

## MATERIAL APPROVAL FORM

**PROFILE PARK AND ATHLONE (GIL) PROJECTS**

Date:  
 Submittal No:  
 Revision: 0

**Contract No.:** Profile park

**To:** Gama Power Systems Inc.  
 Philip Moore

**CC:**

**SUBMITTAL STATUS**

- NEW SUBMITTAL  
 RESUBMITTAL

**SUBMITTAL DISCIPLINE**

- Architectural     Mechanical  
 Civil                 Electrical  
 Structural             Others

**Reference Specifications / Drawings:** Drawing Range: All Areas

**REVISION EXPLANATION:**

**Specification Section No. :**

**BOQ reference :**

Item No.	Description	Manufacturer / Vendor	FOR GCIL USE ONLY (Remarks to be filled in)	FOR GIL USE ONLY (Remarks to be filled in)
1	Outdoor Wall mounted Floodlights	Thorn		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

**PURPOSE / PLACE OF USE:**

For Approval of Lighting

**APPROVAL STATUS**

These documents have been reviewed for general conformance with contract conditions.

- A  Approved            C  Unacceptable  
 B  Approved as noted    D  Revise & Resubmit

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**ATTACHMENTS**

- A Certificates     E Procedures   
 B Brochures       F Samples   
 C Catalogues     G Mat Test Reports   
 D Drawings         H Others

**SUBMITTED BY**

Instrotec  
 Alan Davis, Engineer  
 Date: 23/05/2024

**Reviewed By:**

Philip Moore  
 Name and Signature of Contractor  
 Date: 24/05/2024

**Reviewed By:**

\_\_\_\_\_  
 Name and Signature of Owner  
 Date:



## TECHNICAL SUBMITTAL

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## 1.0 Submittal Summary

**SUBMITTAL NUMBER:** INST-TS-025-E-Type K - 41W Projector Luminaire

**REVISION:** 0

**MATERIAL:** Aluminium

**SERVICE:** Electrical

**MANUFACTURER:** Thorn

**SUPPLIER:** Eastern



## 2.0 Data Sheets

# THORN

LIGHTING



# AREAFLOOD PRO

A general purpose LED area floodlight  
with superior optical performance

# OPTIMISE YOUR LIGHTING

With its flexible choice of sizes and optics, Areaflood Pro offers optimum lighting across a wide range of applications.

## LOADING BAY

Mounting height: 8 m

Spacing: 9 m

Maintenance factor (MF): 0.9



EN 12464-2	Luminaire Type	Specs	Qty	Total Power of Installation	Em Maintained Illuminance	Uo Uniformity
Loading Area Short-term handling of large units	Areaflood Pro Medium 48L70	15 000 lm A6 optic 4000K	10	1020 W	50 lx	0.4

## INDOOR ARENA

Pitch dimensions: 20 x 40 m

Calculation grid: 15 x 7

Mounting height: 10 m

Maintenance factor (MF): 0.9

Glare rating (GR): < 50



EN 12193	Luminaire Type	Specs	Qty	Total Power of Installation	Em Maintained Illuminance	Uo Uniformity
Class I	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000K	22	6534 W	802 lx	0.74
Class II	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000 K	16	4752 W	540 lx	0.72
Class III	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000 K	8	2376 W	267 lx	0.80

## SWIMMING POOL

Pool dimensions: 50 x 25 m

Calculation grid: 17 x 9

Mounting height: 10 m

Maintenance factor (MF): 0.9

Glare rating (GR): < 50



EN 12193	Luminaire Type	Specs	Qty	Total Power of Installation	Em Maintained Illuminance	Uo Uniformity
Class I	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000K	26	7722 W	547 lx	0.74
Class II	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000K	16	4752 W	339 lx	0.75
Class III	Areaflood Pro Large 144L70	41 500 lm A6 optic 4000K	12	3564 W	256 lx	0.68

## SINGLE TENNIS COURT

Field dimensions: 18 x 38 m

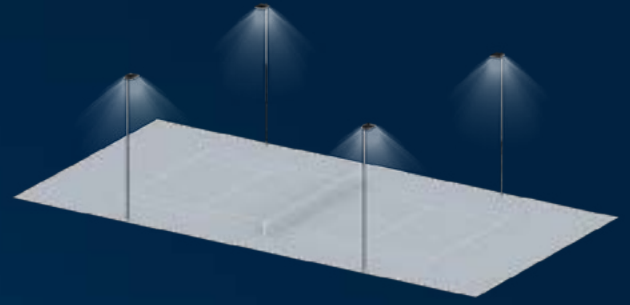
Calculation grid: 12 x 6

Mounting height: 4 masts of 10 m

Maintenance factor (MF): 0.9

Glare rating (GR): < 50

ULR: 0%

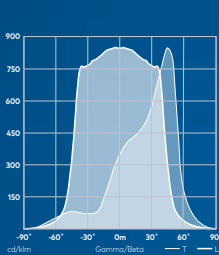


EN 12193	Luminaire Type	Specs	Qty	Total Power of Installation	Em Maintained Illuminance	Uo Uniformity
Class I	Areaflood Pro Large 144L70	41500 lm A6 optic 4000K	16	5940 W	531 lx	0.72
Class II	Areaflood Pro Large 144L70	41500 lm A6 optic 4000K	12	3564 W	315 lx	0.73
Class III	Areaflood Pro Large 144L70	41500 lm A6 optic 4000K	8	2376 W	242 lx	0.70

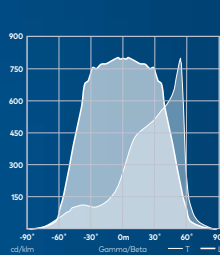
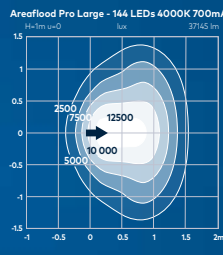
# OPTICAL CHOICE

Suitable for a wide range of applications, Areaflood Pro offers a choice of seventeen optics for efficient and effective lighting. Precise light control and optimum light distribution help maximise comfort and energy savings.

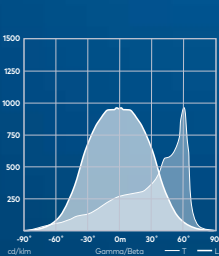
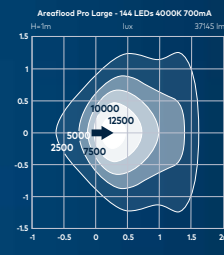
## ASYMMETRICAL OPTICS



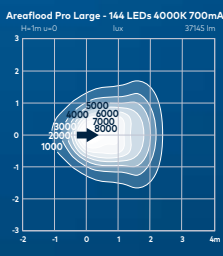
A4: 40° Asymmetrical Optic



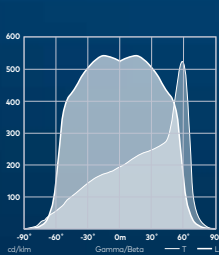
A5: 50° Asymmetrical Optic



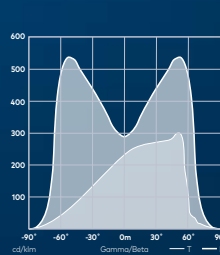
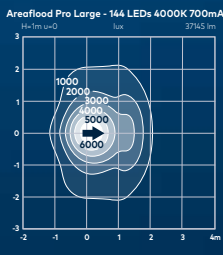
A6: 60° Asymmetrical Optic



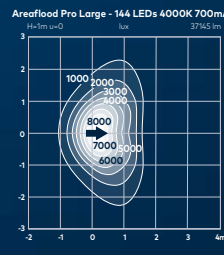
## ROAD OPTICS



EWR: Extra Wide Road Optic



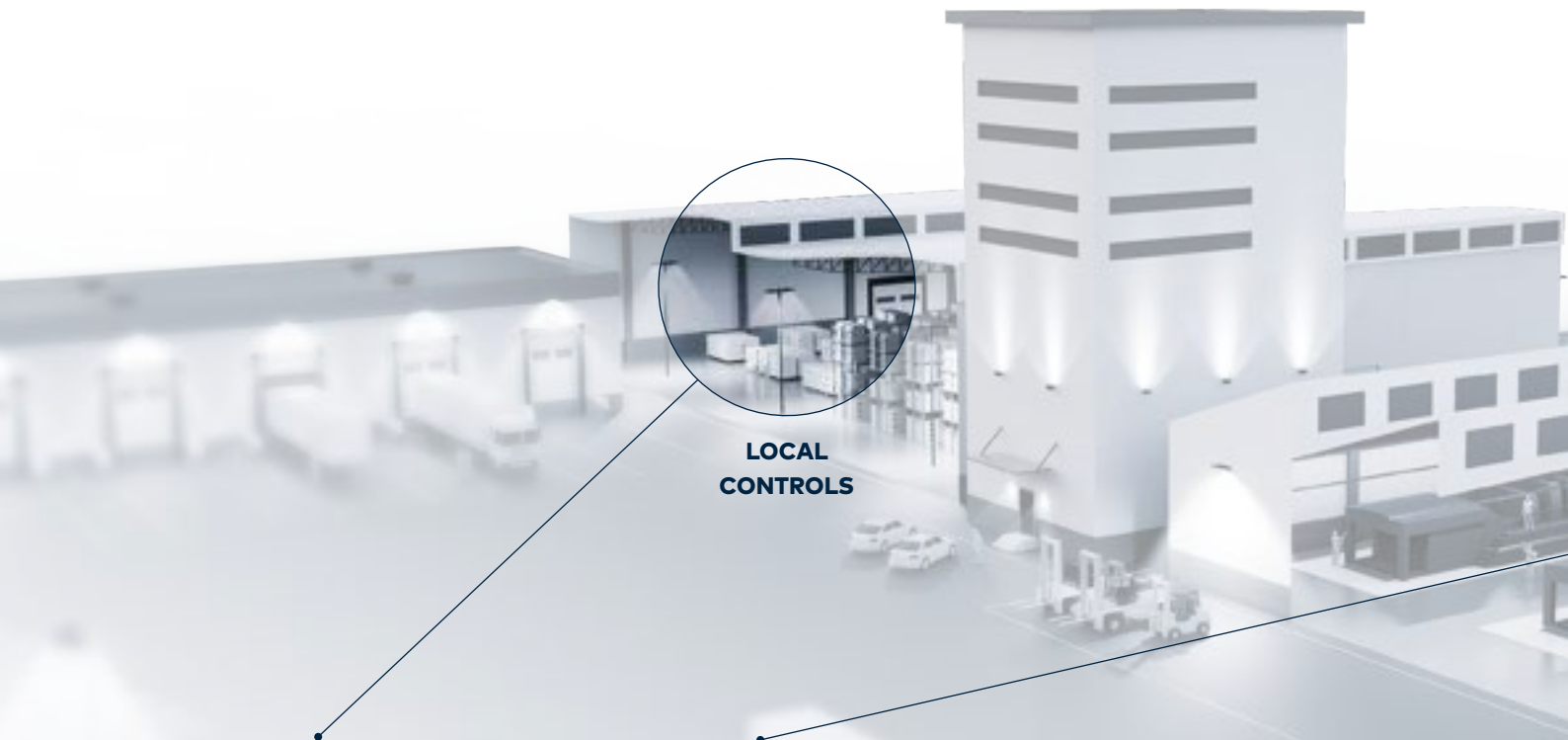
WR: Wide Road Optic



# CONTROL SOLUTIONS

## ADJUSTING LIGHT TO SUIT YOUR NEEDS

Thorn offers a wide range of lighting control solutions. These are generally selected depending on the scale and complexity of the lighting management task.



**LOCAL CONTROLS**

### **LOCAL CONTROLS**

Cabinet control for a group of luminaires via control line. Using typically a local control cabinet, local controls via Bi-Power Power Line (BPL), Light Reduction Twin-Phases (LRT) or DALI allow the dimming of a group of lighting points according to the detection of people and vehicles. Without the need for extensive commissioning, this approach offers good energy savings while still providing all the required light on demand.

### **REMOTE CONTROLS**

Remote central management systems for individual control and monitoring via power line or radio frequency, Zhaga or Nema-based. Offering maximum flexibility and convenience, remote controls ensure the provision of the right light at the right time without the need to visit lighting points or scout for failures. Control can be on an individual or group basis with central switching and/or dimming influencing energy use. Performance data can also be collected.

### **SINGLE LUMINAIRE CONTROLS**

Time switches, photocells and motion detection: these simple controls offer reliable savings with little effort. AreaFlood Pro is fitted with Thorn's Bi-Power Switch (BPS) as standard to give the option of dimming to 50% for eight hours at night. Bi-Power does not require external control wiring and its settings can be easily customised or deactivated (BPX-Y%). Optional photocells (Minicell) can save as much as 50% by reacting to available daylight, while motion sensors offer the possibility of even higher savings.



Rising energy costs combined with reducing budgets and the need to be more resourceful with energy consumption means lighting control has an important role to play. For maximum flexibility, AreaFlood Pro integrates all types of controls from the lighting point to the network level.

**Benefits of lighting control**

- Reduced energy consumption
- Longer luminaire life
- Optimised maintenance cycles
- Reduced site visits
- Lower costs

**Local controls**

BPL / LRT / DALI

**Remote controls**

Power Line / Zhaga / Nema

**Single luminaire controls**

BPS / BPX-Y% / Minicell / Motion detection

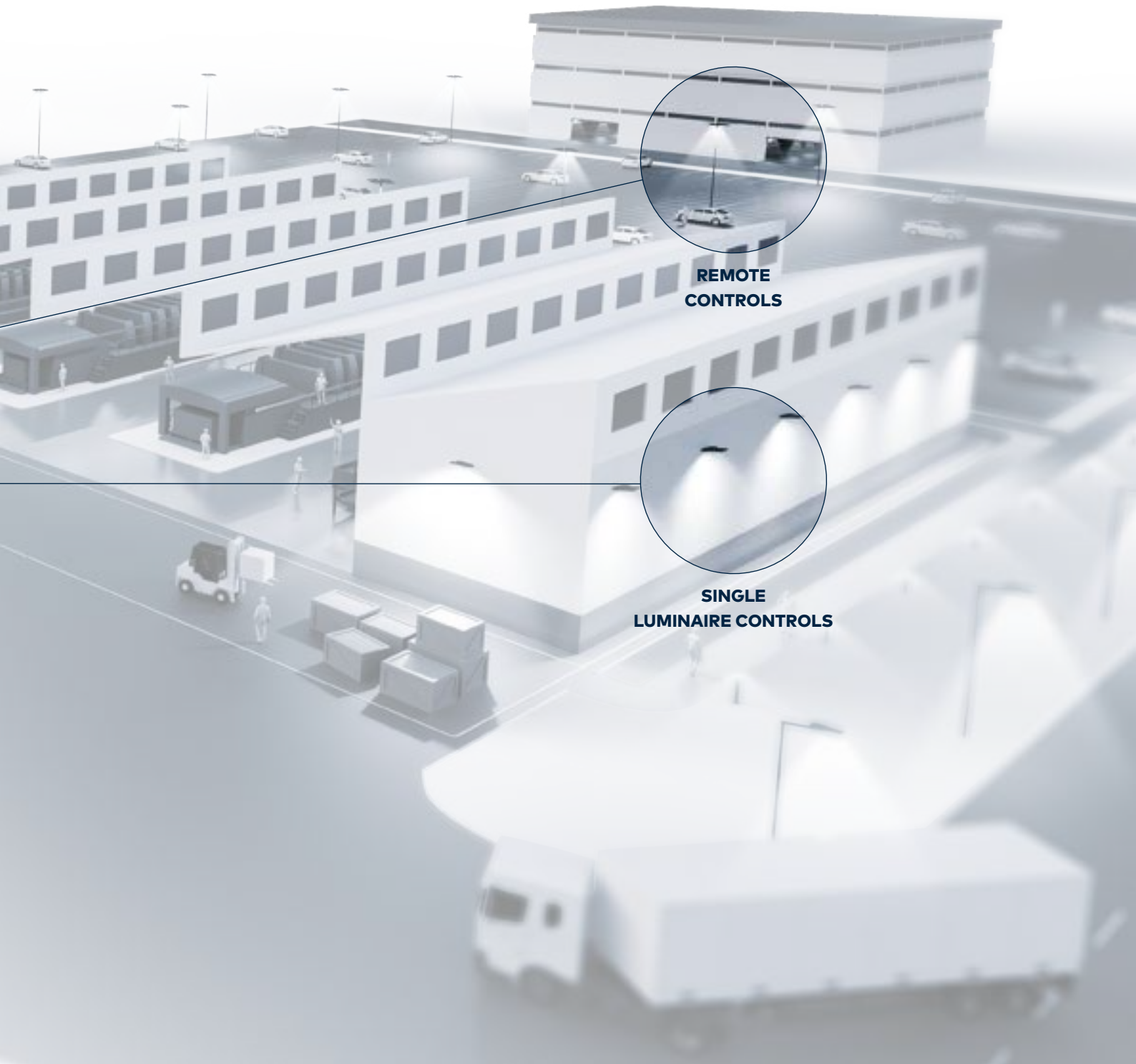
BPS: Bi-Power Switch

BPX-Y%: Bi-Power Customised

(X: hours before and after midnight, Y%: dimming percentage)

