CETF – Hive 10 BESS Project
Proposed Lighting Requirements

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Client: Genus/CETF

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A	23.11.23	Issued for Review	SJ	AS	
B	24.11.23	Updated Section 4	SJ	AS	
C	13.12.23	Updated Section 3 and Attachment 1	SJ	AS	

Contents

1 Introduction

Outdoor lighting for the Battery Energy Storage System (BESS) should achieve the following goals:

- Illuminate BESS areas for enhanced visibility.
- Ensure sufficient intensity and clarity of light for safe movement of personnel and vehicles, aiding in hazard identification, navigation around high voltage (HV) areas and BESS areas.
- Minimize environmental impact.

2 Applicable Standards

The applicable standards are as follows:

- AS/NZS 1680.5 Outdoor workplace lighting
- AS 2067-2008 Substations and high voltage installations exceeding 1kV a.c.
- AS 4282-1997 Control of the obtrusive effects of outdoor lighting
- AS 60598.1 Luminaires General requirements and tests
- AS 3000:2018 Wiring Rules

3 Illumination levels:

AS/NZS 1680.5 Table 3.1 prescribes an average illuminance level (Eav Lx) of 80 lux for general access and movement around areas like maintenance, fabrication assembly, etc. Based on preliminary design (Attachment 1), the lights are to be mounted on the BESS and PCS containers. The BESS and PCS Containers generally have a height in the range of 2.5 meters to 3 meters. The degree of ingress protection to be provided is IP55 as a minimum.

Note:

- The maintenance levels above consider factors like aging luminaires and dirty conditions that may reduce illuminance in the lighting system.

- Wait for a five-minute warm-up period before checking lux levels as some luminaires take time to reach full light output.

4 Lighting Columns

- Always follow the minimum distances to power lines according to AS 2067 and AS 7000.
- Poles must be grounded, following the respective guidelines and standards.
- Place lighting poles around the perimeter, inside the fence. Keep the poles far enough from the fence so that they can't be used for climbing by intruders.
- Also, consider the earthing design to prevent step and touch potential breaches when deciding where to put the poles.
- For fixtures not affixed to lighting columns consider attaching them to the BESS and PCS Containers/Structures if it does not void the warranty of the OEM.
- Mounting heights chosen need to be selected to reduce obtrusive lighting
- The installed light poles should be structurally safe and designed to the Australian Standards with structural certifications provided.

5 Lighting Control

The outdoor lighting system includes a feature that automatically turns the lights on at sunset and off at sunrise using light sensors using PE (Photo Electric) Cells and astronomical clocks.

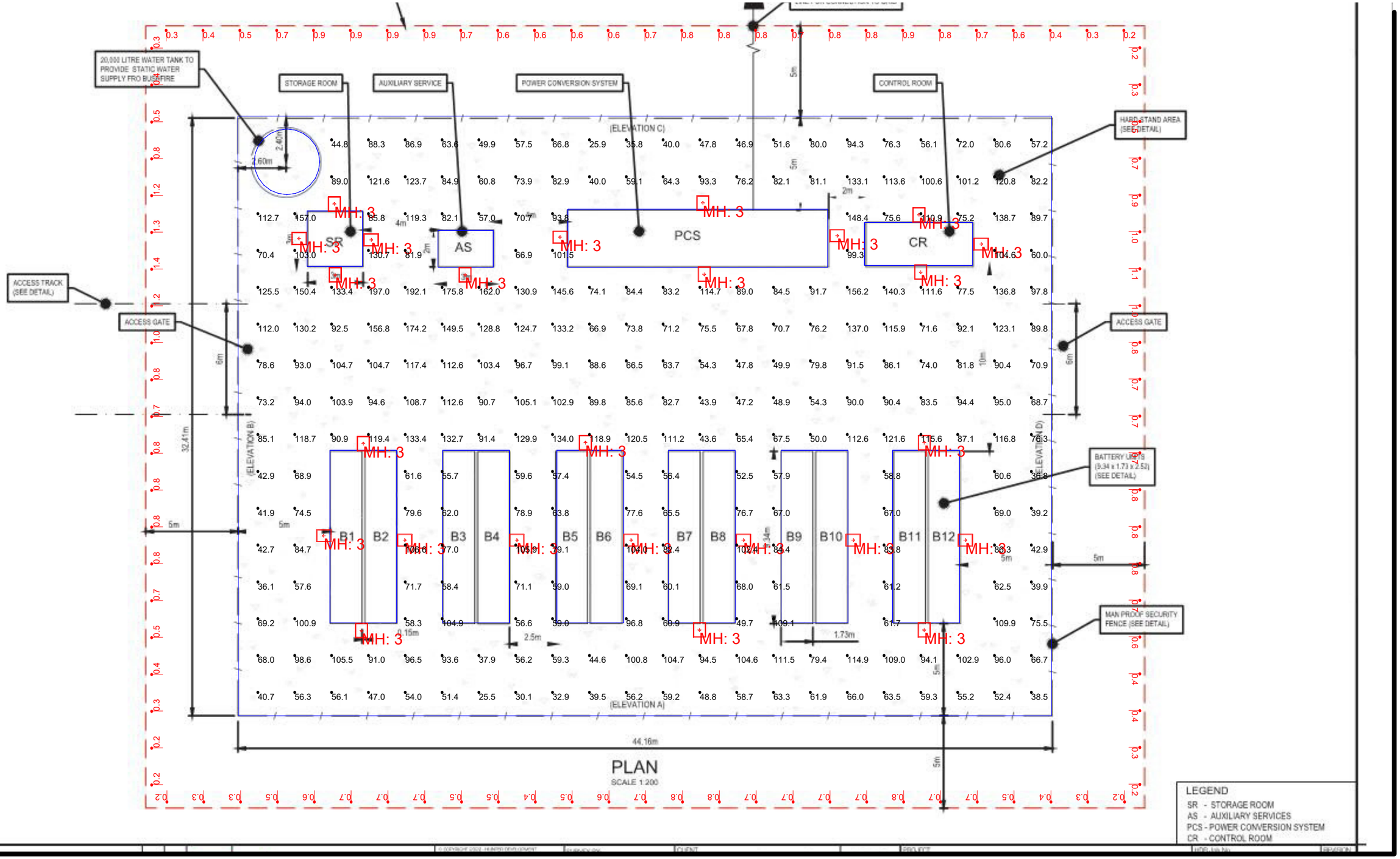
- There should also be a manual switch option, allowing people to turn the lights on or off manually, for Maintenance purposes.
- It's important to have clear signs indicating where the light switches are located. The default mode for the lights should be PE Cell control.
- The switches should be placed in convenient locations or in the LC Distribution Cabinet.

