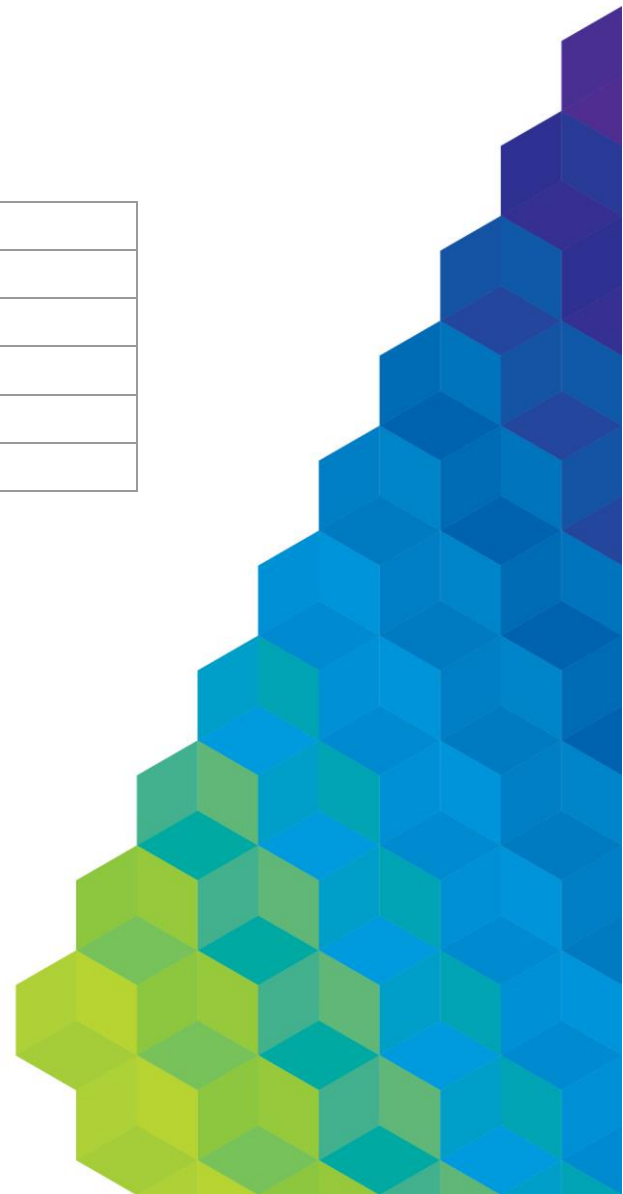


Public Lighting – Standard Luminaires, Poles and Bracket Arms

Electricity Distribution Standard

Document number:	EDS 10-03
Issue number:	11
Status:	Approved
Approver:	John Paul Annal
Author :	Saman De Silva
Date of approval:	24/06/2019



Public Lighting – Standard Luminaires, Poles and Brackets Arms

ISSUE/AMENDMENT STATUS

Issue Number	Date	Description	Author	Approved by
1	25/3/2010	Initial Issue	M Butson	S De Silva
2	7/9/2011	Added Streetworx Enviro T5 luminaire	M Butson	S De Silva
3	18/12/2014	New Template. Added Optispan, Artcraft T5, LED and new poles	S De Silva	Stuart Dick
4	8/02/2016	80W & 125W MV luminaires removed. 100W HPS added. Photos, Spacing tables, SSL spec, additional brackets added. Reformatted.	SdeS	Stuart Dick
5	28/07/2016	Category V LED luminaires added – section 6.3	S De Silva	Stuart Dick
6	01/08/2016	37W LED (high output) added - section 6.2	S De Silva	Stuart Dick
7	19/12/2016	New section 3.1 added, Luminaires fitted with glare shields/baffles	S De Silva	Stuart Dick
8	23/06/2017	Updated to include latest StreedLED model & Sylvania Cat V	S De Silva	John Paul
9	30/07/2018	Revisions to all Clauses, updated approved luminaires & Poles list, added clause on Minamata Convention.	S De Silva	John Paul
10	23/05/2019	Updated latest approved luminaires	S De Silva	John Paul
11	24/06/2019	Item ID on 33W cat P LED corrected	S De Silva	John Paul

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Public Lighting – Standard Luminaires, Poles and Brackets Arms

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Public Lighting – Standard Luminaires, Poles and Brackets Arms

1 PURPOSE/SCOPE

This document contains the following for standard public lighting luminaires, poles and brackets arms:-

- Technical specifications
- List of approved standard public light luminaires
- List of approved public lighting poles and bracket arms
- Approval process.

2 DEFINITIONS

Standard luminaires refer to those which are standard or are commonly used luminaires.
Standard poles refer to those which are standard or are commonly used URD steel poles.

There are basically two categories of lighting:

Major Roads, or Category V (Vehicles) – Lighting applicable to roads where the visual requirements of motorists are dominant. e.g. traffic roads.