BPL: Bi-Power Power Line

LRT: Light Reduction Twin-Phases



**REMOTE  
CONTROLS**

**SINGLE  
LUMINAIRE CONTROLS**

# ENERGY SAVING OPPORTUNITIES

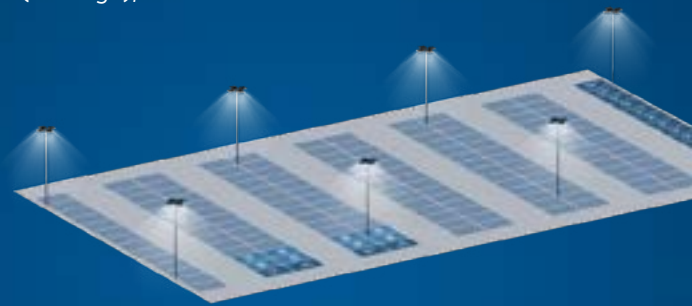
## REDUCE ENERGY CONSUMPTION BY MORE THAN 50% WITH AREAFLLOOD PRO

- Efficient LEDs (up to 169 lm/W) can reduce energy consumption by more than 50%
- Choice of several lumen outputs from 3925 lm to 51 339 lm ensure just the right amount of light for the application
- Wide range of control options to provide light as and when needed
- Choice of seventeen optics to optimise light distribution and minimise waste light

### HEAVY TRAFFIC CAR PARK

A large DIY (Do It Yourself) store car park, with specific requirements of 50 lux maintained illuminance, due to CCTV, security of visitors and for heavy traffic and specific events. The refurbishment programme aims at replacing conventional Areaflood HID 250 W with the LED Areaflood Pro. Dimensions of area: 113 x 63 m; 841 calculation points; 8 columns (8 m high); 32 floodlights installed.

	Required	Conventional Areaflood HID 250 W	Areaflood Pro EWR 72 LEDs	Areaflood Pro EWR 96 LEDs
Power consumption	-	279 W	119 W	160 W
Luminaire lumens output	-	18 900 lm	18 335 lm	24 682 lm
Number of floodlights	-	32	32	24
Number of columns	-	8	8	8
Mechanical tilting angle	-	45°	0°	0°
Maintained average illuminance	50 lux	52 lux	56 lux	56 lux
Initial average illuminance	62 lux	65 lux	70 lux	70 lux
Uniformity (min/ave)	0.25	0.33	0.284	0.253
Energy savings			57%	57%
Additional savings (dimming to the required Eh)			6%	6%



### SINGLE TENNIS COURT CLASS III (TRAINING)

Single Tennis Court Class III with specific requirements of 200 lux maintained illuminance used for training. The refurbishment programme aims at replacing conventional Areaflood HID 400 W with the LED Areaflood Pro. Dimensions of area: 36 x 18 m; 4 columns (10 m high); 12 floodlights installed.

	Required	Conventional Areaflood HID 400 W	Areaflood Pro 120 LEDs / A5 + A4
Power consumption	-	433 W	208 W
Luminaire lumens output	-	26 700 lm	31 286 lm
Number of floodlights	-	12	8
Number of columns	-	4	4
Maintained average illuminance	200 lux	235 lux	203 lux
Uniformity (min / ave)	0.6	0.62	0.6
Energy savings			68%



# INSTALLATION AND MOUNTING

## INCREASE SPEED AND EFFICIENCY

Designed with contractor speed and efficiency in mind, Areaflood Pro is very quick and easy to install. Simply open the luminaire to access the gear housing before placing and connecting the power cable. Once the luminaire is screwed back together, simply install and aim as desired.



**Step 1:** Untighten the four screws positioned at the back of the luminaire.



**Step 2:** Open the back cover to access the gear housing.



**Step 3:** Open the gear housing cover to access the connectors for main supply and controls.



**Step 4:** Place the cable into the luminaire through the cable gland and plug into the connector.



**Step 5:** Close the cover and tighten the screws in the back of the luminaire.



**Step 6:** After installation in a mast/wall/surface, aim and tilt the luminaire accordingly.



# LIGHTWEIGHT AND EASY TO INTEGRATE

## AREAFLOOD PRO IS IDEAL FOR RETROFITS

Areaflood Pro is compact and lightweight to easily replace existing HID solutions and retrofit into any existing column while minimising structural costs. The lightweight design also makes Areaflood Pro easy to carry and install for contractors.

### **Future-proof, easy to maintain design**

Areaflood Pro has a maintenance-free 100 000-hour lifetime (at Ta 25°C) lifetime for both the LED and drivers. A completely removable gear tray also ensures maintenance is quick and easy.



In addition to a completely removable gear tray, Areaflood Pro features a changeable brick to allow the luminaire to be easily updated with new technologies as and when they become available.

DISCOVER

# AREAFLOOD PRO



	SMALL		MEDIUM		LARGE		
*	24 LEDs	36 LEDs	48 LEDs	72 LEDs	96 LEDs	120 LEDs	144 LEDs
*	27 – 52 W	39 – 77 W	50 – 101 W	75 – 150 W	98 – 201 W	124 – 249 W	149 – 360 W
*	3925 – 7637 lm	5856 – 11263 lm	7850 – 15 275 lm	11735 – 22 672 lm	15 653 – 30 277 lm	19 502 – 37 451 lm	23 319 – 51 339 lm
	Up to 154 lm/W	Up to 160 lm/W	Up to 166 lm/W	Up to 166 lm/W	Up to 169 lm/W	Up to 167 lm/W	Up to 166 lm/W
	14 lighting distributions from R-PEC platform + 3 Area light distributions						
	Up to 100 000 h L90B10						
	3000K / 4000K / 5700K						
<b>CRI</b>	70 / 80 / 90 TLCI86 / 90 TLCI90						
**	-25°C to +50°C (with area light distributions)						
	Die cast aluminum, tempered flat glass 4 mm, galvanised steel						
	IK08						
	IP66						
	Resistant to sea side and swimming pool environment (CLASS 5 – very high)						
	Ball proof						
	CL1 and CL2						
	6,5 kg		14 kg		18,5 kg		
	Light grey close to RAL9006 (different RAL on request)						
	Fixation of the product using a stirrup with different inclination angle and fixation points (Option: Accessory for Post-top Ø 60 mm / 76 mm)						
	DALI dimmable, Bi-Power Power Line, Bi-Power Switch, Light Reduction Twin-Phases, Nema interface (minicell on request), Radio Frequency on Zhaga base						
	6 kV and 10 kV (external Surge Protection Device upon request)						
	Visors, louvres, fuses, pre-wired, DALI junction box, simple aiming device						

\* All the values for Lumen Output, Power and Efficacy are linked to the different driving current and optics available  
\*\* The temperature range depends on the number of LEDs and on the mA combination



# Areaflood Pro

# THORN

96644756 AFP S 24L70-740 EWR BS 3550 CL1 GY



## Areaflood Pro

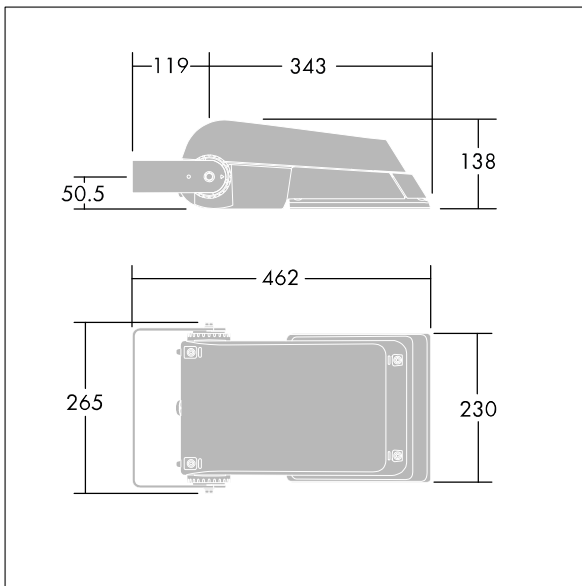
A compact, lightweight, general purpose LED area floodlight. With small body. LED converter configured for power reduction, effective 3 hours before and 5 hours after a calculated midnight, driving 24 LEDs at 700mA with Extra Wide Road light distribution. IP66, IK08, Class I electrical. Body: die-cast aluminium (EN AC-44300), Light grey 150 sanded textured (close to RAL9006).. Enclosure: 4mm thick toughened glass. Reversible mounting stirrup supplied, Equipped with 50% power reduction circuit, effective 3 hours before and 5 hours after a calculated midnight. It can be deactivated at installation with an easily accessible internal switch. Complete with 4000K LED.

Not compatible with UrbaSens systems.

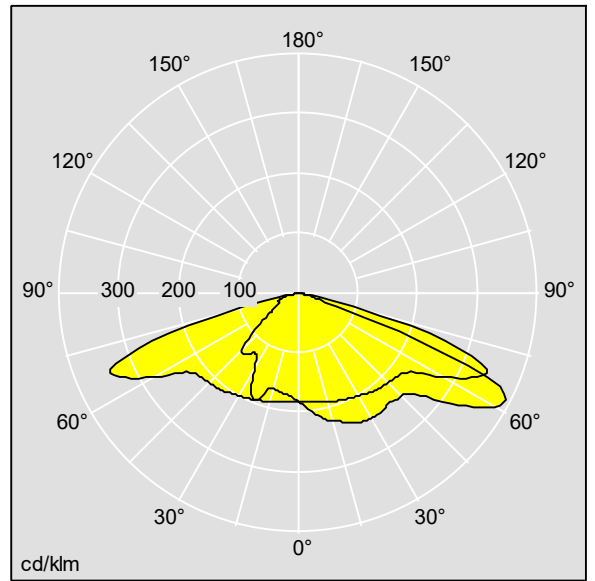
Dimensions: 462 x 265 x 139 mm  
Luminaire input power: 52 W  
Luminaire luminous flux: 7790 lm  
Luminaire efficacy: 150 lm/W  
weight: 6.18 kg  
Scx: 0.05 m<sup>2</sup>



TLG\_AFLP\_F\_SMALLPDB.jpg



TLG\_AFLP\_M\_SML.wmf



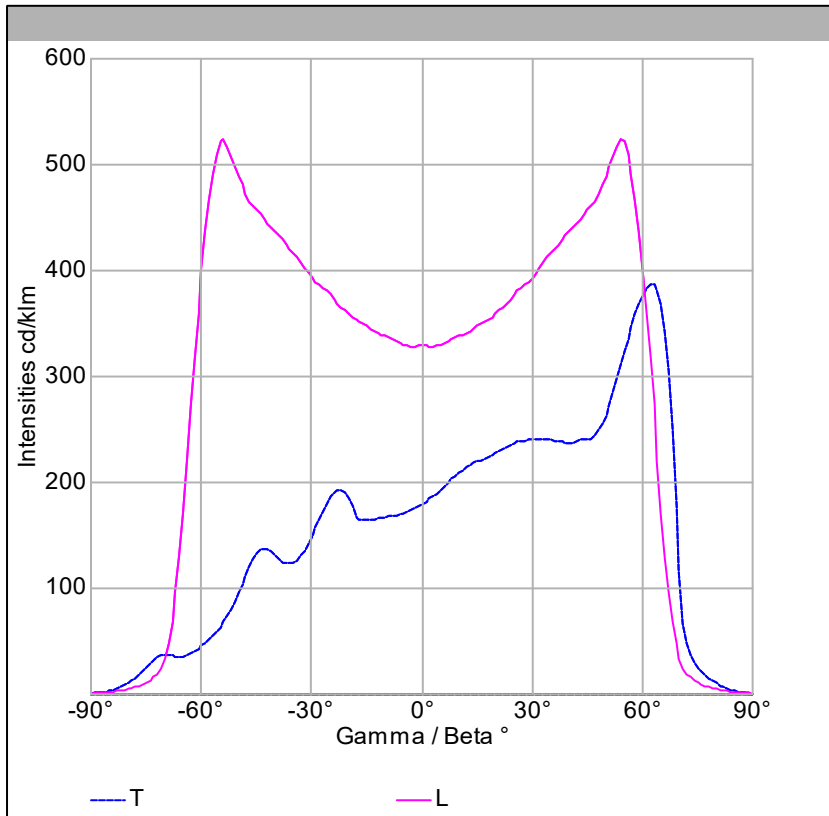
TL\_AFS24L70EWR740.idt

Lamp position: STD - standard  
Light Source: LED  
Luminaire luminous flux\*: 7790 lm  
Luminaire efficacy\*: 150 lm/W  
Colour Rendering Index min.: 70  
Ballast: 1 x 96277221 DRV OS OT 75W 1.05A 115V  
D #4DIMLT2 G2 C

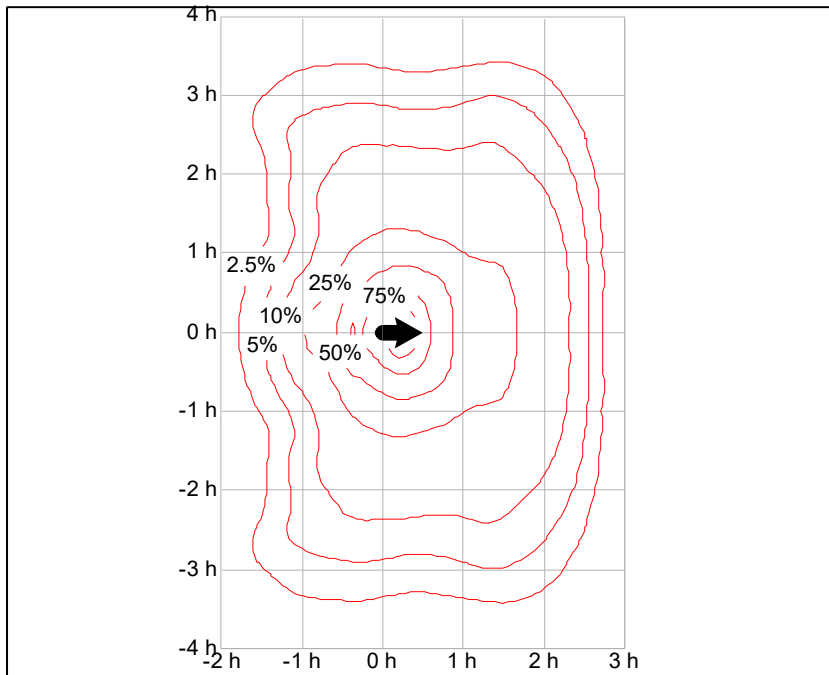
Correlated colour temperature\*: 4000 Kelvin  
Chromaticity tolerance (initial MacAdam): 5  
Rated useful life (B10)\*:  
L90 100000 h at 25 °C  
Luminaire input power\*: 52 W Power factor = 0.95  
Dimming: SETBP  
LOR: 1,00 ULOR: 0,00 DLOR: 1,00

This product contains light sources of energy efficiency class D.

All values marked with an \* are rated values. Thorn uses tried and tested components from leading suppliers, however there may be isolated instances of technology-related failures of individual LEDs during the rated product lifetime. International standards set the tolerance in initial flux and connected load at  $\pm 10\%$ . Unless stated otherwise, the values apply to an ambient temperature of 25°C.