6 Design Considerations

- Pole and luminaire locations to be optimised to achieve the desired lux levels.

- Don't place lights where they might get in the way of power lines or potential future routes for lines.
- Clearly mark all the lights in the switchboard so they can be easily identified.
- Consider using a mobile generator to power the lights in case there's a power outage. Make sure the BESS premises has a generator switch and connection.
- Choose a design option that has the lowest cost over the entire life of the system.
- Install a surge protector in the AC supply to prevent damage from lightning and other power surges.
- Choose lights that emit white light with a color temperature between 3000K to 4000K. It is recommended to use 4000K to achieve better CCTV imagery.
- Demonstrate compliance to AS 4282
- Add diffusers, louvres, or screens to lights to reduce Obtrusive Lighting.

7 Attachment 1 – Preliminary Lighting Design And Luminaire Data Sheets



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This design calculation is based upon specified parameters supplied by the client, and other design inputs assumed by us, as detailed in this document. In practice, the accuracy of the values will differ due to environmental variations such as actual luminaire positioning, room surface reflectance, supply voltage, local luminaire ambient temperature, obstacles/furniture, etc. These results are also subject to normally accepted photometric tolerances, and calculation/program uncertainties. Pierlite provides this calculation without any representationor warranty of any kind. The Company shall be under no liability to the Customer for failure to attain such performance figures unless the performance of the Goods supplied is specifically guaranteed in writing, and any such written guarantee shall be subject to recognised manufacturing variations and tolerances applicable to the Goods.

REV	DATE	COMMENTS	DESIGNED
R0			NK
R1			
R2			
R3			
R4			
R5			

PROJECT
BESS

TITLE
YARD LIGHTING

REVISION
R0

SHEET
A3

CLIENT
GENUS

DOCUMENT NO.
CRM no.

PAGE NO.

Luminaire Schedule								
Symbol	Qty	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	25	MRASLSD4T24 - MineMaster SB -	MRASLSD4M4T24 (4000K) 74W	MM	0.800	8531	69.6046	1740.115

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max	Max/Avg
GROUND_Planar	Illuminance	Lux	84.37	197.0	25.5	0.30	0.13	2.33
ObtrusiveLight_1_Cd_Seg1	Obtrusive - Cd	N.A.	32.8	41	19	0.6	0.5	N.A.
ObtrusiveLight_1_Cd_Seg2	Obtrusive - Cd	N.A.	32.4	45	19	0.6	0.4	N.A.
ObtrusiveLight_1_Cd_Seg3	Obtrusive - Cd	N.A.	33.2	42	16	0.5	0.4	N.A.
ObtrusiveLight_1_Cd_Seg4	Obtrusive - Cd	N.A.	33.3	50	16	0.5	0.3	N.A.
ObtrusiveLight_1_Ill_Seg1	Obtrusive - Ill	Lux	0.66	0.9	0.2	0.30	0.22	N.A.
ObtrusiveLight_1_Ill_Seg2	Obtrusive - Ill	Lux	0.65	1.1	0.2	0.31	0.18	N.A.
ObtrusiveLight_1_Ill_Seg3	Obtrusive - Ill	Lux	0.56	0.8	0.2	0.36	0.25	N.A.
ObtrusiveLight_1_Ill_Seg4	Obtrusive - Ill	Lux	0.72	1.4	0.2	0.28	0.14	N.A.

NOTES:-

COMPLIANT TO AS 1680.5 EXTERIOR WORKPLACES
NOTE AS 4282 COMPLIANCE IS ESTIMATED HERE. THE CALCULATION GRID IS ASSUMED AS SHOWN IN THE DRAWING.
EACH SITE MUST BE CHECKED AS THERE ARE DIFFERENNT ZONES AND CRITERIA.
THIS IS COMPLIANT BASED ON AN ESTIMATED BOUNDARY LINE.

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REV	DATE	COMMENTS	DESIGNED
R0			NK
R1			
R2			
R3			
R4			
R5			

PROJECT: BESS
TITLE: YARD LIGHTING
REVISION: R0
SHEET: A3
CLIENT: GENUS
DOCUMENT NO.: CRM no.