Minor Roads, or Category P (Pedestrian) – Lighting applicable to roads and other public spaces where the visual requirement of pedestrians are dominant. e.g. local roads (URD housing estate roads), car parks.

HPS	High Pressure Sodium
MV	Mercury Vapour
CFL	Compact Fluorescent
SSL	Solid State Lighting
PE	Photo Electric
RFI	Radio Frequency Interference
NATA	National Accredited Testing Association
NEMA	National Electrical Manufacturers Association
IEC	International Engineering Consortium

3 MINAMATA CONVENTION

The *Minamata Convention on Mercury* (the Convention) is a global treaty to protect human health and the environment from the adverse effects of mercury through practical actions.

The Convention aims to protect human health and the environment by addressing releases of mercury through its lifecycle: mining, import and export; manufacture into products and associated emissions and releases; contaminated sites, waste management, and recovery and reuse.

The Convention came into force on 16 August 2017 and over 90 countries have so far ratified it.

Specifically, the **Minamata Convention calls for banning the import, export and manufacture of HPMV lamps by 2020.**

Ratification of the Convention by Australia would therefore ban the import and manufacture of HPMV lamps here from **1 January 2021**. Ongoing use of existing lamp stocks already in-country would still be permitted.

3.1 LAMP TYPE

Use of new Mercury Vapour (MV) lamps is not allowed in Australia. For both P and V category luminaires, AusNet Services' preferred new lamp type is LED.

4 STANDARD LUMINAIRE APPROVAL PROCESS

The standard luminaire (Category P & V) approval process involves a supplier making application to AusNet Services where the suppliers may be requested go through an accredited third party service

Public Lighting – Standard Luminaires, Poles and Brackets Arms

provider (eg Ironbark Sustainability, Steve Jenkins Associates) who will perform a technical evaluation of the item. If deemed acceptable by AusNet Services or this company the item is then be considered for approval by AusNet Services. It should be noted that AusNet Services may request for additional information over and above already supplied to the third party service provider.

4.1 LUMINAIRES FITTED WITH GLARE SHIELDS/BAFFLES

AusNet Services will not accept luminaires fitted with glare shields/baffles as standard luminaires in their network. If a Council intends to install glare shields/baffles due to customer complaints the Council should enter in to an Non-Standard Public Lighting agreement with AusNet Services and install an approved fitting at their own cost.

5 STANDARD LUMINAIRES

Both category V and P luminaires shall meet the requirements specified in SA/SNZ1158.6.

5.1 SUMMARY OF SA/SNZ 1158.6 REQUIREMENTS

- Marking (Interior of Luminaire)
- Marking (Exterior of Luminaire)
- Marking (Interior of Luminaire for HPS/MH)
- Form & Construction
- Ingress Protection
- Resistance to Vandalism
- Luminaire Body Material
- Component Fixing Devices
- Gaskets
- Sealing of Spigot Entry
- Visor Attachment to Luminaire Body
- Visor Material Requirements
- Optical System
- Fixing Spigot Side Entry & Post Top
- Means of Attachment
- Top Entry Spigot
- Maximum Mass of Luminaire
- Requirements for Fluorescent Lamps
- Electricity Supply
- Cable Entry
- Terminal Block
- Mounting of Control Gear
- Mounting of Gear on Hinged Tray
- Connection Arrangement for D2 Base
- Internal Wiring
- Wind Force Test
- Vibration Testing (not applicable for luminaires under 7kgs)
- Ingress Protection Test
- Resistance to External Mechanical Impact
- Impulse Voltage Test
- Thermal Endurance Testing
- Additional Tests
- General Information Including Full Description of Luminaire & Drawing with Part Numbers
- Photometric Information from Accredited NATA Laboratory

Statement of Compliance from supplier that Luminaire Meets Requirements of SA/SNZ 1158.6 including all test reports from NATA accredited laboratories.

Public Lighting – Standard Luminaires, Poles and Brackets Arms

5.2 MAJOR ROADS (CATEGORY V) AND MINOR ROADS (CATEGORY P)

- a) Conform to AS1158.1 & SA/SNZ1158.6
- b) Be Type P (photo-electrically [PE] controlled)

In addition to AS1158.6 requirements, the luminaire shall have the following features:

