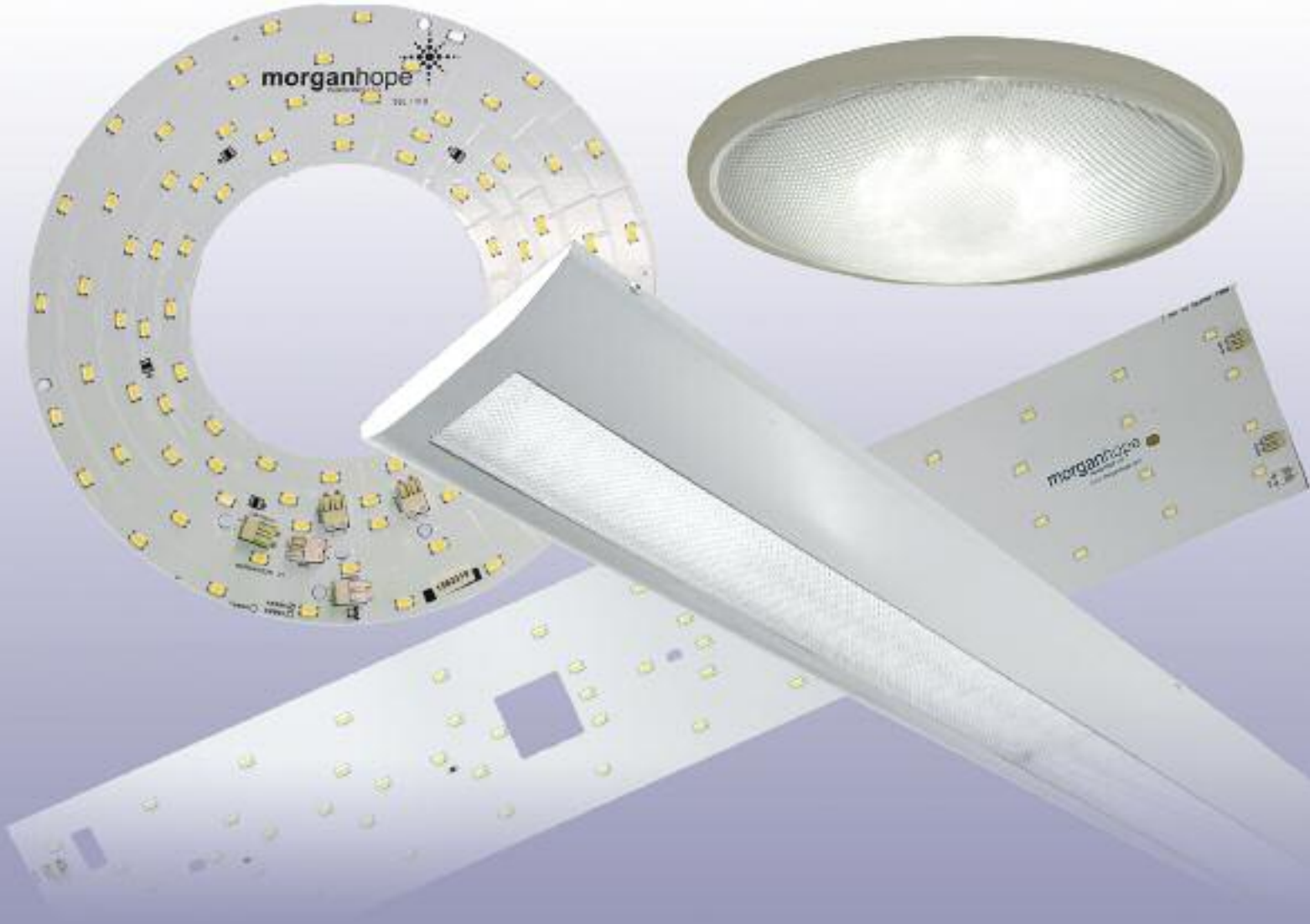


morganhope
INDUSTRIES LTD

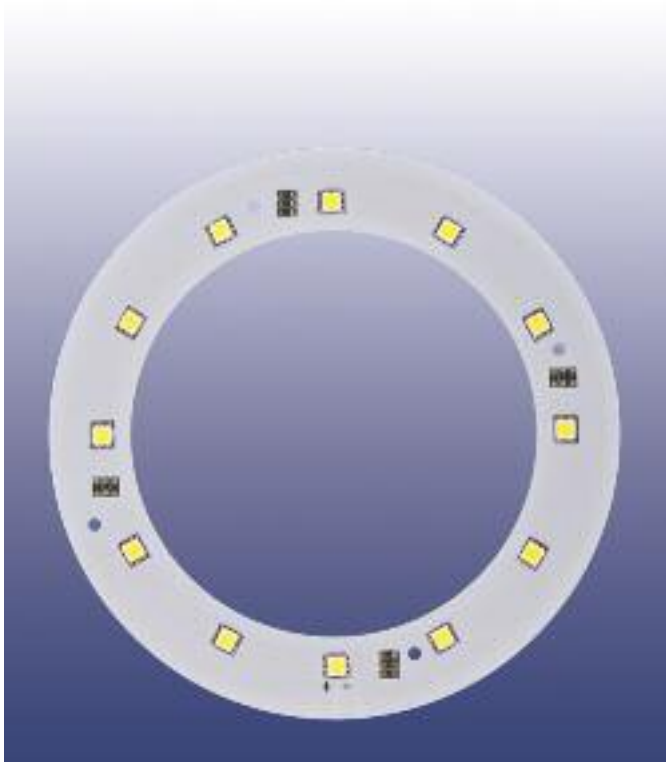
LedLite LED Lighting Range

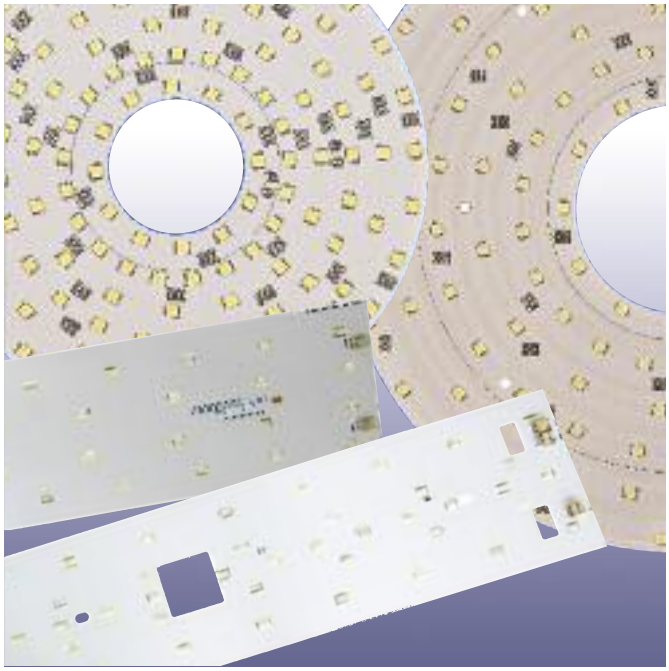
LedLite LED PCB

Over the last decade LED lighting has grown both in terms of market acceptance and new developments, which will over the coming years lead to it being the major lighting source in all areas of use, from heavy industrial applications through to commercial and ultimately domestic use. This of course does not mean that fluorescent has yet reached exclusion and whilst LED is on an upward trend, there are still many opportunities to use fluorescent as an effective and energy efficient lighting provider for both fixed and controlled systems.

The basis of this introduction however is to look at the progress of LED and opportunities of use within the Morgan Hope range of Luminaires. Whilst marketing LED products for the last 8 years, just 4 years ago (2011), Morgan Hope introduced their own bespoke LedLite PCB LED System, designed not only to fit universally into the Luminaire Range, but also to retrofit into other luminaries, enabling cost reductions for LED upgrades.

The development of LEDs has resulted in ongoing progression of design and efficiency that will continue to develop over the coming years. This does not mean that what has gone before does not offer an efficient product; however LED Chips are evolving that now offer extended life patterns and provide improved outputs for lower consumption.





“LedLite CC”

Morgan Hope have followed the LED technology and have superseded the original Circular LedLite PCB Range driven by 12V DC Constant Voltage to a new design based primarily on Constant Current, using proprietary branded LED-SMD Chips from such organisations as Samsung along with Constant Current Drivers from Osram.

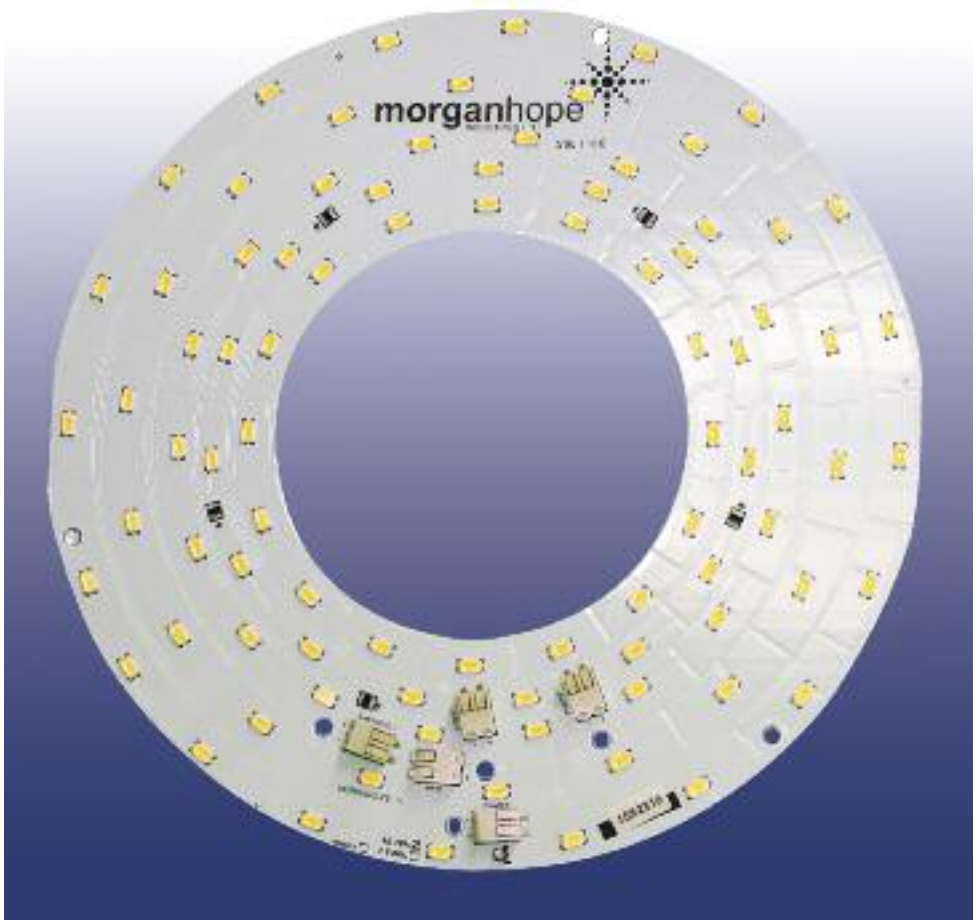
The latest Circular LedLite PCB, re-branded as “LedLite CC” to account for the Constant Current Driver System, has been designed to offer multiple uses dependant upon specific application requirements.

