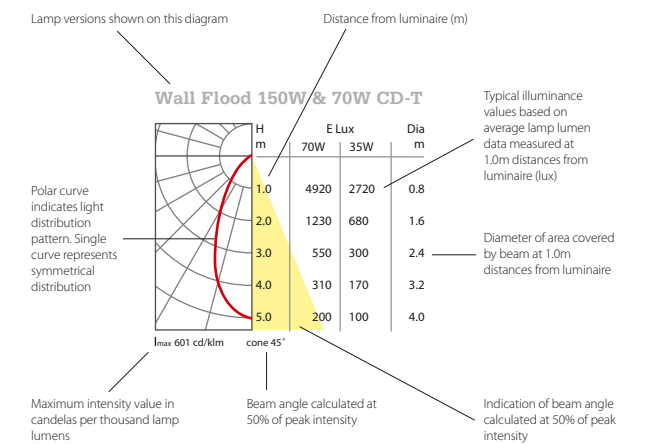
Electronic HID Ballasts

The many benefits in the use of electronics to control HID lamps have resulted in a rapid increase in their use and development. Performance demands on modern HID lamps are such that only by sophisticated electronics can they be optimised. This is particularly important in the retail sector where accurate colour rendition is vital to display strategy.

Electronic ballasts:

- Lightweight, one piece and compact
- Greatly improve colour stability throughout lamp life
- Absence of lamp flicker
- Maximise lamp life
- Shuts down faulty or end of life lamps for safety
- Improved run up and restart times

Photometric Data



The photometric data included in this publication is intended to give a clear guide to the performance from a single luminaire using a typical quality branded lamp. Full data in TM14 and Elumdat format is available on request or downloadable from our website.

Our Technical Department will be pleased to assist with any application enquiries.

Lighting Design Software

Powerlite supports Relux Lighting Design software, which is available as a free download at www.relux.biz

Photometric data for Powerlite products is available for use with Relux either on CD or downloadable via our website.

Emergency Lighting

Emergency lighting is a vital part of safety and security where lives maybe at risk in the event of an emergency evacuation. It is then that reliability becomes a potential lifesaver.

All our emergency lighting products use only leading brand components and are 100% tested after assembly in our ISO9001: 2000 approved factory.

Our two standard adaptation methods feature throughout the range and are denoted by the suffixes /SC3 and /EM3.

SC
3

SC3 - Integral, Self-contained, 3-Hour Maintained, Emergency Conversion

Unless otherwise stated, all the emergency components are contained within the luminaire and include:

- A combined High Frequency ballast and emergency changeover circuit
- Most versions run the lamp at 100% BLF on mains
- Deep discharge battery protection
- Quality, hi-temperature Ni-Cad batteries for 3 hour protection
- Sufficient battery power to reliably start and run amalgam version lamps
- Regulated constant current for optimum charging conditions
- Visible 'charge healthy' LED

EM
3

EM3 - Self-contained (remote), 3-Hour Maintained, Emergency Conversion

The emergency module and high temperature Ni-Cad batteries are housed in a separate steel enclosure connected to the Luminaire by a 0.5m flexible conduit wiring harness.

- Electrical connection by plug and socket connectors
- Most versions run the lamp at 100% BLF on mains
- Deep discharge battery protection
- Quality, hi-temperature Ni-Cad batteries for 3 hour protection
- Sufficient battery power to reliably start and run amalgam version lamps
- Regulated constant current for optimum charging conditions
- Visible 'charge healthy' LED

Non-standard Options

Most of our products may be adapted to suit other emergency lighting systems, Central Systems for example. Please contact our Technical Department for details.

NM
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Low Voltage EM3 & NM3

Our low voltage downlights can be converted to maintained emergency units with the addition of a 'train' of Ni-Cad batteries and transformer.




- Operates in emergency mode for 3 hours at 20W, 1 hour at 50W
- BLF for 20W is 0.06 and for 50W, 0.1
- Train fits through a 60mm diameter ceiling cut-out
- Non-maintained (operates in emergency mode only) versions available Suffix /NM3
- Dimmable if required

Transformer Range





Code	Dimensions VA Max	Dimensions Range (W)	Type	White	Black	Terminals	Dimming	Dimensions (mm)			ø Hole Required (mm)
								L	W	H	
65	20-65		Electronic	DET65	-	Leaded	L & T Edge	150	38	35	50
150	30-150		Electronic	DET150	DET151	6 x 2.5mm ²	T Edge	190	48	42	56
200	100-200		Electronic	DET200	DET201	7 x 4.0mm ²	T Edge	222	54	45	60
100-300	100-300		Toroidal	-	PVL306	6 x 2.5mm ²	Inductive	-	135 dia	95	-