5.2.1 REQUIRED FEATURES OF CATEGORY V AND P LUMINAIRES

- a) Be easily installed
- b) Be easily maintained
- c) Have a service life of at least 20 years
- d) Maintain the specified Ingress Protection rating over the service life of the luminaire
- e) Comply with AS1158.1, Clause 2.5, "Maintenance of Light technical parameters"
- f) The lamp access, lamp, PE cell and electronic ballast (where applicable) must be easily replaced by an operator wearing linesmen's gloves
- g) Access to the lamp chamber to be obvious when looking at the luminaire
- h) Have a NEMA Type socket complying with BS5972 or ANSI C136.10 for the PE switch
- i) All luminaire components which need to be removed for the installation or maintenance of the luminaire shall be held captive during these operations
- j) The Visor should be attached to the luminaire by quick-release stainless steel catches as per Clause 2.4.2 of AS3771. If another method is used, then all parts shall be held captive by the luminaire and be as easy to release as the quick-release catches
- k) Comply with AS/NZS4051 "Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment".
- l) The luminaire performance shall meet the requirements of AS1158 and :-
 - a. Be light & energy efficient. The maximum luminaire spacing shall not be less than the maximum spacing of AusNet Services standard Category V luminaires (with lamp lumens output of 14000lm for 150W HPS & 27000lm for 250W MV)
 - b. I-Tables in the CEI format (as shown in AS1158.2 page 34) shall be supplied for each luminaire. An Isolux diagram is also to be supplied – Data to be prepared by a NATA Registered laboratory or equivalent and measured at 0 degree upcast
- m) Luminaires shall have integral control gear.

Proof of conformity of all of the above requirements with all test reports by a NATA Registered Laboratory shall be provided when submitting luminaire for evaluation.

Note: The use of Mercury Vapour lamps/luminaires in new Category P or V lighting schemes is not permitted, effective after 31 December 2010 (refer AS1158.3).

Public Lighting – Standard Luminaires, Poles and Brackets Arms

5.3 SSL (LED) LUMINAIRE APPROVAL CHECKLIST

Complies	Requirement	Reference to supporting evidence
<input type="checkbox"/>	All relevant requirements of SA/SNZ 1158.6:2015 series are met	
<input type="checkbox"/>	Luminaire is fully sealed with a smooth, transparent visor in front of the light emitting array such that spiders and dirt cannot collect	
<input type="checkbox"/>	Has an option for a luminaire which offers no upward luminaire spill (e.g. aeroscreen)	
<input type="checkbox"/>	Transparent materials (including SSL optics) between the light source and the area to be lit meet all relevant requirements of visors within SA/SNZ 1158.6:2015 Section 2.4.2	
<input type="checkbox"/>	No sharp edges	
<input type="checkbox"/>	Minimum IK06	
<input type="checkbox"/>	Optical chamber is minimum IP65	
<input type="checkbox"/>	Water can drain out of control gear chamber naturally (where control gear chamber is minimum IP24)	
<input type="checkbox"/>	No cable entry glands, washers, grommets or other device to restrict the cable entry in order to meet the minimum diameter of the cable entry hole required by SA/SNZ 1158.6:2015	
<input type="checkbox"/>	Meets vibration testing to SA/SNZ 1158.6:2015 Section 5.4	
<input type="checkbox"/>	Meets impulse voltage testing to SA/SNZ 1158.6:2015 Section 5.5	
<input type="checkbox"/>	Complies with IEC 61000.3.2 (relevant component compliance is acceptable)	
<input type="checkbox"/>	Luminaire and PE cell can operate when ambient temp external to luminaire is 50°C (compliant with this requirement using all DNSP-approved PE cells)	
<input type="checkbox"/>	If a standard side-entry Category P luminaire, then is able to accommodate 27mm to 34mm outer diameter spigots or 42mm for Cat V	
<input type="checkbox"/>	Any material over the light emitting source, including the optics and any other relevant material between the source and the area to be lit, complies with the requirements of the materials and construction clauses of SA/SNZ 1158.6:2015 (i.e. 2.4.2: Materials and construction)	
<input type="checkbox"/>	Correlated colour temperature (CCT) is 3985K ± 275K	
<input type="checkbox"/>	Luminaire is RoHS compliant (relevant component compliance is acceptable)	
<input type="checkbox"/>	Luminaire has no moving parts in normal operation (e.g. fans)	
<input type="checkbox"/>	Luminaire utilises multiple chips to light a particular zone, such that if one chip fails there will still be light provided for that particular zone	



Public Lighting – Standard Luminaires, Poles and Brackets Arms

<input type="checkbox"/>	Is supplied with 7 pin NEMA base for PE cell on the underside of luminaire	
<input type="checkbox"/>	Is the luminaires include a Surge Protection Device (SPD) rated to a minimum $I_n = 5kA$ ($I_{max} = 10kA$) comply with IEC 61643-11 including thermal protection.	
<input type="checkbox"/>	Minimum ten-year warranty provided covering maintained integrity and functionality of: <ul style="list-style-type: none"> • Luminaire housing, wiring, and connections • LED luminaire source(s) LED driver(s)	
<input type="checkbox"/>	Warranty period to begin 90 days after date of invoice, or as negotiated by owner such as in the case of an auditable asset management system	
<input type="checkbox"/>	Life/mortality data for the driver/control gear provided	
<input type="checkbox"/>	Luminaire achieves relevant minimum spacing requirement	