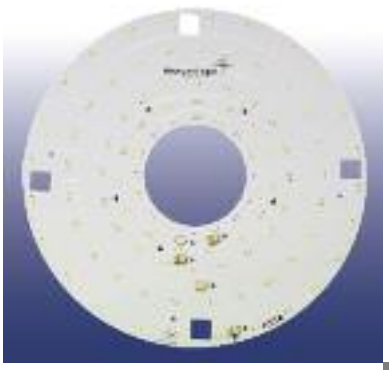
Based on the original design concept, the “LedLite CC-3/1-MicroMac” provides a twin circuit model that offers full output during occupancy but with the MicroMac microwave detector switching the higher output, so that when there is no occupancy only the inner circuit of 3 watts is illuminated for comfort background Health & Safety lighting, with nominal energy consumption.

Due to the versatility of the design, the “LedLite CC” PCB can also offer various options of use covering full output linking where the controlled comfort light is not required or dimmable options where preferred against the 3/1 switching system.

A unique feature of the “LedLite CC” is the variable light output options that will allow on-site adjustments simply by changing connection outputs on the driver. Morgan Hope will pre-wire to the medium, allowing adjustments either during factory production or on-site for a slight improvement in output, or if required a slight reduction.

Another benefit of the “LedLite CC” is the incorporation of a Constant Voltage circuit based on 12V DC, dedicated specifically for emergency lighting based on non-maintained support and including an LED Green Charge Light within the circuitry of the PCB. This is suitable for both integral battery back-up or from a central battery pack based on the Morgan Hope DC2DC system. Such inclusion as standard within the “LedLite CC” PCB also has the added advantage of allowing on-site upgrades to emergency requirements, where extra emergency fittings may be required.



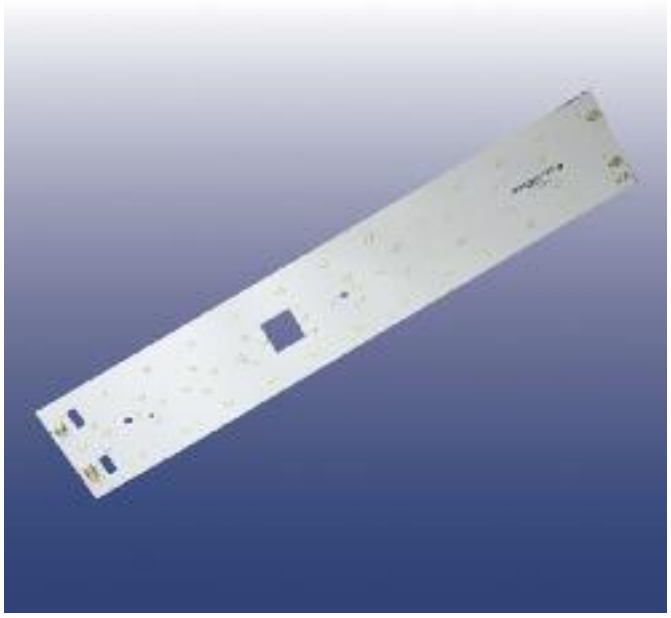


“LedLite Linear”

“LedLite Linear” uses the principles of the LedLite CC but is designed for use in linear luminaires such as the Morgan Hope Vapour-proof Gauntlet. It is produced in kit forms to enable installation into luminaire lengths of 600mm – 1200mm – 1500mm and offers LED replacement for the equivalent of single and twin fluorescent models.

The circuitry replicates that of the “LedLite CC” in as much as it has multiple circuits based on our 1/1 system to enable the primary high output circuit to be switched by the MicroMac occupancy detection, with the secondary circuit remaining “On” for Health & Safety background comfort light and only consuming in the region of 4W to 6W dependent upon LedLite Linear kit sizes required. It is also possible to link the circuits for full output for switching or with dimmable driver systems if required.

As with the “LedLite CC” the “LedLite Linear” also has the Constant Voltage 12V DC Circuit for non-maintained emergency light with the same functions.



Technical Data -
LedLite CC Circular PCB Range

Constant Current Range

Model Types:- LedLite CC–225 - LedLite CC-350

Power Rating Input:- 220V – 240V AC

Driver Options:- Driver for Primary high output main circuit –
Nominal Output Voltage Range:- 18 – 36V DC
Current Range:- Multi output option 500/600/700 mA (Factory default set at 600mA)
Nominal Power Range:- 9 – 25 Watt
Power Loss:- 4.4 Watts + 10%

Driver for Secondary comfort light circuit –
Maximum Voltage:- 6V DC
Current Range:- Input 700 mA
Nominal Power Range:- 1 – 4 Watt
Power Loss:- 2.5 Watts + 10%

Nominal PCB Consumption:-

LedLite CC-225

mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
500mA	14 Watts + 10%	2.5 Watts + 10%
600mA (medium)	16 Watts + 10%	2.5 Watts + 10%
700mA	20 Watts + 10%	2.5 Watts + 10%

LedLite CC-350

mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
500mA	16 Watts + 10%	2.5 Watts + 10%
600mA (medium)	20 Watts + 10%	2.5 Watts + 10%
700mA	24 Watts + 10%	2.5 Watts + 10%

Colour Rendition:- 4000K as Standard 5000K to order

Lumens: Unlike fluorescent lamps that provide light output based on 360° with light loss to the back of the fitting, the LED PCB has 100% downward light utilisation.

	Maximum output combined Circuits	Comfort Light Circuit
LedLite CC-225	2300 Lumens	260 Lumens
LedLite CC-350	2300 Lumens	260 Lumens

Measurement:- LedLite CC-225 = 225mm Diameter
LedLite CC-350 = 350mm Diameter

LED Working Life:- 100,000 hours

Emergency Circuit:- Non-maintained dedicated circuit based on 12V Constant Voltage and rated at 4 Watt to operate from an integral module and battery pack for 3 hour emergency back-up. A Green Charge light is mounted on the LedLite PCB Board. An option for a Self-Test Module is also available.
The emergency circuit is also suitable to operate direct from Mains Supply or with a Static Inverter when fitted with a 12V – 12W Constant Voltage Driver.
Morgan Hope have recently developed the DC2DC Driver System to enable central battery operation of the 12V Constant Voltage circuit from a standard 24V battery unit and charger.

Constant Voltage Range

Model Types:- LedLite–180- LedLite-150-EM

Power Rating Input:- 100V – 240V AC

Design Layout:- LedLite-180 – twin LED circles on a single circuit LED PCB with centre cut-out to allow for detector mounting.
Driver Option:- 12V Constant Voltage – 12 Watt
Consumption:- 10 Watt + 10%
Colour Rendition:- 4250K as Standard
Measurement:- LedLite-180 = 180mm Diameter
LED Working Life:- 50,000 hours

LedLite-150 – single circle/circuit LED PCB designed primarily for use as non-maintained emergency support light.
Driver Option:- *12V Constant Voltage – 12 Watt when used with Static Inverter
* Emergency Module + Battery Pack for direct power to PCB (no driver required)
* Suitable for use with the Morgan Hope DC2DC Driver System
Consumption:- 4.5 Watt + 10%
Colour Rendition:- 4250K as Standard
Measurement:- LedLite-150 = 150mm Diameter
LED Working Life:- 50,000 hours

Caprice

Decorative Circular Luminaire

The Caprice is a Circular Slimline Decorative Luminaire that has been designed for use in residential and commercial applications providing energy efficiency lighting with high output illumination. The luminaire is constructed from a spun steel body, quick release gear tray – finished in satin white powder coat and supplied with a prismatic diffuser.

The Caprice-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Plug-in connector for mains supply
- Decorative Circular Luminaire with a vented body to disperse heat and a quick release gear tray
- Plug-in connector for mains supply
- Available with White, Chrome or Brass Trim
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Lounges
- Bedrooms
- Toilets

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this

concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up
The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option
The Caprice is also available with T5 Fluorescent Lamp Technology fitted with the Circular 40 watt and 22 watt options. Apart from standard High Frequency fixed output, the Caprice is generally supplied with the Morgan Hope Movement Controlled Dimmable Lighting System operating either from MCD-PIR based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied or alternatively the MicroDim Microwave Detector, also offering the 10% facility. For further information please refer to the Caprice Data Sheet relating to the Fluorescent option.

Measurements:
433mm Diameter x 100mm Height inclusive of Diffuser

Model References:
Caprice-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Clear Prismatic Diffuser

Caprice-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Clear Prismatic Diffuser

Caprice-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Clear Prismatic Diffuser

Caprice-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Clear Prismatic Diffuser

Available options:
Opal Prismatic Diffuser – if required suffix Model Code "OPR"

Semi-Recessed for mounting in suspended ceiling tiles or plasterboard – if required suffix Model Code "REC"

Supplied standard with White Trim but also available with Chrome Trim (suffix Model Code "CH") or Brass Trim (suffix Model Code "BS") or Satin Nickel (suffix Model Code "SN")

For integral emergency suffix Model Code "EM3"

Caprice Mini
The Caprice Mini offers all the benefits of the Caprice but designed for areas requiring smaller diameter fittings such as small lobbies, narrow corridors, etc. Measurements 330mm diameter and 100mm height inclusive of diffuser. Not available as recessed.

Gemini

Decorative Circular Luminaire with ceiling backwash lighting

The Gemini is a Circular Slimline Decorative Luminaire that has been designed for use in residential and commercial applications providing energy efficiency lighting with high output illumination. The luminaire is constructed from a spun steel body, quick release gear tray – finished in satin white powder coat and supplied with a prismatic diffuser. It is designed to provide both downward illumination plus a backwash of light to the ceiling.