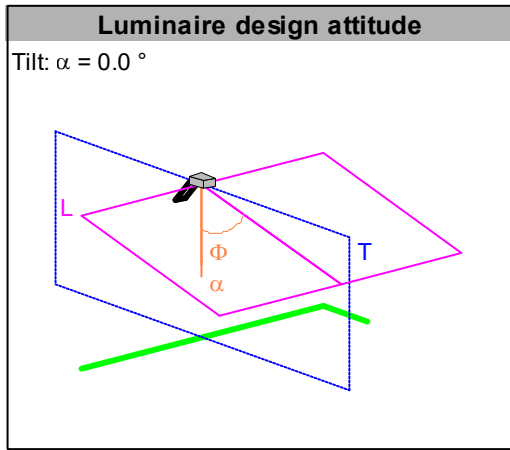


Measurement	AFS24L70EWR740G37
Catalogue number	AFP S 24L70-740 EWR
Lamps	1 x LEDs
Lamp adjustment	
IP	



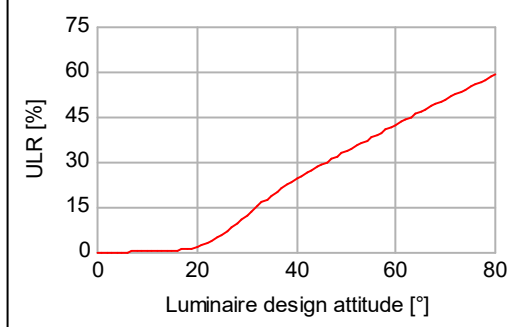
$$E \text{ (lux)} = \frac{E_{\text{max}} \times E\% \times F}{h^2 \times 1000}$$

$E_{\text{max}} = 201.8 \text{ / m} / \text{klm}$   
 luminous flux for the chosen lamp (Im)  
 Mounting height (m)



<b>Maximum intensity</b>	
Imax	522 cd/klm
$\Phi$	71°
<b>Beam divergence at 50% of Imax</b>	
Longitudinal	2 x -1.0°
Transverse:	49.7° / -1.0°
<b>at 10% of Imax</b>	
Longitudinal	2 x 57.6°
Transverse:	-57.8° / 71.8°
<b>Light Output Ratio</b>	
Luminaire design attitude	0.0°
LOR	100.00
ULOR	0.00
DLOR	100.00

<b>Upward light ratio</b>	
0% for a tilt =	1% for a tilt = 18°
3% for a tilt = 22°	5% for a tilt = 24°
10% for a tilt = 28°	15% for a tilt = 32°
20% for a tilt = 36°	25% for a tilt = 41°



### Glare restriction Obtrusive light

Luminous intensity class G3

$\gamma$	Meas. Data Imax in cd/klm	Specified in EN 13201-2
70°	522	
80°	54	100
90°	0	20
>95°	0	

**UK** Installation instructions

**DE** Montageanleitung

**CZ** Montážní návod

**DK** Monteringsvejledning

**EE** Paigaldusjuhend

**FI** Asennusohje

**FR** Notice de montage

**HU** Szerelési útmutató

**IT** Istruzioni di montaggio

**LT** Montavimo Instrukcijos

**LV** Instalācijas instrukcija

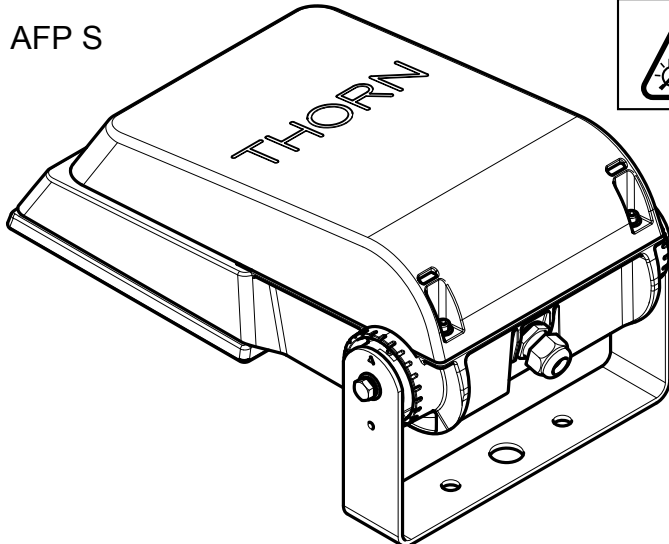
**NO** Monteringsanvisning

**PL** Instrukcja montażu

**SE** Installationsanvisning

**RU** ИНСТРУКЦИЯ ПО МОНТАЖУ

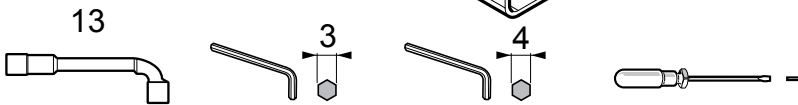
TYPE : AFP S



The luminaire with clear optic should be positioned so that prolonged staring into the luminaire at a distance <1.5 m is not expected.

The light source of this luminaire is not replaceable; when the light source reaches its end of life the whole module shall be replaced.

To reduce the risk of strangulation the flexible wiring connected to this luminaire shall be effectively fixed to the wall if the wiring is within arm's reach

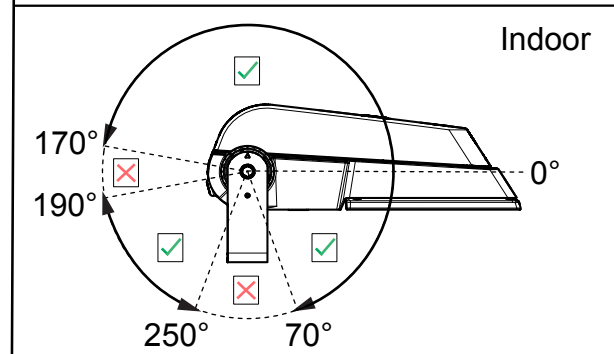
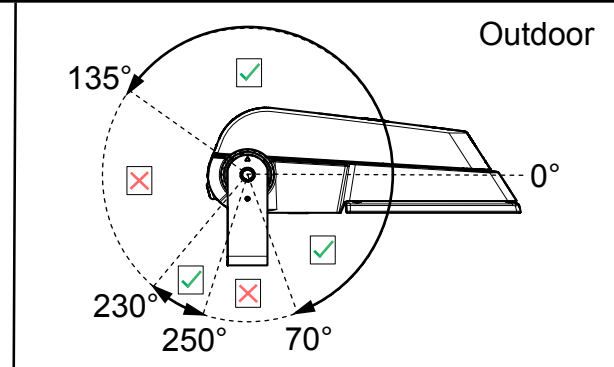
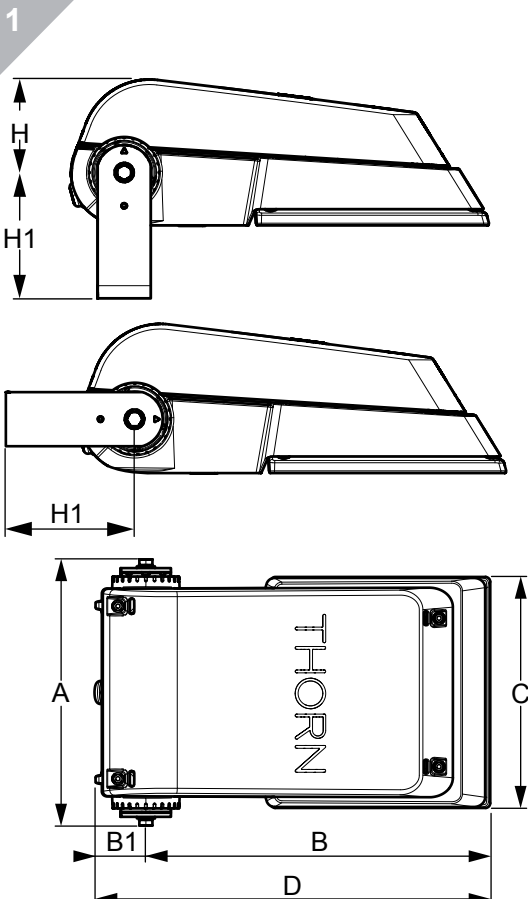


LED

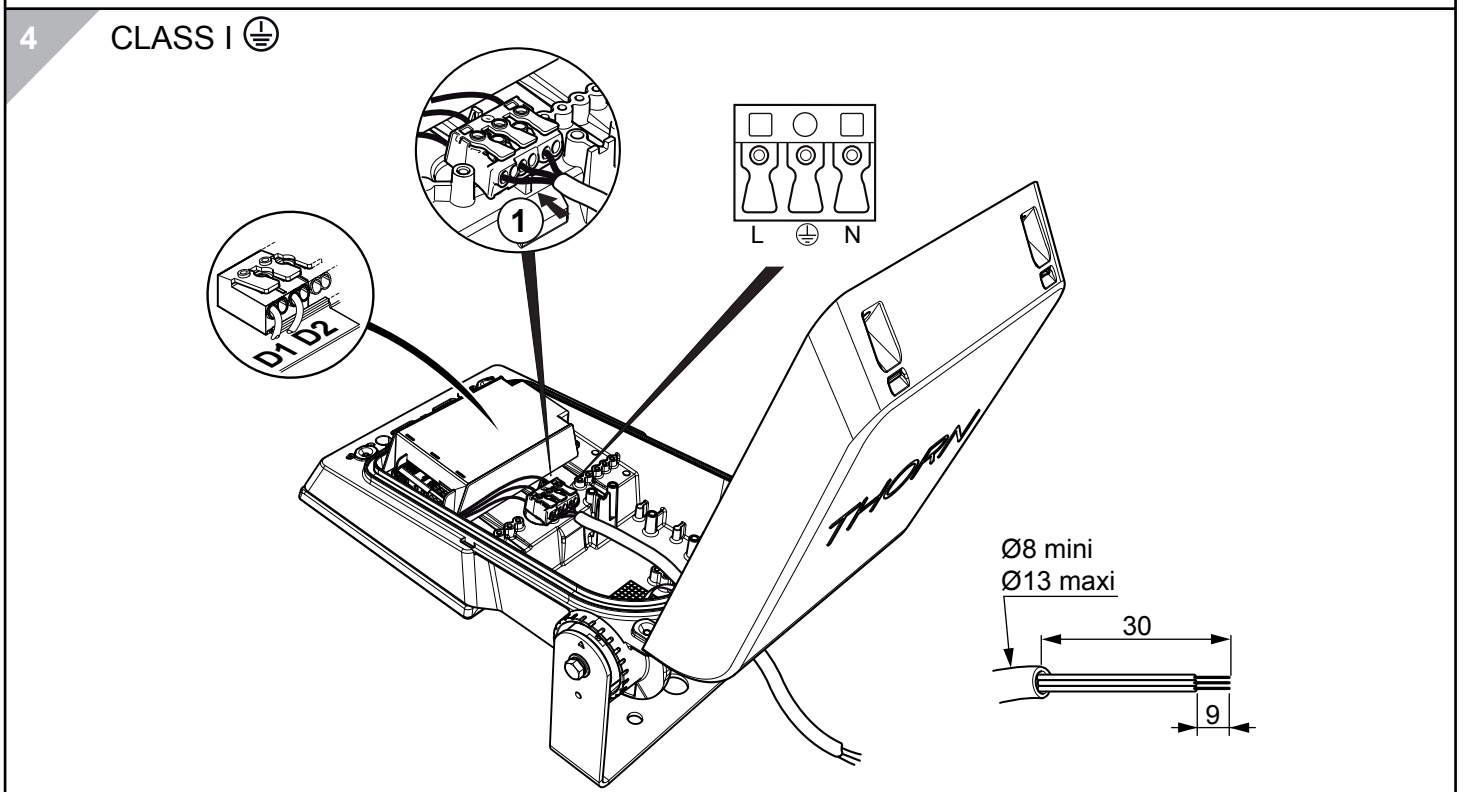
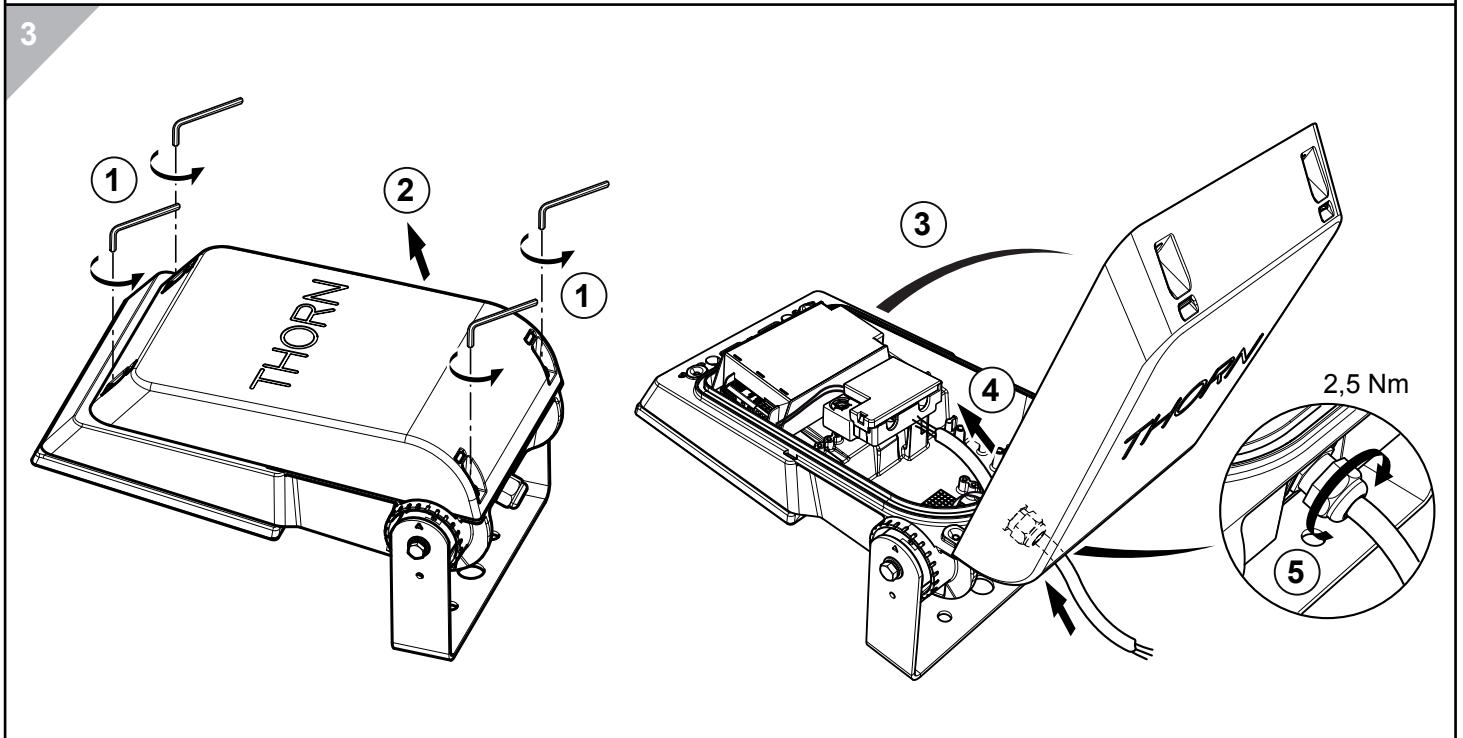
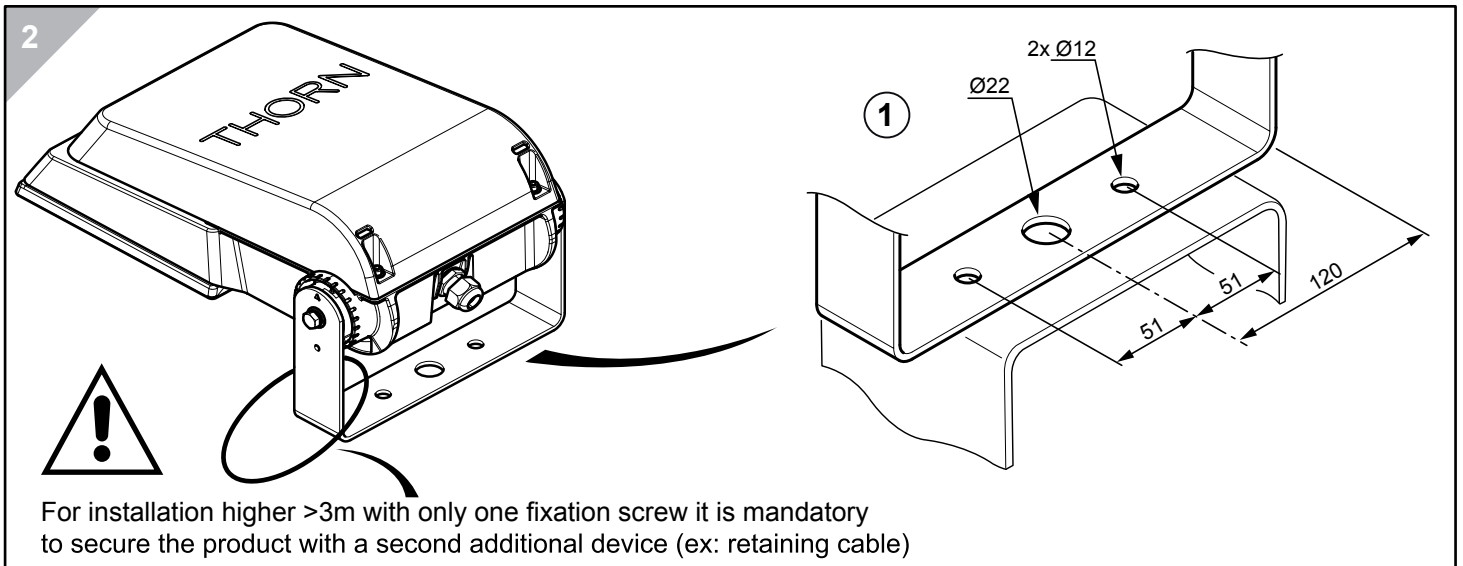
CLASS I

