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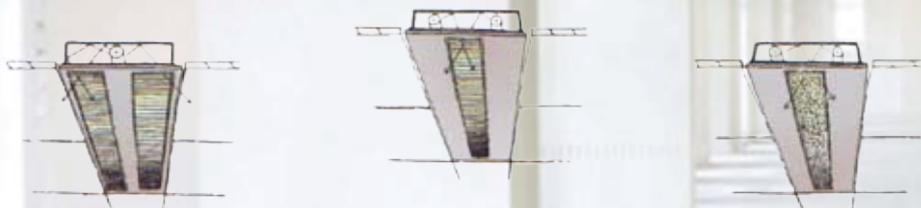


“To provide too little flexibility may make the building less desirable to potential tenants”

Lighting Guide 7: Para 3.1.2

A + F = L^S
Adjustability + Flexibility = LET Space!

The 5th Dimension



	Recessed Specular Louvre	Recessed Dual Component with Semi Matt Louvre plus Side Chambers	Recessed Dual Component with Mesh Diffuser plus Side Chambers
Screen Reflections	None	In Unusual Cases	Sometimes
Horizontal Illuminance	Yes ✓	Yes ✓	Yes ✓
Vertical / Wall Illuminance	No ✗	Yes ✓	Yes / Yes ✓
Ceiling Illuminance	Dependant on Cavity Reflectance	No ✗	No ✗
Visual Interest	No ✗	Yes ✓	Yes / Yes ✓
Translation / Lamp Glare	No ✗	Yes ✓	Yes / Yes ✓
Likelihood that Extra Lighting Required	High	Medium	Low
Cost Effective	/	/	/

*Table taken from the British Council for Offices - Office Fit Out Guide, Page 30



Contents

1 - 2	Previous Installations
3 - 4	The Story (RET Adjust)
5 - 6	RET83 Adjust
7 - 8	RET83 Adjust Technical Specification
9 - 10	RET120 Adjust
11 - 12	RET120 Adjust Technical Specification
13	Non-Standard and Bespoke
14	Airflow Disruption Test
15 - 16	General Guide to Lighting of Work Places 1
17	General Guide to Lighting of Work Places 2
18	Maintenance Factors
19	Lighting Controls and Ancillary Equipment
20	Truly Simple but Effective Lighting Controls
21	ActiLume System
22	Basic Control System
23 - 24	The Addressable Spectrum System
25	Installation Options
26	Emergency Lighting

Suspended D/ID or Free Standing D/ID many Louvre/Diffuser Options	RET Adjust
None	Very Limited / LG3 Compliant
Yes ✓	Yes ✓
Yes ✓ or Yes ✓ / Yes ✓	Yes ✓ / Yes ✓
Yes ✓ / Yes ✓	Yes ✓ / Yes ✓
Yes ✓ / Yes ✓	Subjective
Varies	Very Limited / LG3 Compliant
Zero	Low to Zero
/	Unrivalled

Previous Installations

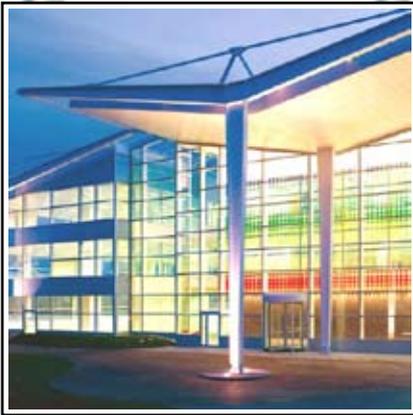
When choosing or specifying new luminaires for a building it is often difficult to predict how the various options will be received. This is particularly true of “speculative” developments, since often neither the tenant nor their requirements are known at the time of product selection. As a result we have developed and patented an adjustable luminaire, the product in hindsight is ‘simplicity itself’ and that is why it has been patented.



Dexter House, Royal Mint Court

Client: International Underwriting Association
Design: SMY Electrical / Lumitron
Installation: SMY Electrical

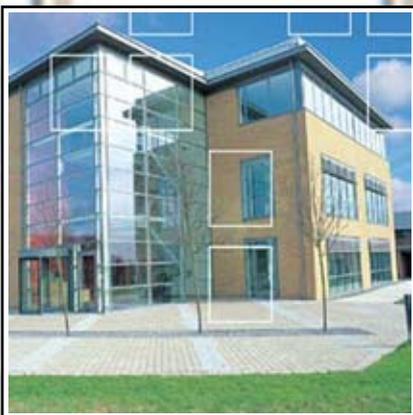
Dexter House was vacated by a major insurance company and plans were realised to market the building. Lumitron in discussions with the electrical contractor offered RET/Adjust fittings as a possible option. This option was further enhanced since we manufactured non-standard length fittings to suit the existing ceiling grid, minimising costs and disruption.



5 Longwalk, Stockley Park

Client: Exemplar
Design: Hilson Moran
Installation: Unidata

The property fund Exemplar retained Hilson Moran to oversee the refurbishment of the 115,000 sq. ft. building. Hilson Moran identified the advantages of having flexibility especially in a building which is a speculative refurbishment. The general finishes are high specification (SAS330 ceiling) and the luminaires were intended to be flexible but also be capable of high return airflow (80 l/s). The consultant specified four manufacturers and Lumitron in consultation with the successful contractor offered a flexible and cost effective solution. This included supplying the luminaires to site with plugs and leads to minimise site installation time. The luminaire was independently photometered to alleviate any fears on performance.



Hempton Court, Bristol

Client: HBG Property
Design: Hoare Lea
Installation: Renelec Building Services

Situated in the successful Aztec West Business Park, Hempton Court is a high specification speculative building. RET/Adjust fittings were chosen for their flexibility as the client wished to show the building with various options on gondola position. In addition we supplied a fully integrated lighting control system.

One style of luminaire, **3** options

- ① Flexibility
- ② Adjustability
- ③ Letability

“This unique patented luminaire ensures flexibility in commercial buildings, with clean ceiling lines in position 1 and LG7 compliance in position 3.”

62-63 Threadneedle Street

Client: The Royal Bank of Scotland
Design: RHB Partnership
Installation: Trilectric Ltd.

RET/Adjust fittings were chosen for this project for a variety of reasons. Contractor confidence in the fact that we could deliver both on time but also a viable solution to the occupiers request that certain floors required own occupation whilst others were to be marketed. This product resolved the dilemma as where appropriate the patented gondola was dropped to Position 3 and the area achieved LG7 compliance. On the other floors the gondola remained recessed to give a clean ceiling line during marketing.

Note: This building was deemed to be section 20 and all leads from the LCM's to fittings were supplied by us in FireTuff.



Banco Santander, 100 Ludgate Hill

Client: Banco Santander
Design: KTJ Electrical / Lumitron
Installation: KTJ Electrical

We were approached by the electrical contractor KTJ, their client Banco Santander was looking for a modern flexible solution to fit the existing ceiling. We proposed RET/Adjust and a sample area was set up for client approval. After staff consultations it was decided that the luminaire would be installed in the dropped position. This decision was as a result of perception rather than numbers relating to LG7.



One America Square

Client: Catalyst Capital
Design: Lumitron Lighting
Installation: M&M Electrical Ltd

We have supplied RET/Adjust to the first floor refurbishment of this major building in the heart of the city.

All parties recognised the benefits of the flexible option offered. We supplied in dropped position 3, to suit an SAS metal ceiling.



From a client or specifiers point of view this simple yet unique option can solve a recurring problem:

The majority of professional teams including architects, consultants and sales/letting agents do not like to see luminaires below the ceiling. However they must balance this view with practical and commercial issues including the increased emphasis on LG3 and LG7 compliance.

Our offer is where technical and commercial meet. This luminaire provides options where previously none existed.

RETINO Adjust

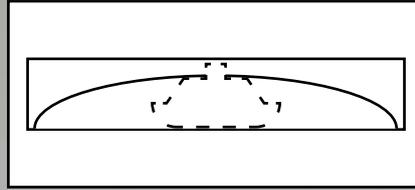
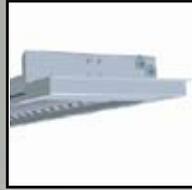
RET Adjust is an innovative, patented range of luminaires for use in modern office environments. The range meets the brightness control requirements of LG3/CAT 1000cd/m² in position 3 and LG3/CAT2 1500cd/m² in positions 1 and 2.

This product offers flexibility to architects, consultants and letting agents. For end users it ensures that in typical circumstances compliance is achievable with a single style of office luminaire.



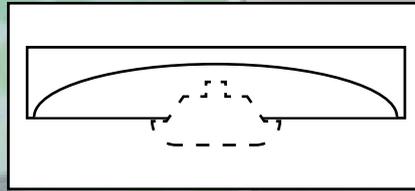
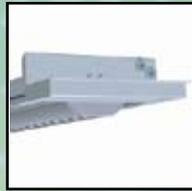
Position 1

- Fully Recessed with no protrusion below the ceiling line
- Compliance with LG3 CAT2 / 1500cd/m²
- Good SHR
- 61% LOR



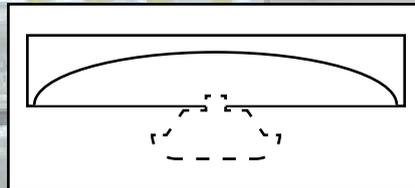
Position 2

- Partially dropped Gondola - assists in the spirit of LG7
- Compliance with LG3 CAT2 / 1500cd/m²
- Good SHR
- 65% LOR



Position 3

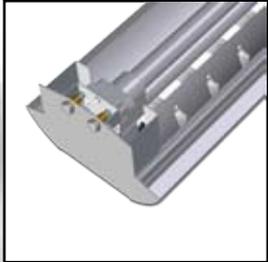
- Fully dropped, this position can create an LG7 compliant scheme in many situations
- Compliance with LG3 CAT2 / 1000cd/m²
- Good SHR
- 68% LOR (this output ratio is far in excess of most of our competitors)



In all installations where the building or floors are being marketed, the client had chosen to install the fitting in Position 1 (Recessed), yet when let the majority of fittings are dropped to Position 3 (fully dropped) to assist in LG7 compliance

The key feature of the RET/Adjust is its 'ease of adjustment'. With no specialised knowledge and no fuss this clever and patented luminaire quickly transforms from recessed to semi-recessed.