Public Lighting – Standard Luminaires, Poles and Brackets Arms



6 APPROVED STANDARD LUMINAIRES & COMPONENTS

6.1 HPS LUMINAIRES

Approved for maintenance and lamp replacement			
Material ID	Type	Model/Manufacturer	
005312	LUMINAIRE, SODIUM, HIGH PRESSURE, 100W, WITH INTEGRAL CONTROL GEAR & (250V CHOKE) AND D2 PE SWITCH BASE	<ul style="list-style-type: none"> Suburban/Sylvania 	Sylvania Suburban HID 
005306	LUMINAIRE, SODIUM, HIGH PRESSURE, 150W, WITH INTEGRAL CONTROL GEAR & (250V CHOKE) AND NEMA PE SWITCH BASE,	<ul style="list-style-type: none"> Roadster/Sylvania Optispan/Aldridge Traffic Systems 	 Sylvania Roadster
005304	LUMINAIRE, SODIUM, HIGH PRESSURE, 250W, WITH INTRGRAL CONTROL GEAR & (250V CHOKE) AND NEMA PE SWITCH BASE,	<ul style="list-style-type: none"> Roadster/Sylvania Optispan/Aldridge Traffic Systems 	
005307	LUMINAIRE, SODIUM, HIGH PRESSURE 400W, WITH WITH INTRGRAL CONTROL GEAR & NEMA PE SWITCH BASE	<ul style="list-style-type: none"> Roadster/Sylvania Optispan/Aldridge Traffic Systems 	

Note: Though HPS is an approved lamp type in AusNet Services area (mainly for maintenance) LED is the preferred lamp type for new and replacement luminaires.

6.2 ENERGY EFFICIENT LUMINAIRES – CATEGORY P

Approved for maintenance and lamp replacement			
Material ID	Type	Model/Manufacturer	
007418	42W Compact Fluorescent (CF)	JS97A03L / Sylvania	
007417	32W Compact Fluorescent (CF)	JS98A01L /Sylvania	
007358	24W Twin T5 Fluorescent	<ul style="list-style-type: none"> GS2224VIC/P / Pierlite SWT522401/ Streetworx 12181/ Artcraft 	
007357	14W Twin T5 Fluorescent	<ul style="list-style-type: none"> GS2214VIC/P / Pierlite SWT521401/ Streetworx 12221/ Artcraft 	

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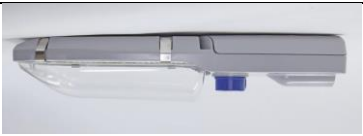
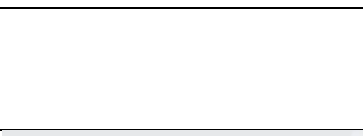

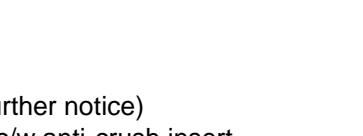
Category P LED luminaires approved for new installations and luminaire replacement			
SAP ID	System Watts	Part Number	
011476 – Semi cutoff	17W LED	<ul style="list-style-type: none"> JLC99A06L17/Sylvania StreetLED Mk3 (Semi cut-off , NEMA PE) JLC99A16L17/Sylvania (Aeroscreen, NEMA PE) 	
	18W LED	<ul style="list-style-type: none"> Aldridge Aero P-LED.II.14W 	
	25W LED	<ul style="list-style-type: none"> GE P4P5 LED (EVOLVE P4/P5) 	
011477 – Aeroscreen **	18W LED	<ul style="list-style-type: none"> Artcraft Urban Genesis 18 LED Semi-cutoff 	
		<ul style="list-style-type: none"> Artcraft Urban Genesis 18 LED Aeroscreen 	
13758	33W LED (High output – replace 125W MV)	<ul style="list-style-type: none"> Sylvania StreetLED ECO 33W LED 	

** The current stores description for Cat P LED is for Sylvania StreetLED 18W, in the future under the nominated stores items any of the technically approved luminaire type may be purchased.

Note: The efficiency of LED lamps and associated luminaires are improving very rapidly. The listed 'wattage' of the luminaire is the most currently approved version. However for ease of maintaining the SDME spatial data all category P lamp types shall be defaulted to 18W. Accordingly until further notice in all drawings Cat P LED public lighting shall be marked as 18W LED.

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6.3 ENERGY EFFICIENT LUMINAIRES – CATEGORY V

Category V LED luminaires approved for new installations and luminaire replacement			
Material ID	Type	Model/Manufacturer	
00013503	Lantern,LED, V Category, Replace 150W HPS	Aldridge Aero V-LED II V21675WT5N7P (System watts = 75W)	
		- RoadLED Midi 70W, 4K, SPD PM99A06L70 (Aero) - RoadLED Midi 70W, 4K, SPD PM99A16L70 (semi cut off) (System Watts – 70W)	
00013504	Lantern,LED, V Category, Replace 250W HPS	Aldridge Aero V-LED V216175WT5N7P (System Watts – 175W)	
		- RoadLED Midi 150W, 4K, SPD PM99A06L150 (Aeroscreen) - RoadLED Midi 150W, 4K, SPD PM99A16L150 (semi cut off) (System Watts – 155W)	
00013505	Lantern,LED, V Category, Replace 400W HPS	Aldridge Aero V-LED V216265WT5N7P (System Watts – 265W)	
		-RoadLED 275W 4K SPD PECN7 9006 - PL99A06L275 (Aeroscreen) - RoadLED 275W 4K SPD PECN7 CO 9006 - PL99A16L275 (semi cut off) (System Watts – 275W)	