CLASS II

IK08 IP66

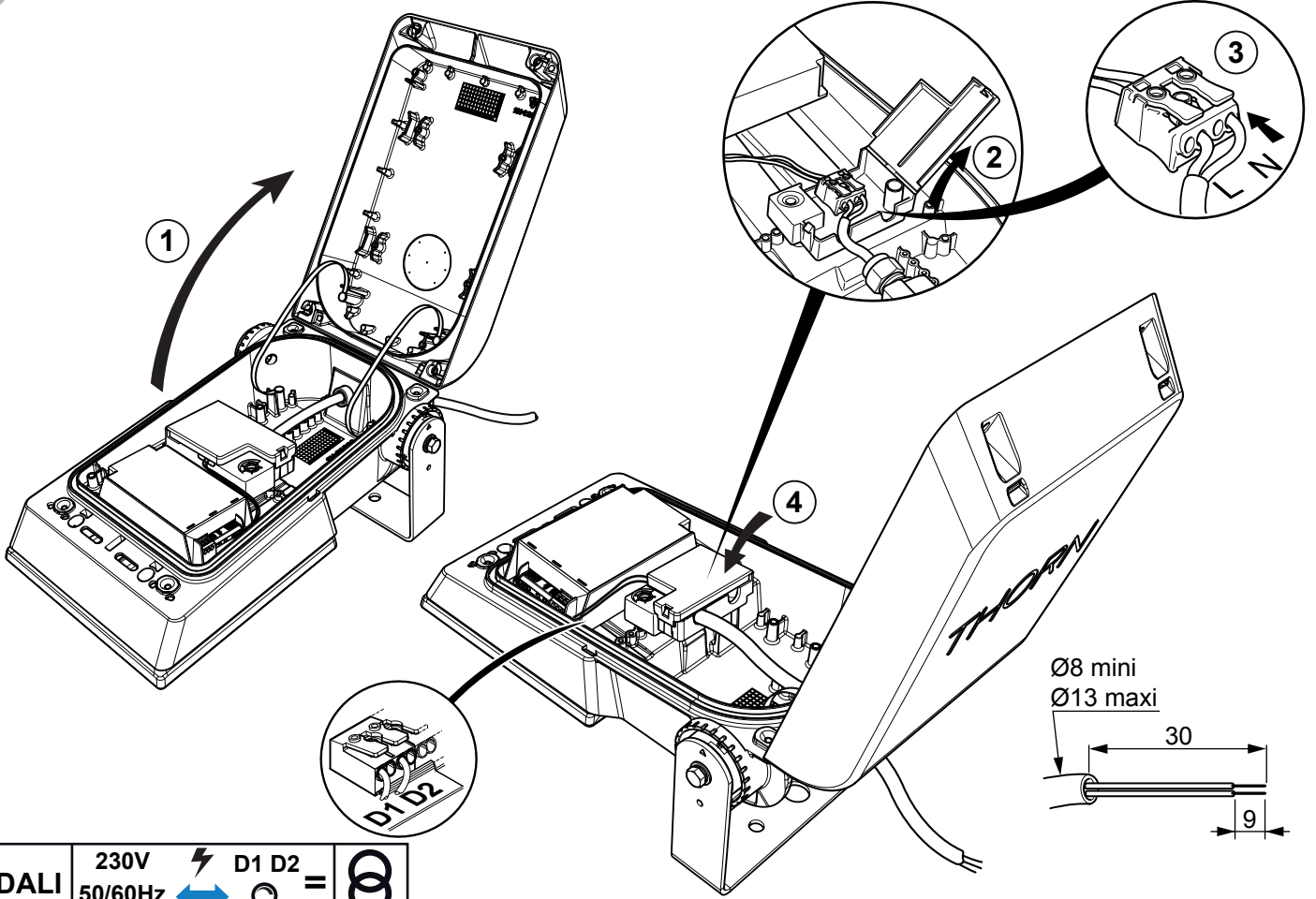


A	B	C	D	H	H1	(kg)	SCx (at 0°)
mm	mm	mm	mm	mm	mm		
248	342	230	395	95	119	6,5	0,050 m <sup>2</sup>



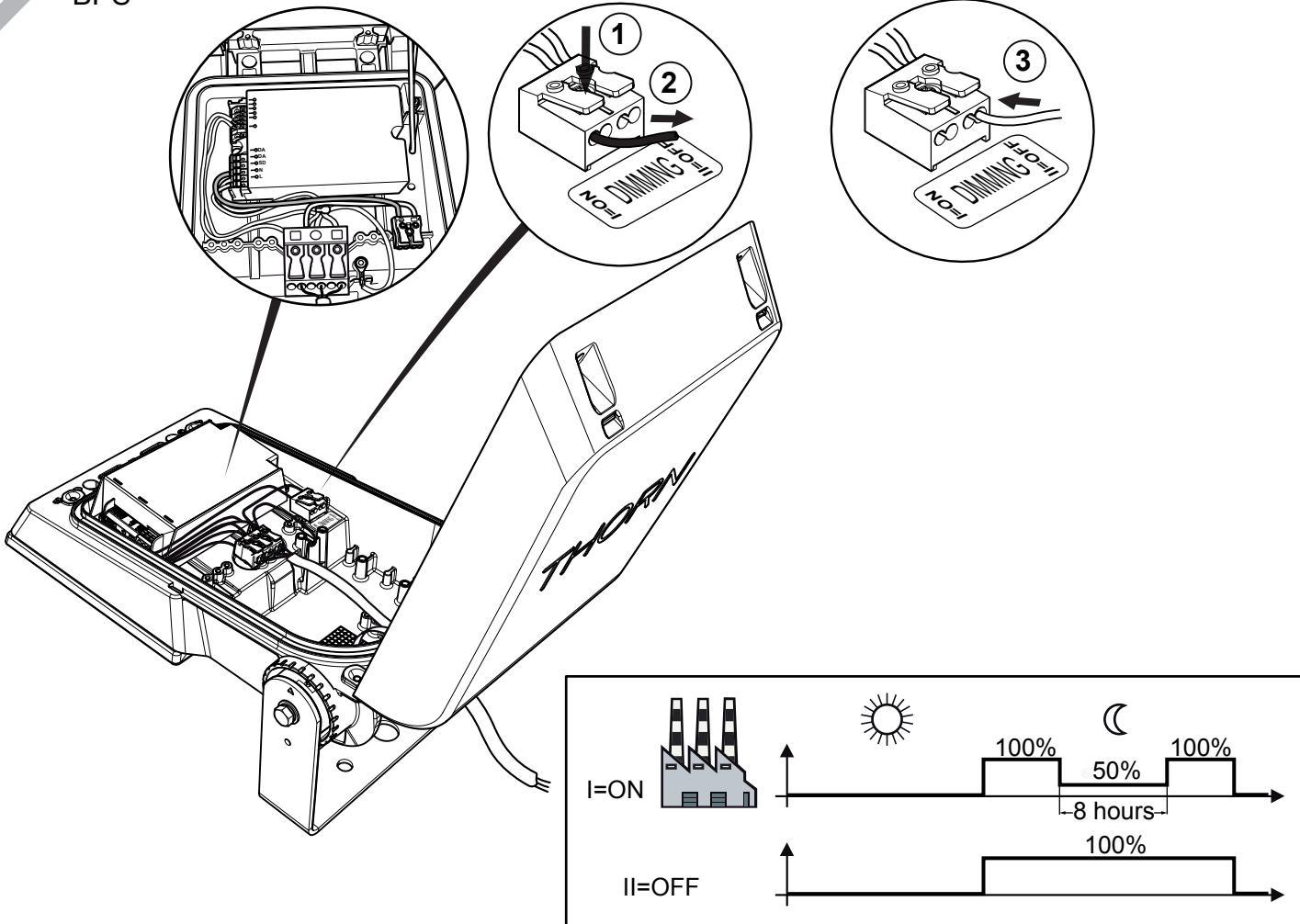


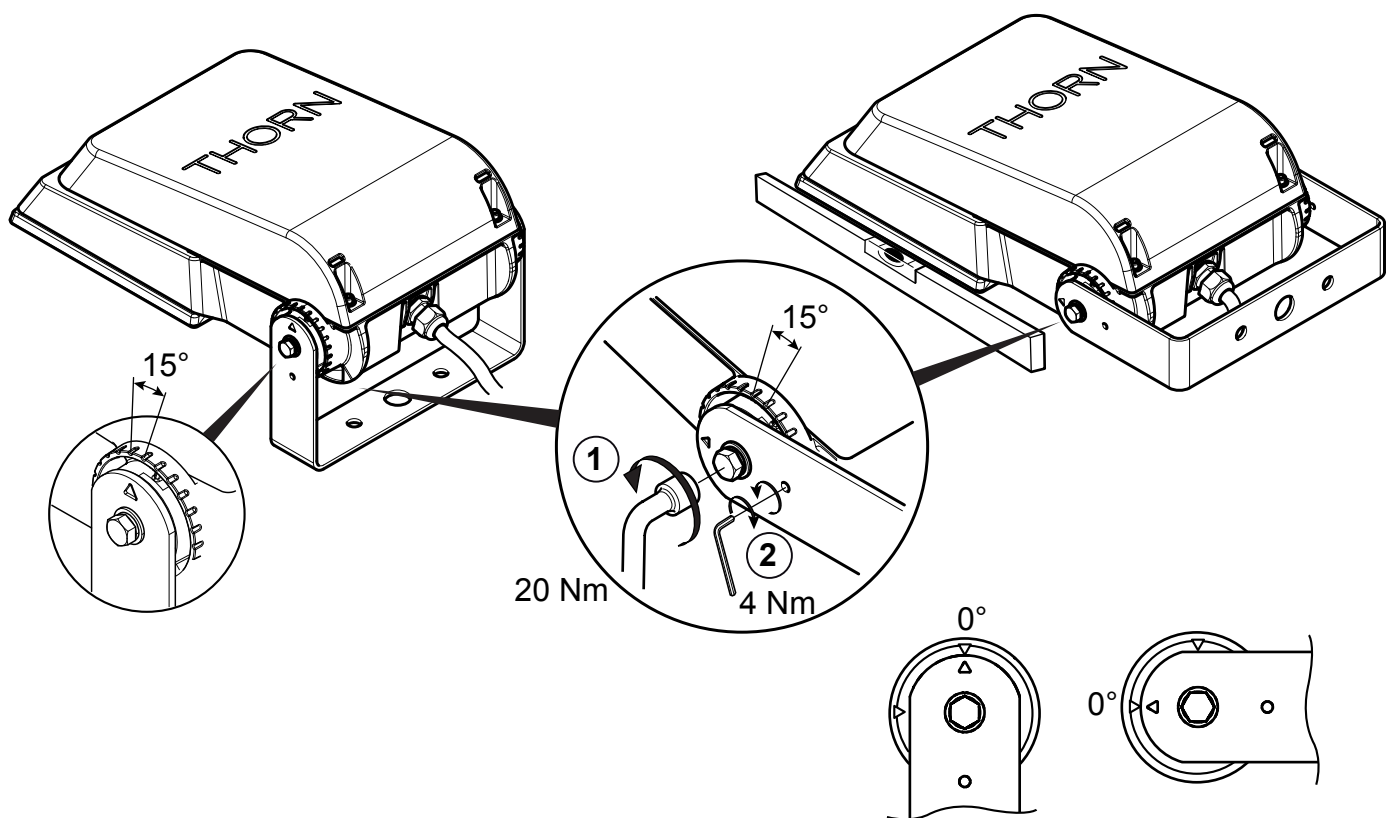
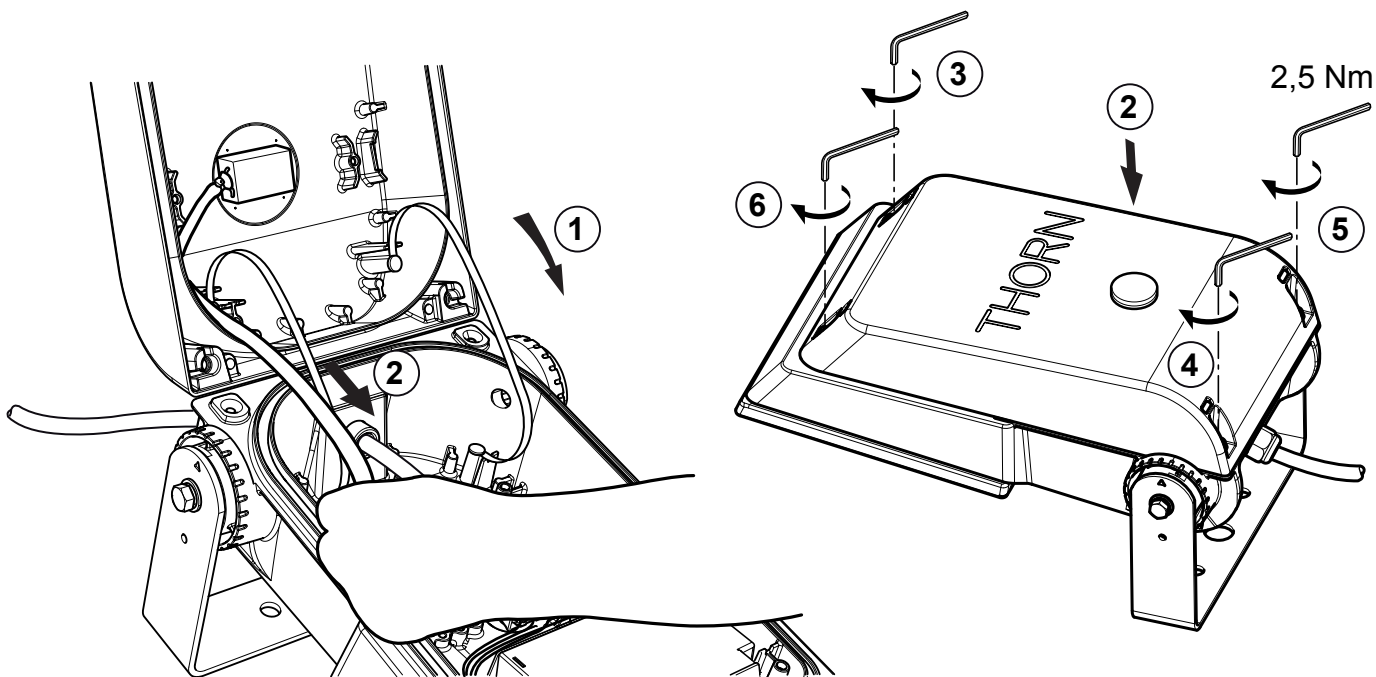
5 CLASS II □