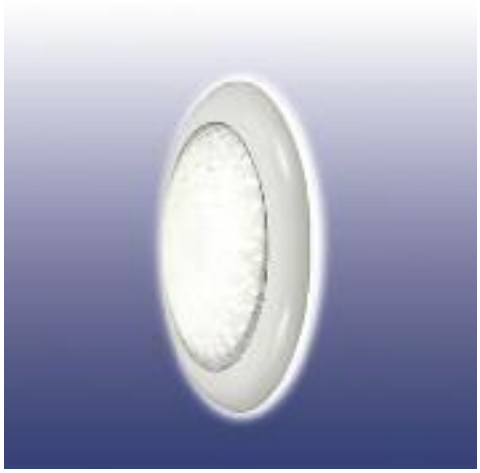
The Gemini-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Decorative Circular Luminaire with a vented body to disperse heat and a quick release gear tray
- Plug-in connector for mains supply
- Available with White, Chrome or Brass Trim
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Lounges
- Bedrooms



Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Gemini is also available with T5 Fluorescent Lamp Technology fitted with the Circular 40 watt and 22 watt options. Apart from standard High Frequency fixed output, the Gemini is also supplied with the Morgan Hope Movement Controlled Dimmable Lighting System operating either from MCD-PIR based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied or alternatively the MicroDim Microwave Detector, also offering the 10% facility. For further information please refer to the Gemini Data Sheet relating to the Fluorescent option.

Measurements:

526mm Diameter x 104mm Height inclusive of Diffuser

Model References:

Gemini-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Clear Prismatic Diffuser

Gemini-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Clear Prismatic Diffuser

Gemini-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Clear Prismatic Diffuser

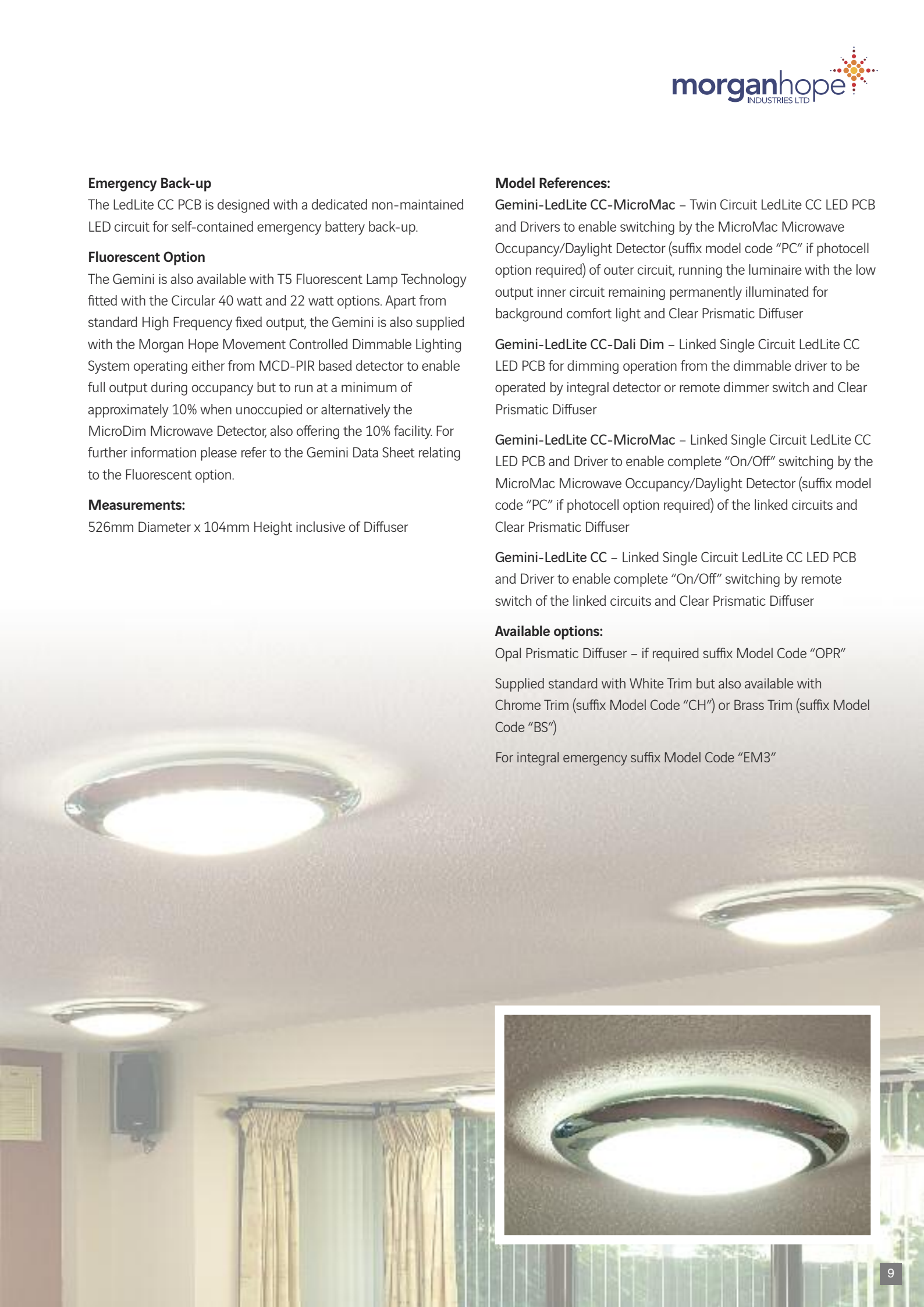
Gemini-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Clear Prismatic Diffuser

Available options:

Opal Prismatic Diffuser – if required suffix Model Code "OPR"

Supplied standard with White Trim but also available with Chrome Trim (suffix Model Code "CH") or Brass Trim (suffix Model Code "BS")

For integral emergency suffix Model Code "EM3"



Pyramid

Decorative Square Luminaire with circular diffuser feature for both recessed and surface mount applications

The Pyramid is a Square Decorative Luminaire that has been designed for use in residential and commercial applications providing energy efficiency lighting with high output illumination. The luminaire is constructed from steel with a square body either for recessing into a 600mm x 600mm ceiling grid with tegular edge drop front or for surface mounting. It is supplied with a quick release gear tray – finished in satin white powder coat. The Pyramid features perforations to each corner, that can be covered integrally with coloured gel film, allowing for colour light wash through the perforations. The surface mount model has chamfered edging and both designs are fitted with a circular 415mm prismatic diffuser.

The Pyramid-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- 600mm x 600mm Square Decorative Luminaire with a vented body to disperse heat and a quick release gear tray
- 4 cornered perforation design feature that can be covered integrally with gel film for colour light wash
- Plug-in connector for mains supply
- Available with Satin White Trim
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Lounges

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits

to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Pyramid is also available with T5 Fluorescent Lamp Technology fitted with the Circular 40 watt and 22 watt options. Apart from standard High Frequency fixed output, the Pyramid is also supplied with the Morgan Hope Movement Controlled Dimmable Lighting System operating either from MCD-PIR based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied or alternatively the MicroDim Microwave Detector, also offering the 10% facility. For further information please refer to the Pyramid Data Sheet relating to the Fluorescent option.

Measurements:

Recessed – 595mm x 595mm x 60mm to ceiling grid. (Allow additional 50mm below ceiling level for diffuser).

Surface – 600mm x 600mm x 110mm including depth of diffuser

Model References:

Pyramid-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Clear Prismatic Diffuser

Pyramid-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Clear Prismatic Diffuser

Pyramid-CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Clear Prismatic Diffuser

Pyramid-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Clear Prismatic Diffuser

When required as Surface Mount suffix above Model Codes "SM"

Available options:

Opal Prismatic Diffuser – if required suffix Model Code "OPR"

Supplied standard with White Trim

For integral emergency suffix Model Code "EM3"

Classic Midi

IP65 Decorative Circular Luminaire

The Classic Midi is an IP65 Circular Decorative Luminaire that has been designed for use in residential and commercial applications providing energy efficiency lighting with high output illumination. The luminaire is constructed with a polycarbonate body, hinged gear tray – finished with white trim and semi-transparent or opal polycarbonate diffuser.

The Classic Midi-LedLite CC incorporates the LedLite LED CC PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- IP65 Polycarbonate Decorative Circular Luminaire suitable for internal and external use
- Easy fit snap-on diffuser
- Plug-in connector for mains supply
- Supplied with White Body and also available in Chrome
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- External Walkway and Patio Light
- External under soffit and access corridor lighting
- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Bathrooms and Toilets
- Store Rooms

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Classic Midi is also available with T5 Fluorescent Lamp Technology fitted with the Circular 22 watt lamp. Apart from standard High Frequency fixed output, the Classic Midi is generally supplied with the Morgan Hope Movement Controlled Dimmable Lighting System operating either from MCD-PIR based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied or alternatively the MicroDim Microwave Detector, also offering the 10% facility. For further information please refer to the Classic Midi Data Sheet relating to the Fluorescent option.

Measurements:
325mm Diameter x 130mm Height inclusive of Diffuser

Model References:
Classic Midi-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Semi Transparent Diffuser

Classic Midi-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Semi Transparent Diffuser

Classic Midi-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Semi Transparent Diffuser

Classic Midi-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Semi Transparent Diffuser

Available options:
Opal Diffuser – if required suffix Model Code "OP"

Supplied standard with White Trim but also available with Chrome Trim (suffix Model Code "CH")

For integral emergency suffix Model Code "EM3"

Taurus

Anti-Ligature Decorative Circular Luminaire

The Taurus is a Circular Decorative Luminaire that has been designed for applications where anti-ligature fittings are required, providing energy efficiency lighting with high output illumination. The luminaire is constructed from a spun steel back body, quick release gear tray and spun steel front cover with enclosed diffuser that is fixed with security screws. Apart from the primary use as an anti-ligature luminaire the Taurus is also suitable for applications where a more robust vandal resistant fitting is required and luminaire access needs to be restricted.