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MineMaster SB

The MineMaster SB provides versatility with spigot or bulkhead mounting options & high quality of light for all applications, supplied with lumen select technology making it ideal for sites with a requirement for singular or multiple lumen outputs across multiple locations on a site, this allows for one common fitting with one product to order across the site.

- Multiple wattages/lumen outputs in one luminaire with a maximum of 70W
- Amber with T2 Optics and 4000K with T2 or T5 optics provide 0.2% maximum upward light
- Diecast marine grade aluminium housing with chromate and RAL9007 powdercoat finish with 27mm to 32mmØ spigot mount

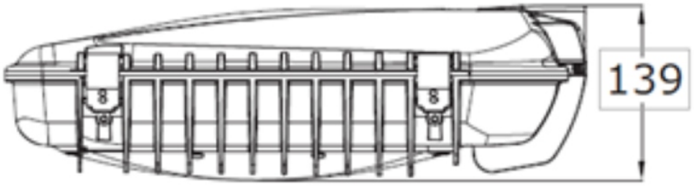
LUMEN SELECT™

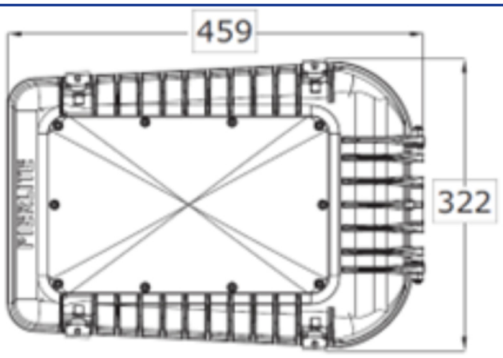
IP66	IK10	3SDCM	-25 to 50	DALI	84,000hrs (L70/B50)	5 Years
Ingress Protection Rating	Impact Rating	MacAdam Steps	Operating Temperature	Dimming	Lifetime	Warranty

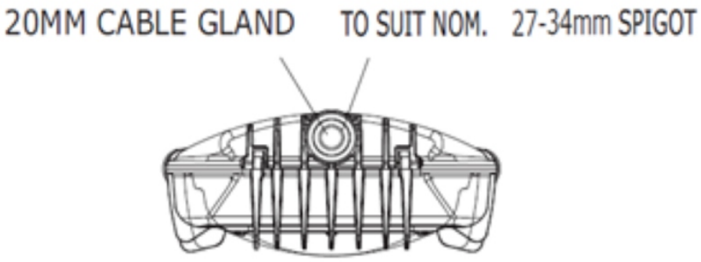
CODE	SYSTEM POWER	EXIT LUMEN	EFFICACY	CCT	DIMENSIONS
MRASLSD4T24	70W	9717lm	142lm/W	4000K	L459 x W323 x H135 mm
	60W	8630lm	145lm/W		
	50W	7332lm	147lm/W		
	40W	5947lm	149lm/W		
	31W	4766lm	150lm/W		
	27W	4216lm	151lm/W		
MRASLSD4T54	70W	10380lm	133lm/W	4000K	L459 x W323 x H135 mm
	60W	9041lm	143lm/W		
	50W	7664lm	144lm/W		
	40W	6294lm	143lm/W		
	31W	5083lm	141lm/W		
	27W	4518lm	140lm/W		
MRASLSDAT24	70W	6471lm	83lm/W	1730K	L459 x W323 x H135 mm
	60W	5913lm	90lm/W		
	50W	5078lm	91lm/W		
	40W	4219lm	92lm/W		
	31W	3422lm	92lm/W		
	27W	3047lm	92lm/W		

ACCESSORY CODE	DESCRIPTION
MRASLSD4T2LM	Minemaster alum. Spigot Lumen Select (70W max) Dali 4000K T2 Optic no Spigot & Bulkhead mounting
MRASLSDAT2LM	Minemaster alum. Spigot Lumen Select (70W max) Dali AMBER T2 Optic no Spigot & Bulkhead mounting
MRASLSD4T5LM	Minemaster alum. Spigot Lumen Select (70W max) Dali 4000K T5 Optic no Spigot & Bulkhead mounting
MRAB	Minemaster SB Bulkhead Powder coated RAL9007 Paint Kit c/w Screws & 10KV Surge Protection geartray
MRAPCCD	Minemaster SB PC Clear Diffuser c/w Gasket & Screws
MRAPG	Minemaster SB Surge Protection Gear Tray to Suit Mains Fitting
MRALSG	Minemaster SB 70W Dali Lumen Select (Mains) Control Geartray
ST25TBAR	Security Torx T25 TBAR Tool
C33VANDALUX	Flat wall mount Bracket, Mild steel, Hot Dip Galvanised Finish

Line Drawings







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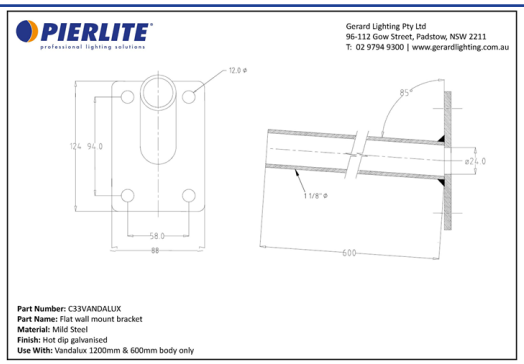
Product Images

Accessories



C33VANDALUX

*Rated LED design life where stated is based upon application of Pierlite's operating and maintenance guidelines; see pierlite.com.au. Actual product life may vary dependent upon frequency of maintenance and product application. Due to continual product improvement, information is subject to change without notification. Pierlite standard Terms and Conditions apply.