6.4 APPROVED COMPONENTS

- 1) **Lamps** : For maintenancce
 - 80W & 125W MV (For maintenance purposes only until further notice)
 - 32W CF – Sylvania 32W Amalgam CF Lamp, colour 840 c/w anti-crush insert,
 - 42W CF – Sylvania 42W Amalgam CF Lamp, Colour 840, c/w anti-crush insert,
 - 14W T5 - 14W Philips Master TL5 HE 14W/840 and
 - 24W T5 - 24W Osram FO 24W/840 HO constant FLH1
 - Samsung LED module
 - Cree LED module
 - Phillips LED module
 - Samsung/Phillips/Mean Well/GE – Electronic driver
- 2) **PE Cells** :
 - Electronic D2 PE cell:
 - Hendon Part No HSC-PE2 or
 - Kaga Model No PS-2403P1
 - Tyco Model No D2A-E22T
 - NEMA PE Cell:

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- ALR
 - TE
 - Hendon
- 3) **SPD (Surge Protection Device)** – 10kA (8/20 μ s) c/w Thermal cut –off. – Littlefuse LSP10, MOSO 12kA (8/20 μ s) or equivalent.

7 STANDARD PUBLIC LIGHTING POLES AND BRACKET ARMS

Standard public lighting poles and Bracket arms must meet the requirements of AusNet Services specification DES 10-02 'Steel Poles, Brackets and Weights for Public Lighting'.

7.1 STANDARD POLES AND BRACKET ARMS APPROVAL PROCESS

Supplier must meet the requirements of the AusNet Services specification, DES 10-02 "Steel Poles, Brackets and Weights for Public Lighting" accompanied with all test reports from a NATA accredited laboratory supplied. Structural computations certified by a qualified structural engineer for the adequacy of the pole and brackets shall be accompanied with the submission for approval.

Public Lighting – Standard Luminaires, Poles and Brackets Arms

8 APPROVED STANDARD PUBLIC LIGHTING POLES AND BRACKET ARMS

8.1 PUBLIC LIGHTING POLES

Item No.	Material ID	Description	Drawing No.
1	001581	Pole , Steel, Plate Setting, Centre Hinge, 76mm OD Spigot for 0.5m Hinged Pole Brackets with Ragbolts on 650mm PCD, 15m long.	EVX15/325/6 (Pole) EVX15/318/3 (Door) EVX15/165/2 (Screw) (EVX15/214/36 (Footings))
2	001570	Pole , Steel, Plate Setting, Centre Hinge, 76mm OD Spigot for 0.5m Hinged Pole Brackets with Ragbolts on 350mm PCD, 12.5m long.	EVX15/325/6 EVX15/318/3 (Door) EVX15/165/2 (Screw) (EVX15/313/1 (Footings))
3	001576	Pole , Steel, 7/5.5m/1kN Ground Setting, complete with Protective Coating.	EVX15/165 EVX15/318/3 (Door) EVX15/165/2 (Screw)
4	006283	Pole , Steel, 9/7.5m/1kN Ground Setting, complete with Protective Coating with 27mm spigot.	EVX15/330/1
5	006393	Pole , Steel, 10.8/9m /1kN Ground Setting, complete with Protective Coating with 27mm spigot.	EVX15/330/1
6	001575	Pole , Steel, 10.8/9m /1kN Ground Setting, complete with Protective Coating with 42mm spigot.	EVX15/330/1
7	01566	Pole, Steel. 8.5m, Impact Absorbing	
8	06915	Pole, Steel. 11m, Impact Absorbing	

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8.2 PUBLIC LIGHTING BRACKET ARMS