The Taurus-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Anti-Ligature design with Security Screws to provide fully enclosed luminaire
- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Decorative Circular Luminaire with a quick release gear tray
- Plug-in connector for mains supply
- Available with White Trim
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Lounges
- Bedrooms
- Toilets

Occupancy Control
Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up
The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option
The Taurus is also available with T5 Fluorescent Lamp Technology fitted with the Circular 40 watt and 22 watt options. Apart from standard High Frequency fixed output, the Taurus is also available with the Morgan Hope Movement Controlled Dimmable Lighting System operating from the MicroDim Microwave Detector based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied. For further information please refer to the Taurus Data Sheet relating to the Fluorescent option.

Measurements:
525mm Diameter x 110mm Height inclusive of Diffuser

Model References:
Taurus-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Clear Prismatic Diffuser

Taurus-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Clear Prismatic Diffuser

Taurus-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Clear Prismatic Diffuser

Taurus-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Clear Prismatic Diffuser

Available options:
Opal Prismatic Diffuser – if required suffix Model Code "OPR"

Supplied standard with White Trim

For integral emergency suffix Model Code "EM3"

Leo

Vandal Resistant Robust Decorative Circular Luminaire

The Leo is a Circular Decorative Luminaire that has been designed for applications requiring internal robust vandal resistant fittings, providing energy efficiency lighting with high output illumination. The luminaire is constructed from a spun steel back body, quick release gear tray and spun steel straight edged front cover, with enclosed diffuser that is fixed with security screws; ideal for use where luminaire access needs to be restricted.

The Leo-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

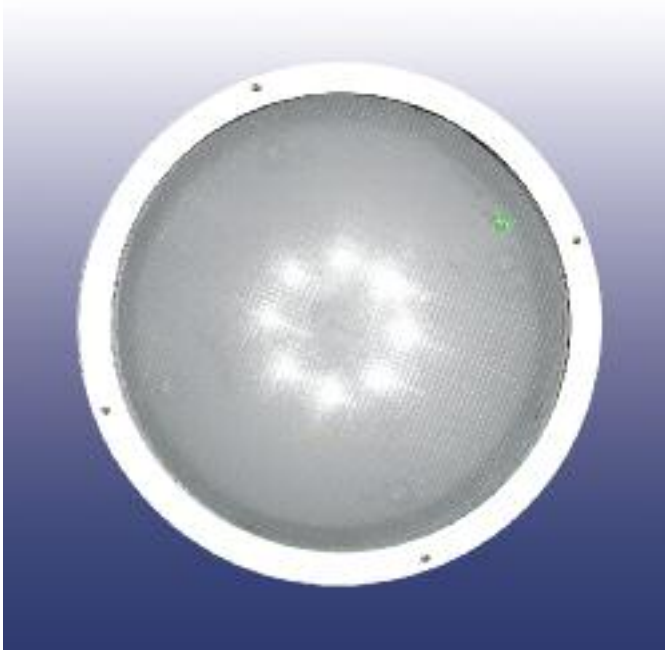
Features

- Vandal resistant design with Security Screws to provide fully enclosed luminaire
- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Decorative Circular Luminaire with a quick release gear tray
- Plug-in connector for mains supply
- Available with White Trim
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor Lighting
- Stairwells
- Receptions and Entrance Lobbies
- Lounges
- Bedrooms
- Toilets

Occupancy Control



Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Leo is also available with T5 Fluorescent Lamp Technology fitted with the Circular 40 watt and 22 watt options. Apart from standard High Frequency fixed output, the Leo is also available with the Morgan Hope Movement Controlled Dimmable Lighting System operating from the MicroDim Microwave Detector based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied. For further information please refer to the Leo Data Sheet relating to the Fluorescent option.

Measurements:
465mm Diameter x 110mm Height inclusive of Diffuser

Model References:

Leo-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Clear Prismatic Diffuser

Leo-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Clear Prismatic Diffuser

Leo-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Clear Prismatic Diffuser

Leo-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Clear Prismatic Diffuser

Available options:

Opal Prismatic Diffuser – if required suffix Model Code "OPR"

Supplied standard with White Trim

For integral emergency suffix Model Code "EM3"

Cloister

A robust interior and exterior vandal resistant luminaire

The Cloister is an IP65 Circular Decorative Luminaire designed for applications requiring robust vandal resistant fittings for both internal and external use, providing energy efficiency lighting with high output illumination. The luminaire is constructed with a cast base, integral gear tray and semi-transparent diffuser in a cast housing that is fixed with security screws; ideal for use where luminaire access needs to be restricted.

The Cloister-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- IP65 Cast Decorative Circular Luminaire suitable for internal and external use
- Cast Diffuser Housing that is fixed with Security Screws
- Vandal Resistant
- Plug-in connector for mains supply
- Supplied with Grey or White body
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote
- Dusk to dawn photocell option

Applications

- Corridor Lighting
- External under soffit and access corridor lighting
- Stairwells
- Toilets
- Walkway and Patio Lighting
- For general external applications, where a robust, vandal resistant luminaire is required

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Cloister is also available with T5 Fluorescent Lamp Technology fitted with the Circular 22 watt lamp. Apart from standard High Frequency fixed output, the Cloister is also available with the Morgan Hope Movement Controlled Dimmable Lighting System operating from the MicroDim Microwave Detector based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied. For further information please refer to the Cloister Data Sheet relating to the Fluorescent option.

Measurements:

365mm Diameter x 145mm Height inclusive of Diffuser

Model References:

Cloister-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Semi Transparent Diffuser

Cloister-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Semi Transparent Diffuser

Cloister-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Semi Transparent Diffuser

Cloister-LedLite CC – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Semi Transparent Diffuser

Available options:

Opal Diffuser – if required suffix Model Code "OP"

For integral emergency suffix Model Code "EM3"

For White body suffix Model Code "WH"

For Eyelid cover suffix Model Code "EY"

Maximus

A robust interior and exterior vandal resistant luminaire

The Maximus is an IP65 Circular Decorative Luminaire designed for applications requiring robust vandal resistant fittings for both internal and external use, providing energy efficiency lighting with high output illumination. The luminaire is constructed with a white polycarbonate base, integral gear tray and polycarbonate diffuser that is fixed with security screws; ideal for use where luminaire access needs to be restricted.

The Maximus-LedLite CC incorporates the LedLite CC LED PCB providing a lifespan in the region of 100,000 hours.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- IP65 Polycarbonate Decorative Circular Luminaire suitable for internal and external use
- Polycarbonate Diffuser that is fixed with Security Screws
- Vandal Resistant
- Plug-in connector for mains supply
- Supplied with White Body
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote
- Dusk to dawn photocell option

Applications

- Corridor lighting
- External under soffit and access corridor lighting
- Stairwells
- Bathrooms and Toilets
- Walkway Lighting and Patio Light
- Store Rooms
- For general external applications, where a robust, vandal resistant luminaire is required

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

Emergency Back-up

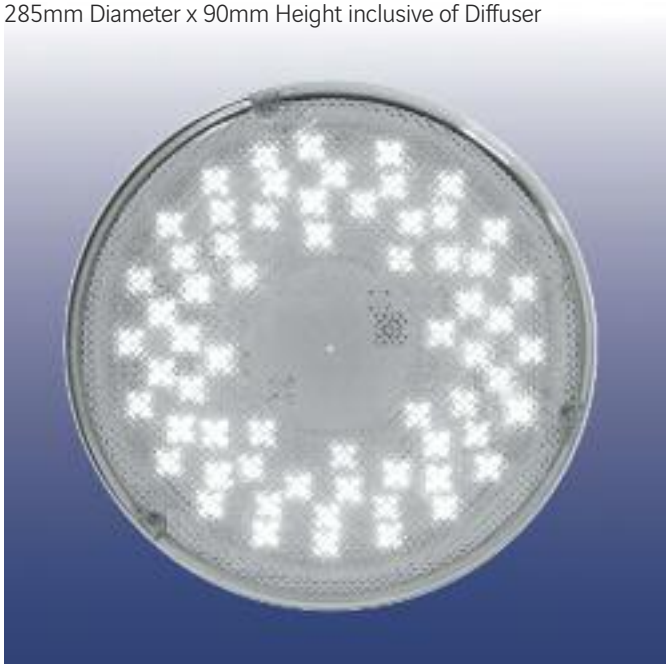
The LedLite CC PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Fluorescent Option

The Maximus is also available with T5 Fluorescent Lamp Technology fitted with the Circular 22 watt lamp. Apart from standard High Frequency fixed output, the Maximus is also available with the Morgan Hope Movement Controlled Dimmable Lighting System operating from the MicroDim Microwave Detector based detector to enable full output during occupancy but to run at a minimum of approximately 10% when unoccupied. For further information please refer to the Maximus Data Sheet relating to the Fluorescent option.

Measurements:

285mm Diameter x 90mm Height inclusive of Diffuser



Model References:

Maximus-LedLite CC-MicroMac – Twin Circuit LedLite CC LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running the luminaire with the low output inner circuit remaining permanently illuminated for background comfort light and Semi Transparent Diffuser

Maximus-LedLite CC-Dali Dim – Linked Single Circuit LedLite CC LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch and Semi Transparent Diffuser

Maximus-LedLite CC-MicroMac – Linked Single Circuit LedLite CC LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits and Semi Transparent Diffuser

Maximus-LedLite CC – Linked Single Circuit LedLite LED CC PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits and Semi Transparent Diffuser

Available options:

Opal Diffuser – if required suffix Model Code "OPR"

For integral emergency suffix Model Code "EM3"

Technical Data - LedLite Linear PCB Range

Constant Current Range

Model Types:-

The LedLite Linear Range is designed as a 2 piece PCB board kit in sizes suitable for single and twin linear fittings of 1200mm and 1500mm lengths; however split kits can be used either as a sole unit, or a combination of kits, to enable mounting in other lengths of luminaires from either the Morgan Hope Range or as retro-fit to existing luminaires -

LedLite Linear 112-22W - single output 2 piece kit for mounting into single 1200mm linear luminaire
LedLite Linear 212-26W - twin output 2 piece kit for mounting into twin 1200mm linear luminaire
LedLite Linear 115-26W - single output 2 piece kit for mounting into single 1500mm linear luminaire
LedLite Linear 215-40W - twin output 2 piece kit for mounting into twin 1500mm linear luminaire

Consumption:- The "LedLite Linear" has variable light output options that will allow on-site adjustments simply by changing connection inputs on the driver. Morgan Hope will pre-wire to the medium, allowing adjustments either during factory production or on-site for a slight improvement in output, or if required a slight reduction.