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INSTALLATION / WARRANTY INSTRUCTIONS
PRODUCT BRAND: PIERLITE
PRODUCT NAME: MineMaster SB - Conveyer/ Area Light
PRODUCT CODE: Please see point

Issue Date: 23/06/2022

Please read these installation instructions carefully before installing or maintaining this equipment. The product is designed for installation and maintenance in accordance with relevant Australian standards (AS/NZ3000), by an authorised and licensed electrician. The installation instructions were correct at the time of print. To reflect changes in technology and Australian and New Zealand standards; Pierlite reserves the right to amend the instructions without notice. Updated guidelines can be found on relevant brand web site.

1. PRODUCT SPECIFICATION:

Type of protection	Class I luminaire
Type of protection	IP66
IK rating	IK10
IC Rating	N/A
Nominal voltage	220V to 264V ~
Nominal frequency	50/60 Hz
Number of wattages per fitting	6 per fitting refer 6 selections
Available wattages	Refer to section 4
Power factor	>0.9
Surge protection rating	L-N 10KV/5KA, L-E: 10KV/5KA, N-E: 10KV/5KA Maximum impulse voltage, 10KV (where installed)
Inrush current	Cold start 10A(twidth=46µs Measured at 50% Ipeak) at 230VAC
Earth leakage	0.15mA
Rated operating ambient temperature	0 to +50°C
LED lifetime	• Rated 84,000 hours (L70/B10) +50°C • Calculated >211,000 hours (L70/B10) @ +50°C • Rated 57,000 hours (L90/B10) +50°C • Calculated 57,000 hours (L90/B10) @ +50°C
Emergency battery design life	Lithium Iron Phosphate battery – 10 years
Colour temperature	4000K and PC amber Leon, adding PC amber
Colour rendering index (CRI)	80
LED control gear	DALI / Lumen select
Available in emergency	Yes, DALI and self-testing
Emergency battery technology	2-hour Lithium Iron Phosphate (LiFePO4)
Electrical connection	4.5m long 2c+E 2.5mm² heavy duty orange circular 1KV UV protected via 6.0mm² terminal block
Cable entry	1x 20mm – cable diameter size 8mm – 13.5mm +/- 0.5mm
Installation type	27mm to 34mm Ø Spigot or surface mounted with surface mounted kit
Dimensions (LxWxH)	Refer to table in section 6
Net weight of luminaire	Refer to table in section 6
Warranty	Luminaire: 5 years Emergency Battery: 4 years
Suitability	Indoor and outdoor
Suitable for rough service	Yes

2. CONSUMABLES

Description	QTY Required Per Fitting	Brand	Component Part Number	Dimensions (LxWxH) mm
2-amp fuse	1	Glass fuse	TDC180-2A	20 x 5 x 5
2-hour duration 6.4V 3.2AH Side by side pack	1	Pierlite	BATPK3200/2L21	70 x 53 x 31

3. SERVICE & OPERATION (EMERGENCY VERSION)

Normal Operation: Maintained Emergency Operation.

Battery: Sealed **Lithium Iron Phosphate (LiFePO4)** rechargeable battery pack. As per AS/NZS 2293, it is required that the battery pack is discharged and recharged at least once every 6 months.

In case of a replacement, same brand and type of battery pack must be used. Allow 24 hours charging time before carrying out any discharge tests.

Charge Duration: 16 Hours
Discharge Duration: M2 = 2 Hours for standard emergency or M4 = 4 hours for rail/heavy industry emergency (Initial Test)

Test Switch: If manual test switch pressed, the fixture will operate from its battery supply.
Please ensure battery plug is connected to the inverter battery terminal.

Warning: All maintenance, such as battery change on this luminaire is to be changed by qualified personnel only. De-energize all supplies before maintenance.

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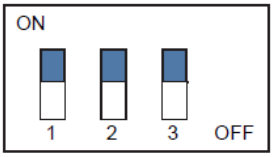
4. LUMEN SELECT TABLE (contractor selectable output)
Pierlite's lumen select products allow all licensed electricians to purchase one luminaire that can be set as multiple fixed wattages/fixed lumen outputs. By offering this capability within one fitting it provides the following benefits

- One fitting multiple fixed outputs
- Less stocked items
- Easy to change settings
- IES files available for all available for wattages shown in the above table
- No control system or software required to change fixed output

The lumen output can be altered by changing the driver dip switches from the factory default setting to the driver milli-amps as specified in the table. Dip switches are located on the control gear tray.