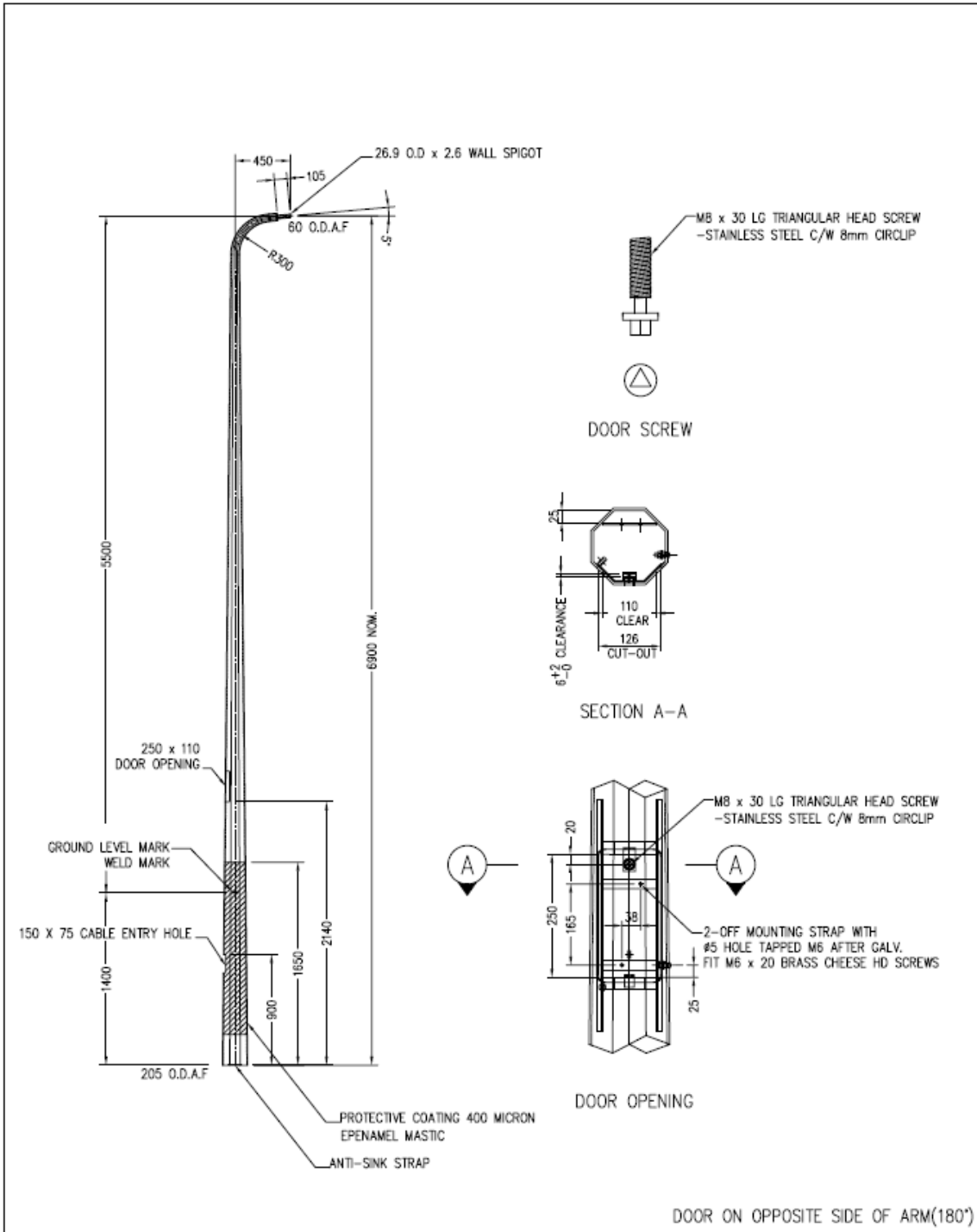
Item No.	Material ID	Description	Drawing No.
1	001060	Crossarm mounting bracket	VX15/307/6
2	001088	Inclined arm 2.5m uplift, 3.0m outreach	VX15/2294/16
3	001079	Inclined arm 2.5m uplift, 4.5m outreach	VX15/2294/16
4	001170	Inclined arm 2.5m uplift, 6.0m outreach	VX15/2294/16
5	001101	Inclined arm 3.5m uplift, 4.2m outreach	VX15/2294/17
6	001094	Inclined arm 4.2m uplift, 5.0m outreach	EVX15/2294/18
7	000988	Cobra, tapered Tube 3m outreach	VX15/174/9
8	000982	Cantilever, tapered Tube 5m outreach	VX15/174/10
9	001134	Outreach arm, 3.0m single bracket	VX15/153/2
10	001104	Outreach arm, 4.5m single bracket	VX15/153/10
11	001124	Outreach arm, 1.5m/4.5m Asymmetrical Double bracket	VX15/153/19
12	001125	Outreach arm, 3.0m double bracket	VX15/153/3
13	001105	Outreach arm, 4.5m double bracket	VX15/153/14
14		Outreach arm, 3.0m/4.5m double bracket	EVX15/153/23
15	000976	Bracket, for Hinged Poles 0.5m Outreach, 2 Arms at 90°.	EVX15/325/7
16	001147	Bracket, for Hinged Poles 0.5m Outreach, 2 Arms at 180°.	EVX15/325/7
17	001078	Bracket, for Hinged Poles 0.5m Outreach, 3 Arms at 120°.	EVX15/325/7
18		Bracket, for Hinged Poles 0.5m Outreach, 4 Arms at 90°.	EVX15/325/7