LedLite Linear 112		
mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
500mA	17 Watts + 10%	5 Watts + 10%
600mA (medium)	20 Watts + 10%	5 Watts + 10%
700mA	22 Watts + 10%	5 Watts + 10%

LedLite Linear 212		
mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
500mA	22 Watts + 10%	5 Watts + 10%
600mA (medium)	27 Watts + 10%	5 Watts + 10%
700mA	31 Watts + 10%	5 Watts + 10%

LedLite Linear 115		
mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
500mA	23 Watts + 10%	5 Watts + 10%
600mA (medium)	27 Watts + 10%	5 Watts + 10%
700mA	31 Watts + 10%	5 Watts + 10%

LedLite Linear 215		
mA Rating	Full Output of combined Circuits	H & S Comfort Light Circuit
800mA	37 Watts + 10%	5 Watts + 10%
925mA (medium)	42 Watts + 10%	5 Watts + 10%
1050mA	47 Watts + 10%	5 Watts + 10%

Power Rating Input:- 220V – 240V AC

Driver Options:-

Driver for Primary high output main circuit –
LedLite Linear 112
Nominal Output Voltage Range:- 18 – 36V DC
Current Range:- Main Circuit - Single input option 500 mA
Nominal Power Range:- 18 Watt
Power Loss:- 4.4 Watts + 10%

LedLite Linear 212 + LedLite Linear 115
Driver for Primary high output main circuit –
Nominal Output Voltage Range:- 18 – 36V DC
Current Range:- Multi input option 500/600/700 mA (Factory default set at 600mA)
Nominal Power Range:- 9 – 25 Watt
Power Loss:- 4.4 Watts + 10%

LedLite Linear 215
Driver for Primary high output main circuit –
Nominal Output Voltage Range:- 27 – 54V DC
Nominal Current Range:- Multi option 800/925/1050 mA (Factory default set at 925mA)
Nominal Power Range:- 23 – 55 Watt
Power Loss:- 8.9 Watts + 10%

Driver for Secondary comfort light circuit –
Maximum Voltage: 19.2V DC
Current Range:- Input 250 mA
Nominal Power Range:4.5-4.8 Watt
Power Loss:- 1.6Watts + 10%

Colour Rendition:-	4000K as Standard	5000K to order	
Lumens:	Unlike fluorescent lamps that provide light output based on 360° with light loss to the back of the fitting, the LED PCB has 100% downward light utilisation.		
		Maximum output combined Circuits	Comfort Light Circuit
	LedLite Linear 112	2510 Lumens	520 Lumens
	LedLite Linear 212	3280 Lumens	540 Lumens
	LedLite Linear 115	3540 Lumens	540 Lumens
	LedLite Linear 215	4900 Lumens	540 Lumens
Measurement:-	LedLite Linear 112 Each PCB Board - 560mm x 60mm x 2 PCB Boards per kit		
	LedLite Linear 212 Each PCB Board - 560mm x 120mm x 2 PCB Boards per kit		
	LedLite Linear 115 Each PCB Board - 715mm x 60mm x 2 PCB Boards per kit		
	LedLite Linear 215 Each PCB Board - 715mm x 120mm x 2 PCB Boards per kit		
LED Working Life:-	100,000 hours		
Emergency Circuit:-	Non-maintained dedicated circuit based on 12V Constant Voltage and rated at 4 Watt to operate from an integral module and battery pack for 3 hour emergency back-up. A Green Charge light is mounted on the LedLite PCB Board. An option for a Self-Test Module is also available.		
	The emergency circuit is also suitable to operate direct from Mains Supply or with a Static Inverter when fitted with a 12V – 12W Constant Voltage Driver.		
	Morgan Hope have recently developed the DC2DC Driver System to enable central battery operation of the 12V Constant Voltage circuit from a standard 24V battery unit and charger.		

Gauntlet

Range of Vapour-proof Luminaires

The Gauntlet is a range of IP65 Vapour-proof Luminaires designed for applications requiring robust fittings for both internal and external use. It is constructed with a light grey polycarbonate housing, steel gear tray and clear polycarbonate diffuser that is fixed in place with stainless steel clips. The Gauntlet is suitable for use with various light sources covering LED, T5 and T8 Fluorescent and is available with a range of occupancy based detection systems. Whilst primarily the focus is on LED options, data is also provided under this section on the various fluorescent based light sources.

When used with the LedLite Linear a lifespan in the region of 100,000 hours can be expected.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- IP65 Polycarbonate body and diffuser with stainless steel clip fasteners - suitable for internal and external use
- Vandal Resistant
- Plug-in connector for mains supply
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Corridor lighting
- Car Park lighting
- Plant Rooms
- Stairwells
- Communal Bathrooms and Toilets
- Laundry and Kitchen lighting
- Walkway lighting
- Store Rooms
- For general external applications, where a robust, vandal resistant luminaire is required

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

The MicroDim and MCD PIR detectors are not only suitable for the LED Systems but also offer lighting control with the fluorescent based models either for "On/Off" switching or dimming of the tubes when operating with dimmable ballasts. All options of control can be discussed with our technical staff.

When used with Microwave occupancy/daylight detection the MicroMac Detector is located within the main luminaire housing; however if the MCD PIR detection is required a bespoke designed POD is mounted to the body of the fitting, following the contours both of the body and diffuser.

Emergency Back-up

The LedLite Linear PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Model Types:

The Gauntlet is available in Single and Twin bodies and the LedLite Linear LED PCB is designed to replace the equivalent in fluorescent lamp options:

Model reference for Single 1200mm (4ft) - Single body Gauntlet measuring 1270mm Length x 100mm Wide x 110mm Deep

Gauntlet-112-LedLite-1/1-MicroMac – Single body with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Gauntlet-112-LedLite-Dim – Single body with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Gauntlet-112-LedLite-MicroMac – Single body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Gauntlet-112-LedLite – Single body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1200mm (4ft) - Twin body Gauntlet measuring 1270mm Length x 160mm Wide x 110mm Deep

Gauntlet-212-LedLite-1/1-MicroMac – Twin body with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Gauntlet-212-LedLite-Dim – Twin body with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Gauntlet-212-LedLite-MicroMac – Twin body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Gauntlet-212-LedLite – Twin body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for single 1500mm (5ft) - Single body Gauntlet measuring 1570mm Length x 100mm Wide x 110mm Deep

Gauntlet-115-LedLite-1/1-MicroMac – Single body with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Gauntlet-115-LedLite-Dim – Single body with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Gauntlet-115-LedLite-MicroMac – Single body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Gauntlet-115-LedLite – Single body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1500mm (5ft) - Twin body Gauntlet measuring 1570mm Length x 160mm Wide x 110mm Deep

Gauntlet-215-LedLite-1/1-MicroMac – Twin body with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Gauntlet-215-LedLite-Dim – Twin body with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Gauntlet-215-LedLite-MicroMac – Twin body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Gauntlet-215-LedLite – Twin body with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Also available for special order only – 600mm (2ft)

Fluorescent Option

The Gauntlet range is also available with T5 Fluorescent Lamp Technology fitted with the linear lamps based on 28 Watt or 54 Watt for the 1200mm (4ft) – 35 Watt, 49 Watt or 80 Watt for the 1500mm (5ft). Apart from standard High Frequency fixed output, the Gauntlet is also available with occupancy and daylight control systems that are incorporated within the body of the fitting, using the Morgan Hope Movement Controlled Lighting System, either integrally mounted behind the diffuser when operated by Microwave or within a bespoke POD unit when based on PIR. Options are available for Dimmable Lighting using the MicroDim Microwave Detector or the PIR based MCD-POD plus also "On/Off" switching of the fitting with either the MicroMac Microwave or the MiniTect PIR-POD. See outline Detector Options at the end of this Brochure.

Nightingale

The Nightingale is a range of Surface Mount Linear Luminaires designed for applications requiring decorative but durable fittings for internal use. It is constructed in steel, powder coated white and fitted with a clear prismatic diffuser that is fixed in place via the luminaire end caps. The Nightingale is suitable for use with various light sources covering LED and T5 Fluorescent and is available with a range of occupancy based detection systems. Whilst primarily the focus is on LED options, data is also provided under this section on the various fluorescent based light sources.

When used with the LedLite Linear a lifespan in the region of 100,000 hours can be expected.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Durable steel housing finished in white, white clear prismatic diffuser for internal use
- Plug-in connector for mains supply
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Hospital lighting
- Corridor lighting
- Stairwells
- Kitchen lighting

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

The MicroDim and MCD PIR detectors are not only suitable for the LED Systems but also offer lighting control with the fluorescent based models either for "On/Off" switching or dimming of the tubes when operating with dimmable ballasts. All options of control can be discussed with our technical staff.

When used with Microwave occupancy/daylight detection the MicroMac Detector is located within the main luminaire housing; however if the MCD PIR detection is required, a bespoke designed end cap is provided for detector mounting.

Emergency Back-up
The LedLite Linear PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Model Types:
The Nightingale is a single width, designed to take options of the LedLite Linear LED PCB for replacement of the equivalent in fluorescent lamp sizes.

Model reference for Single 600mm (2ft) - measuring 610mm Length x 195mm Wide x 65mm Deep

Nightingale-106-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-106-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-106-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-106-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 600mm (2ft) - measuring 610mm Length x 195mm Wide x 65mm Deep

Nightingale-206-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-206-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-206-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-206-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Single 1200mm (4ft) - measuring 1290mm Length x 195mm Wide x 65mm Deep

Nightingale-112-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-112-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-112-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-112-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1200mm (4ft) - measuring 1290mm Length x 195mm Wide x 65mm Deep

Nightingale-212-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-212-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-212-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-212-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for single 1500mm (5ft) - measuring 1590mm Length x 195mm Wide x 65mm Deep

Nightingale-115-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-115-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-115-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-115-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1500mm (5ft) - measuring 1590m Length x 195mm Wide x 65mm Deep

Nightingale-215-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Nightingale-215-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Nightingale-215-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Nightingale-215-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Fluorescent Option

The Nightingale range is also available with T5 Fluorescent Lamp Technology fitted with the linear lamps based on 14 Watt or 24 Watt for the 600mm (2ft) - 28 Watt or 54 Watt for the 1200mm (4ft) – 35 Watt, 49 Watt or 80 Watt for the 1500mm (5ft). Apart from standard High Frequency fixed output, the Nightingale is also available with occupancy and daylight control systems that are incorporated within the body of the fitting, using the Morgan Hope Movement Controlled Lighting System, either integrally mounted behind the diffuser when operated by Microwave or within the bespoke end cap when based on PIR. Options are available for Dimmable Lighting using the MicroDim Microwave Detector or the PIR based MCD plus also "On/Off" switching of the fitting with either the MicroMac Microwave or the MiniTect PIR. See outline Detector Options at the end of this Brochure.