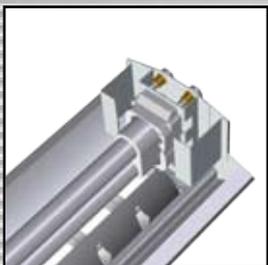
Based on typical installations with installations with realistic reflectances, this luminaire in position 3 can easily conform to LG7 compliance.



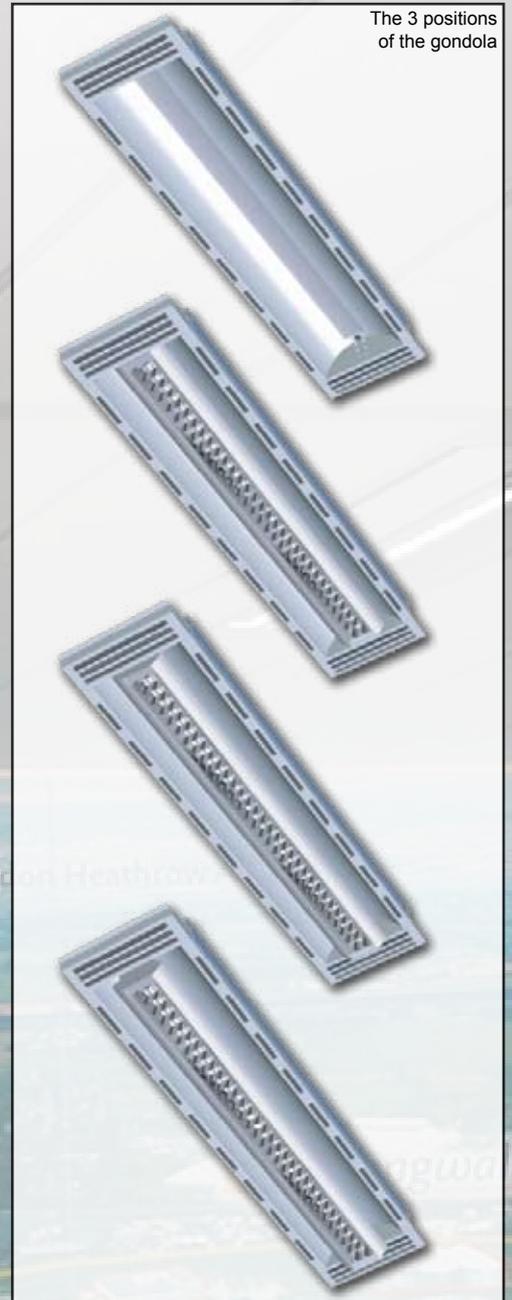
To enable the adjustment of the gondola between the 3 positions, the fitting must first be made safe and power disconnected.



At either end of the gondola are 2 snap fixings, which can easily be undone to enable the gondola to be repositioned in the correct setting.



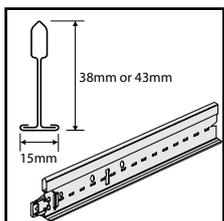
Once set in the correct position, the snap fixings can then be inserted and the fitting is operationally ready. This entire process requires no specialist knowledge.



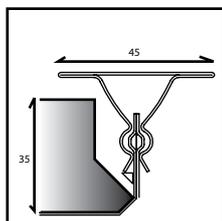
The real benefits of RET/Adjust are to the letting/managing agents and the ultimate client. The fitting minimises the potential disruption of incoming tenants and their professional team raising the issue of LG7 compliance, yet in its recessed form in the area being marketed maintains a discrete impression.



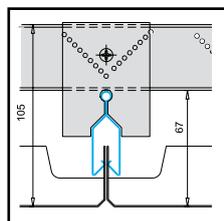
Recessed (P1), semi dropped gondola (P2) or dropped gondola LG7 (P3) this fitting offers a unique advantage; flexibility yet whether in P1, P2 or P3 has the benefits of a gentle diffused back reflector and when viewed across an open plan floor it creates an even illumination without high intensity peaks often associated with this type of fitting.



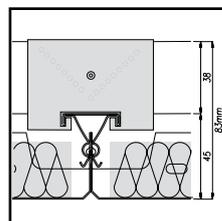
Flat Table 15mm Tee,
38mm or 43mm high



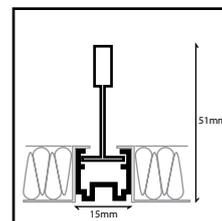
Burgess "Spring Tee" or
"Orcal Spring Tee"



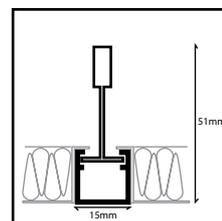
SAS150



System 120 Long Span
Spring Tee



Alugrid-Q 15/16



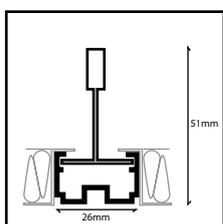
Alugrid-P 15/16

Introduction

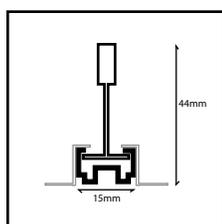
A modern, flexible, recessed luminaire, see benefits and concept at the beginning of the guide.

The fitting is designed as standard for 600 x 600mm modular ceilings but is also available as a 'bespoke' 750 x 750mm.

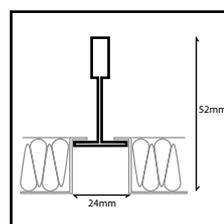
We can supply either a zero iridescence Aluminium LG CAT2/1000cd/m² louvre or a modern discrete microprism diffuser. The MPKL option is a combination of both louvre and MPK controller and therefore benefits from both brightness control and the modern style of the microprism diffuser.



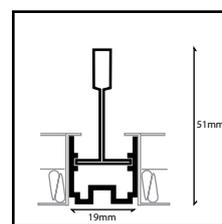
Alugrid-Q 26/16



Alugrid-Q 15/08



TruGrid T24 System



Alugrid-Q 15/19

Technical Specification

Size

Nominally 597mm x 597mm x 114mm recess depth

Control Gear

High Frequency fixed output as standard (HF), other options include:
1-10v analogue dimming (HFDIM)
Digital DSI signal (HFDIG)
DALI ballast (HFDAL)*

*On DALI ballasts we usually indicate ballast manufacturer offered.
We typically use Philips, Tridonic, HUCO and Helvar

Ceiling Integration

Recessed luminaire housing with 3-position adjustable (patented) gondola system.

We will make to suit any ceiling system subject to the following:

1. Possible minimum quantity
2. Lamp characteristic

Controller

Louvre - Zero iridescence LG3 CAT2/1000cd/m² retained by wishbone springs finished in semi-matt aluminium (W2M)

Microprism controller - Luminaire housing as for W2M louvre but high precision lens, especially suitable for use with daylight lamps (WPK).

Louvre / microprism controller combination (MPKL)

Luminaire Efficiency

LEF of over 53 lumens per Watt

CE - IP20

Designed and manufactured to EN60598
Emergency EN605982.22



1000cd/m² refers to P3, in other positions with W2M louvre the Luminaire is LG3 CAT2/1500cd/m²



Air Handling

We can readily incorporate return air handling in our fittings. See next page or Bespoke for special applications.

Emergency Conversion of Luminaires

All of these products can be converted to operate lamps on mains failure. For standard integral 3 hour inverter and batteries suffix /3M.

We can supply a 'self test' option, please contact us for further information.

Body

Steel painted, welded and tabbed

Gondola

Endcaps welded and finished to microperforated basket with opal UV stable insert.

Lamp Options

TCL 40 Watt or 55 Watt available as single or twin lamps.

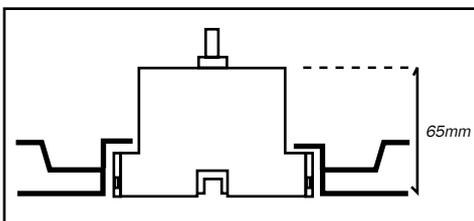
	Lamp	Control Gear	Colour Finish *1	Ceiling Systems	Semi-Matt Louvre	Micro Controller Lens	Louvre / Micro Controller Combination	Dimensions (mm) Length x Width x Depth	Air handling 1 (20 litres) *2	Air handling 2 (30 litres) *3
RET/ADJ/8340	1 x 40W TCL	HF	RAL9016 20% matt	15 or 25mm flat Tee	/W2M	/MPK	/MPKL	597 x 597 x 114	/AHR20	/AHE30
RET/ADJ/8355	1 x 55W TCL	HF	RAL9016 20% matt	15 or 25mm flat Tee	/W2M	/MPK	/MPKL	597 x 597 x 114	/AHR20	/AHE30
RET/ADJ/8380	2 x 40W TCL	HF	RAL9016 20% matt	15 or 25mm flat Tee	/W2M	/MPK	/MPKL	597 x 597 x 114	/AHR20	/AHE30
RET/ADJ/8311	2 x 55W TCL	HF	RAL9016 20% matt	15 or 25mm flat Tee	/W2M	/MPK	/MPKL	597 x 597 x 114	/AHR20	/AHE30

*1 - Any RAL colour is available subject to a minimum quantity

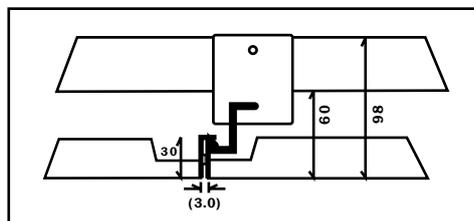
*2 - 20 Litres air handling via rear of body, air flow rates based on velocity of 1.8m/sec

*3 - 30 litres air handling via slots in luminaire bezel, air flow rates based on velocity of 1.8m/sec

Similar to the RET83, the RET120 incorporates a 3 stage gondola with P1 (Fully recessed), P2 (Semi dropped gondola) and P3 (Dropped gondola LG7)



SAS330 - Single thread rod suspension for 'C' profiles up to 150mm wide



SAS200

The RET120 Adjust is designed to fit any of the shown ceiling systems. Please confirm ceiling type with Lumitron to ensure compatibility

Introduction

Many large and prestigious buildings use linear ceiling systems such as the SAS330 system. The RET120 range is a well tried and practical option for linear ceiling installations.