8.3 APPROVED POLES SUPPLIERS

- Ingal EPS
- Vicpole Pty Ltd
- Coslee Heavy Metal Fabricators Pty. Ltd.
- Saferoads Pty Ltd

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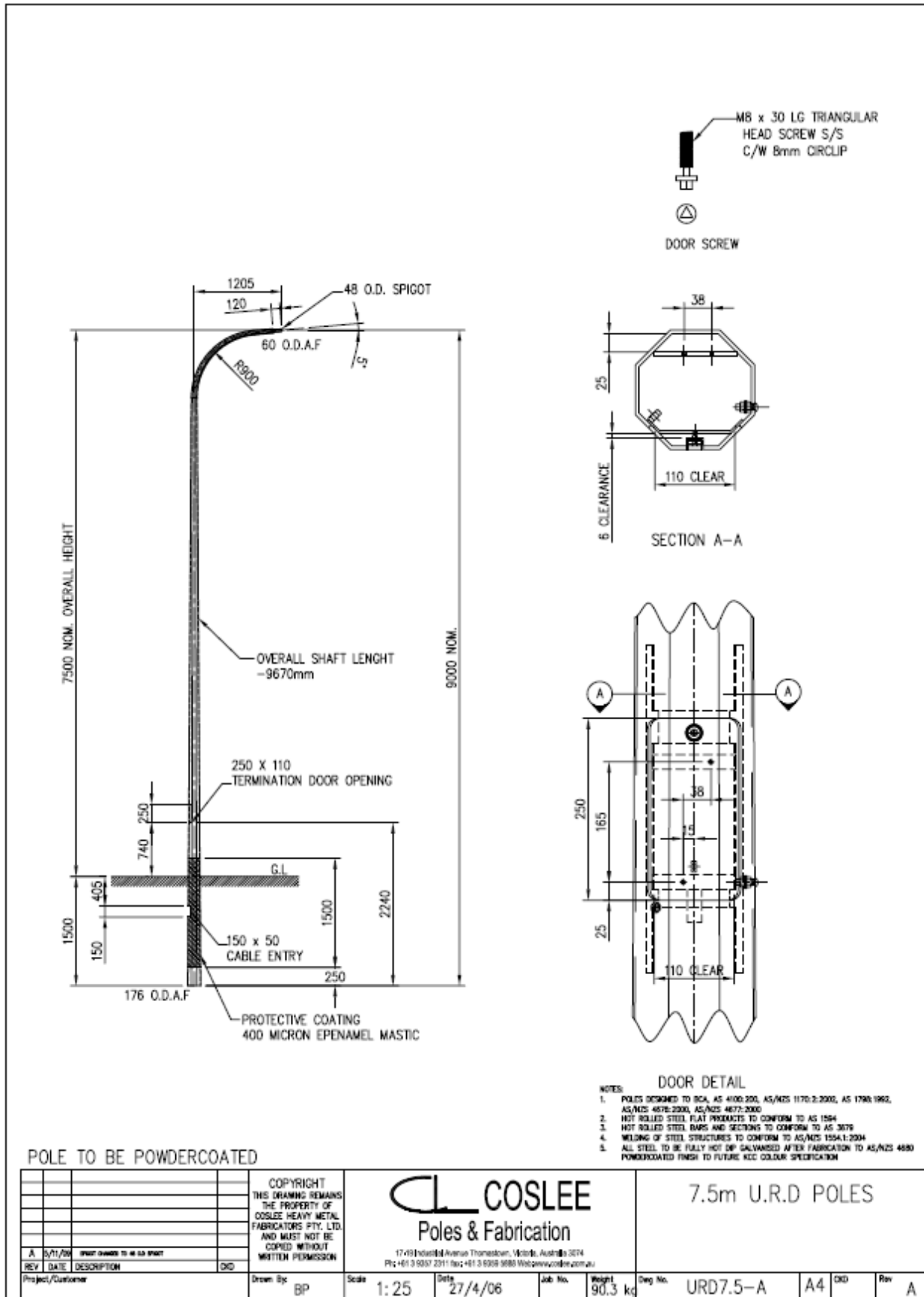
COSLEE 5.5m URD POLE



COPYRIGHT THIS DRAWING REMAINS THE PROPERTY OF COSLEE HEAVY METAL FABRICATORS PTY. LTD. AND MUST NOT BE COPIED WITHOUT WRITTEN PERMISSION		COSLEE Pole & Fabrication <small>11-13 Industrial Avenue Thornhill, Melb, Australia 3074 Ph: +61 3 9337 2311 Fax: +61 3 9339 5388 Web: www.coslee.com.au</small>		5.5m URD POLE	
B 14/1/08 SHAFI CHANGED A 26/9/09 DOOR POSITION CHANGED REV DATE DESCRIPTION DKO	Drawn By: BP	Scale: N.T.S	Date: 14/1/09	Job No.	Weight: 132
Project/Customr	Drawn By: BP	Scale: N.T.S	Date: 14/1/09	Job No.	Weight: 132
Deg No. URD5.5	A4	DKO	Rev B		