DALI	230V	⚡	D1 D2	=	⊗
	50/60Hz				

6 BPS

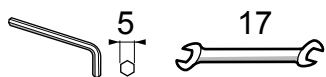
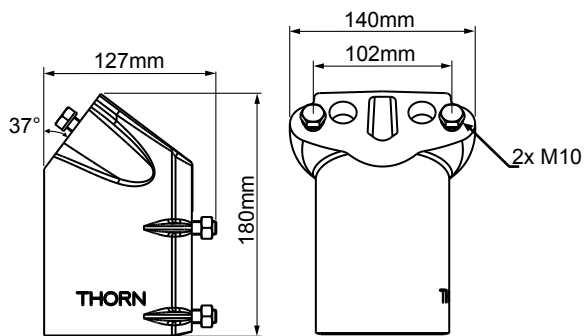
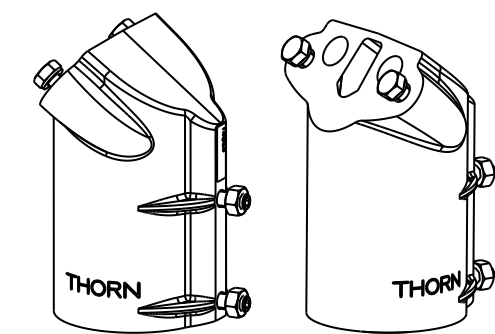






8

AFP MTP 60MM 96631743  
AFP MTP 76MM 96631744



AREA MTP 60MM



1,66kg

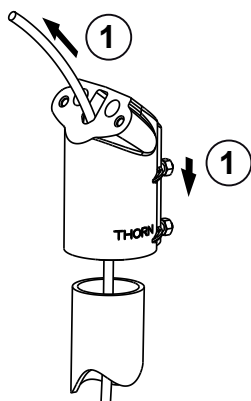
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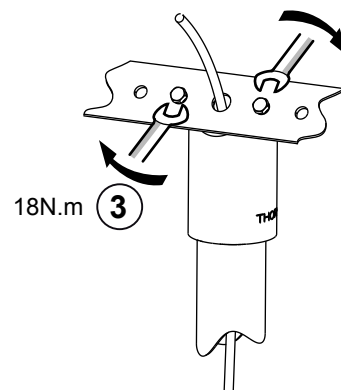
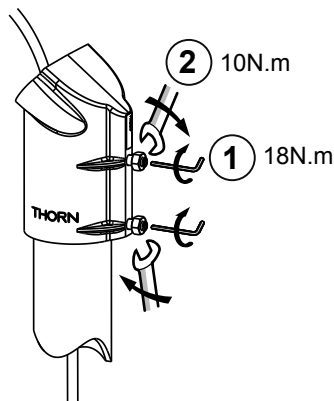
1,60kg

9

MTP

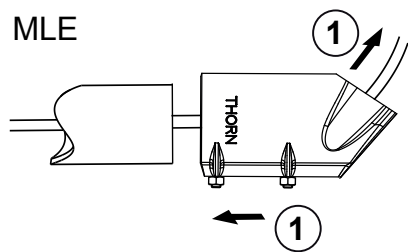


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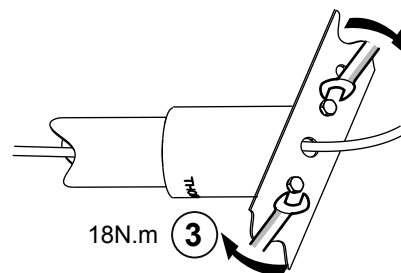
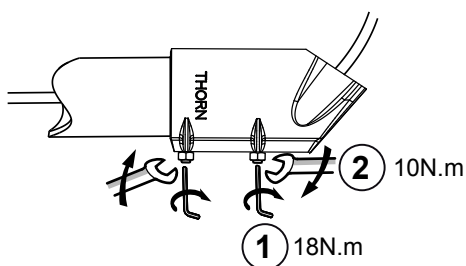


AFP MTP 60MM 96631743

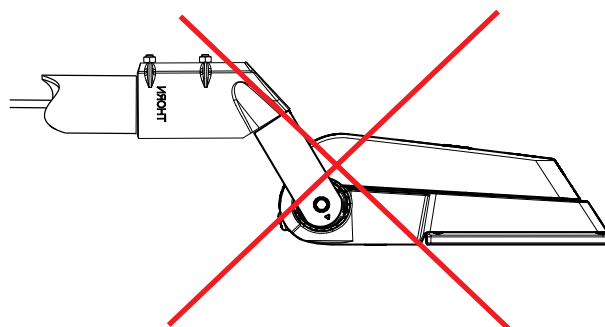
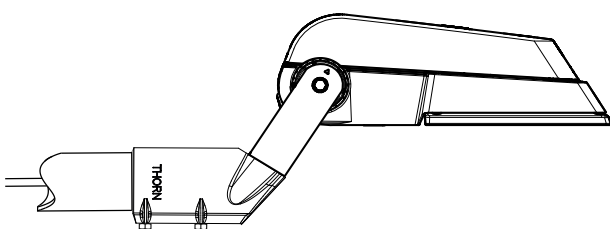
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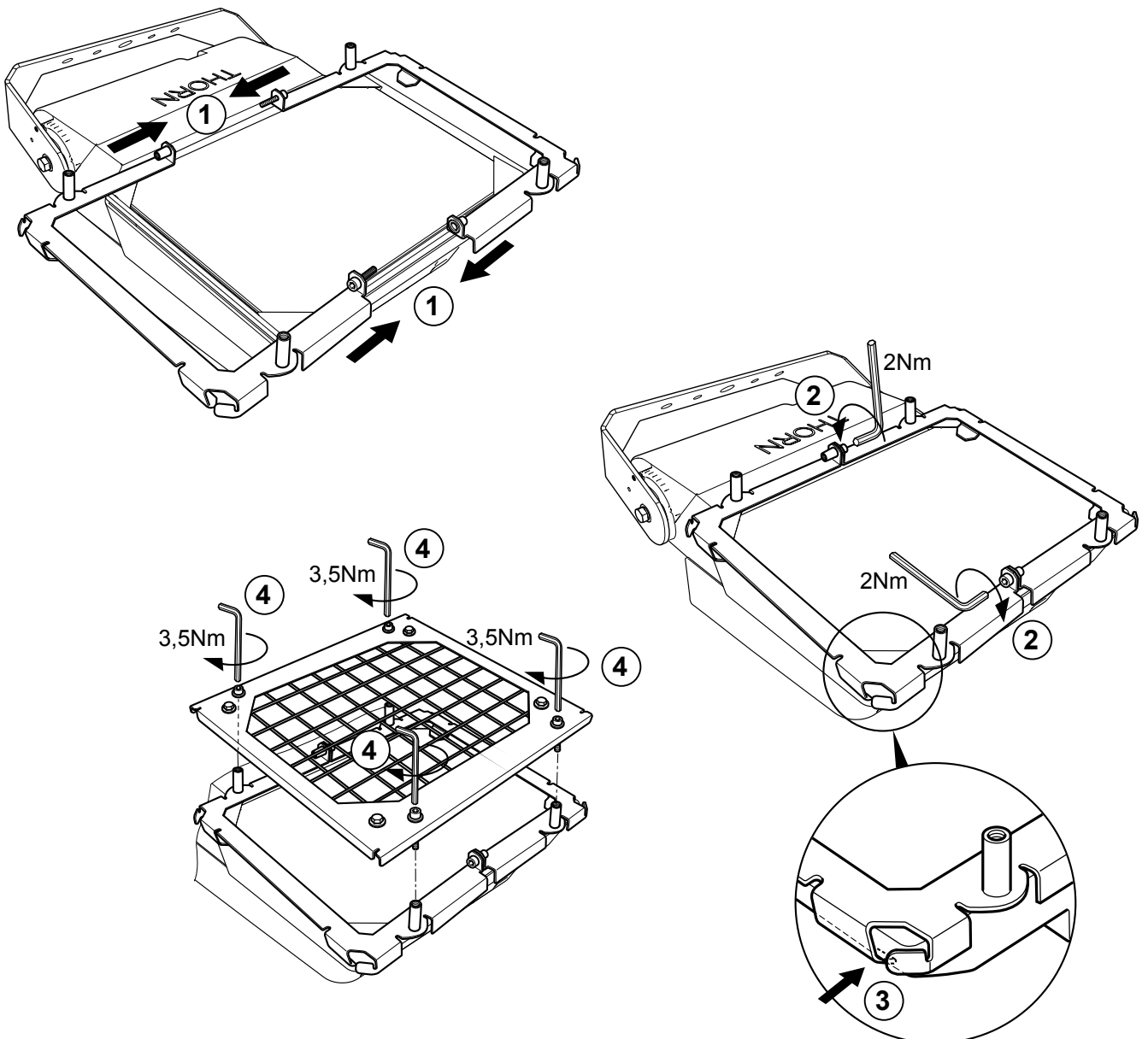
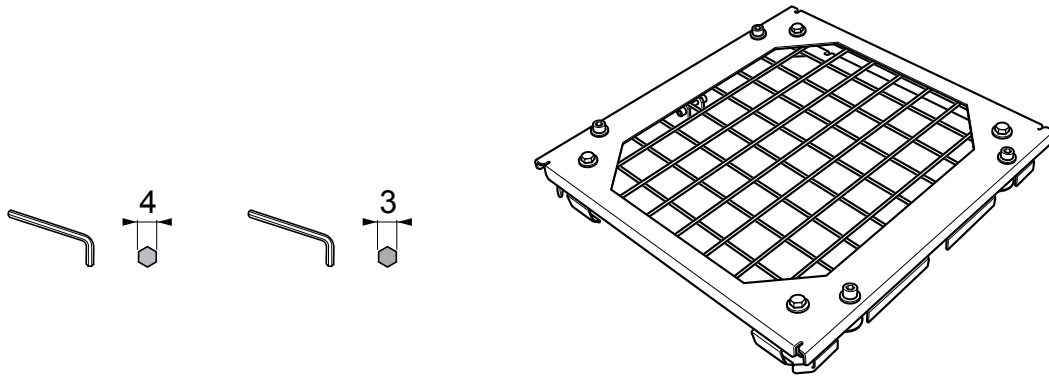


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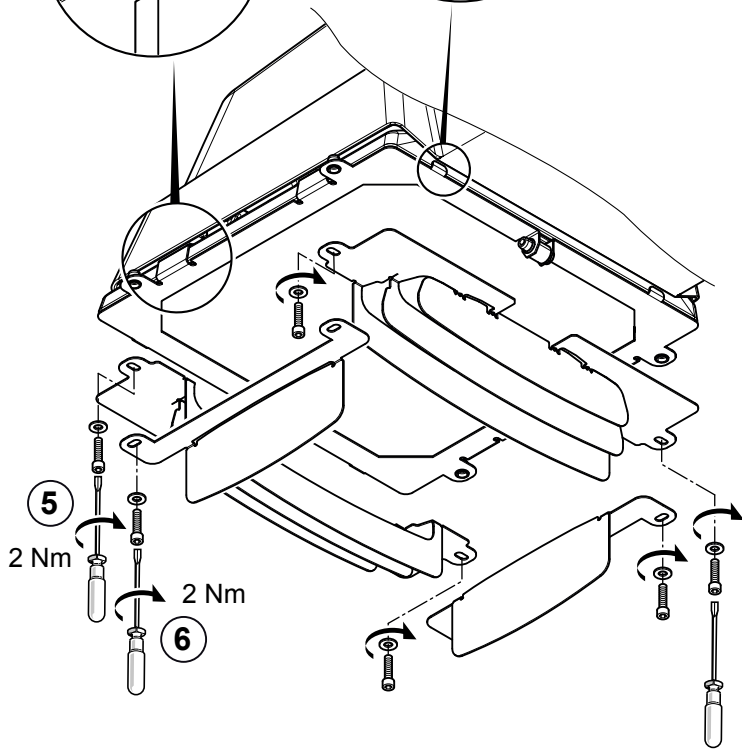
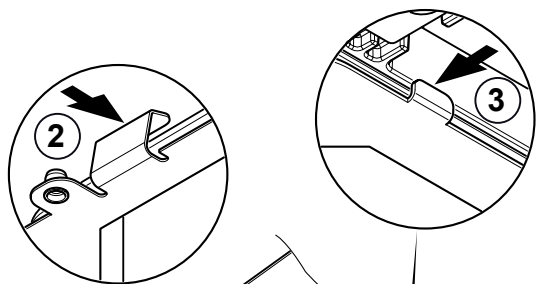
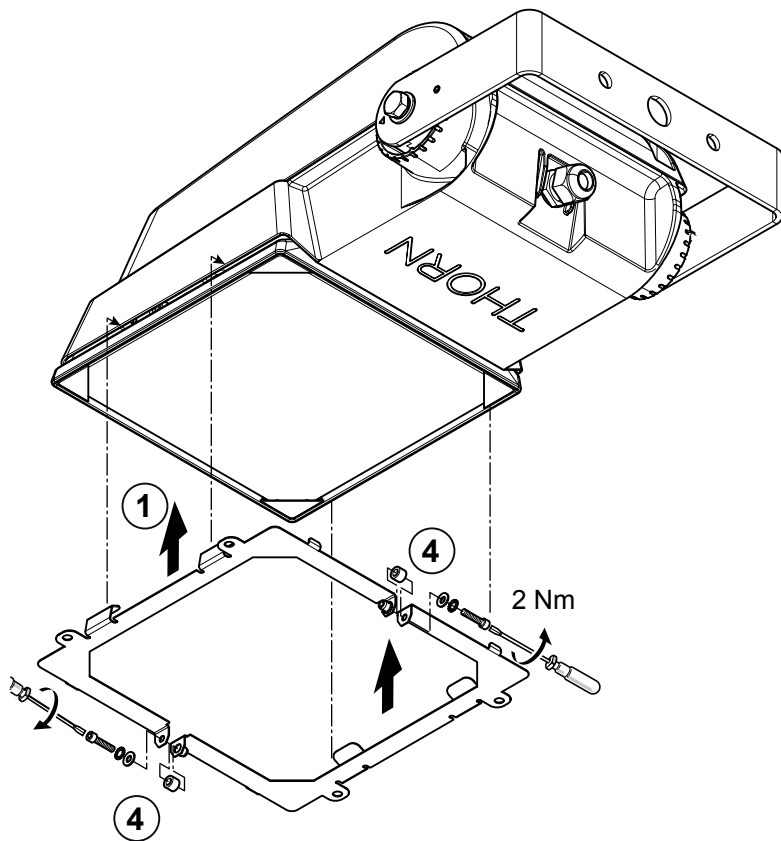
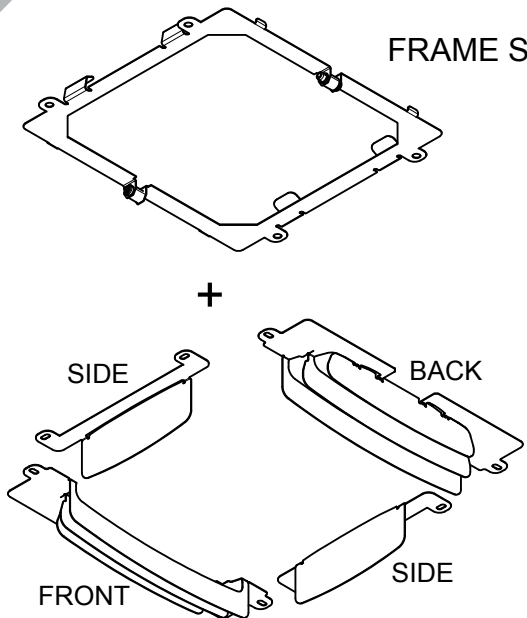


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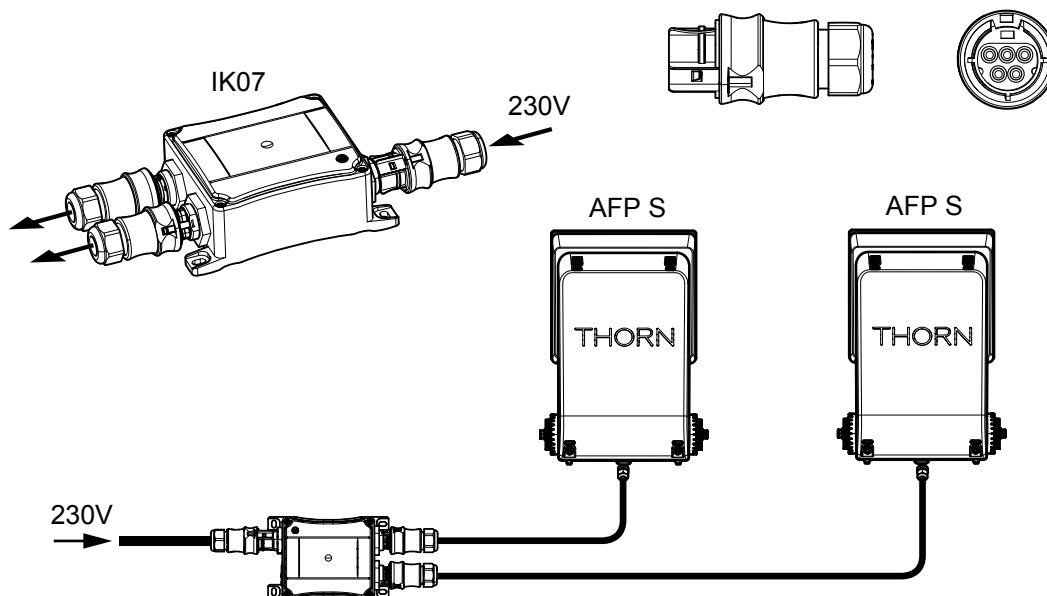




FRAME S




## AFP DALI IN / OUT BOX 96631877

**FRANCAIS**

- Remplacer toute protection fissurée.
- Les luminaires classe II doivent être installés de façon à ce que la partie métallique ne soit pas en contact avec l'installation électrique connectée à la terre.