We can adapt any of the luminaires in this range to suit non-standard ceilings or high volumes of air return. Please see our 'Non-standard and Bespoke' page for further details.

This luminaire allows flexibility and again as with the RET83, the ability to create an LG7 compliant area upon tenants occupation without the need to carry out major relighting, which is a great benefit to the range, making the product cost effective and efficient.



Technical Specification

Size

Nominally 1199mm x 299mm x 114mm recess depth

Control Gear

High Frequency fixed output as standard (HF), other options include:
1-10v analogue dimming (HFDIM)
Digital DSI signal (HFDIG)
DALI ballast (HFDAL)*

*On DALI ballasts we usually indicate ballast manufacturer offered.
We typically use Philips, Tridonic, HUCO, Helvar

Ceiling Integration

Recessed luminaire housing with 3-position adjustable (Patented) gondola system.

Controller

Louvre - Zero iridescence LG3 CAT2/1000cd/m² retained by wishbone springs finished in semi-matt Aluminium (W2M)

Micro controller - Luminaire housing as for W2M louvre but high precision lens, especially suitable for use with daylight lamps.

Louvre / microprism controller combination (MPKL)

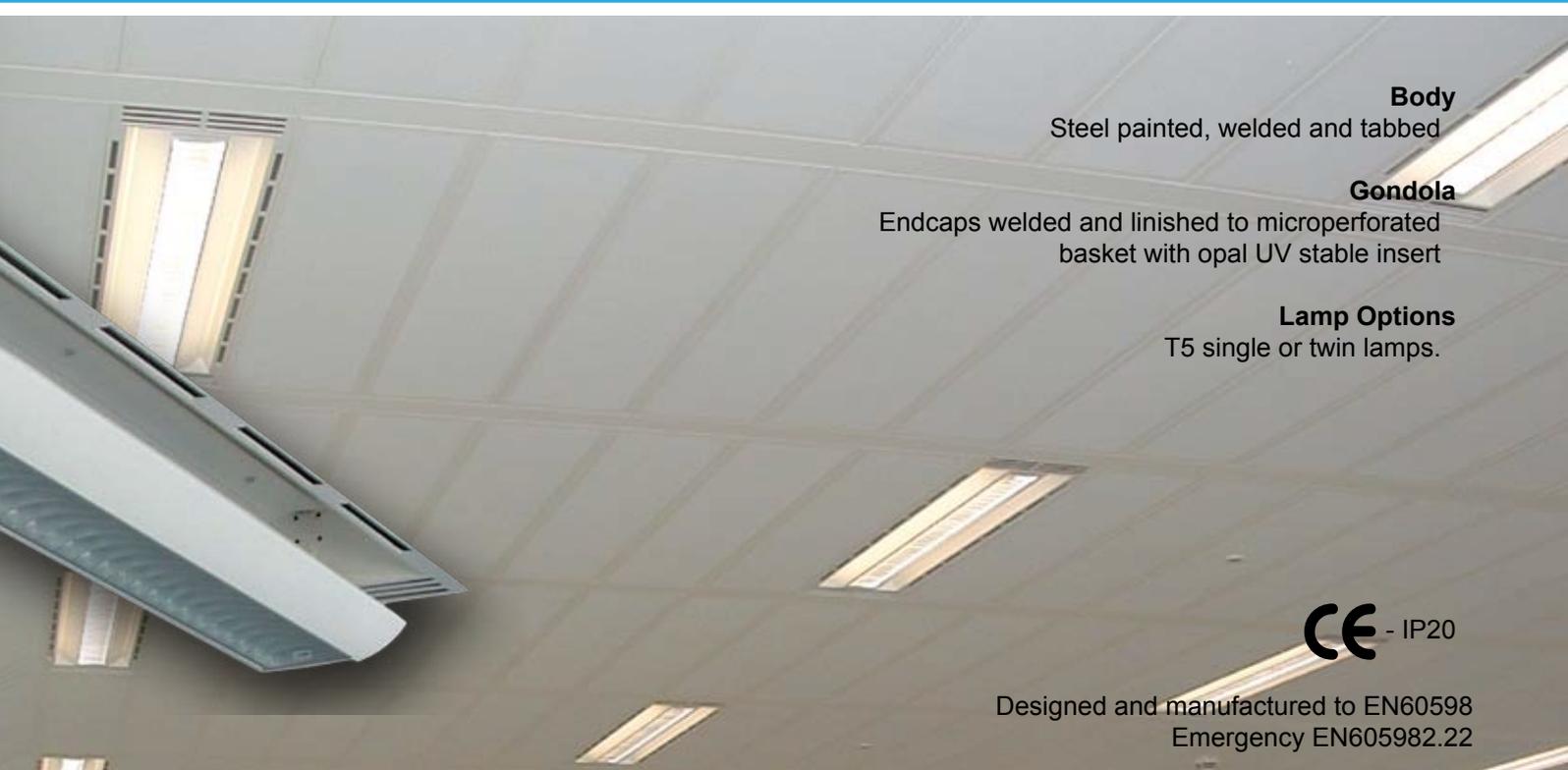
Air Handling

We can readily incorporate return air handling in our fittings. See opposite page or Bespoke for special applications.

Emergency Conversion of Luminaires

All of these can be converted to operate lamps on mains failure. For standard integral 3 hour inverter and batteries suffix /3M.

We can supply a 'self test' option, please contact us for further information.



Body

Steel painted, welded and tabbed

Gondola

Endcaps welded and finished to microperforated basket with opal UV stable insert

Lamp Options

T5 single or twin lamps.



Designed and manufactured to EN60598
Emergency EN60598.2.2

	Lamp	Control Gear	Colour Finish *1	Ceiling Systems	Semi-Matt Louvre	Micro Controller Lens	Louvre / Micro Controller Combination	Dimensions (mm) Length x Width x Depth	Air Handling 1 (20 litres) *2	Air Handling 2 (30 litres) *3
RET/ADJ/12128	1 x 28W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1199 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12228	2 x 28W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1199 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12154	1 x 54W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1199 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12254 *4	2 x 54WT5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1199 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12135	1 x 35W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1499 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12235	2 x 35W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1499 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12149	1 x 49W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1499 x 299 x 114	/AHR20	/AHE30
RET/ADJ/12249	2 x 49W T5	HF	RAL9010 20% matt	SAS330	/W2M	/MPK	/MPKL	1499 x 299 x 114	/AHR20	/AHE30

*1 - Any RAL colour is available subject to a minimum quantity

*2 - 20 Litres air handling via rear of body, air flow rates based on velocity of 1.8m/sec

*3 - 30 litres air handling via slots in luminaire bezel, air flow rates based on velocity of 1.8m/sec

*4 - RET/ADJ/12254 Brightness exceeds 1500 cd/m²

Non-Standard and Bespoke

We can design and manufacture to suit special requirements. These include integration of smoke heads or PIR's and high volume return air handling via external bezel trim.



Special RET83 designed to suit 750 x 750 Alugrid ceiling system.

The Coanda Effect

The Coanda effect is the tendency of a moving stream of fluid to follow the curvature of a contact surface, rather than maintaining its original straight path.

Lumitron is one of the few manufacturers to have airflow tests carried out as part of the fitting development.

The RET Adjust has been fully tested at BSRIA* to show how the geometry of the luminaire affects the airflow pattern across the ceiling.

The results from the flow visualisation exercise and airspeed measurements show that when the fitting is installed so that the fluorescent tubes are parallel to the slot diffuser, then there are no adverse airflow conditions and the Coanda Effect is not manifested.

A full copy of our BSRIA test report is available on request.



Coanda Effect as demonstrated with a spoon and water stream



* The leading independent UK laboratory for product testing, certification and CE marking providing test and research facilities to the construction and building service companies.

Reflectances

The reflectance of a surface can dramatically alter both the levels achieved in an area and more importantly the likelihood of LG7 compliance. The result of applying arbitrary figures can often be that the areas appear excessively bright or surprisingly dark.

In the table 1.0 below we have used a standard type recessed luminaire with an LOR of 61%. This is representative of many fittings in use today. This table has a dual purpose since it shows that if the 'typical or assumed' reflectances were applied as opposed to the real percentages, then not only are the levels achieved distorted but also if the client is seeking LG7 compliance, there is a temptation to 'pour' more light onto the walls by the use of wall washing downlights.

These, whilst beneficial if applied correctly, can if viewed against a 'brighter' than anticipated surface, appear almost overpowering.

Figure 1.0
This scheme illustrates the problem with reflectances and their effects on LG7 compliance. Based on information to hand (70%, 50%, 20% reflectances) the scheme theoretically needed additional wall wash downlights to supplement the wall and ceiling levels. In reality the reflectances were 82%, 81% and 23% for ceiling, wall and floor respectively.

Figure 2.0
This scheme was at proposal stage deemed to fail to meet LG7. The client accepted this and after discussion decided against supplementary wall wash downlights.

When designed initially with 70%, 50% and 20% reflectances the scheme showed levels of 435lux average, 43% walls / working plane, 20% ceiling / working plane.

After attending site with Dulux colour swatches, we determined the real reflectance values. Without going into detail, the scheme now fully complies with LG7 and the maintained level is well over 500 lux.



