



## MCW Request Guide

### Selection of Lighting Category

Lighting performance and design requirements are grouped into two main categories; Category P – Pedestrian area lighting, where the visual requirements of pedestrians are dominant and Category V – Vehicular traffic lighting, where the visual requirements of motorists are dominant. These are then further categorised into subcategories where the Light Technical Parameters (LTP’s) are designed to specifically meet the application. The Roads authority (local council or Roads and Maritime Service) is responsible for determining the appropriate subcategory and Essential Energy is responsible for maintaining these levels.

To assist Road authorities in selecting appropriate lighting levels further information can be found in:

- ▶ AS/NZS 1158 - Lighting for roads and public spaces and
- ▶ Operational Standard: Public Lighting Maintenance CEOS5126.02.

### Category P

Category P roadway lighting is defined as lighting where the visual requirements of pedestrians are dominant. There are five subcategories within Category P that have specific LTP’s that are necessary and sufficient for the application. The table below is an extract from AS/NZS 1158.3.1 which explains the selection criteria for each of the Category P subcategories.

Type of road or pathway		Selection criteria			Applicable lighting subcategory
General description	Basic operating characteristics	Pedestrian/ cycle activity	Risk of crime	Need to enhance amenity	
Collector roads or non-arterial roads which collect and distribute traffic in an area, as well as serving abutting properties	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	Low	P4
Local roads or streets used primarily for access to abutting properties, including residential, commercial and industrial precincts		N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	Low	P4
		N/A	N/A	N/A	P5*
Common area, forecourts of cluster housing		N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
	Low	Low	Low	P4	

Table 1 - Category P design selection criteria

Lighting Subcategory	Manufacturer	Luminaire Description	Item Code
P3	Sylvania	StreetLED2 33W 3000K 3367lm 700mA Aeroscreen	510228
	OrangeTek	IGNIS MINI 27W 3000K 425mA 3685lm	542450
P4/P5	Sylvania	StreetLED3 17W 3000K 350mA 2187lm	510165
	OrangeTek	IGNIS MINI 22W 3000K 325mA 2903lm	542460
	GE	GE Evolve 17W 3000K 435mA 2352lm	510197

Table 2 - Current default Category P LED luminaires

**Category V**

Category V roadway lighting is defined as lighting where the visual requirements of motorists are dominant. There are five subcategories within Category V that have specific LTP’s that are necessary and sufficient for the application. The table below is an extract from AS/NZS 1158.1.1 that explains the selection criteria for each of the Category V subcategories. The most common categories used on Essential Energy’s network are V1 and V3. V2 and V4 are available for use, however the operating characteristics are very similar to V1 and V5, respectively.

Typical applications		Applicable lighting subcategory
Description of road or area type	Operating characteristics	
Arterial or main roads in central and regional activity centres of capital and major provincial cities, and other areas with major abutting traffic generators	<ul style="list-style-type: none"> <li>-Mixed vehicle and pedestrian traffic</li> <li>-High to very high vehicle volume</li> <li>-High to very high pedestrian volume</li> <li>-Moderate to low vehicle speeds</li> <li>-Stationary vehicles alongside the carriageway</li> <li>-Through and local traffic</li> <li>-High traffic generation from abutting properties</li> </ul>	V1
Arterial roads that predominantly carry through traffic from one region to another, forming principal avenues of communication for traffic movement, with major abutting traffic generators	<ul style="list-style-type: none"> <li>-Mixed vehicle and pedestrian traffic</li> <li>-High vehicle volume</li> <li>-High pedestrian volume</li> <li>-Moderate to high vehicle speeds</li> <li>-Stationary vehicles alongside the carriageway</li> <li>-Through and local traffic</li> <li>-High traffic generation from abutting properties</li> </ul>	V2
Freeways, motorways and expressways consisting of divided highways for through traffic with no access for traffic between interchanges and with grad separation at all intersections	<ul style="list-style-type: none"> <li>-Vehicle traffic only</li> <li>-High to very high vehicle volume</li> <li>-High speeds</li> </ul>	V3
Arterial roads that predominantly carry through traffic from one region to another, forming principal avenues of communication for traffic movement.	<ul style="list-style-type: none"> <li>-Mixed vehicle and pedestrian traffic</li> <li>-Moderate to high vehicle volume</li> <li>-High pedestrian volume</li> <li>-Moderate to low vehicle speeds</li> <li>-Stationary vehicles alongside the carriageway</li> <li>-Through and local traffic</li> <li>-Low traffic generation from abutting properties</li> </ul>	
Sub-arterial or principal roads which connect arterial or main roads to areas of development within a region, or which carry traffic directly from one part of a region to another part	<ul style="list-style-type: none"> <li>-Mixed vehicle and pedestrian traffic</li> <li>-Moderate vehicle volume</li> <li>-Low pedestrian volume</li> <li>-Moderate to low vehicle speeds</li> <li>-Low traffic generation from abutting properties</li> </ul>	V4 or V5

**Table 3 - Category V design selection criteria**

Lighting Subcategory	Manufacturer	Luminaire Description	Item Code - Nema Control
V1 High	Sylvania	RoadLed 300W 4000K 35254lm 650mA Aeroscreen	510263
V1	Sylvania	RoadLed Midi 150W 4000K 20321lm 650mA	510244
V3	Sylvania	RoadLed Midi 80W 4000K 9509lm 661mA	510241
	OrangeTek	Ignis 1 71W 4000K 8960lm 650mA	542490
V5	Sylvania	RoadLed Midi 50W 4000K 7614lm 208mA	510236
	OrangeTek	Ignis 1 49W 4000K 6532lm 450mA	542500

Table 4 - Current default category V LED luminaires

### Selection of Outreach

The selection of an outreach will determine the luminaires mounting height and overhang; of which both will have significant impact on the effectiveness and compliance of the lighting installed. Where installing on existing infrastructure, the suitability of outreaches will need to be assessed on a case-by-case basis to ensure appropriate roadway and electrical clearances can be maintained. The tables below summarise standard roadway configurations for both Lighting Categories and the outreaches available for selection.

