

SOUTHERN LIGHTING & DISTRIBUTION

AS/NZS 115.3.1: 2020 amendment summary (2024)

Car Parks are more clearly defined between off road and on road.

- Off road being an area that is not connected to the road reserve.
- On road being parking spaces on the road reserve including parallel, angle and median parking and parking for the disabled.
 - *In essence, on road carparks get treated per the road way standard and do not need to be treated as a separate car park calculation area.*

Scotopic/Photopic (SP) Ratios have been introduced.

- This is a derating tool to adjust for the ratio of the luminous output of a light source evaluated according to the CIE scotopic spectral luminous efficiency V the luminous output evaluated according to the CIE photopic spectral luminous efficiency.
- Applies in lower levels, where scotopic vision is likely to engage, and only for road ways (subcategories PR3, PR4, PR5, PR6) and pathways (subcategories of PP4 and PP5).
- There is a formular if the S/P ratio is known, or, a formular if only the CCT is known;
 - For CCT conversion, the formular is:
 - CCT $\geq 2500\text{K}$, no deration factor
 - CCT between 1900K and 2500K, apply a 0.85 deration factor
 - CCT $\leq 1900\text{K}$, apply a 0.5 deration factor.
 - *Unlikely to have as significant an impact as it appears on paper due to physics of pathways/ roadways and the fact that we still need to comply with luminous intensity angles i.e. this may have a small impact on energy load but is unlikely to significant impact pole spacings, and therefore cost.*

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Pathway Surround Illuminance is now given specific values and more clearly defined

- Provided as minimum horizontal values.
- Taken 5m either side of a 'suitable verge' or up to the structure/ boundary from the edge of the path.
- The calculation field is as per the standard pathway design criteria (AS1158.2) and includes the pathway i.e. a 2m wide path using a 2m x 2m grid would require a Pathway Surround Illuminance calc. that is 12m wide using a 2m x 2m grid.
- The exceptions are when it is not deemed necessary by the relevant authority, or if there is a residential property within 3m of the path's boundary.
 - *Deeming this unnecessary will be important step in ecologically sensitive zones to reduce spill light into waterways etc.*

PCX pedestrian crossing category in car parks has been redefined and improved

- Now specifically references PCX crossings as being those over circulation and access roadways, and does not apply to walkways within the car parking aisles.
- Now in line with PCD calculations using minimum point horizontal and greater than average
 - ≥ 5 lux min. and \geq the car park average.
 - *This catches the standard up to current research, and is a far more sensible level than the previous version.*

Limitation of luminous intensity updated

- Public Activity Areas, Connecting Elements and Car parks are now required to meet the limits of luminous intensity in the luminaires designed position.
 - However, a value of 3 500 cd absolute may be used for these areas i.e. restrictions cap out once luminaires deliver $>19\ 500$ lumens.
- Pathways and roadways remained per the photometered position.
 - *This is a significant step in discouraging the upward tilting of luminaires when area lighting.*

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Changes to Discomfort Glare

- Discomfort Glare (DGI) is no longer required for Public Activity Areas, Connecting Elements and Car parks.
- No limits are no enforced for pole heights above 10m.

UWLR now separates car parks

- As offroad parking is not considered as part of public lighting by AS/NZS 4282 they fall under the formal scope of the standard. Therefore, outdoor car parks will now require a conformance report to AS/NZS 4282.
 - *Identifying a car parks environmental zone will now be required for car park designs.*

Luminaire placement for pathways better defined

- At the start/end of the pathway a luminaire should be placed no greater than $0.33 \times \text{Spacing}$.
 - *Good design practice for pathway lighting regardless, a good inclusion.*

Curved sections of pathway more clearly defined

- Two options are now defined for compliance at curved sections of pathways:
 1. An illuminance analysis over the extent of the curve for all LTPs including pathway surround point horizontal illuminance.
 2. Spacing at the curve is 0.8 of the maximum spacing, and you when you draw a straight line joining successive luminaires it lies within 2 m either side of the path, and when the plane of a luminaire is $\geq 15^\circ$ from an adjacent luminaire, an illuminance calculation for the extent of the curve must meet the requirements for $2 \times E_h$, $2 \times E_{Ph}$, and UE2.
 - *With the exclusion of the curve being slight, this means we will likely now need to calculate curve sections of pathways going forward.*