Figure 1.0



Figure 2.0



Position 1
(Fully recessed)

Area (m) L x W x H	Reflectances			Levels (Lx)	Compliance in P1
	Ceiling	Walls	Floor		
9 x 9 x 2.7*	70	50	20	468	No - Walls / Working Plane (0.518), Ceiling / Working Plane (0.209)
9 x 9 x 2.7	80	50	20	477	No - Walls / Working Plane (0.520), Ceiling / Working Plane (0.210)
9 x 9 x 2.7	87	70	30	565	Yes - Walls / Working Plane (0.593), Ceiling / Working Plane (0.330)
9 x 9 x 2.7	87	83	20	562	Yes - Walls / Working Plane (0.580), Ceiling / Working Plane (0.303)
9 x 9 x 2.7	70	83	10	501	No - Walls / Working Plane (0.534), Ceiling / Working Plane (0.231)

Table 1.0

* Highlighted in orange in table 1.0 and table 2.0 are the standard industry reflectances used

Ceiling

70% = Typical lighting industry ceiling reflectance
 80% = Notional reflectance assumed where it is known that the reflectance factor is greater than 70%
 87% = RAL 9010 20% gloss ceiling

Wall

50% = Typical lighting industry wall reflectance
 70% = Notional reflectance assumed where it is known that the reflectance factor is greater than 50%
 83% = Actual reflectance of Magnolia colour paint in matt (Dulux)

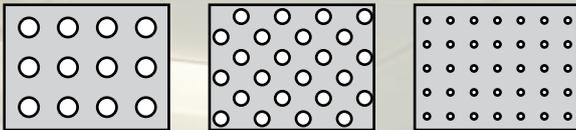
Floor

20% = Typical industry floor reflectance
 10% = Notional reflectance of a floor based on assumption that floor finishes are very dark
 30% = Actual reflectance of a light coloured carpet



Position 2
(Fully dropped W2M louvre)

Light Reflectance



Standard perforation: 2.5mm dia. holes, 16% open area
 Microperforation: 1.5mm dia. holes, 22% open area
 Extra Microperforation: 0.7mm dia. holes, 1% open area

Pattern	RAL9010
Plain (Unperforated)	87%
Extra Microperforation with acoustic fleece	85%
Microperforation with acoustic fleece	71%
Standard perforation with acoustic fleece	75%

Measured in accordance with ASTM 1477-98

Table 2.0 below demonstrates how LG7 compliance was achieved using the fully dropped gondola (position 3). The same reflectance's were used as in table 1.0, yet each example here using position 3 met LG7 compliance.

Having achieved LG7 with the use of only a single type luminaire this adjustable luminaire meets clients needs and saves them money.

Area (m) L x W x H	Reflectances			Levels (Lx)	Compliance in P3
	Ceiling	Walls	Floor		
9 x 9 x 2.7*	70	50	20	450	Yes - Walls / Working Plane (0.599), Ceiling / Working Plane (0.312)
9 x 9 x 2.7	80	50	20	474	Yes - Walls / Working Plane (0.594), Ceiling / Working Plane (0.313)
9 x 9 x 2.7	87	70	30	530	Yes - Walls / Working Plane (0.621), Ceiling / Working Plane (0.342)
9 x 9 x 2.7	87	83	20	570	Yes - Walls / Working Plane (0.642), Ceiling / Working Plane (0.377)
9 x 9 x 2.7	70	83	10	500	Yes - Walls / Working Plane (0.599), Ceiling / Working Plane (0.313)

Table 2.0

Typical ceiling reflectance is quoted as 70% but did you know that the following companies quote as follows:

Ecophon White Fibre Tile	83%	(NCS colour S 0500-N)
Armstrong plan Metal Lite	87%	ASTM 1477-98
Extra Perforation	85%	ASTM 1477-98
Microperforation	71%	ASTM 1477-98
Standard Perforation	75%	ASTM 1477-98

Above products are based on RAL20% gloss

Guidance on Lighting

The guidance of office lighting comes from a number of sources:

- Lighting guide 7: Office lighting
- BSEN12464-1: 2002 Light & Lighting – Indoor work place.
- The BCO office fit-out guide.

Under LG7 the recommended design for maintained illuminance over the task area should be between 300 to 500 lux. (6.1.1. Open plan offices)

However 6.1.2 Deep-plan offices can be considered to have a higher requirement in the core area. For example 300 lux by a window, translates to 500 lux in the core. 500 lux by a window raises the core area to 750 lux.

BS EN 12464-1 gives guidance levels to be a minimum of about 500 lux.

Since these are maintained levels (see maintenance factor information), when switched on levels can appear excessively high. A maintained average of 500 lux with a general industry standard MF of 0.67 means without control, the scheme at day one can nearer 800 lux.

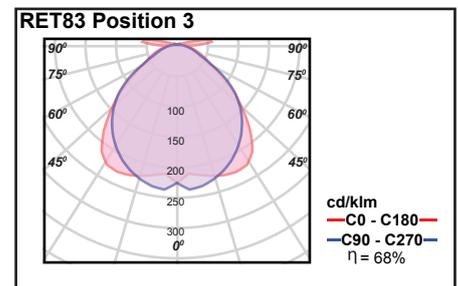
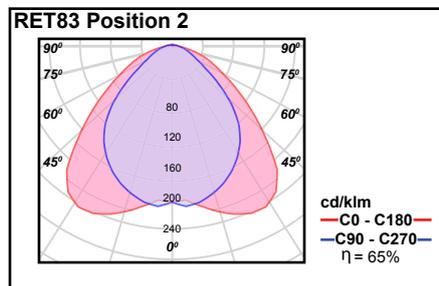
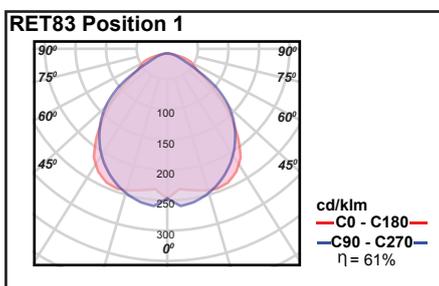
The BCO office fit-out guide has a non lighting perspective but makes rational and practical observation. Not surprisingly as a non lighting guide they are willing to defer to “suitably qualified designers”.

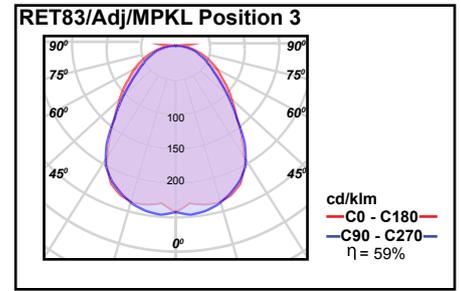
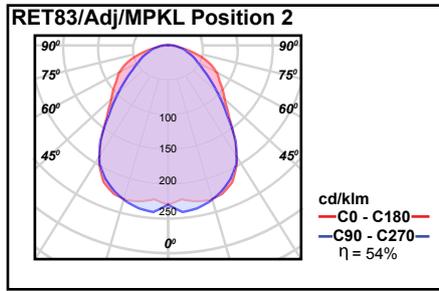
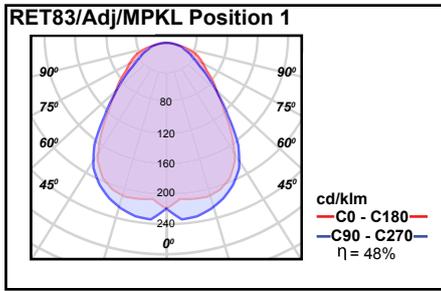
The basis of any scheme must surely be overall practicality, whether for building developers, owners or occupiers.

In addition to the above a good scheme should be:

- Energy efficient
- User friendly

With regards to energy efficiency, L2 and LG7 bring attention to energy use and where possible control should be used to minimise running cost and meet L2 (building regulations).





Maintained illuminance of an installation is defined as the average illuminance over the reference surface at the time maintenance has to be carried out by replacing or cleaning the equipment or the room surfaces.

Before the mid 90's, the maintenance factor (MF) only considered the collection of dust and dirt on lamps, luminaires and room surfaces.

Since then, formulae have been introduced to determine a more quantifiable figure for the maintenance factor.

The calculation is based on the following:

$$MF = LLMF \times LSF \times LMF \times RSMF$$

LLMF = Lamp Lumen Maintenance Factor
 LSF = Lamp Survival Factor

LMF = Luminaire Maintenance Factor
 RSMF = Room Surface Maintenance Factor

Each of the listed factors will have an effect on the resultant MF and should be considered carefully before selection. Lamp lumen depreciation and survival information are available from the lamp manufacturers but the SLL Code for Lighting publishes generic tables for various lamp types and also tables for luminaire and room surface maintenance factors.

Also, most modern lighting design software packages include a section which allows the maintenance factor to be calculated by inputting parameters for the installation.

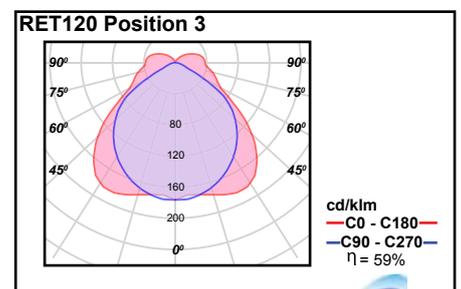
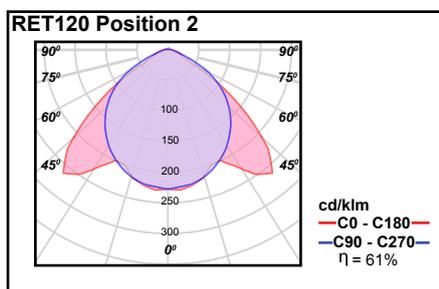
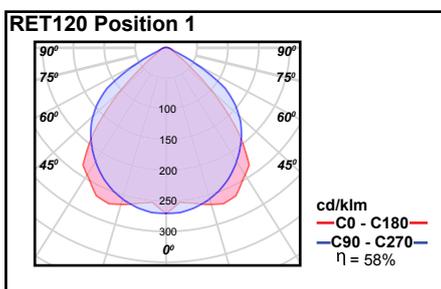
Warning!

- Maintenance factor of 0.8 means that 25% more luminaires are added to cover light loss due to dust, dirt and depreciation.
- Maintenance factor of 0.7 means that 43% more luminaires are added to cover light loss due to dust, dirt and depreciation.

- A five year old installation that has not been cleaned or re-lamped and interior has not been redecorated, will have lost more than 50% of the maintained average illuminance level.