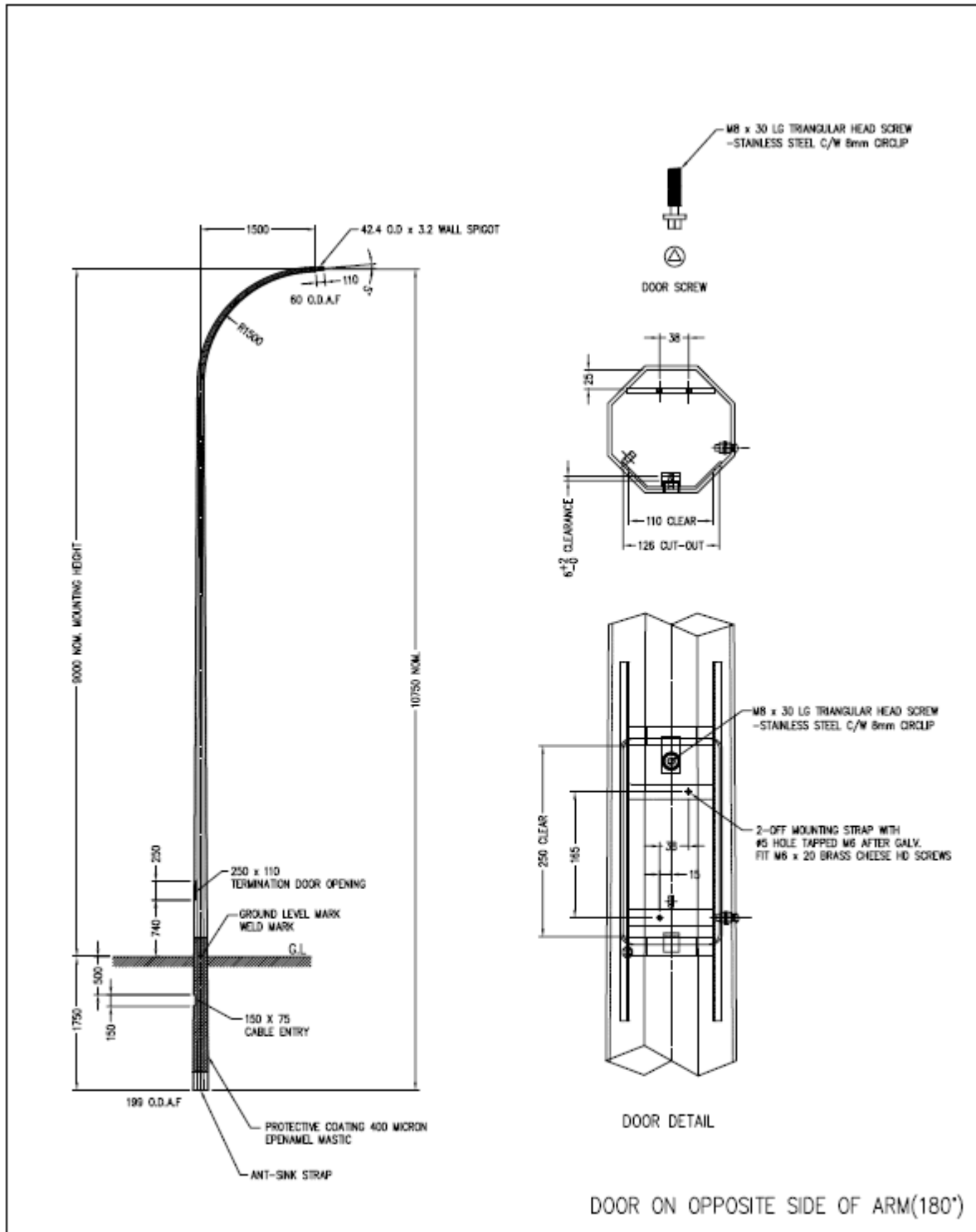
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COSLEE 7.5m URD Pole



Public Lighting – Standard Luminaires, Poles and Brackets Arms

COSLEE 9m URD POLE



		COPYRIGHT THIS DRAWING REMAINS THE PROPERTY OF COSLEE HEAVY METAL FABRICATORS PTY. LTD. AND MUST NOT BE COPIED WITHOUT WRITTEN PERMISSION				9.0m URD POLE	
B 23/5/13 ARM LENGTH AND DOOR CHANGED A 26/4/13 WELD MARK & WELD MARK ADDED REV DATE DESCRIPTION DKG		Drawn By	Scale	Date	Job No.	Height	Day No.
Project/Customer		BP	N.T.S	27/4/06		210	URD9
							A4 DKG Rev B

Public Lighting – Standard Luminaires, Poles and Brackets Arms

COSLEE 11m IMPACT ABSORBING POLE