Crescent

The Crescent is a range of Surface Mount Low Profile Linear Luminaires designed for applications requiring decorative but durable fittings for internal use. It is constructed in steel, powder coated white and fitted with a clear prismatic diffuser that is internally fixed in place within the luminaire. The Crescent housing is fitted with a detachable gear tray that is mounted to the back body and the front diffuser cover is attached using security screws. The Crescent is suitable for use with various light sources covering LED and T5 Fluorescent and is available with a range of occupancy based detection systems. Whilst primarily the focus is on LED options, data is also provided under this section on the various fluorescent based light sources.

When used with the LedLite Linear a lifespan in the region of 100,000 hours can be expected.

Features

- Energy Efficient with High Output LED light source
- Dual Circuit PCB to enable background comfort light facility
- Variable output options
- Durable steel housing finished in white, with clear prismatic or opal diffuser for internal use
- Plug-in connector for mains supply
- Compatible with Occupancy and Daylight control systems, either integrally mounted or remote

Applications

- Hospital lighting
- Railway Stations, Airports and Ferry Terminals
- Corridor lighting
- Stairwells
- Kitchen lighting
- Meeting Rooms and Offices

Occupancy Control

Whilst LED Lighting Systems have energy consumption benefits over fluorescent lighting, the incorporation of occupancy detection offers not only significant energy savings but also a considerable extension to the life of the luminaire, when considering the reduction of use by the LEDs during hours of non-occupancy. This control can be provided either on the basis of switching the complete luminaire or where background health and safety comfort light is required then by switching one of the LED circuits to offer up to 80% reduction in consumption. When using the Morgan Hope MicroMac Microwave Detector not only is this concealed behind the diffuser but also offers the dual benefit of Occupancy and Daylight Control – see the MicroMac Data Sheet for further information. Other options of control are also available and can be discussed with our technical staff.

The MicroDim and MCD PIR detectors are not only suitable for the LED Systems but also offer lighting control with the fluorescent based models either for "On/Off" switching or dimming of the tubes when operating with dimmable ballasts. All options of control can be discussed with our technical staff.

When used with Microwave occupancy/daylight detection the MicroMac Detector is located within the main luminaire housing; however if the MCD PIR detection is required, a bespoke designed end cap is provided for detector mounting.

Emergency Back-up
The LedLite Linear PCB is designed with a dedicated non-maintained LED circuit for self-contained emergency battery back-up.

Model Types:
The Crescent is a single width, designed to take options of the LedLite Linear LED PCB for replacement of the equivalent in fluorescent lamp sizes.

Model reference for Single 600mm (2ft) - measuring 600mm Length x 310mm Wide x 45mm Deep

Crescent-106-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-106-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-106-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-106-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 600mm (2ft) - measuring 600mm Length x 310mm Wide x 45mm Deep

Crescent-206-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-206-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-206-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-206-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Single 1200mm (4ft) - measuring 1200mm Length x 310mm Wide x 45mm Deep

Crescent-112-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-112-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-112-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-112-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1200mm (4ft) - measuring 1200mm Length x 310mm Wide x 45mm Deep

Crescent-212-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-212-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-212-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-212-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for single 1500mm (5ft) - measuring 1500mm Length x 310mm Wide x 45mm Deep

Crescent-115-LedLite-1/1-MicroMac – Single with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-115-LedLite-Dim – Single with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-115-LedLite-MicroMac – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-115-LedLite – Single with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

Model reference for Twin 1500mm (5ft) - measuring 1500mm Length x 310mm Wide x 45mm Deep

Crescent-215-LedLite-1/1-MicroMac – Twin with Twin Circuit LedLite LED PCB and Drivers to enable switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of outer circuit, running luminaire with the low output inner circuit remaining permanently illuminated for background comfort light

Crescent-215-LedLite-Dim – Twin with Linked Single Circuit LedLite LED PCB for dimming operation from the dimmable driver to be operated by integral detector or remote dimmer switch

Crescent-215-LedLite-MicroMac – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by the MicroMac Microwave Occupancy/Daylight Detector (suffix model code "PC" if photocell option required) of the linked circuits

Crescent-215-LedLite – Twin with Linked Single Circuit LedLite LED PCB and Driver to enable complete "On/Off" switching by remote switch of the linked circuits

For integral emergency suffix Model Code "EM3"

For Opal diffuser suffix Model Code "OP"

Fluorescent Option

The Crescent range is also available with T5 Fluorescent Lamp Technology fitted with the linear lamps based on 14 Watt or 24 Watt for the 600mm (2ft) - 28 Watt or 54 Watt for the 1200mm (4ft) – 35 Watt, 49 Watt or 80 Watt for the 1500mm (5ft). Apart from standard High Frequency fixed output the Crescent is also available with occupancy and daylight control systems that are incorporated within the body of the fitting, using the Morgan Hope Movement Controlled Lighting System, either integrally mounted behind the diffuser when operated by Microwave or within the diffuser cover when based on PIR. Options are available for Dimmable Lighting using the MicroDim Microwave Detector or the PIR based MCD plus also "On/Off" switching of the fitting with either the MicroMac Microwave or the MiniTect PIR. See outline Detector Options at the end of this Brochure.

Bespoke retrofit Gear Tray service

At Morgan Hope we understand that full replacement of fittings is not always practical due to various reasons, which may be as simple as cost implications, or more complex where luminaire bodies could be embedded into the substrate or subject to attachment to asbestos ceiling, where the removal would have the risk of asbestos dust contamination.

Whatever the reason for requiring the retrofit gear tray option, Morgan Hope can offer a bespoke service to provide gear trays to meet on site specific requirements from its broad and versatile range of LED PCBs and Drivers. Morgan Hope will work closely with the client to ensure that the gear tray is designed to meet the detailed requirements of each application.

Upgrade of luminaires in the Car Park at Preston Station with a bespoke Gear Tray and LedLite PCB system for retrofit application.

Preston Station Car Park with existing Luminaires upgraded with the LedLite CC bespoke retrofit gear trays.

Occupancy Detectors

Morgan Hope provides a range of occupancy and daylight control detectors and whilst the optimum product for use with the LedLite PCB Range is based on the range of Microwave controls for both switching and dimming, options are also available with PIR based detectors where less sensitive control is required. Outlined below are the model details for this selection of the detector types; however there is a wider range available depending upon specific applications, details of which can be provided via our Helpline. Full information is available in the relevant Product Data Sheets.

Occupancy and Daylight Control with "On/Off" Microwave Detection

The Microwave "On/Off" Occupancy System is designed to operate with both LED and fluorescent at full output when movement is detected and will switch off when the area is unoccupied. It is located within the housing of the luminaire and will detect through the diffuser and as such will operate on occupancy but still retain the sealed integrity of the luminaire.

The two principle detectors for "On/Off" switching are the MicroTect and MicroMac both of which are suitable for incorporation within the luminaire ranges and have options of Time-out – Sensitivity and Daylight. Daylight control settings are specific to application requirements and not suitable for use with all luminaires.

- Time-out Setting options – from 12 seconds to 30 minutes.
- Reach/Sensitivity options - 2m to 10m
- Daylight regulation options - 150 lux to 2000 lux only suitable for specific luminaires where nuisance switching can be avoided.

Occupancy and Daylight Control with MicroDim – 0V to 10V Dimming Control with Microwave Detection

The MicroDim "Dimmable" Microwave Occupancy System is designed to operate with both LED and Fluorescent with 0V to 10V analogue dimming LED Drivers and dimming High Frequency Ballast, which functions on the basis of full output when movement is detected and will dim in a single stage to minimum output of the Driver/Ballast rating at approximately 10%, when the area is unoccupied. It is located within the housing of the luminaire and will detect through the diffuser and as such will operate on occupancy but still retain the sealed integrity of the luminaire.

The control incorporates adjustable settings based on dip switches for Time-out – Reach/Sensitivity and Daylight offering the following options:

- Time-out Setting options - 12 seconds – 5 minutes – 10 minutes – 30 minutes.
- Reach/Sensitivity options - 2m – 5m – 10m
- Daylight regulation options - 150 lux - 300 lux - 500 lux - 2000 lux. When daylight control is not required we suggest setting at 2000 lux to avoid potential nuisance switching. If daylight control is required then in regards to the LedLite CC Circular PCB Range, the MicroMac is supplied with the photocell on a fly-lead to mount within the body of the fitting to ensure light wash from the diffuser dœs not distort the photocell detection and product codes should be suffixed "PC".

When the area is unoccupied the System will run continuously at minimum output, providing background comfort security lighting and good health and safety practice but any time during the time-out period that movement is detected, the lighting will return to 100% output.

There is also a facility to adjust the minimum dimmed output level to meet specific requirements, up to 60% of total output, although the control will always be supplied set to minimum. Each luminaire is fitted with its own integral occupancy detector.

Occupancy Controlled Dimmable System with MCD-PIR 2 Stage Dimming

The MCD-PIR Movement Controlled Dimmable Lighting System is designed to operate with analogue 1V to 10V dimming Ballasts or Drivers, maintaining full output during occupancy, then dimming in two stages with 50% output after 5 minutes of non-detection and an additional 40% after a further 2.5 minutes of non-detection, to remain at a constant 10% output. Any time during the time-out movement is detected, the luminaire will switch to 100% output. The MCD-PIR does not have daylight facility and whilst suitable for LED, it is predominately used with fluorescent based luminaires and is especially useful in areas such as Data Centres, where moving equipment could cause nuisance switching with Microwave detection.

Occupancy and Daylight Control with MiniTect – "On/Off" PIR Detection

MiniTect is a miniature PIR Detector with remote sensor head that is connected by a linking cable to the main switch box and is designed primarily for fitting integrally into Fluorescent based luminaires, such as the Gauntlet or FLB Batten Range. MiniTect is an automatic sensor switch device using infrared detection and IC & SMB technology, to detect presence of movement and light conditions within its detection range.

The main switch box consists of a series of Dip Switches to adjust "Time Out" from 5 seconds to 8 minutes – daylight option to hold off operation unless below 10 lux – sensitivity switch to improve detection range – detection range of approximately 5m radii – switching load of 200W.