**REMEMBER THE CARBON FOOTPRINT
 WASTED ENERGY COSTS NOT ONLY MONEY
 EVERY £1 = 5 - 6Kg of CARBON**



Lighting Controls and Ancillary Equipment

We recognise both the commercial and environmental benefits of lighting controls.

Minimising the use of energy must be aligned with not only good lighting control but also good lighting. For occupiers of buildings the well-being of their staff must be a priority. Developers and owners of buildings no doubt wish to be seen as environmentally conscious and a well lit controlled building must surely be a sensible asset.

For installations and facilities managers the above is true but they have the added responsibility to maintain systems and this is where customer service becomes a priority.

We have formed a strategic partnership with a well established and respected lighting controls company.

OEM relationships with:

- Tridonic for DSI Smart
- Philips for ActiLume

For integral sensors in any of our fittings (subject to viability) we can supply the EX-OR integrated MLS digital detector.

Using the above we can offer a suitable product or system for either application.

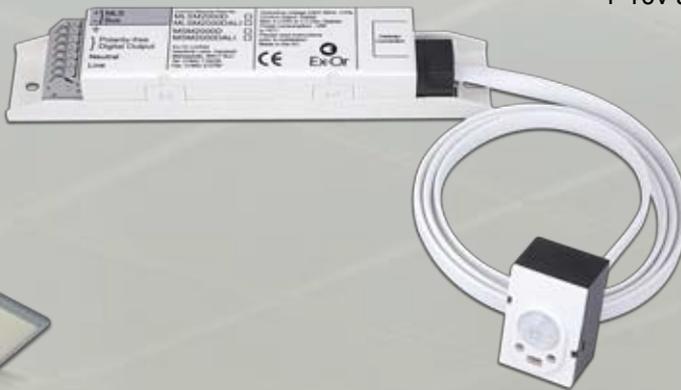


Truly Simple but Effective Lighting Controls

Lighting controls can be used to automatically adjust the lighting levels within a building without the need for human input. They can adjust the brightness of the lamps to save energy when the exterior light is bright and can be used to turn off luminaires when the room is not in use.

The EX-OR MLS Sensor

The EX-OR MLS sensor head is ideal for integration with the RET/Adjust or any of our products. Given EX-OR's experience it should be a natural choice for integrated sensor-head applications.



The MLS operates with:
 - 1-10v analogue dimming
 - DSI dimming
 - DALI



The DSI Smart System

The DSI Smart system from Tridonic is a viable alternative to EX-OR and particularly where we are supplying our 12-way marshalling box. The DSI sensor comes complete with a housing and plug to ensure ease of connection. The sensor with housing is ideally suited to locate in the centre of 4 fittings.



Technical Data

Light Level	1 - 100%
Time Delay	30 Seconds - 60 Minutes
PIR	Active / Inactive / Off
Bright Out	Yes / No
When Vacant	Off / Low, 1m-cont.
Power Up	On / Off
10% Start	On / Off
Hold Over	Yes / No

* Any of the above systems are available with our luminaires, however it is recommended that we discuss fully your requirements to ensure the best option is offered.

ActiLume System

ActiLume is a versatile lighting control system particularly suitable for integration within the RET/Adjust or any of our products.

ActiLume is a true “plug and play” solution for either open plan (up to 9 luminaires) or cellular offices (up to 4 luminaires). It can be installed in a master and slave luminaire system, and is easy to install and use.

“Philips world leading technology combined with Lumitrons’ service and reliability”



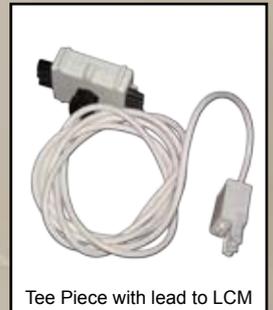
Basic Control System

The LUM12WMB is a basic, practical solution providing control of up to 10 luminaires and PIR controllers. This 2 channel system also allows dimming luminaires to be controlled in groups of 4 with a DSi Smart controller or similar.

We can supply (1) Leads and plugs, (2) Flexible wiring assemblies, (3) Special assemblies such as FP200 and FireTuff, (4) Advice on suitable products for specific applications.

Technical Data

- 12 Output boxes with a maximum load of 16 Amps
- Leads are available in 3 pole, 3 core for mains, and 6 pole, 4 core for emergency luminaires which minimises excess cable
 - Leads are also available in 6 pole, 5 or 6 core
- Suitable for mains, emergency, and all dimming protocols, providing complete versatility
- 2 channel connection centre with the potential for 2 PIR or 2 switch inputs giving further flexibility for the installer and user
- Pluggable PIR's with dimming capability provide the opportunity for future upgrades
- Dual fix operation provides simple and speedy installation
- Simple through wiring makes the installation process much quicker and easier
- A compact LCM measuring only 300 x 160 x 50mm



Tee Piece with lead to LCM



3 and 4 pole Connectors



6 and 3 pole Extender Leads



Luminaire mounted TEE piece

Product Code	Number of Poles	Core Size	Cable Length	Low Smoke and Fume	Low Smoke and Zero Halogen
3001	3	3 Core 1mm	1m	/LSF	/LSOH
3002	3	3 Core 1mm	2m	/LSF	/LSOH
3003	3	3 Core 1mm	3m	/LSF	/LSOH
3004	3	3 Core 1mm	4m	/LSF	/LSOH
3005	3	3 Core 1mm	5m	/LSF	/LSOH
4001	6	4 Core 1mm	1m	/LSF	/LSOH
4002	6	4 Core 1mm	2m	/LSF	/LSOH
4003	6	4 Core 1mm	3m	/LSF	/LSOH
4004	6	4 Core 1mm	4m	/LSF	/LSOH
4005	6	4 Core 1mm	5m	/LSF	/LSOH
5001	6	5 Core 1mm	1m	/LSF	/LSOH
5002	6	5 Core 1mm	2m	/LSF	/LSOH
5003	6	5 Core 1mm	3m	/LSF	/LSOH
5004	6	5 Core 1mm	4m	/LSF	/LSOH
5005	6	5 Core 1mm	5m	/LSF	/LSOH
6001	6	6 Core 1mm	1m	/LSF	/LSOH
6002	6	6 Core 1mm	2m	/LSF	/LSOH
6003	6	6 Core 1mm	3m	/LSF	/LSOH
6004	6	6 Core 1mm	4m	/LSF	/LSOH
6005	6	6 Core 1mm	5m	/LSF	/LSOH

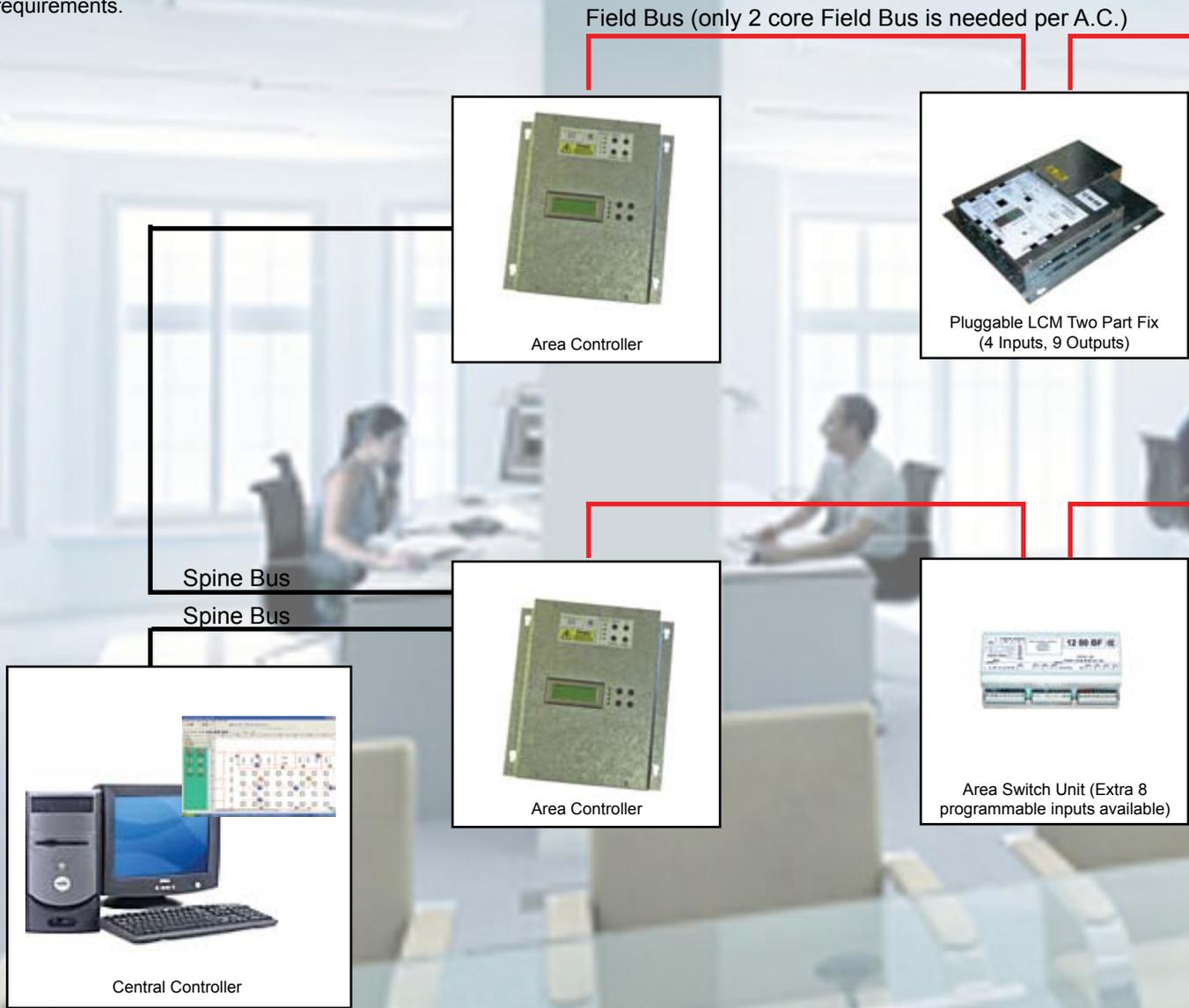
Product Codes

To specify an LCM, the code is LUM12WMB.
To specify leads, please use the table shown above.