Lamp Data

Fluorescent Lamps

Symbol	Catalogue Designation	Watts (W)	Cap	Colour Temp (K)	Initial Lumens	Colour Appearance	Colour Rendering Index/Group	Rated Life 50% Survivors
Linear Fluorescent								
T5 High Efficiency (HE)								
	T5 HE	14	G5	4000	1200	Cool White	85/1B	16000 hr
	T5 HE	21	G5	4000	1900	Cool White	85/1B	16000 hr
	T5 HE	28	G5	4000	2600	Cool White	85/1B	16000 hr
	T5 HE	35	G5	4000	3300	Cool White	85/1B	16000 hr
T5 High Output (HO)								
	T5 HO	24	G5	4000	1750	Cool White	85/1B	16000 hr
	T5 HO	39	G5	4000	3100	Cool White	85/1B	16000 hr
	T5 HO	49	G5	4000	4300	Cool White	85/1B	16000 hr
	T5 HO	54	G5	4000	4450	Cool White	85/1B	16000 hr
	T5 HO	80	G5	4000	6150	Cool White	85/1B	16000 hr
T8 Triphosphor								
	T8	18	G13	4000	1350	Cool White	85/1B	14000 hr
	T8	18	G13	3500	1350	White	85/1B	14000 hr
	T8	18	G13	3000	1350	Warm White	85/1B	14000 hr
	T8	18	G13	6000	1300	Daylight	85/1B	15000 hr
	T8	18	G13	4000	3350	Cool White	85/1B	14000 hr
	T8	36	G13	3500	3350	White	85/1B	14000 hr
	T8	36	G13	3000	3350	Warm White	85/1B	14000 hr
	T8	36	G13	6000	3250	Daylight	85/1B	15000 hr
	T8	58	G13	4000	5200	Cool White	85/1B	14000 hr
	T8	58	G13	3500	5200	White	85/1B	14000 hr
	T8	58	G13	3000	5200	Warm White	85/1B	14000 hr
	T8	70	G13	4000	6550	Cool White	85/1B	14000 hr
	T8	70	G13	3500	6550	White	85/1B	14000 hr
	T8	70	G13	3000	6550	Warm White	85/1B	14000 hr

Compact Fluorescent Lamps












Symbol	Catalogue Designation	Watts (W)	Cap	Colour Temp (K)	Initial Lumens	Colour Appearance	Colour Rendering Index/Group	Rated Life 50% Survivors
Compact Fluorescent								
2D Type								
	2D	16	GR10Q4	2700	1050	Tungsten White	82/1B	10000 hr
	2D	28	GR10Q4	3500	2050	White	82/1B	10000 hr
	2D	38	GR10Q4	3500	2850	White	82/1B	10000 hr
	2D	55	GR10Q4	3500	3900	White	82/1B	10000 hr
D Type								
	TC-D	13	G24*1	4000	900	Cool White	85/1B	10000 hr
	TC-D	13	G24*1	3500	900	White	85/1B	10000 hr
	TC-D	13	G24*1	3000	900	Warm White	85/1B	10000 hr
	TC-D	18	G24*1	4000	1200	Cool White	85/1B	10000 hr
	TC-D	18	G24*1	3500	1200	White	85/1B	10000 hr
	TC-D	18	G24*1	3000	1200	Warm White	85/1B	10000 hr
	TC-D	26	G24*1	4000	1800	Cool White	85/1B	10000 hr
	TC-D	26	G24*1	3500	1800	White	85/1B	10000 hr
TC-D	26	G24*1	3000	1800	Warm White	85/1B	10000 hr	
T Type								
	TC-T	32	GX24q3	4000	2200	Cool White	85/1B	12000 hr
	TC-T	32	GX24q3	3500	2200	White	85/1B	12000 hr
	TC-T	32	GX24q3	3000	2200	Warm White	85/1B	12000 hr
	TC-T	42	GX24q3	4000	3200	Cool White	85/1B	12000 hr
	TC-T	42	GX24q3	3500	3200	White	85/1B	12000 hr
	TC-T	42	GX24q3	3000	3200	Warm White	85/1B	12000 hr
L Type								
	TC-L	18	2G11	4000	1250	Cool White	85/1B	10000 hr
	TC-L	18	2G11	3500	1250	White	85/1B	10000 hr
	TC-L	18	2G11	3000	1250	Warm White	85/1B	10000 hr
	TC-L	24	2G11	4000	1800	Cool White	85/1B	10000 hr
	TC-L	24	2G11	3500	1800	White	85/1B	10000 hr
	TC-L	36	2G11	3000	2900	Warm White	85/1B	10000 hr
	TC-L	36	2G11	4000	2900	Cool White	85/1B	10000 hr
	TC-L	36	2G11	3500	2900	White	85/1B	10000 hr
	TC-L	40	2G11	3000	3500	Warm White	85/1B	10000 hr
	TC-L	40	2G11	3500	3500	White	85/1B	10000 hr
	TC-L	40	2G11	3000	3500	Warm White	85/1B	10000 hr
	TC-L	55	2G11	4000	4850	Cool White	85/1B	10000 hr
	TC-L	55	2G11	3500	4850	White	85/1B	10000 hr
	TC-L	55	2G11	3000	4850	Warm White	85/1B	10000 hr