Product Code#	Power (W)	Emergency Wattage (W)	Line Current (A)	Lumen Output (Lm)	Dip Switch Settings Refer section 5			CCT (K)	Optics	Emergency
					1	2	3			
MRASLSD4T24	70	N/A	0.3	9,717	Off	Off	Off	4000K	T2	No
	60		0.26	8,630	On	Off	Off			
	50		0.22	7,332	Off	On	Off			
	40		0.18	5,947	Off	Off	On			
	31		0.15	4,766	On	Off	On			
	27		0.13	4,216	Off	On	On			
MRASLSDAT24	72	N/A	0.3	6,417	Off	Off	Off	Amber	T2	No
	65		0.26	5,913	On	Off	Off			
	55		0.22	5,078	Off	On	Off			
	45		0.18	4,219	Off	Off	On			
	36		0.15	3,422	On	Off	On			
	33		0.13	3,047	Off	On	On			
MRASLSD4T54	72	N/A	0.3	10,380	Off	Off	Off	4000K	T5	No
	62		0.26	9,041	On	Off	Off			
	53		0.22	7,664	Off	On	Off			
	43		0.18	6,294	Off	Off	On			
	35		0.15	5,083	On	Off	On			
	32		0.13	4,518	Off	On	On			
MRASLSD4M2T24	70	4	0.32	9,717	Off	Off	Off	4000K	T2	Yes
	60		0.28	8,630	On	Off	Off			
	50		0.24	7,332	Off	On	Off			
	40		0.2	5,947	Off	Off	On			
	31		0.17	4,766	On	Off	On			
	27		0.16	4,216	Off	On	On			
MRASLSDAM2T24	70	4	0.32	6,417	Off	Off	Off	Amber	T2	Yes
	60		0.28	5,913	On	Off	Off			
	50		0.24	5,078	Off	On	Off			
	40		0.2	4,219	Off	Off	On			
	31		0.17	3,422	On	Off	On			
	27		0.16	3,047	Off	On	On			
MRASLSD4M2T54	70	4	0.32	10,380	Off	Off	Off	4000K	T5	Yes
	60		0.28	9,041	On	Off	Off			
	50		0.24	7,664	Off	On	Off			
	40		0.2	6,294	Off	Off	On			
	31		0.17	5,083	On	Off	On			
	27		0.16	4,518	Off	On	On			



Note: *Make sure to disconnect power before changing a DIP switch on the luminaries. Setting the DIP switches according to the above ONLY. All other settings may affect the luminaries' performance. After setting, secure the silicon cover over the DIP switches.*

5. DALI CONTROL GEAR: The LED driver and emergency control gear are both controllable through a certified DALI system. A DALI connection is not required in a non-systemized electrical system. If DALI is not required do not connect it.
Note: When designing the DALI system please refer to the table below for the number of DALI addresses.

Control gear	Function	Number of Addresses
LED Driver	Dimming, on/off & feedback	1
Emergency Inverter	Testing & Reporting	1

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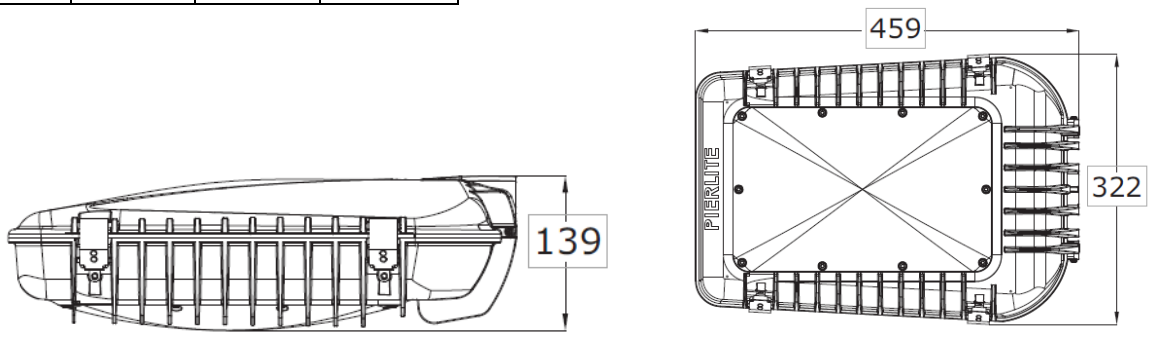
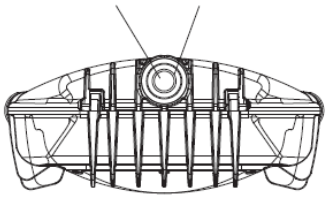
6. LINE DIAGRAMS AND DIMENSIONS

Length (mm)	Width (mm)	Height (mm)	Weight in (kg)
459	322	139	9



20MM CABLE GLAND TO SUIT NOM. 27-34mm SPIGOT



7. INSTALLATION / GENERAL: Installation of the product is to be completed by an authorized and licensed electrician, in accordance with these instructions, relevant Australia standards and local regulations (where applicable). Termination of product wiring, together with the installation of the product must be in a manner and orientation that maintains the integrity of the designated IP rating of the product for electronic control equipment (when supplied) DO NOT MEGGER between A and N.

Installation:

Tools Required

- **T25 Torx screw bit of drill bit**
- **13mm spanner / socket**
- **Flat blade screwdriver**

Installation steps for Spigot mount

1. Loosen Torx screws on clips with T25 Torx screw bit
2. Place flat blade screwdriver under clips to open
3. Place fingers in between the top and bottom to push retainer clip back allowing light module to open
4. Unscrew spigot bolts enough to slide fitting over spigot
5. Slide cable through pole and fitting over spigot (27mm to 34mmØ). Ensure dust cover is tight around pole and tight against the luminaire
6. Ensure fitting is straight on pole ensuring it is level when the pole is upright
7. Tighten spigot bolts using 13mm spanner / rachet and socket to 14NM to 18NM
8. If installing emergency fitting connect the battery to the inverter via plugs
9. Set the lighting level to the desired lumen output via the lumen select switches. Refer to section 4
10. Ensure fuse and connection cable between lighting module and spigot mount is secure, this may have loosened while in freight
11. Close lighting module to spigot mount and close clips
12. Tighten clip screws using the T25 Torx screw bit
13. Ensure supply is isolated as per the Australian standard and your SWMS / site requirements
14. Connect the cable into junction box / weatherproof plug
15. Ensure IP rating of installation is at minimum of the specified IP rating of the luminaire
16. Test circuit per Australian standards and your SWMS / site requirements
17. Energies luminaire