The Addressable Spectrum System

The Addressable Spectrum System is a state of the art, fully configurable lighting control system. It is available in several versions to accommodate individual customer requirements and to suit a range of applications. For more information on this system or for technical assistance please contact us.

Each floor can be individually commissioned by Apex Lighting Controls to suit specific layouts and requirements.



Features of the Spectrum Systems

General

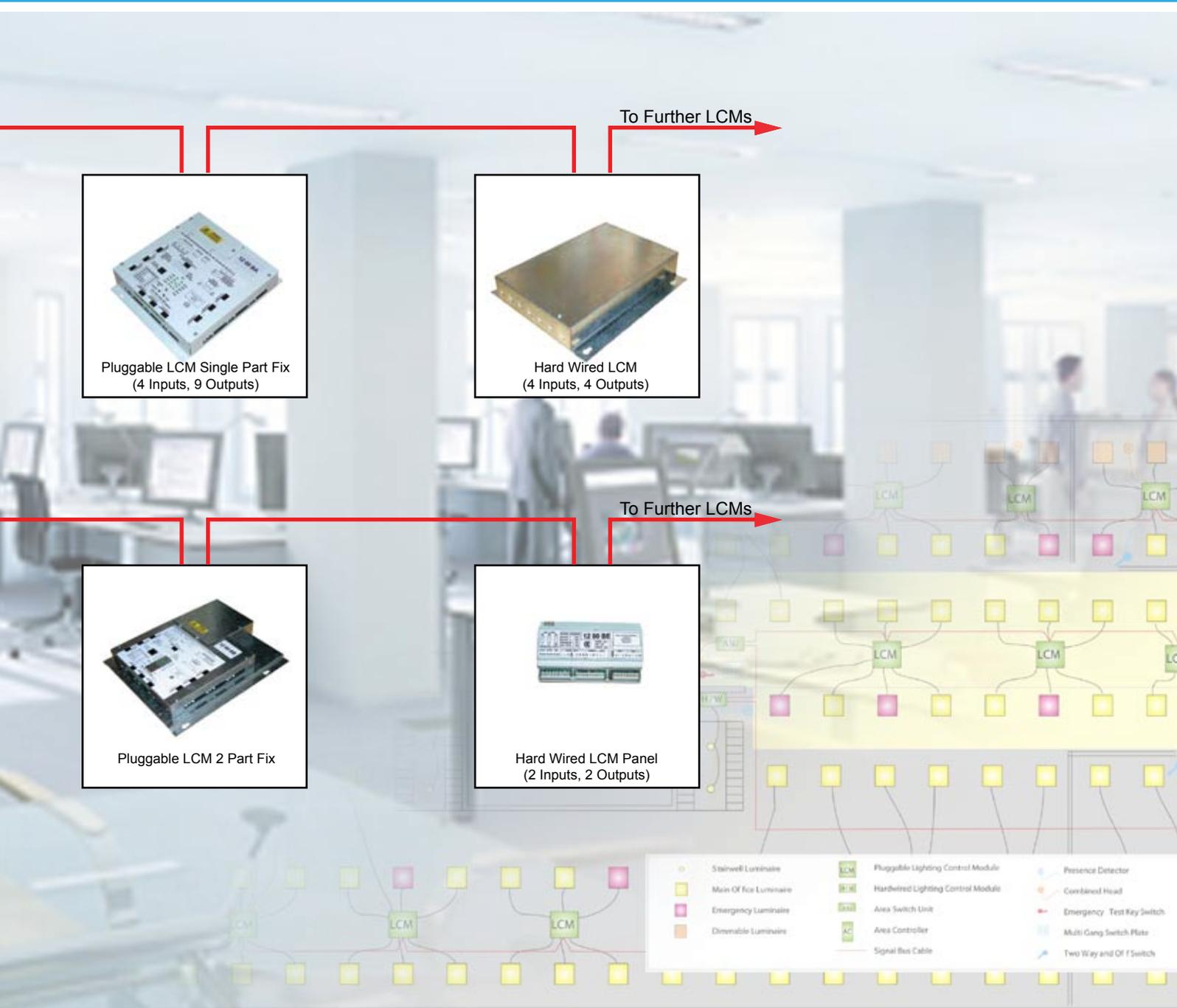
- Only one Field Bus need be run per Area Controller
- Hours Run information collected per output
- Any pluggable LCM may be installed in any location and therefore it is not necessary to search for a specific unit required for a given location

Emergency Test

- Emergency test switches connect to any input
- Emergency test run from keyswitch / time program / front end

Combined Sensor

- Ultra Compact (42mm mounting hole, 30mm depth, 50mm flange)



A range of override devices may be connected to any input on any LCM



Combined Light and Presence Sensor



Emergency Light Sensor



Computer Override

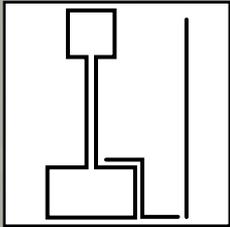


Wall Switch, Conventional 2 Way and Off

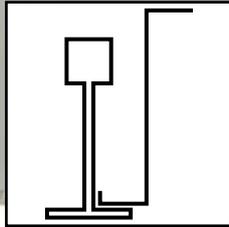


Emergency Current Sensor

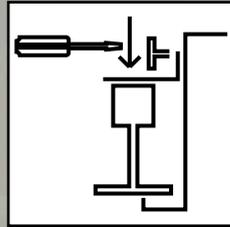
Installation Options



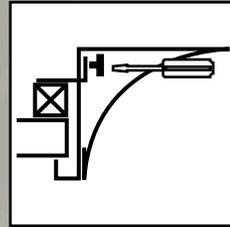
ALT
Alugrid Lift & Tilt. Please indicate Alugrid system to determine height of upstand



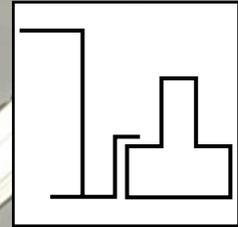
Standard system
If required as pull up from below ceiling with external brackets



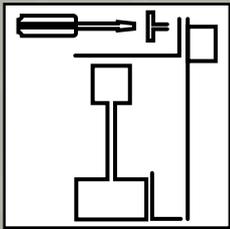
E/BKS



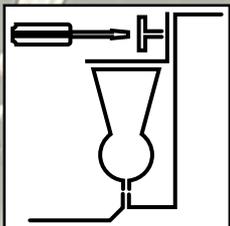
CF
This option has a removable internal reflector system for access into the luminaire body



SAS 330



AEB
Alugrid External Brackets from adjacent ceiling tile. Please indicate Alugrid system



MPB
Metal Pan External Brackets from adjacent tile. The bezel on this product is not bevelled edge.

We work closely with specifiers and installers to ensure compatibility on luminaires and ceilings. Please speak to us as communications on projects can minimise installation time and disruptions.

Emergency Lighting

To specify integral 3 hour emergency kit please suffix product reference with /3M.
We can supply all luminaires with self test emergency systems, please contact us to discuss your requirements.

The two standards that lighting designers will be concerned with are:

- **BS5266-1-2005** Code of Practice for the emergency lighting of premises
- **BSEN50172-2004** Emergency escape lighting systems

BSEN 50172-2004 specifies the requirements whereas BS5266-1 is a code of practice.

Escape Route Lighting

It is essential to provide additional luminaires to ensure minimum illuminance levels. In addition, every compartment on the escape route must have at least two luminaires to provide light in the event of luminaire failure.

Escape routes call for a minimum of 1 lux anywhere on the centre line of the escape route for normal risks, based on a uniformity ratio of 40:1(max to min) which must not be exceeded.

Open (Anti-panic) core areas - areas larger than 60m²

Open areas with an escape route or hazards identified by the building risk assessment all require emergency lighting. BS5266 requires 0.5 lux minimum of the empty core area which excludes a 0.5m of the perimeter of the area.

High Risk Task Area Lighting

Areas of high physical risk or control rooms of dangerous plant and production lines require emergency lighting to enable them to be shut down safely. BS5266 Part 1 states that emergency lighting should provide 10% of the normal lighting level with a minimum of 15 lux.

Lumitron Terms and Conditions of Sale

1 Interpretation. 1.1 In these Conditions: 'BUYER' means the person who accepts a quotation of the Seller for the sale of the goods or whose order for the goods is accepted by the Seller. 'GOODS' means the goods (including any instalment of the goods or any parts for them) which the Seller is to supply in accordance with these Conditions. 'SELLER' MEANS Performance Lighting Limited registered in England under number 3273329. 'CONDITIONS' means the standard terms and conditions set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and Seller. 'CONTRACT' means the contract for the purchase and sale of the Goods. 'WRITING' includes telex, cable, facsimile transmission, e-mail and comparable means of communication. 1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision as amended, re-enacted or extended at the relevant time. 1.3 The headings in these Conditions are for convenience only and shall not affect their interpretation.

2 Basis of the sale. 2.1 The Seller shall sell and the Buyer shall purchase the Goods in accordance with any written quotation of the Seller which is accepted by the Buyer, or any written order of the Buyer which is accepted by the Seller, subject in either case to the Conditions, which shall govern the Contract to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted, or any such order is made or purported to be made, by the Buyer. 2.2 No variation to these Conditions shall be binding unless agreed in writing between the authorised representatives of the Buyer and the Seller. 2.3 The Seller's employees or agents are not authorised to make any representations concerning the Goods unless confirmed by the Seller in writing. In entering into the Contract the Buyer acknowledges that it does not rely on any such representations which are not so confirmed. 2.4 Any advice or recommendation given by the Seller or its employees or agents to the Buyer or its employees or agents, as to the storage, application or use of the Goods which is not confirmed in writing by the Seller is followed or acted upon entirely at the Buyer's own risk, and accordingly the Seller shall not be liable for any such advice or recommendation which is not confirmed. 2.5 Any typographical, clerical or other error or omission in any sales literature, quotation, price list, acceptance of offer, invoice or other document or information issued by the Seller shall be subject to correction without any liability on the part of the Seller.