**ATTENTION:** Les luminaires classe I doivent être reliés à la terre.

- Ce luminaire fonctionne à une tension nominale qui doit être coupée avant toute intervention sur l'appareillage.
- Toute modification de cet appareil est interdite.

**SVERIGE**

- Ersätta alla spräckta skyddsplåtar.
- Klass II armaturer måste installeras så att nakna metalldelar i armaturen inte är i kontakt med någon elektrisk installation, kopplad till en skyddledare.

**VARNING:** Klass I armaturer måste vara jordade.

- Denna armatur fungerar med högspänning som måste vara fränslagen före ingripande i driftdonen.
- Alla ändringar i denna armatur är förbjuden.

**ITALIANO**

- Sostituire sempre tutte le protezioni danneggiate.
- Gli apparecchi in classe II devono essere installati in modo che le parti metalliche non siano in contatto con apparati elettrici collegati a terra.

**ATTENZIONE:** Gli apparecchi in class I devono essere collegati a terra.

- Questo apparecchio funziona a tensione nominale, questa deve essere interrotta prima di ogni intervento sul gruppo di alimentazione.
- Ogni modifica dell' apparecchio è proibita.

**ENGLISH**

- Replace any cracked protective shield.
- Class II luminaires must be installed so that exposed metal work of the luminaire is not in contact with any part of the electrical installation connected to a protective conductor.

**WARNING:** Class I luminaires must be earthed.

- This luminaire operates at mains voltage which must be switched off before intervention in control gear.
- Any modification to this luminaire is forbidden.

**DEUTSCH**

- Ersetze jede gebrochene Schutzscheibe.
- Schutzklasse II Leuchten müssen so installiert werden, daß berührbare Metallteile nicht mit einem, an dem Schutzleiter angeschlossenen Teil der elektrischen Installation in Kontakt kommen können.

**ACHTUNG:** Schutzklasse I Leuchten müssen geerdet sein.

- Diese Leuchte wird mit Netzspannung betrieben. Bevor Eingriffe am Vorschaltgerät vorgenommen werden sowie vor Wartung und Installation, ist die Versorgungsspannung abzuschalten.
- Jede Änderung an dieser Leuchte ist verboten.

**SUOMI**

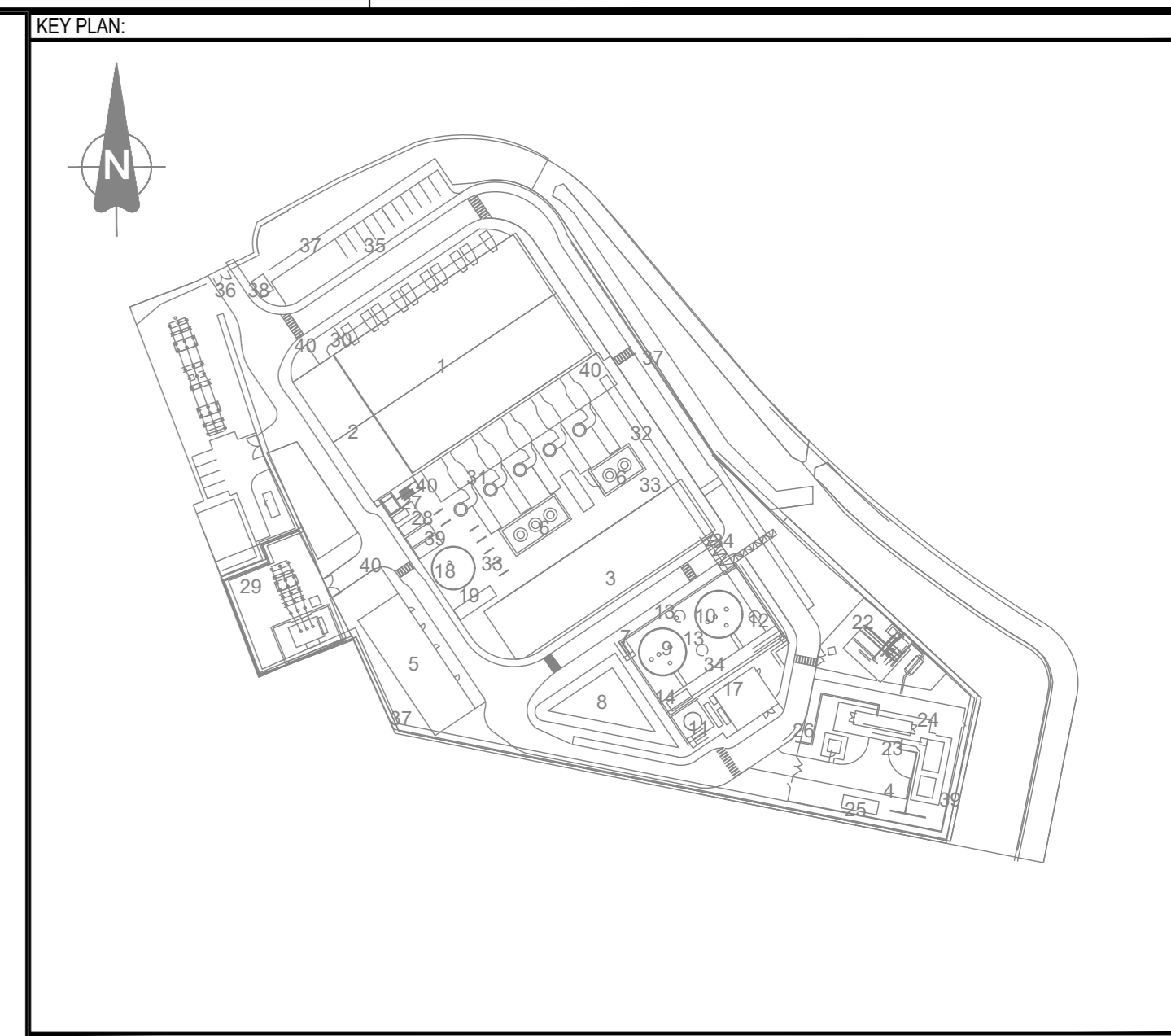
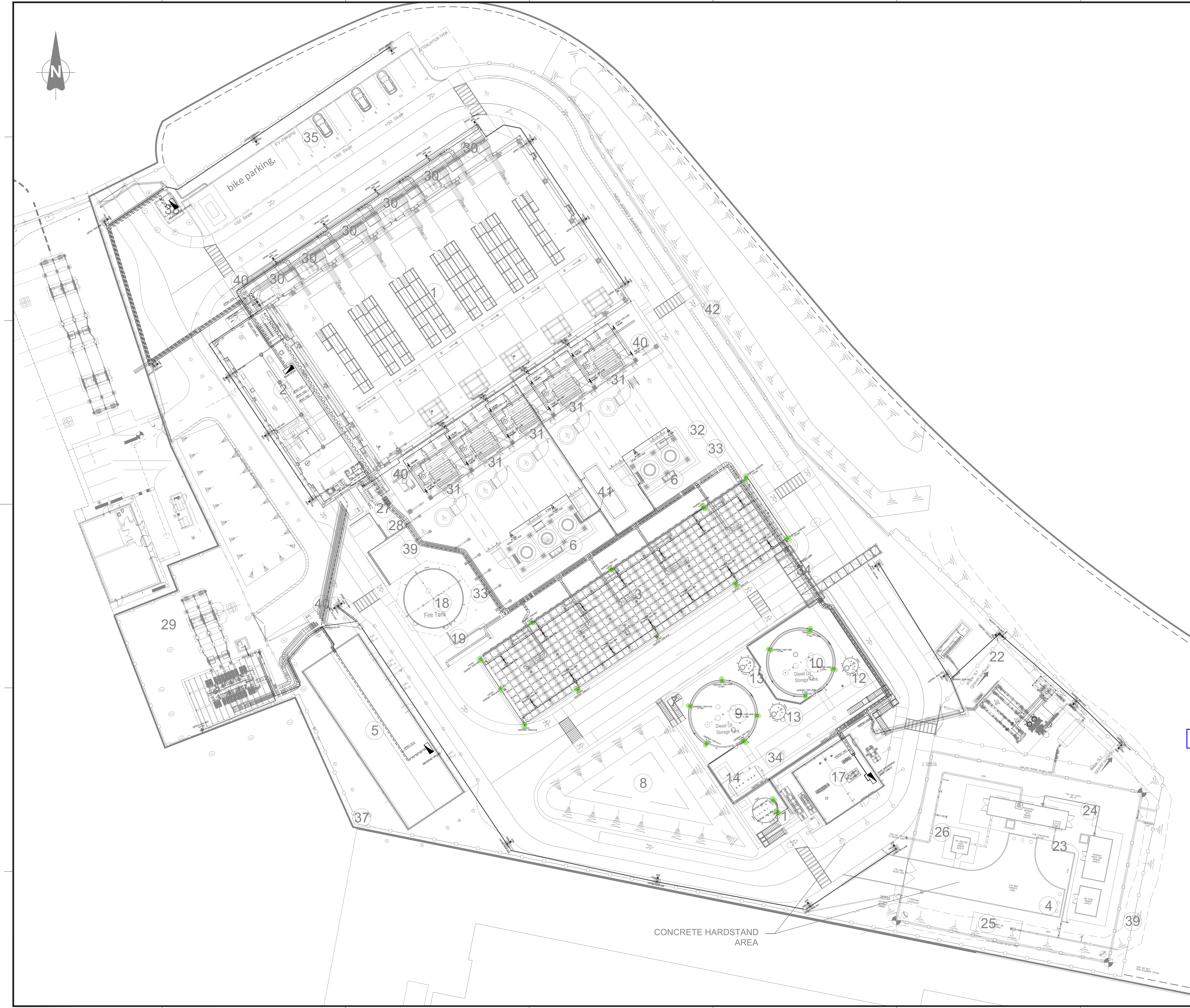
- Rikkoontunut suojalasi vaihdettava välittömästi uutsen vastaavaan.
- Asennettaessa suojausluokan II valaisinta on peruseristetyin johdon ja kosketeltävien metalliosien välinen kosketus tehokkaasti eristettävä.

**VAROITUS:** Suojausluokan I valaisin täytyy maadoittaa.

- Verkköjännite on kytkettävä pois ennen valaisimen huoltotoimenpiteitä.
- Valaisimen rakennetta ei saa muuttaa.

## 3.0 Specification Reference





REFERENCE DRAWINGS:

PRF-EL-DW-00-YP-0001	Overall Single Line Diagram
PRF-EL-DW-00-YP-0002	MV/LV Electrical Equipment Arrangement Layout (Consumer Layout)
PRF-EL-DW-00-YP-0003	MV Distribution Layout
PRF-EL-LS-00-YP-0002	Overall Electrical Cable List
PRF-EL-CR-00-YP-0007	MV Cable Sizing Calculation Report
PRF-EL-DW-00-YP-0008	Outdoor/Site Cable Routing Layouts (Incl. Cable Tray and Conduits)
PRF-EL-LS-00-YP-0003	Outdoorsite Cable Schedule
PRF-EL-TS-00-YP-0003	Medium Voltage Cable Technical Specification
PRF-EL-DW-01-YP-0001	Engine Hall MV/LV Electrical Equipment Arrangement Layout
PRF-EL-DW-01-YP-0002	Engine Hall MV Distribution Layout
PRF-EL-DW-01-YP-0010	Engine Hall Cable Routing Layouts (Incl. Cable Tray and Conduits)
PRF-EL-LS-01-YP-0001	Engine Hall Electrical Cable Schedule (including MV and LV Systems)
PRF-EL-DW-02-YP-0001	Electrical Annex MV/LV Electrical Equipment Arrangement Layout
PRF-EL-DW-02-YP-0002	Electrical Annex MV Distribution Layout
PRF-EL-DW-02-YP-0010	Electrical Annex Cable Routing Layouts (Incl. Cable Tray and Conduits)
PRF-EL-LS-02-YP-0001	Electrical Annex Electrical Cable Schedule (including MV and LV Systems)

NOTES:

- The outdoor lighting switching will be performed manually and automatically from Guard House. Guard house pane will be equipped by Manu/Auto switch and ON/OFF button. When selector switch is in manual position, an operator can switch On and Off all fixtures of outdoor lighting. When selector switch is in Auto position, a daylight photocell, installed in vicinity of guard house, will switch On and Off all fixtures automatically.
- Having purpose to control the switching of outdoor lighting, which is fed from three local panels, three control cables will be run from guard house to EA, Workshop and Tank Farm. In each local feeding panel contactor circuit will be ensured.
- Operator safety for outdoor lighting circuits will be ensured by 30mA RCDs
- Lighting cables as per TNS earthing system shall include yellow/green earthing copper core.
- Lighting fixtures types were chosen regardless of hazardous area classification. If required, risk mitigation in hazardous areas shall be applicable.