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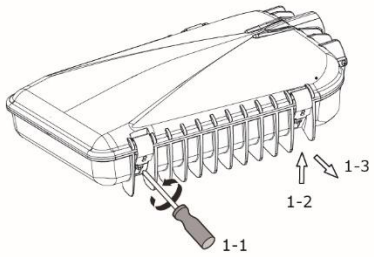
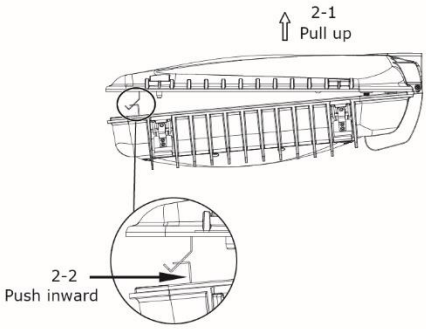
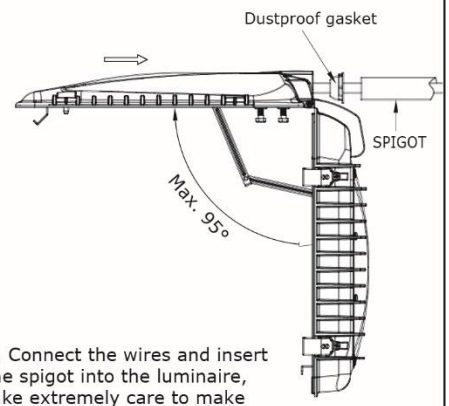
Installation:



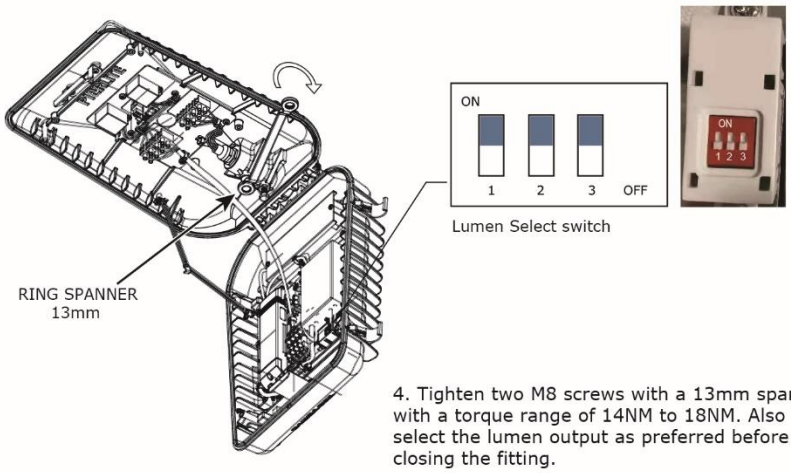
1. Unfasten 4 secure screws on the latches and release 4 latches by using a flat head screw driver.



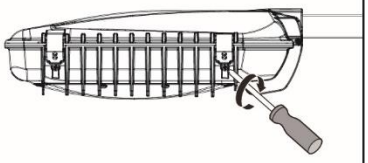
2. Pull the upper cover up by about 5°and push the toggle bracket inward to release the lower body as shown above.



3. Connect the wires and insert the spigot into the luminaire, take extremely care to make sure silicon sleeve is in proper location.



4. Tighten two M8 screws with a 13mm spanner with a torque range of 14NM to 18NM. Also select the lumen output as preferred before closing the fitting.



5.Make sure the fitting is closed properly and sitting flat on the gasket, close 4 latches and fasten 4 secure screws again.

Installation Steps for Surface mount (surface mount kits is sold separately as an accessory)

Tools Required

- **T25 Torx screw bit of drill bit**
- **Flat blade screwdriver**
- **PH2 Philip head screwdriver**

1. Loosen Torx screws on clips with T25 Torx screw bit
2. Place flat blade screwdriver under clips to open
3. Place fingers in between the top and bottom to push retainer clip back allowing light module to open
4. Open the fitting, cut off cable tie and unplug the quick connector
5. Unscrew hanging support bracket and trunnion screws
6. Replace the spigot mount cover with surface mount cover, drilling positions are shown in below
7. Screw 2x trunnion screws back and then screw the hanging bracket to surface mount cover.
8. Plug in quick connector and add another cable tie to the connector cable and tighten it
9. If installing emergency fitting connect the battery to the inverter via plugs
10. Set the lighting level to the desired lumen output via the lumen select switches. Refer to section 4
11. Ensure fuse and connection cable between lighting module and spigot mount is secure, this may have loosened while in freight
12. Install the light fitting to the ceiling
13. Connect the power cable to the terminal block, wire the lighting fitting according to AS3000
14. Close lighting module toward to surface mount, hook on support bracket first.
15. Align the light module and surface mount cover to make sure gasket is sit in proper position
16. Lift up the module and close the clips
17. Tighten clip screws using the T25 Torx screw bit
18. Ensure supply is isolated as per the Australian standard and your SWMS / site requirements
19. Ensure IP rating of installation is at minimum of the specified IP rating of the luminaire
20. Test circuit per Australian standards and your SWMS / site requirements
21. Energies luminaire