Morgan Hope In-Rush Current Protection with ICP-3 to interface with Distribution Boards

The operational characteristics of LED lighting and the related drivers can cause significant in-rush currents at start-up, resulting in nuisance tripping of the circuits during switching. Morgan Hope have designed the ICP-3 to interface with the distribution board lighting circuits, including but not limited to ranges of various types of Circuit Breakers or Fused Systems. The purpose of the ICP Range is to suppress the in-rush current from the LED circuits and drivers.

In-rush current is a momentary surge of power which is rarely simultaneous when switching multiples of LedLite Luminaires, enabling a single ICP-3 unit to manage up to 20 fittings per circuit. The ICP protects against circuit tripping and damage to circuit breakers.

Technical Data

		ICP-3
Supply: 240V AC	-	50Hz
Max Load	-	3A
Max Inrush	-	250A Peak
Repetitive switching	-	Every 30 seconds

Morgan Hope DC2DC Converter for primary use with central battery pack for emergency lighting back-up with LED lighting systems

The DC2DC converter has been designed primarily as a device to enable LED arrays to be operated from a 24V central battery pack The DC2DC unit operates on the basis of a variable input DC voltage running from approximately 15V to 30V and a fixed DC output of 12V ±10%.

The DC2DC unit is integrally mounted within the luminaire and is part of the design concept to allow a standard 24V battery pack, with charger, to operate multiples of luminaires fitted with the DC2DC converter as an emergency back-up, either as a maintained system or non-maintained, when supported by the bespoke Morgan Hope Hold-off Relay.

The nature of the unit is such that due to the variable DC option, the input it is not fixed to just the 24V battery pack but other ratings as well. Within the design concept and the use as a central battery system, the variable input rating allows for a greater number of luminaires to be supported, with longer cable runs, enabling voltage variances from, slightly higher voltage with the luminaires closer to the battery stack, to a lower voltage at the luminaires furthest away from the battery stack, accounting for voltage drop. The number of luminaires to operate from the central battery pack will be determined by the load, cable length and number of circuits.

This revolutionary way of controlling emergency lighting has the benefits of static inverter systems, whilst dramatically reducing capital and running costs. The Power Supply Units (PSU's) can be fitted on almost any wall (subject to warning indication being visible) freeing up valuable floor/cupboard space. There is little to no heat build-up, further preserving battery life, and therefore additional savings are achieved, as no forced ventilation or air conditioning units may be required.

Construction and wiring is the same as static inverter systems in as much as there is - Power Supply (c/w battery backup) - DP MCB's - Fire Resistant Cables and the systems can be maintained or non-maintained, subject to configuration. For maintained back-up connection is direct to the DC2DC Converter and for non-maintained, connection is interfaced via a hold-off relay, either connected at the battery supply or by using the Morgan Hope Hold-off Relay unit, mounted integrally into each related luminaire.

The DC2DC unit is available in two ratings – DC2DC-0.5 used for loads up to 5 Watts and DC2DC-2 used for loads up to 16 Watts.

Morgan Hope DC2DC Case Study – Emergency Lighting using Morgan Hope DC2DC-0.5 Converters & 24V DC PSU

To evaluate the DC2DC-0.5 system an independent Case Study was carried out. Several PSU's were tested, a number of which were established as not suitable for this specific application, resulting in the choice of a PSU based on Model type Elmdene - G2405BM-R, providing minimum Volt Drop through the circuitry and Low Voltage disconnection to protect the batteries, against which all test results have been prepared. This specific PSU has 5 Amps maintained and continuous output with additional capacity to recharge discharged batteries within 24hrs, which as noted offers deep discharge protection and minimal circuit loss from battery to charger output. The tests carried out were with maximum capacity 17Ah Yuasa batteries, 1.5mm FP200 cables @ 16-18 Centigrade and the Morgan Hope LedLite CC PCB using the dedicated Constant Voltage 4 Watt emergency circuit as the connected load.

Design of the system is **most critical** due to - volt drop – loading – cable resistance – battery/charger capacity; due to this we have produced data providing simple rule of thumb design criteria.

Recommendations

Power Supply Unit (PSU)

Elmdene - G2405BM-R - rated at 24 Volt DC full output of 5 Amps maintained with additional 0.5 Amps for battery charging, to fully recharge within 24hrs. The following recommendations assume maximum load of 4 Amps for 3 hours

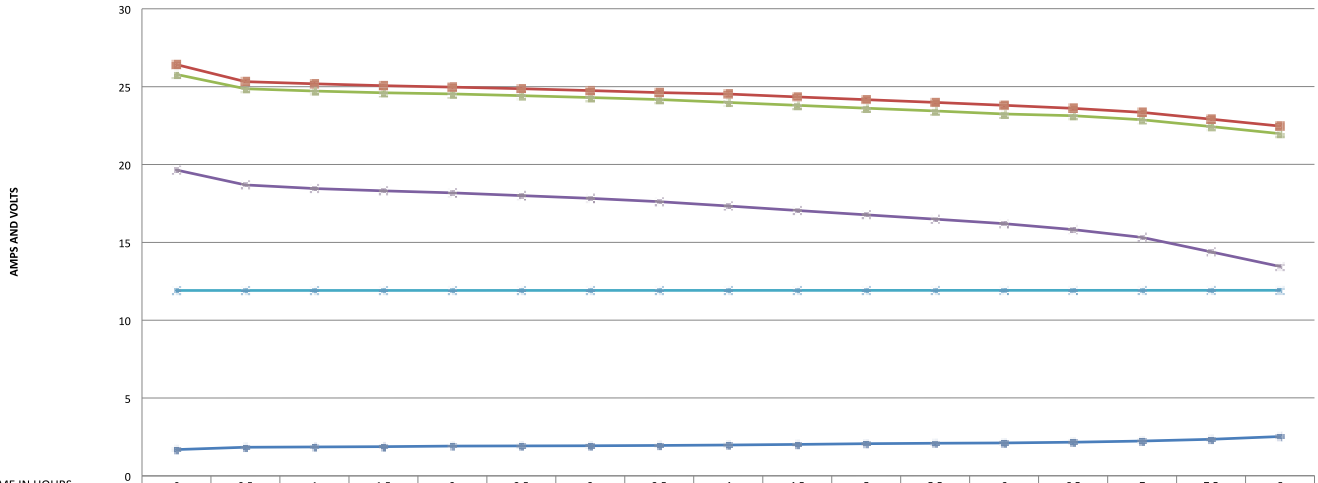
Maximum number of Morgan Hope LedLite CC - 4 Watt circuits connected were 20 per PSU (subject to configuration see below)

Cable & loading Capacity (cable FP200 1.5mm)

These parameters should NOT be exceeded from one Power Supply Unit

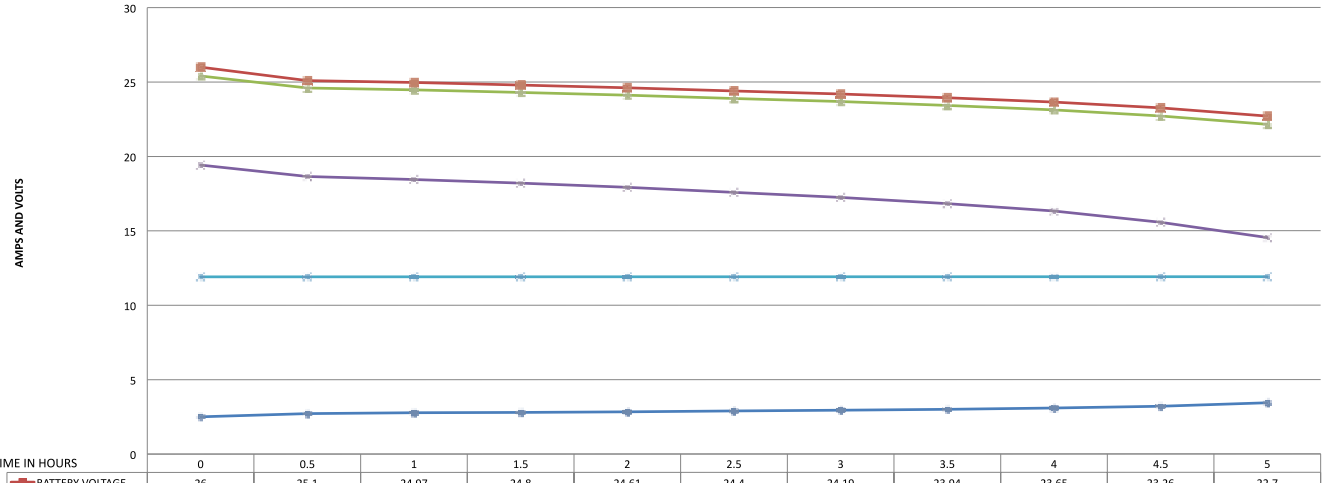
- 10 No. LedLite CC 4 Watt Circuits on one length of cable up to 150m (max. load for 1 PSU)
- 15 No. LedLite CC 4 Watt Circuits on one length of cable up to 100m (max. load for 1 PSU)
- 20 No. LedLite CC 4 Watt Circuits on two lengths of cable up to 100m (10 No. per 100m) (max. load for 1 PSU)