3 Orders and specifications. 3.1 No order submitted by the Buyer shall be deemed to be accepted by the Seller unless and until confirmed in writing by the Seller's authorised representative. 3.2 The Buyer shall be responsible to the Seller for ensuring the accuracy of the terms of any order (including any applicable specification) submitted by the Buyer and for giving the Seller any necessary information relating to the Goods within a sufficient time to enable the Seller to perform the Contract in accordance with its terms. 3.3 The quantity, quality and description of and any specification for the Goods shall be those set out in the Seller's quotation. 3.4 If the Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with a specification submitted by the Buyer, the Buyer shall indemnify the Seller against all loss, damages, costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claim for infringement of any patent, copyright, design, trade mark or other industrial or intellectual property rights of any other person which results from the Seller's use of the Buyer's specification. 3.5 The Seller reserves the right to make any changes in the specification of the Goods which are required to conform with any applicable statutory or EC requirements or, where the Goods are to be supplied to the Seller's specification, which do not materially affect their quality or performance. 3.6 No order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in writing of the Seller and on terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit), costs (including the cost of all labour and materials used), damages, charges and expenses incurred by the Seller as a result of cancellation.

4 Price of the goods. 4.1 The price of the Goods shall be the Seller's quoted price or, where no price has been quoted (or a quoted price is no longer valid), the price listed in the Seller's published price list current at the date of acceptance of the order. Where the Goods are supplied for export from the United Kingdom, the Seller's published export price list shall apply. All prices quoted are valid for 30 days only or until earlier acceptance by the Buyer, after which time they may be altered by the Seller without giving notice to the Buyer. 4.2 The Seller reserves the right, by giving notice to the Buyer at any time before delivery to increase the price of the Goods to reflect any increase in the cost to the Seller which is due to any factor beyond the control of the Seller such as, without limitation, any foreign exchange fluctuation, currency regulation, alteration of duties, significant increase in the costs of labour, materials or other costs of manufacture, any change in delivery dates, quantities or specifications for the Goods which is requested by the Buyer, or any delay caused by any instructions of the Buyer or failure of the Buyer to give the Seller adequate information or instructions. 4.3 Except as otherwise stated under the written terms of any quotation or in any price list of the Seller, and unless otherwise agreed in writing between the Buyer and the Seller, all prices are given by the Seller on an ex works basis, and where the Seller agrees to deliver the Goods otherwise than at the Seller's premises, the Buyer shall be liable to pay the Seller's charges for transport, packaging and insurance and any other trading costs. 4.4 The price is exclusive of any applicable value added tax, which the Buyer shall be additionally liable to pay to the Seller. 4.5 The cost of pallets and returnable containers will be charged to the Buyer in addition to the price of the Goods, but full credit will be given to the Buyer provided they are returned undamaged to the Seller before the due payment date.

5 Terms of payment. 5.1 Subject to any special terms agreed in writing between the Buyer and the Seller, the Seller shall be entitled to invoice the Buyer for the price of the Goods on or at any time after delivery of the Goods, unless the Goods are to be collected by the Buyer or the Buyer wrongfully fails to take delivery of the Goods, in which event the Seller shall be entitled to invoice the Buyer for the price at any time after the Seller has notified the Buyer that the Goods are ready for collection or (as the case may be) the Seller has tendered delivery of the Goods. 5.2 Provided no previous invoice is overdue, the Buyer shall be entitled to a prompt payment discount of 1.75% of the price of the goods (excluding any charge for transport, packaging or insurance) for payment within 28 days of the date of the Seller's invoice. 5.3 The Buyer shall pay the price of the Goods (less any discount to which the Buyer is entitled, but without any other deduction) within 30 days of the date of the Seller's invoice, and the Seller shall be entitled to recover the price, notwithstanding that delivery may not have taken place and the property in the Goods has not passed to the Buyer. The time of payment of the price shall be of the essence of the Contract. Receipts for payment will be issued only upon request. 5.4 If the Buyer fails to make any payment on the due date then, without prejudice to any other right or remedy available to the Seller, the Seller shall be entitled to: 5.4.1 cancel the contract, or suspend any further deliveries to the Buyer; 5.4.2 appropriate any payment made by the Buyer to such of the Goods (or the goods supplied under any other contract between the Buyer and the Seller) as the Seller may think fit notwithstanding any purported appropriation by the Buyer; and 5.4.3 unless at a rate permitted by statute (if higher) charge the Buyer interest (both before and after any judgement) on the amount unpaid, at the rate of 5 per cent per annum above Lloyds TSB Bank base rate from time to time, until payment in full is made (a part of a month being treated as a full month for the purpose of calculating interest).

6 Delivery. 6.1 Delivery of the Goods shall be made by the Buyer collecting the Goods at the Seller's premises at any time after the Seller has notified the Buyer that the Goods are ready for collection, or if some other place for delivery is agreed by the Seller, by the Seller delivering the Goods to that place. 6.2 Any dates quoted for delivery of the Goods are approximate only and the Seller shall not be liable for any delay in delivery of the Goods however caused. Time for delivery shall not be of the essence of the Contract unless previously agreed by the Seller in writing. The Goods may be delivered by the Seller in advance of the quoted delivery date upon giving reasonable notice to the Buyer. 6.3 Where the Goods are to be delivered in instalments, each delivery shall constitute a separate contract and failure by the Seller to deliver any one or more of the instalments in accordance with these Conditions or any claim by the Buyer in respect of any one or more instalments shall not entitle the Buyer to treat the Contract as a whole as repudiated. 6.4 If the Seller fails to deliver the Goods (or any instalment) for any reason other than any cause beyond the Seller's reasonable control or the Buyer's fault, and the Seller is accordingly liable to the Buyer, the Seller's liability shall be limited to the excess (if any) of the cost to the Buyer (in the cheapest available market) of similar goods to replace those not delivered over the price of the Goods. 6.5 If the Buyer fails to take delivery of the Goods or fails to give the Seller adequate delivery instructions at the time stated for delivery (otherwise than by reason of any cause beyond the Buyer's reasonable control or by reason of the Seller's fault) then, without prejudice to any other right or remedy available to the Seller, the Seller may: 6.5.1 store the goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) of storage; or 6.5.2 sell the Goods at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) account to the Buyer for the excess over the price under the Contract or charge the Buyer for any shortfall below the price under the Contract.

7 Risk and property. 7.1 Risk of damage to or loss of the Goods shall pass to the Buyer: 7.1.1 in the case of Goods to be delivered at the Seller's premises, at the time when the Seller notifies the Buyer that the Goods are available for collection; or 7.1.2 in the case of Goods to be delivered otherwise than at the Seller's premises, at the time of delivery or, if the Buyer wrongfully fails to take delivery of the Goods, the time when the Seller has tendered delivery of the Goods. 7.2 Notwithstanding delivery and the passing of risk in the Goods, or any other provision of these Conditions, the property in the Goods shall not pass to the Buyer until the Seller has received in cash or cleared funds payment in full of the price of the Goods and all other goods agreed to be sold by the Seller to the Buyer for which payment is then due. 7.3 Until such time as the property in the Goods passes to the Buyer, the Buyer shall hold the Goods as the Seller's fiduciary agent and bailee, and shall keep the Goods so far as it may be within its power or control, separate from those of the Buyer and third parties and properly stored, protected and insured and identified as the Seller's property. 7.4 Until such time as the property in the Goods passes to the Buyer (and provided the Goods are still in existence and capable of removal without damage to property) the Seller shall be entitled at any time to require the Buyer to deliver up the Goods to the Seller and, if the Buyer fails to do so forthwith, to enter upon any premises of the Buyer or any third party where the Goods are stored and repossess the Goods. 7.5 The Buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Seller until payment, but if the Buyer does so all monies owing to the Seller shall (without prejudice to any of the right or remedy of the Seller) become immediately due and payable. Until payment the Buyer shall not be entitled to sell or attempt to sell any goods.