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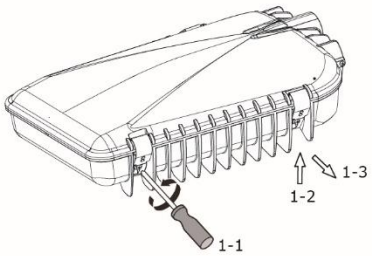
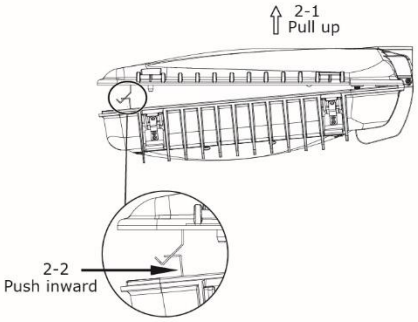
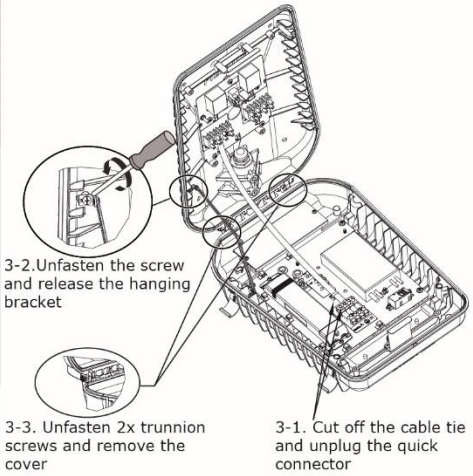
Installation of surface Mount Version



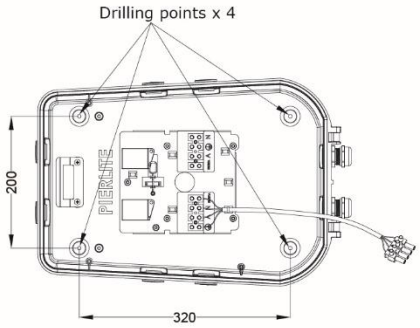
1. Unfasten 4 secure screws on the latches and release 4 latches by using a flat head screw driver.



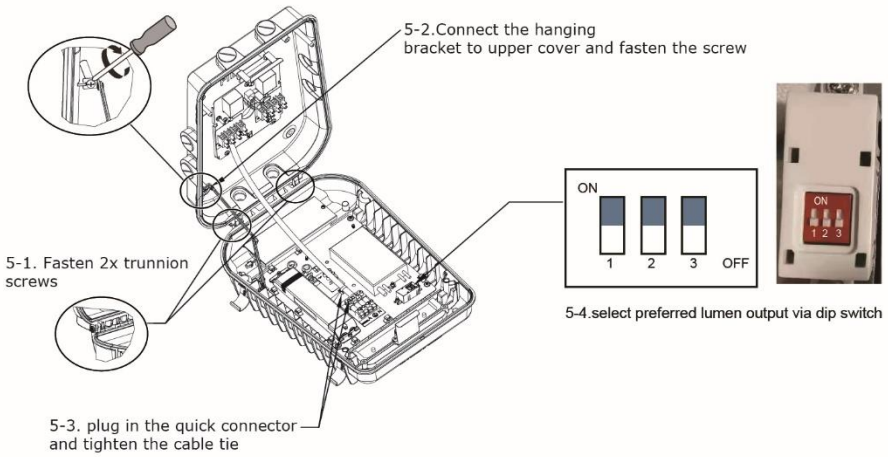
2. Pull the upper cover up by about 5°and push the toggle bracket inward to release the lower body as shown above.



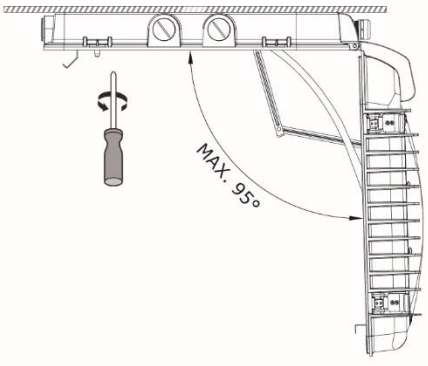
3.Remove spigot mount cover



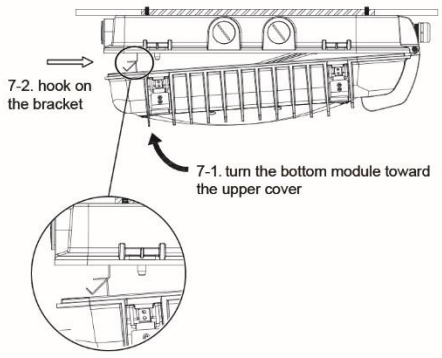
4. Drilling position is shown as per above picture.



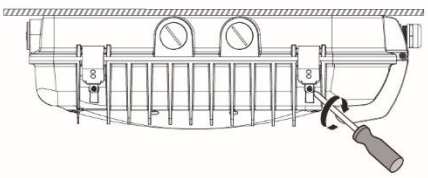
5.Assemble the surface mount cover and select the preferred lumen output, Also select the lumen output as preferred before closing the fitting.