LEGEND:

SYMBOL:	DESCRIPTION:
	LIGHTING AND RECEPTACLE PANEL
	38 W LIGHTING POLE, 6000 Lumen, 4000K
	41 W PROJECTOR, 7000 Lumen, 4000K
	26 W LINEAR LED 120cm LIGHTING FIXTURE, 4200 Lumen, 4000K
	15 W LINEAR LED 70cm LIGHTING FIXTURE, 2300 Lumen, 4000K
	FEEDING CABLE (N2XH)
	YY PVC INSULATED AND SHEATHED FLEXIBLE CONTROL CABLE

CLIENT:

CONTRACTOR:

SITE / PROJECT: 100 MW PROFILE PARK RECIPROCATING POWER PLANT PROJECT

ISSUE OWNER:

REV	DATE	DESCRIPTION	DESIGNED	CHECKED	APPROVED
0	18-03-24	FOR CONSTRUCTION	BS	AG	CK

STATUS:  FOR INFORMATION  FOR TENDER  ORIGINAL EDITION  SIZE SCALE

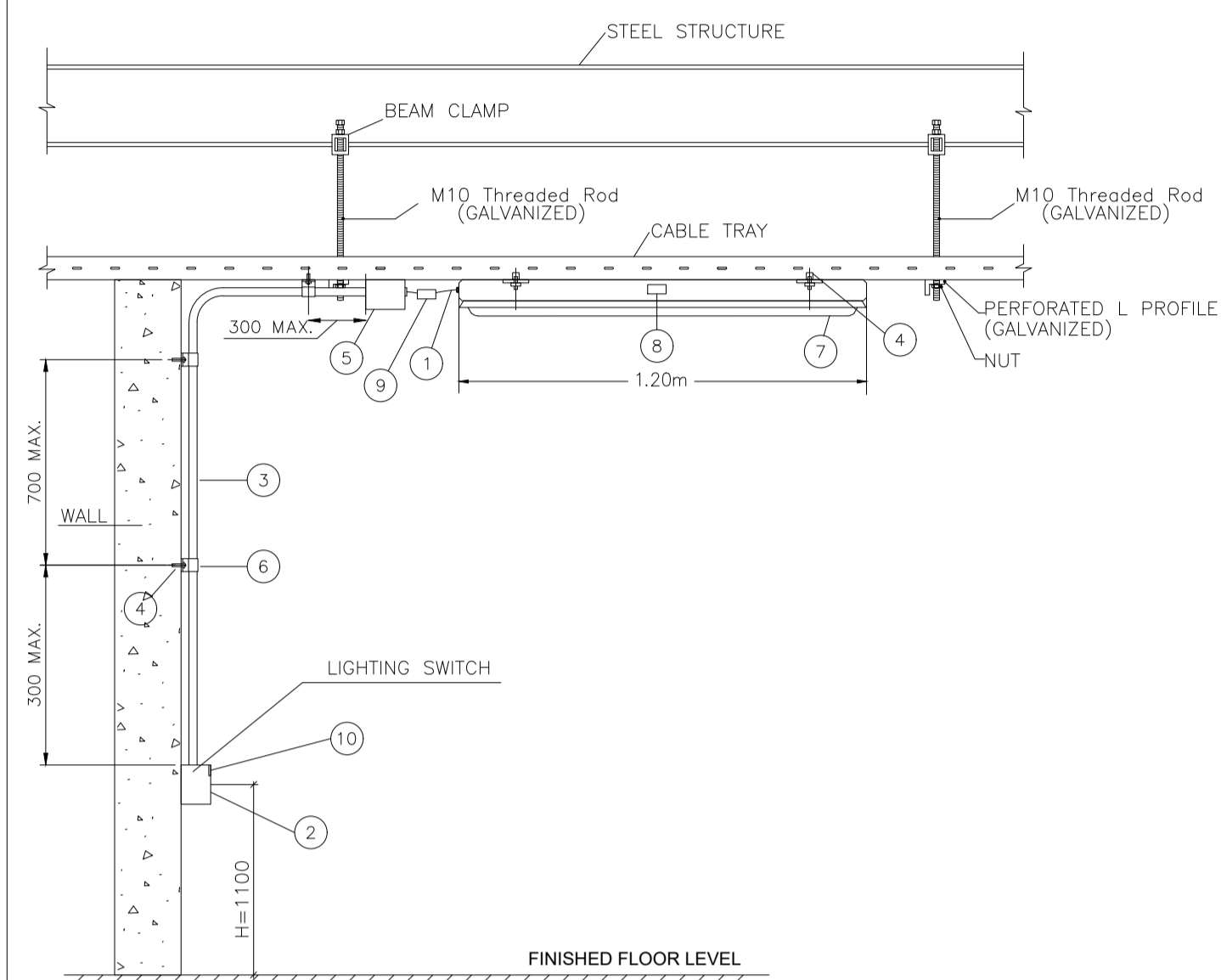
FOR REVIEW  FOR CONSTRUCTION  CHECKED 18.03.24  DESIGNED 18.03.24  APPROVED 18.03.24  A0 1/200

DRAWING NUMBER: PRF-EL-DW-00-YP-0007 SHEET: 1 OF: 2 DRAWING NAME: OUTDOOR LIGHTING LAYOUT

FORMATO DIN A-0 (1189x841)



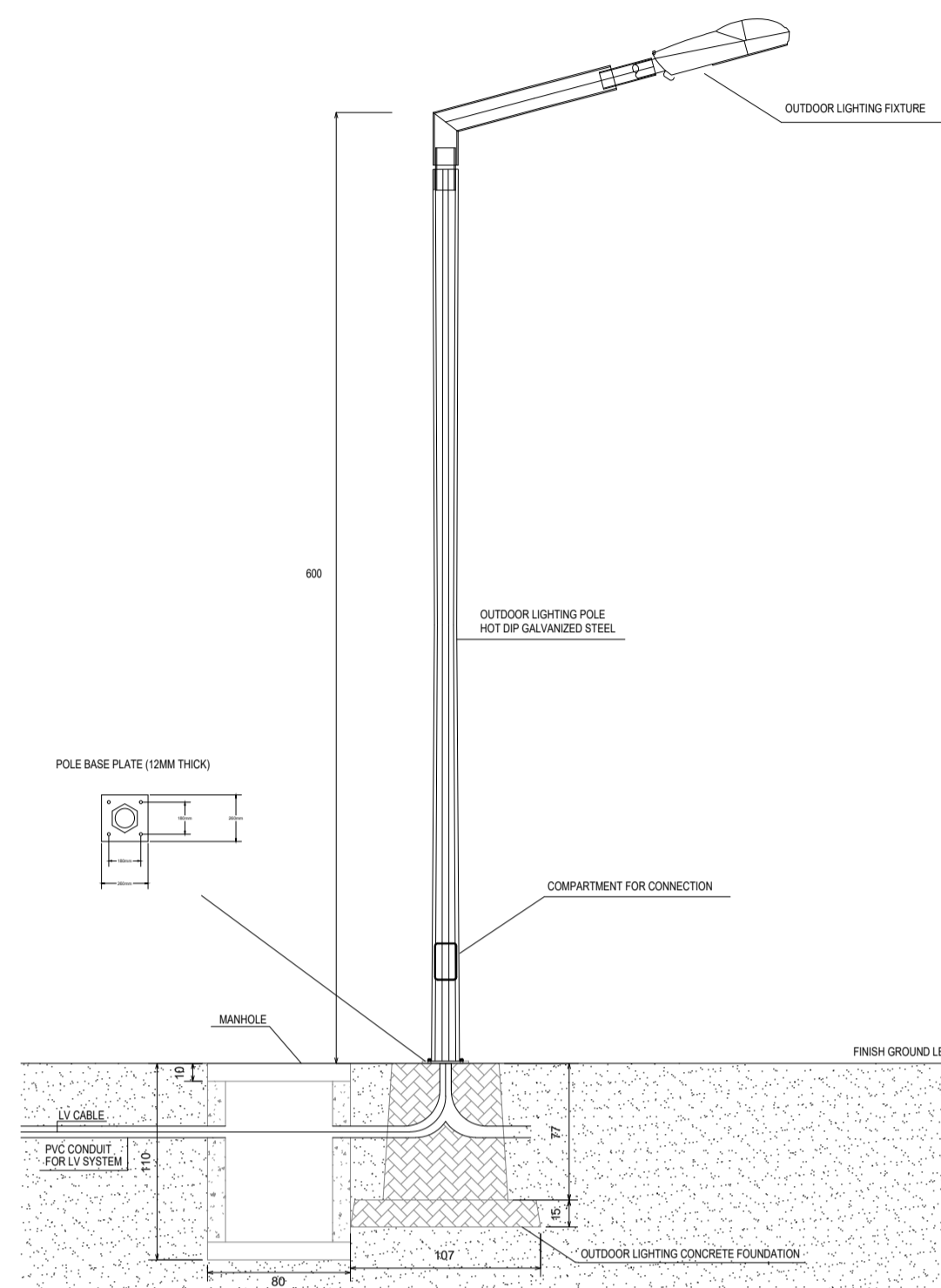
### INSTALLATION OF LIGHTING FIXTURES ON THE CABLE TRAY



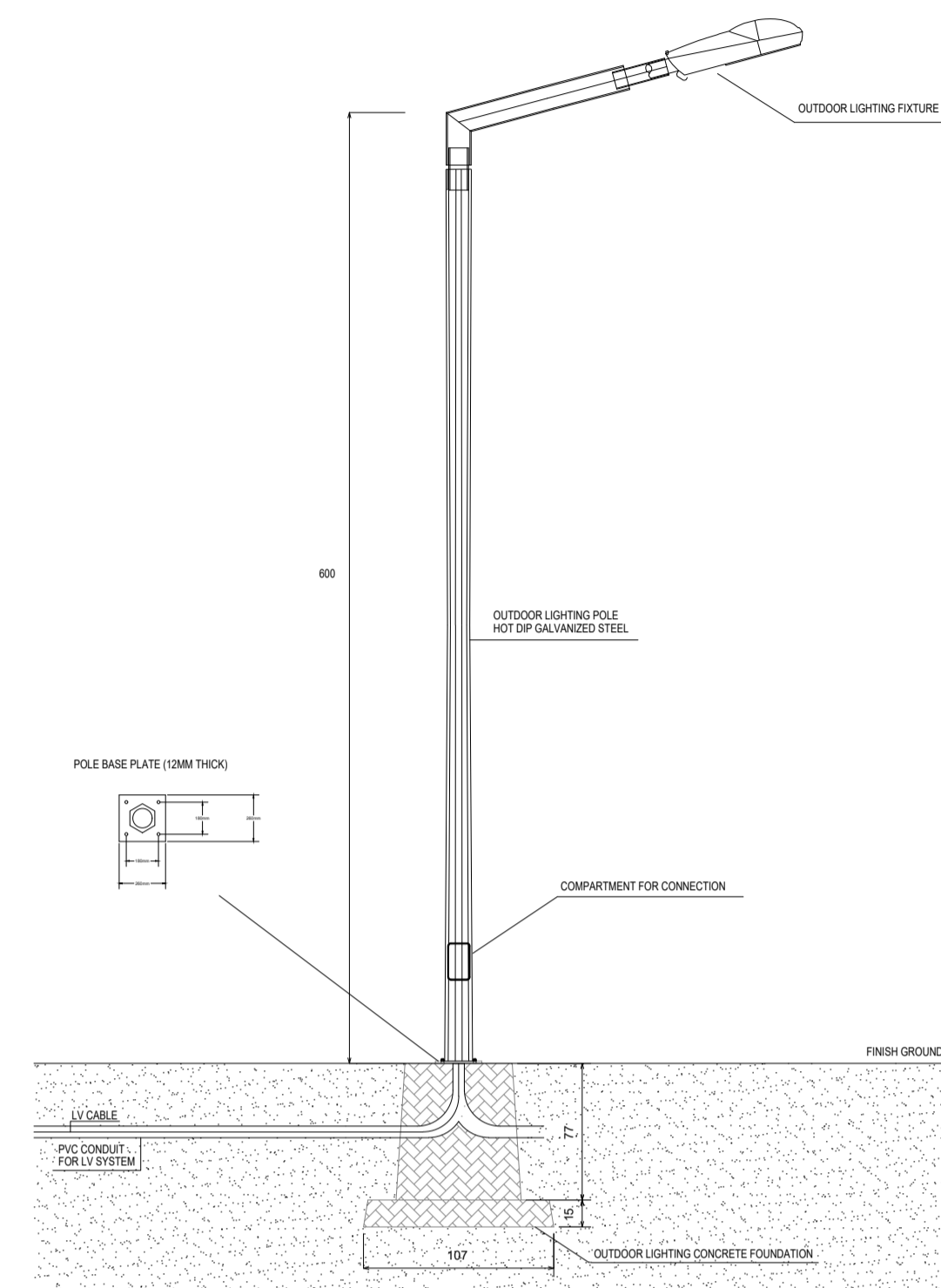
**LEGEND:**

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	LIGHTING CABLE TO FIXTURE	7	LIGHTING FIXTURE SUPPLIED COMPLETE WITH WIRING HARNESS AND LAMPS
2	JUNCTION BOX WITH TERMINALS	8	TRAFOLITE FIXTURE TAG WITH INDUSTRIAL ADHESIVE
3	1" EMT CONDUIT	9	LIGHTING CABLE TAG PLATE WITH FIXING TIE
4	EXPANSION BOLT & WASHERS	10	TRAFOLITE FIXTURE TAG/SUB LIGHTING JB TAG WITH INDUSTRIAL ADHESIVE
5	JUNCTION BOX WITHOUT TERMINALS		
6	CONDUIT FASTENER		

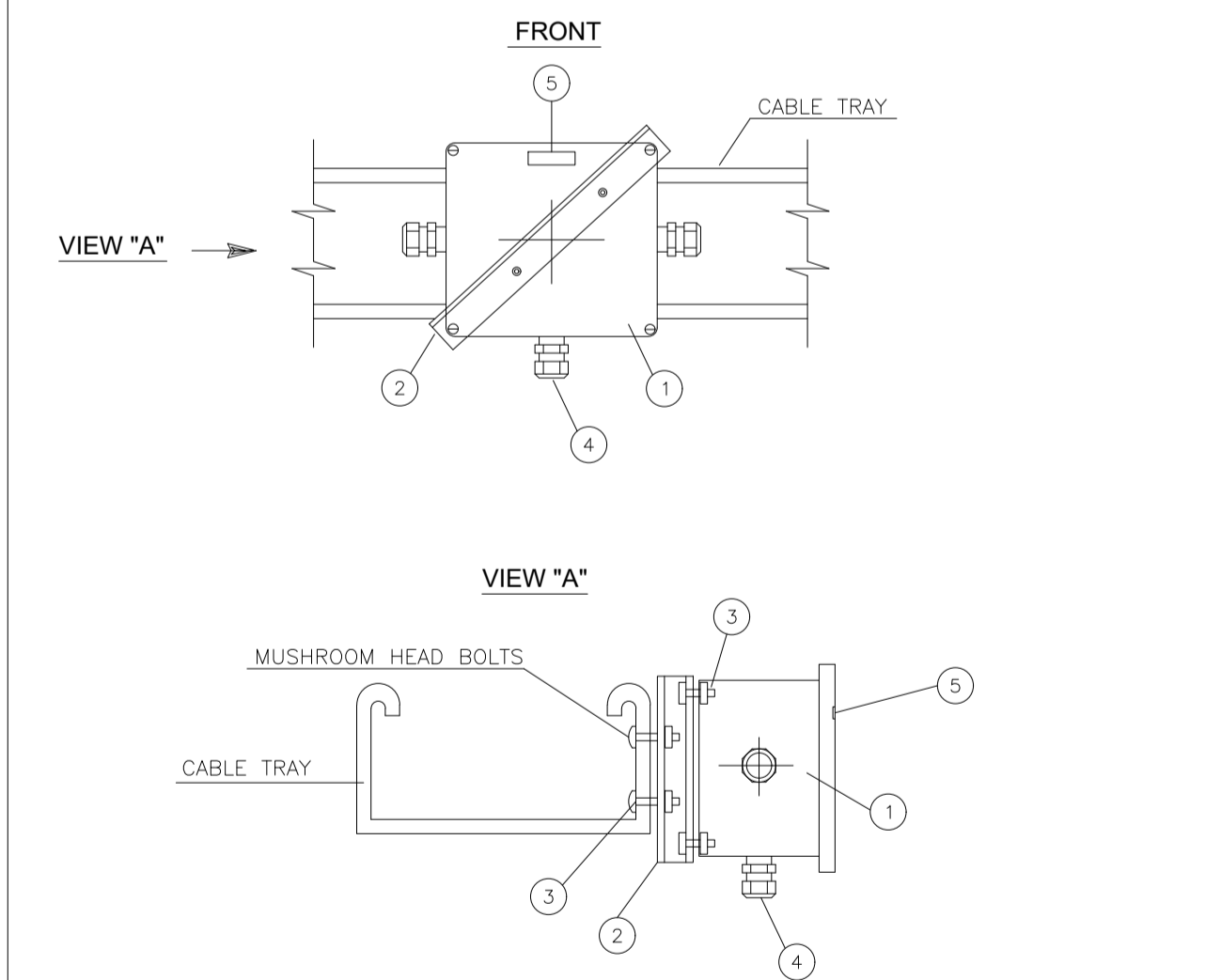
### TYPICAL OUTDOOR LIGHTING POLE CONNECTION TYPE-1