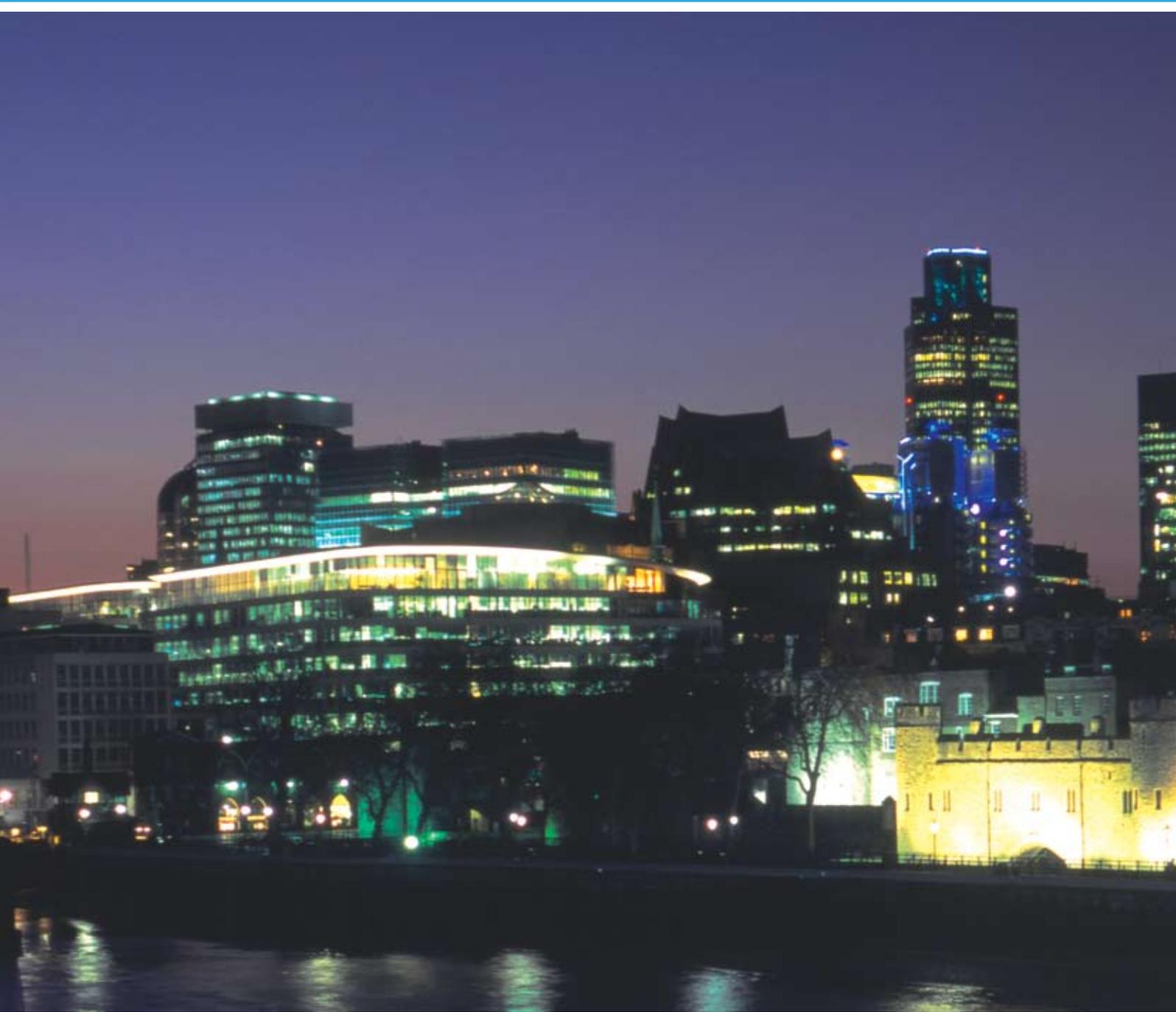
8 Warranties and liability. 8.1 Subject to the conditions set out below the Seller warrants that the Goods will correspond with their specification at the time of delivery and will be free from defects in material and workmanship for a period of 12 months from the date of their initial use or 12 months from delivery, whichever is the first to expire. 8.2 The above warranty is given by the Seller subject to the following conditions: 8.2.1 the Seller shall be under no liability in respect of any defect in the Goods arising from any drawing, design or specification supplied by the Buyer. 8.2.2 the Seller shall be under no liability in respect of any defect arising from fair wear and tear, wilful damage, negligence, abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), misuse or alteration or repair of the Goods without the Seller's approval; 8.2.3 the Seller shall be under no liability under the above warranty (or any other warranty, condition or guarantee) if the total price for the Goods has not been paid by the due date for payment; 8.2.4 the above warranty does not extend to parts, materials or equipment not manufactured by the Seller, in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to the Seller. 8.3 Subject as expressly provided in these Conditions, and except where the Goods are sold to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977), all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law. 8.4 Where the Goods are sold under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 19076) the statutory rights of the Buyer are not affected by these Conditions. 8.5 Any claim by the Buyer which is based on any defect in the quality or condition of the Goods or their failure to correspond with specification shall (whether or not delivery is refused by the Buyer) be notified to the Seller within 7 days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect or failure. If delivery is not refused and the Buyer does not notify the Seller accordingly, the Buyer shall not be entitled to reject the Goods and the Seller shall have no liability for such defect or failure, and the Buyer shall be bound to pay the price as if the Goods had been delivered in accordance with the Contract. 8.6 Where any valid claim in respect of any of the Goods which is based on any defect in the quality or condition of the Goods or their failure to meet specification is notified to the Seller in accordance with these Conditions, the Seller shall be entitled to replace the Goods (or the part in question) free of charge or, at the Seller's sole discretion, refund to the Buyer the price of the Goods (or a proportionate part of the price), but the Seller shall have no further liability to the Buyer. 8.7 Except in respect of death or personal injury caused by the Seller's negligence, the Seller shall not be liable to the Buyer by reason of any representation (unless fraudulent) or any implied warranty, condition or other term, or any duty at common law, or under the express terms of the Contract, for any indirect, special or consequential loss or damage (whether caused by the negligence of the Seller, its employees or agents or otherwise) which arise out of or in connection with the supply of the Goods or their use or resale by the Buyer, and the entire liability of the Seller under or in connection with the Contract shall not exceed the price of the Goods, except as expressly provided in these Conditions. 8.8 The Seller shall not be liable to the Buyer or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Seller's obligations in relation to the Goods, if the delay or failure was due to any cause beyond the Seller's reasonable control. Without prejudice to the generality of the foregoing, the following shall be regarded as causes beyond the Seller's reasonable control: 8.8.1 Act of God, explosion, flood, tempest, fire or accident; 8.8.2 War or threat of war, sabotage, insurrection, civil disturbance or requisition; 8.8.3 Acts, restrictions, regulations, bye-laws, prohibitions or measures of any kind on the part of any governmental, parliamentary or local authority; 8.8.4 Import or export regulations or embargoes; 8.8.5 Strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Seller or of a third party); 8.8.6 Difficulties in obtaining raw materials, labour, fuel, parts or machinery; 8.8.7 Power failure or breakdown in machinery.

9 Indemnity 9.1 If any claim is made against the Buyer that the Goods infringe or that their use or resale infringes the patent, copyright, design, trade mark or other industrial or intellectual property rights of any other person, then unless the claim arises from the use of any drawing, design or specification supplied by the Buyer, the Seller shall indemnify the Buyer against all loss, damages, costs and expenses awarded against or incurred by the Buyer in connection with the claim, or paid or agreed to be paid by the Buyer in settlement of the claim, provided that: 9.1.1 the Seller is given full control of any proceedings or negotiations in connection with any such claim. 9.1.2 the Buyer shall give the Seller all reasonable assistance for the purposes of any such proceedings or negotiations; 9.1.3 except pursuant to a final award, the Buyer shall not pay or accept any such claim, or compromise any such proceedings without the consent of the Seller (which shall not be unreasonably withheld). 9.1.4 the Buyer shall do nothing which would or might vitiate any policy of insurance or insurance cover which the Buyer may have in relation to such infringement, and this indemnity shall not apply to the extent that the Buyer recovers any sums under any such policy or cover (which the Buyer shall use its best endeavours to do); 9.1.5 the Seller shall be entitled to the benefit of, and the Buyer shall accordingly account to the Seller for, all damages and costs (if any) awarded in favour of the Buyer which are payable by, or agreed with the consent of the Buyer (which consent shall not be unreasonably withheld) to be paid by, any other party in respect of any such claim; and 9.1.6 without prejudice to any duty of the Buyer at common law the Seller shall be entitled to require the Buyer to take such steps as the Seller may reasonably require to mitigate or reduce any such loss, damages, costs or expenses for which the Seller is liable to indemnify the Buyer under this clause.

10 Insolvency of buyer 10.1 This clause applies if: 10.1.1 the Buyer makes any voluntary arrangement with its creditors or (being an individual or firm) becomes bankrupt or (being a company) becomes subject to an administration order or goes into liquidation (otherwise than for the purposes of amalgamation or reconstruction); or 10.1.2 an encumbrancer takes possession, or a receiver is appointed, of any of the property or assets of the Buyer; or 10.1.3 the Buyer ceases, or threatens to cease, to carry on business; or 10.1.4 the Seller reasonably apprehends that any of the events mentioned above is about to occur in relation to the Buyer and notifies the Buyer accordingly. 10.2 If this clause applies then, without prejudice to any other right or remedy available to the Seller, the Seller shall be entitled to cancel the Contract or suspend any further deliveries under the Contract without any liability to the Buyer, and if the Goods have been delivered but not paid for The price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary.

11 Export terms. 11.1 In these Conditions 'Incoterms' means the international rules for the interpretation of trade terms of the International Chamber of Commerce as in force at the date when the Contract is made. Unless the context otherwise requires, any term or expression which is defined in or given a particular meaning by the provisions of Incoterms shall have the same meaning in these Conditions, but if there is any conflict between the provisions of Incoterms and these Conditions, the latter shall prevail. 11.2 Where the Goods are supplied for export from the United Kingdom, the provisions of this clause 11 shall (subject to any special terms agreed in writing between the Buyer and the Seller) apply notwithstanding any other provision of these Conditions. 11.3 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods into the country of destination and for the payment of any duties on them. 11.4 Unless otherwise agreed in writing between the Buyer and the Seller, the Goods shall be delivered F.O.B. the air or sea port of shipment and the Seller shall be under no obligation to give notice under section 32(3) of the Sale of Goods Act 1979. 11.5 The Buyer shall be responsible for arranging for testing and inspection of the Goods at the Seller's premises before shipment. The Seller shall have no liability for any claim in respect of any defect in the Goods which would be apparent on inspection and which is made after shipment, or in respect of any damage during transit. 11.6 Payment of all amounts due to the Seller shall be made by irrevocable Letter of Credit opened by the Buyer in favour of the Seller and confirmed by a bank in England acceptable to the Seller or, if the Seller has agreed in writing on or before acceptance of the Buyer's order to waive this requirement, by acceptance by the Buyer and delivery to the Seller of a bill of exchange drawn on the Buyer payable 60 days after sight to the order of the Seller at such branch of Lloyds TSB Bank in England as may be specified in the Bill of Exchange. 11.7 The Buyer undertakes not to offer the goods for resale in England Wales Scotland and Northern Ireland or any other country notified by the Seller to the Buyer at or before the time the Buyer's order is placed, or to sell the goods to any person if the Buyer knows or has reason to believe that that person intends to resell the goods in any such country.

12 General. 12.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in writing addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice. 12.2 No waiver by the Seller of any breach of the Contract by the Buyer shall be considered as a waiver of any subsequent breach of the same of any other provision. 12.3 If any provision of these Conditions is held by any competent authority to be invalid or unenforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be affected. 12.4 The Contract shall be governed by the laws of England, and the Buyer agrees to submit to the non-exclusive jurisdiction of the English courts.



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