*D = 2 pin lamp with integral starter





*Q = 4 pin lamp less starter

Lamp Data

Discharge Lamps

Symbol	Catalogue Designation	Watts (W)	Cap	Colour Temp (K)	Initial Lumens	Colour Rendering Index/Group	Rated Life 50% Survivors
Metal Halide Elliptical Coated							
	MH-E	100	E27	3200	8000	70/2A	7500 hr
	MH-E	250	E40	5200	19000	90/1A	15000 hr
	MH-E	250	E40	3700	18000	70/2A	10000 hr
	MH-E	250	E40	3700	18000	70/2A	10000 hr
	MH-E	400	E40	3700	36000	70/2A	15000 hr
	MH-E	400	E40	5900	31000	90/1A	15000 hr
	MH-E	400	E40	3800	43000	65/2B	15000 hr
	MH-E	400	E40	3700	38000	70/2A	20000 hr
Tubular Clear							
	MH-T E40	250	E40	4200	21000	70/2A	10000 hr
	MH-T E40	400	E40	4200	35000	70/2A	15000 hr
Single Ended							
	MH-T G12	70	G12	4200	5500	85/1B	9000 hr
	MH-T G12	150	G12	4200	12500	85/1B	9000 hr
Single Ended Ceramic							
	CD-T	70	G12	3000	6300	83/1B	9000 hr
	CD-T	150	G12	3000	13500	85/1B	9000 hr
Single Ended Ceramic Capsule							
	CD-TC	35	G8.5	3000	3300	81/1B	10000 hr
	CD-TC	70	G8.5	3000	6400	83/1B	10000 hr
Tubular Double Ended							
	MH-TD	70	RX7S	4200	5500	70/2A	9000 hr
	MH-TD	150	RX7S-24	4200	11250	70/2A	9000 hr
Double Ended Ceramic							
	CD-TD	70	RX7S	3000	6300	80/1B	9000 hr
	CD-TD	150	RX7S-24	3000	13500	85/1B	9000 hr
Multi White Son							
	MSW-TG	50	G12	2550	2400	81	9000 hr
	MSW-TG	100	G12	2550	4900	83	9000 hr
Double Ended Ceramic							
	CDM-R111 10°	35	GX8.5	3000	35000	81	-
	CDM-R111 24°	35	GX8.5	3000	8500	81	-
	CDM-R111 40°	35	GX8.5	3000	4000	81	-
	CDM-R111 10°	70	GX8.5	3000	50000	84	-
	CDM-R111 24°	70	GX8.5	3000	15000	84	-
	CDM-R111 40°	70	GX8.5	3000	9000	84	-
High Pressure Sodium Elliptical Coated							
	SON-E	70	E27	2000	5600	23/4	20000 hr
	SON-E	70	E27	2000	5600	23/4	20000 hr
	SON-E	150	E40	2000	15000	23/4	20000 hr
	SON-E	250	E40	2000	27000	23/4	20000 hr
	SON-E	400	E40	2000	48000	23/4	20000 hr
Tubular Clear							
	SON-T	70	E27	2200	5900	23/4	20000 hr
	SON-T	150	E27	2200	15000	23/4	26000 hr
	SON-T	250	E40	2200	27500	23/4	26000 hr
	SON-T	400	E40	2200	49000	23/4	26000 hr

Tungsten Halogen Lamps

Symbol	Catalogue Designation	Watts (W)	Cap	Colour Temp (K)	Lumens/ Intensity	Colour Rendering Index/Group	Rated Life 50% Survivors	Beam Angle
Metal Halide Low Voltage Capsule								
	-	20	G4	-	-	-	-	-
Low Voltage GU5.3 Reflector								
	-	20	GU5.3	3100	700	1A	-	38 Flood
	-	35	GU5.3	3100	1500	1A	-	38 Flood
	-	50	GU5.3	3100	10000	1A	-	10 Narrow Spot
	-	50	GU5.3	3100	4000	1A	-	24 Medium Spot
	-	50	GU5.3	3100	2000	1A	-	38 Flood
	-	50	GU5.3	3100	1050	1A	-	60 Wide Flood
Mains Voltage Halogen Capsule								
	-	40	G9	2800	490	-	2000 hr	-
Linear Halogen								
	-	200	R7S	3000	3100	1A	2000 hr	-
	-	300	R7S	3000	4800	1A	2000 hr	-
	-	500	R7S	3000	9500	1A	2000 hr	-
	-	750	R7S	3000	15000	1A	2000 hr	-
	-	1000	R7S	3000	21000	1A	2000 hr	-
	-	1500	R7S	3000	36000	1A	2000 hr	-