6. Mount the fitting to the ceiling properly and wire the fitting according to AS/NZS 3000, for Emergency products, please make sure the battery connector is connected.



7. Lift the bottom module gently to the position shown on the picture, hook on the bracket first, and then align the bottom module with upper cover.



8. Close the fitting carefully, make sure gasket is sealed properly, and then close 4 latches and fasten 4 security screws.

IMPORTANT - the product must be maintained and operated in accordance with the manufacturer's instructions, failure to do so may damage the product and services. It is strongly recommended that this important note be communicated to the owner and or operator of the installation at the time of site commissioning. Good practice does not recommend the 24/7 use of products without the application of suitable switch cycle intervals. Furthermore, with the omission of nominated survival curves and or recommended operating hours, product design expectations provide for a continual daily usage of 6 hours for residential applications and a continual daily usage of 12 hours for commercial and industrial applications. All

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products must be thoroughly cleaned on a regular basis at intervals that reflect in the installation environment, ensuring the optical performance, together with the electrical, mechanical, and structural integrity as designed, is maintained throughout the service life of the product.

APPROVALS: The RCM marking of this product applies to AS/NZS CISPR15 (EMC) "Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment".
This product is designed to conform to AS/NZS60598 "Luminaires, general requirements and tests".

STORAGE: Prior to installation products are to be stored in cool and dry conditions.

APPLICATION: The installation application and orientation of the product is designed in accordance with the nominated product IP rating, class designation and these installation installations. Installation environments outside these conditions are not recommended.

MAINTENANCE:
(a) The supply must be isolated before opening or accessing the luminaire. Product maintenance is IMPORTANT and is critical to the products designed performance. The product is to be maintained in accordance with the manufacturer's instructions. For the latest product maintenance guides please go to relevant brand web site. Pierlite is not responsible for any product not maintained in accordance with the recommended procedure or intervals.
(b) Lamps (where provided): The product is designed with the supplied (LEDs) / LAMP/s and it is strongly recommended that any LAMP / (LEDs) changes (if any) be made in accordance with the type, colour and brand supplied. For recommended LAMP / LED maintenance or operating guides (inclusive of recommended product switch cycles and mandatory run-in procedures for HID and Fluorescent lamps when used with dimming circuits), Pierlite recommends the application of the lamp manufacturer's operating guidelines, which can be found on manufacturer's website. Pierlite is not responsible for the product performance of alternative lamp/s used. As a member of FluroCycle, we encourage recycling of lamps and components.
(c) Battery (where provided): The battery is designed with a rated average battery design life in standby mode and is supported with a standard warranty (refer to product specifications for details); conditional of the product being maintained and operated in accordance with the manufacturer's guidelines and tested in accordance with AS/NZS2293. For guidelines see product installation instructions or visit the relevant brand web site.
(d) For products supplied with glass visors or covers, do not operate the product with a damaged visor or cover; it is recommended the product be turned off, area surrounding the product vacated, and the damaged glass replaced by a professional installer immediately.
(e) Cables or chords, If any external cable or cord of the X or Y type luminaire is damaged, it shall be replaced by a by a qualified person or manufactures service agent.
For Z type attachments to luminaire, cord cannot be replaced if damaged, the luminaire shall be removed from service.

Flex cord types.

- X: A specially prepared flexible cable or cord, may also include a part of the luminaire and only available from manufacture.
- Y: Attachment may be used either with ordinary or special flexible cable or cord.
- Z: Attachment of cable or cord that cannot be replaced without damage to luminaire

WARRANTY INSTRUCTIONS: For the purpose of warranty claims (if any) the following instructions apply:
Warranty period - The above components are provided with a warranty (refer to product specifications for details) against manufacturing defects or failure to perform to specifications for products installed by an authorised installer in accordance with the manufacturer's installation instructions and which have not been subject to incorrect operation or maintenance, unauthorised modification or damage arising from any intervening cause.
Warranty reference - The warranty reference date commences from the date of purchase.
Warranty point of contact – Pierlite, 96 Gow Street Padstow NSW 2211, phone T 1300 799 300 contact – Pierlite After Sales Support.

Warranty claim procedure – For the purpose of making a claim the customer must:
1. Contact the "point of contact" above and upon provision of proof of purchase the customer will receive a goods return advice (GRA) number.
2. At the customer's expense, collect and return the goods to the "point of contact" with the issued GRA number.
3. Upon receipt of the goods, Pierlite will review the claim and if found to be accepted, Pierlite will return a replacement product to the customer to install at the customer's expense. Alternatively, if the claim is rejected, the customer may request the return of the goods at their expense.
Consumer Contracts - The benefits to the customer given by the Pierlite warranty are in addition to other rights and remedies of the customer if the goods are the subject of a Consumer Contract under the Australian Consumer Law. In that event the following statement is required to be brought to the Consumer's attention: - *Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.*
Limitation of Liability – if the goods are not purchased by the customer under a Consumer Contract within the Australian Consumer Law then but not otherwise;- (a) the Company is not liable in tort for any loss or damage suffered by the customer or by any third party; and (b) in no circumstances is Pierlite liable to the customer or to any third party for any loss of profits, loss of anticipated savings, economic loss or interruption of business or for any indirect or consequential loss (Consequential Loss).

Terms of Sale – these warranty provisions are in substitution for any inconsistent provisions in the Pierlite Terms and Conditions of Sale in so far as they apply to the warranty components.