10 X LEDLITE 4W EM CIRCUITS CONNECTED TO A 5A PSU 17AH
BASED ON A SINGLE 150m RUN OF 1.5mm FP200 - TEST REF 11



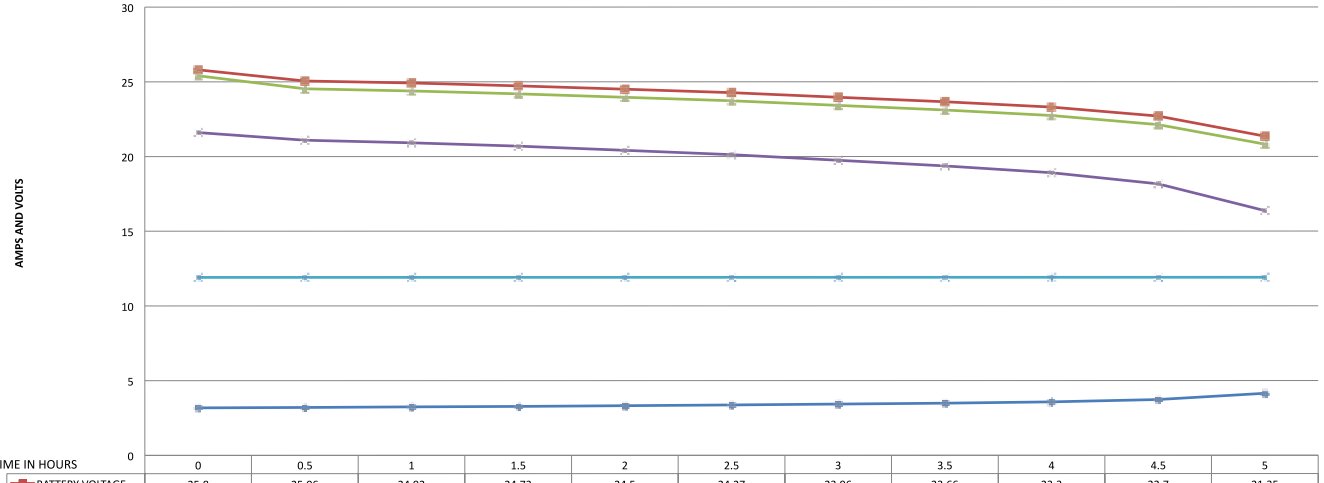
TIME IN HOURS	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
BATTERY VOLTAGE	26.42	25.32	25.18	25.06	24.97	24.87	24.75	24.62	24.52	24.34	24.16	23.98	23.8	23.6	23.34	22.9	22.46
CHARGER OUTPUT	25.79	24.87	24.72	24.61	24.53	24.42	24.3	24.17	23.98	23.8	23.61	23.43	23.24	23.13	22.87	22.43	21.97
CONVERTER VOLTAGE	19.65	18.69	18.46	18.31	18.18	18	17.82	17.61	17.33	17.04	16.76	16.48	16.2	15.81	15.31	14.38	13.44
LED VOLTAGE	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91
AMPS	1.69	1.84	1.86	1.88	1.91	1.92	1.93	1.95	1.98	2.02	2.06	2.09	2.11	2.16	2.23	2.34	2.52

15 X LEDLITE 4W EM CIRCUITS CONNECTED TO A 5A PSU 17AH
BASED ON A SINGLE 100m RUN OF 1.5mm FP200 - TEST REF 8



TIME IN HOURS	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
BATTERY VOLTAGE	26	25.1	24.97	24.8	24.61	24.4	24.19	23.94	23.65	23.26	22.7
CHARGER OUTPUT	25.41	24.6	24.47	24.3	24.11	23.89	23.69	23.42	23.12	22.71	22.15
CONVERTER VOLTAGE	19.42	18.65	18.45	18.21	17.92	17.58	17.24	16.82	16.33	15.57	14.54
LED VOLTAGE	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91
AMPS	2.5	2.72	2.78	2.8	2.83	2.89	2.94	3	3.09	3.2	3.44

20 X LEDLITE 4W EM CIRCUITS CONNECTED TO A 5A PSU 17AH
BASED ON 2 x SPLIT 100m RUNS (10 FITTINGS PER 100m) OF 1.5mm FP200 - TEST REF 6



TIME IN HOURS	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
BATTERY VOLTAGE	25.8	25.06	24.92	24.73	24.5	24.27	23.96	23.66	23.3	22.7	21.35
CHARGER OUTPUT	25.4	24.53	24.39	24.19	23.96	23.73	23.42	23.11	22.74	22.13	20.82
CONVERTER OUTPUT	21.6	21.09	20.92	20.69	20.41	20.12	19.74	19.37	18.91	18.16	16.37
LED VOLTAGE	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91
AMPS	3.18	3.21	3.24	3.27	3.32	3.37	3.43	3.49	3.57	3.73	4.15

Savings based on comparison running costs of a standard static inverter against the Morgan Hope DC2DC PSU System

Actual Power Consumption when in by-pass mode			
4.5 KVA Static but only running 1.4 KVA battery pack in bypass mode			
Input	6.3	Amps	
Output	2.7	Amps	
To run Static only	3.6	Amps	828 Watts
Load for one day	19.872	KW	
Load per year	7253.26	KW	
Cost per year (£0.12)	£870.39		
Cooling fan 24/7	£33.51		
Total per year	£903.90		

Capital cost plant only	
Small Static set to 1.4 KVA	£2,400.00
Fan	£250.00
Total	£2,650.00

Battery replacement	
One set	£952.28
Allow 8 year replacement cycle (in practice from 6 years)	
10 Year cost	£1,190.35

Morgan Hope DC2DC System with 5A PSU			
Input	0.175	Amps	
Input with output removed	0.033	Amps	7.59 Watts
(Batt charging only)			
To run PSU	0.033	Amps	
Load per year	66.4884	KW	
Cost per year (£0.12)	£7.98		
4 no. units required	£33.91		

Capital cost plant only	
SA PSU with 2 x 17AH Batt	£173.65
4 No. PSU req.	£694.60

Battery replacement	
One set	£55.53
4 sets	£222.12
Allow replacement at 4 years	
10 Year cost	£555.30

Initial Capital Saving	**£1,955.40**

Total over 10 years of annual cost of consumption, with no allowance for tariff increase plus capital cost of equipment plus battery replacement cost over 10 years.

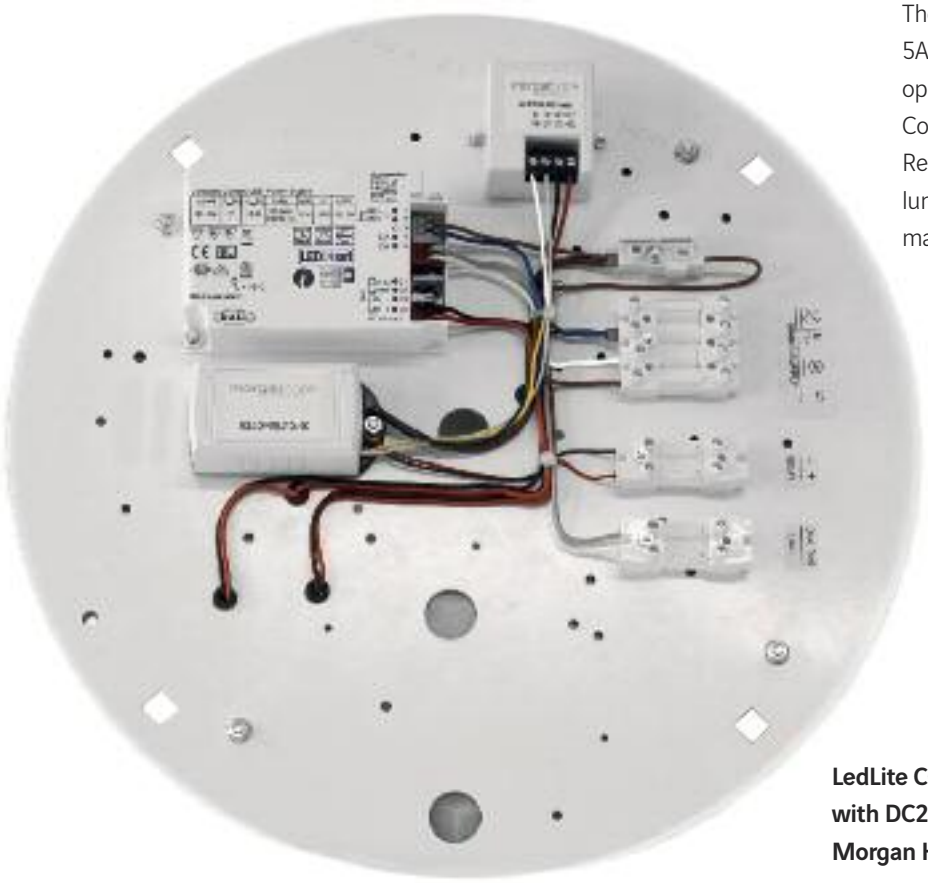
Static inverter	£12,879.36
PSU	£1,569.04
Saving against Static over 10 years	£11,310.31
For example single site of between 35-40 bedrooms or sheltered scheme of approximately 30 flats.	
Energy reduction/saving/10 years	71867.916 KW
Tonnes of carbon/10 years	38593

Notes

No labour charges included in above in regards to initial installation or ongoing maintenance. In reality installation labour costs of a Static Inverter would be significantly higher than with the Morgan Hope DC2DC Battery System. Disposal cost reduced with PSU will be a fraction of the cost of disposing of a Static Inverter. In the event of full equipment failure of Static Inverter replacement cost in the region of £2.4k whereas only £200.00 for the PSU. Assumes no increase in electricity cost over 10 years. Carbon footprint reduced.

Calculations are based on 4.5 KV Static Inverter running 1.4 KV batteries. Many organisations opt for the larger 6KV Static Inverter as a standard size, resulting in the potential for greater savings, which would equate to an additional £4k over 10 years.

Morgan Hope Hold-Off Relay – MH2POLE-5A/230V



The Morgan Hope Hold-Off Relay – MH2Pole-5A/230V is designed as a bespoke unit to operate with the Morgan Hope DC2DC Converter and PSU Battery System. The Hold-Off Relay is mounted integrally into the related luminaire to enable operation as a non-maintained emergency back-up lighting unit.

LedLite CC Gear tray complete with DC2DC converter and Morgan Hope Hold-off Relay.

Technical Data

Rated Specs

Item	2 Poles Type	
	Resistance Load	Inductive Load
Rated Power	5A，220VAC 5A，24VDC	2A，220VAC 2A，24VDC
Load Current	5A	
Max Switch Voltage	250VAC,125VDC	
Max Switch Current	5A	
Max Switch Load	1,100VA 120W	440VA 48W
Min Load	1mA,5VDC	
Connection Material	Silver	

Coil Rated Values

Rated Voltage	Rated Current (mA)		Coil Resistance (Ω)	Electrical Inductance (For Ref)		Action Voltage (V)	Reset Voltage (V)	Max Voltage Allowed (V)	Approx Consumption Power
AC	50Hz	60Hz	12.2Ω	Arm.OFF	Arm.ON	Percentage Of Rated Voltage			
220/240V	4.8/ 5.3mA	4.2/ 4.6mA	40Ω	83.5H	136H	80% max.	30% min.	110%	0.9 ~ 1.1VA (60Hz)

LedLite LED Lighting Range

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All electrical installation work should be carried out by a qualified electrician.

Morgan Hope reserves the right to change specification details of all products without prior notification.

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