### TYPICAL OUTDOOR LIGHTING POLE CONNECTION TYPE-2



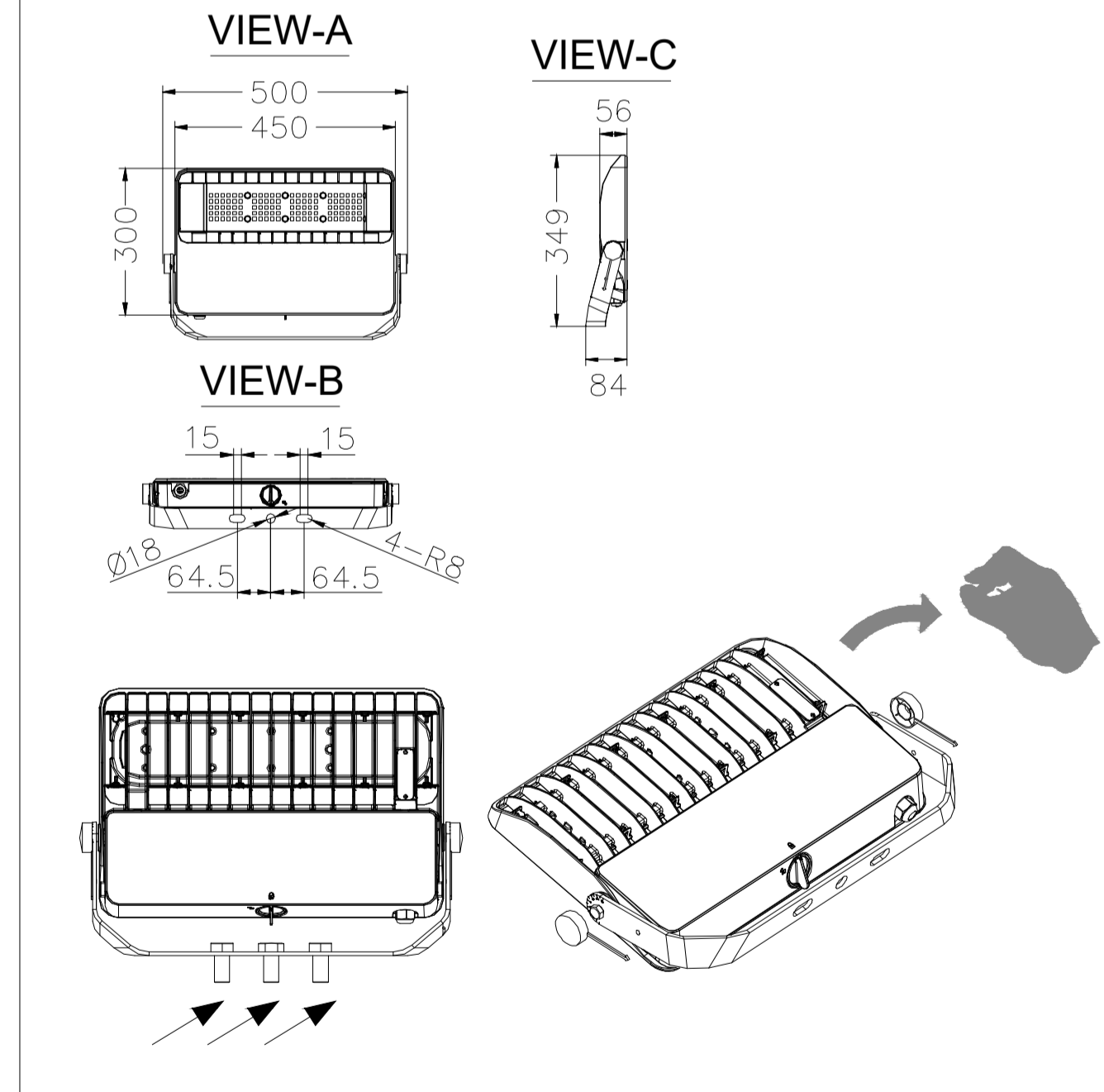
### LIGHTING JUNCTION BOX MOUNTING ON CABLE TRAY



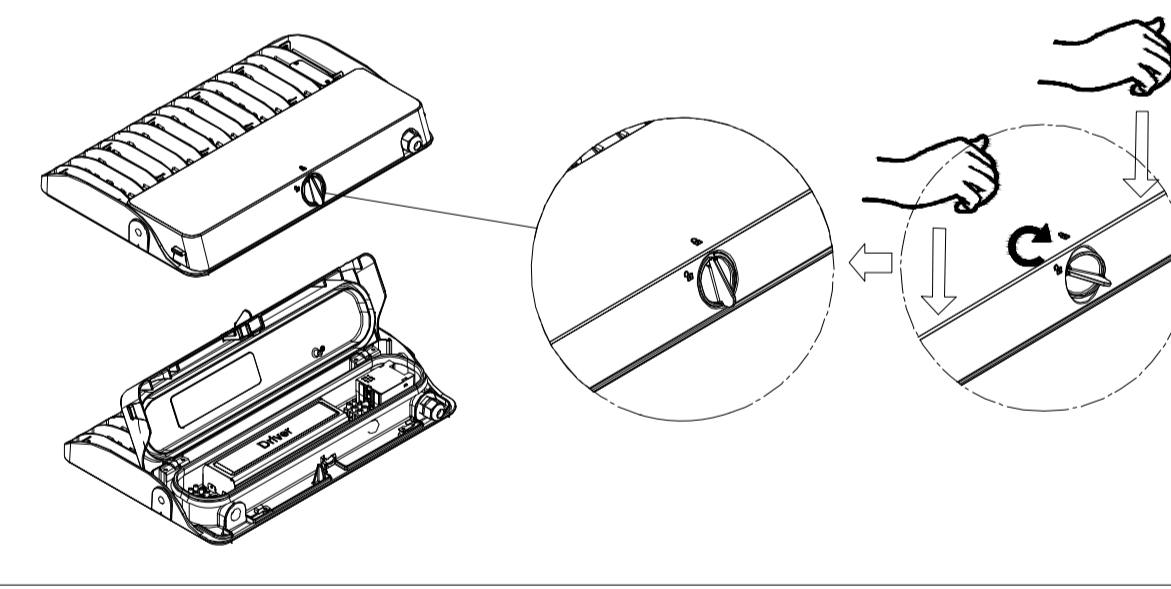
**LEGEND:**

ITEM	DESCRIPTION
1	JUNCTION BOX WITH WAGO CLAMP
2	HDG STEEL PERFORATED CHANNEL (LENGTH AS REQUIRED)
3	HDG BOLTS WITH NUTS & WASHERS
4	CABLE GLAND
5	TRAFOLITE SUB LIGHTING JB TAG WITH INDUSTRIAL ADHESIVE

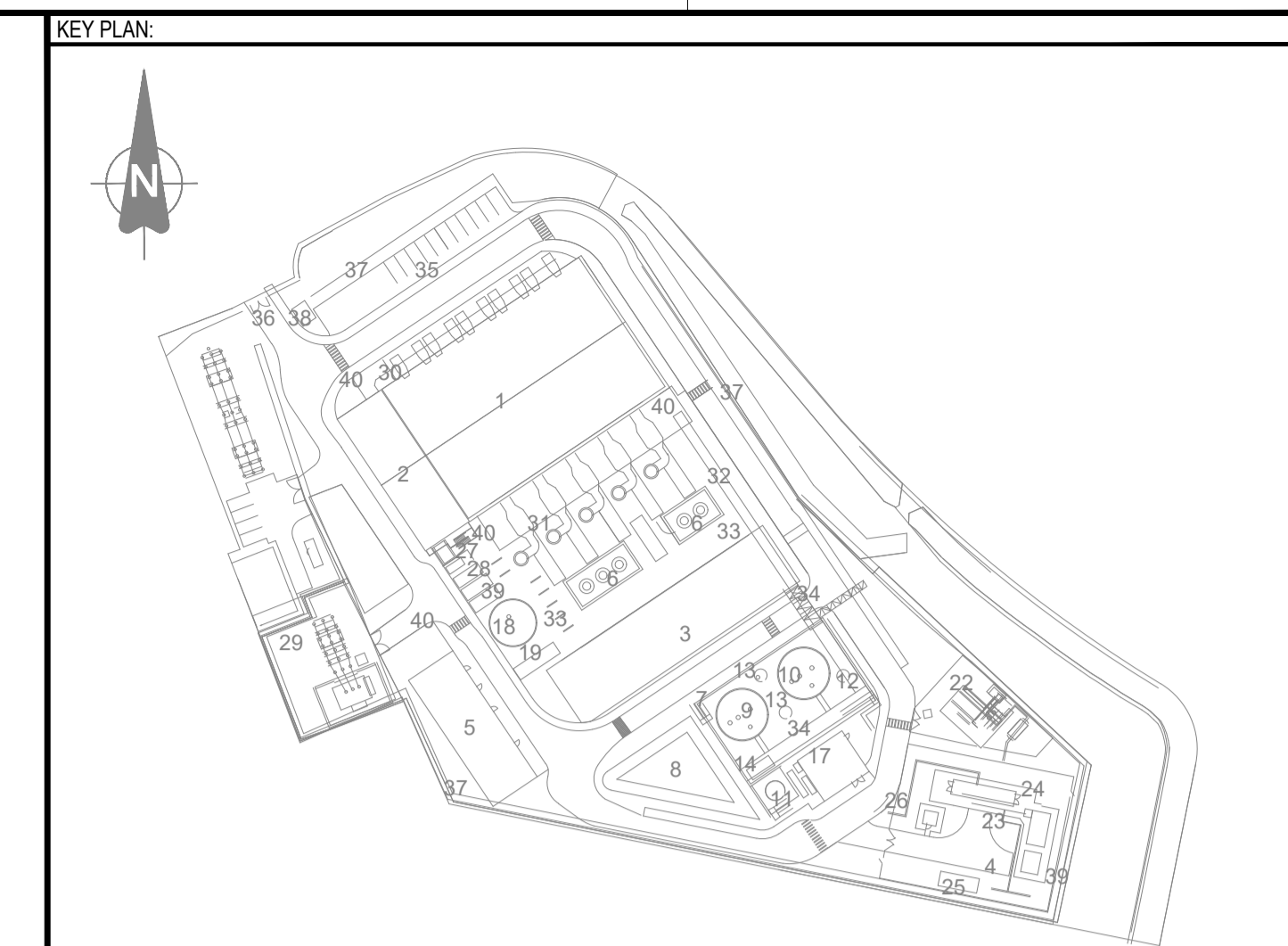
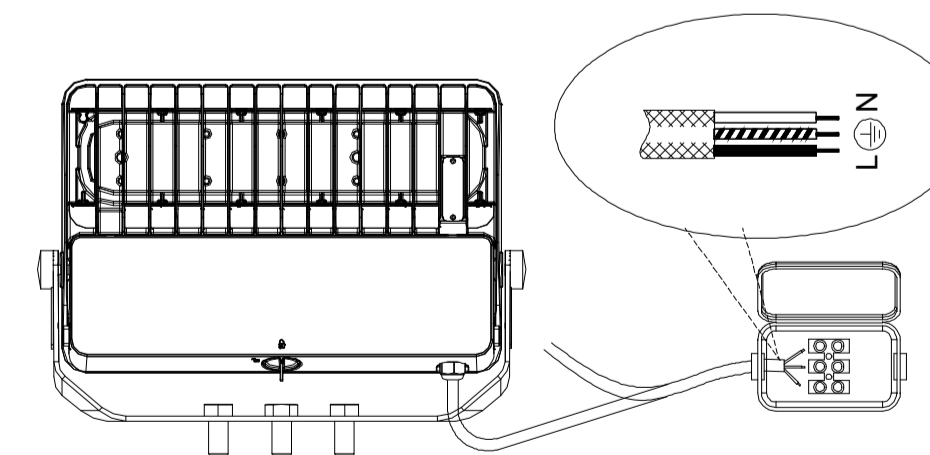
### INSTALLATION



### GEAR COVER LOCK



### CONNECT THE POWER CORD



**REFERENCE DRAWINGS:**

PRF-EL-DW-00-YP-0001	Overall Single Line Diagram
PRF-EL-DW-00-YP-0002	MV/LV Electrical Equipment Arrangement Layout (Consumer Layout)
PRF-EL-DW-00-YP-0003	MV Distribution Layout
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PRF-EL-LS-00-YP-0003	Outdoor/site Cable Schedule
PRF-EL-TS-00-YP-0003	Medium Voltage Cable Technical Specification
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PRF-EL-DW-01-YP-0002	Engine Hall MV Distribution Layout
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PRF-EL-DW-02-YP-0010	Electrical Annex Cable Routing Layouts (Incl. Cable Tray and Conduits)
PRF-EL-LS-02-YP-0001	Electrical Annex Electrical Cable Schedule (including MV and LV Systems)

**LEGEND:**

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	41 W PROJECTOR, 7000 Lumen, 4000K
	26 W LINEER LED 120cm LIGHTING FIXTURE, 4200 Lumen, 4000K
	15 W LINEER LED 70cm LIGHTING FIXTURE, 2300 Lumen, 4000K
	FEEDING CABLE (N2XH)
	YY PVC INSULATED AND SHEATHED FLEXIBLE CONTROL CABLE

CLIENT:

CONTRACTOR:

SITE / PROJECT: 100 MW PROFILE PARK RECIPROCATING POWER PLANT PROJECT

ISSUE OWNER: **YOKSEL PROJE**

REV.	DATE	DESCRIPTION	DESIGNED	CHECKED	APPROVED	BS	AG	CK
0	18-03-24	FOR CONSTRUCTION						

**STATUS:**

FOR INFORMATION	<input type="checkbox"/>	FOR COMMENCEMENT	<input type="checkbox"/>
FOR REVIEW	<input type="checkbox"/>	FOR CONSTRUCTION	<input checked="" type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>	FOR COORDINATION	<input type="checkbox"/>

**ORIGINAL EDITION**

DESIGNED	CHECKED	APPROVED	DATE
			18-03-24
			18-03-24
			18-03-24

**SIZE SCALE:** A1 NTS

DRAWING NUMBER: PRF-EL-DW-00-YP-0007

SHEET: 2 OF: 2

DRAWING NAME: OUTDOOR LIGHTING LAYOUT

## 4.0 Declaration of Conformity



## EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY DÉCLARATION UE DE CONFORMITÉ

Datum, Date, Date:

17.10.2022

Wir, we, nous:

Thorn Lighting Limited  
Durhamgate Spennymoor  
Co. Durham DL16 6HL  
UK

erklären in alleiniger Verantwortung, dass das Produkt  
declare under sole responsibility that the product  
déclarons, sous notre propre responsabilité, que le produit

Bezeichnung, Name, Modèle:

Area Flood Pro

Bemerkung, Remark, Remarques:

auf das sich diese Erklärung bezieht, mit den folgenden Richtlinien und Normen übereinstimmt:  
to which this declaration relates is in conformity with the following directives and standards:  
auquel se réfère cette déclaration est conforme aux directives et aux normes:

<b>Directive 2014/35/EU</b> Low voltage directive	EN 60598-1:2015 +A1:2018 EN 60598-2-5:2015 EN 62471:2015 EN 62493:2015
<b>Directive 2014/30/EU</b> Electromagnetic compatibility	EN 55015:2019+A11:2020 EN 61000-3-2:2019 +A1:2021 EN 61000-3-3:2013 +A1:2019 EN 61547:2009
<b>Directive 2009/125/EC</b> Ecodesign requirements for energy-related products	Regulation (EU) 2019/2020
<b>Directive 2011/65/EU</b> Restriction of hazardous substances (RoHS)	

Name, Position und autorisierte Unterschrift

Name, position and signature of authorized person

Nom, position et signature de la personne autorisée

  
Leo Luppi

Vice President Quality

## UKCA DECLARATION OF CONFORMITY

**Date:** 17.10.2022  
**We:** Thorn Lighting Limited  
Durhamgate Spennymoor  
Co. Durham DL16 6HL  
UK

declare under sole responsibility that the product

**Name:** Area Flood Pro

**Remark:**

to which this declaration relates is in conformity with the following regulations and standards:

<b>UK SI 2016 No. 1101</b> The Electrical Equipment (Safety) Regulations 2016	EN 60598-1:2015 +A1:2018 EN 60598-2-5:2015 EN 62471:2015 EN 62493:2015
<b>UK SI 2016 No. 1091</b> The Electromagnetic Compatibility Regulations 2016	EN 55015:2019+A11:2020 EN 61000-3-2:2019 +A1:2021 EN 61000-3-3:2013 +A1:2019 EN 61547:2009
<b>UK SI 2010 No. 2617</b> The Ecodesign for Energy-Related Products Regulations 2010	UK SI 2021 No. 1095
<b>UK SI 2012 No. 3032</b> The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	

**Name, position and signature of authorized person**

  
Leo Luppi

Vice President Quality