Lighting Subcategory	Road Reserve Width (m)	Mounting Height (m)	Offset Distance (m)	Upcast Angle (°)	Maximum Spacing (m)
P3	20	7.5	5	5	59
P4	20	7.5	5	5	65
P5	20	7	5	5	75

Table 5 - Standard roadway configuration for Category P

Lighting Category	ARR	Wk (m)	H (m)	OH (m)	Upcast Angle (°)	Required spacing (m)
V1 High	3	13	12	3	5	46
	3	13	13.5			46
	4	23	12			61
	4	23	13.5			65
V1	3	13	10.5	3	5	33
	3	13	12			30
	4	23	10.5			42
	4	23	12			40
V3	3	13	9	2	5	29
	3	13	10.5	3		32
	4	23	9	2		45
	4	23	10.5	3		44
V5	3	13	9	2	5	31
	3	13	10.5	3		35

Table 6 - Standard roadway configuration for Category V

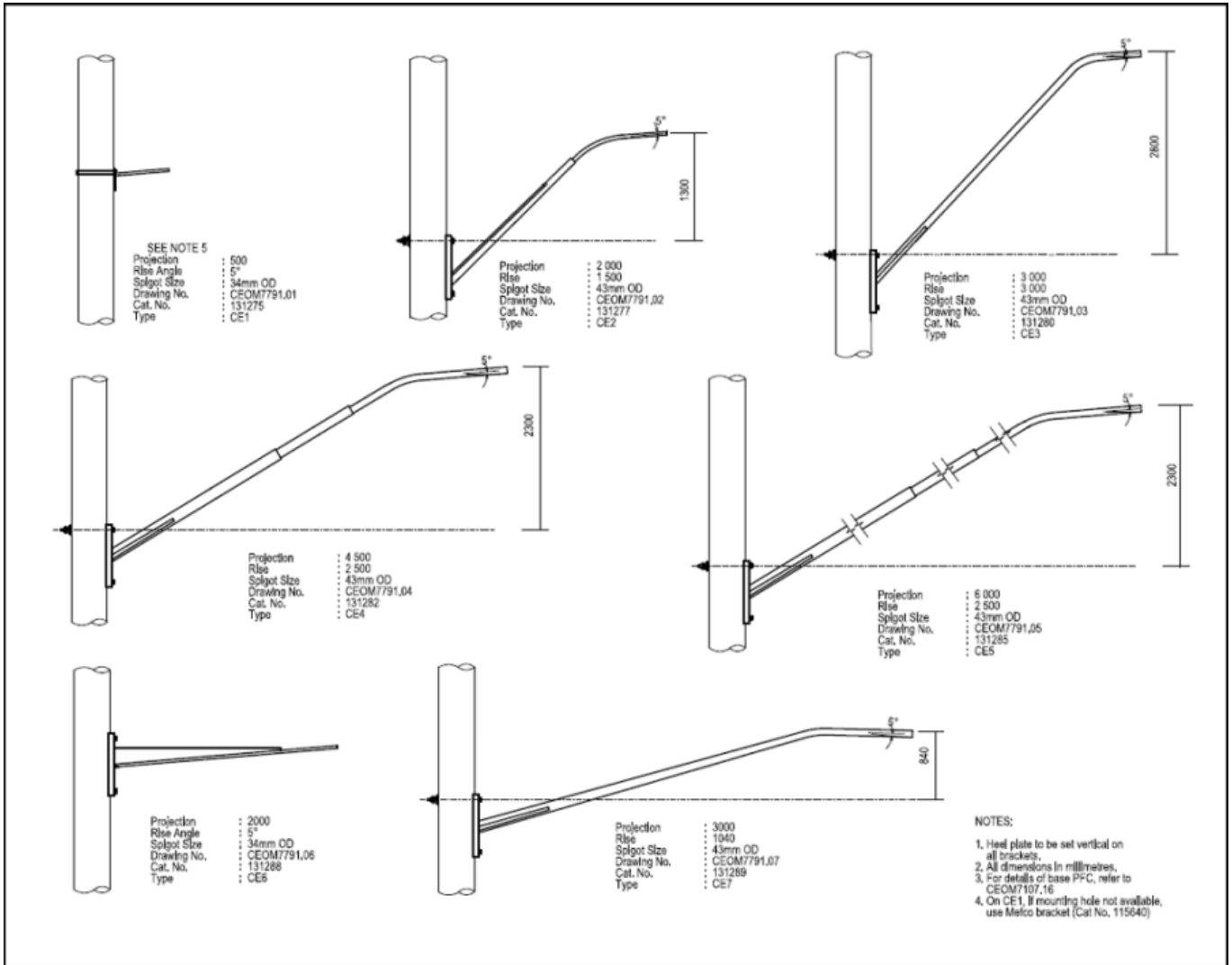


Table 7 - Available outreaches