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Indoor Carparks Lighting Design Criteria

General Lighting: Lux levels required as per AS/NZS 1680.2.1

	Maintained Illuminance (lux)			
Area	**Day**	**Night**	**Product**	**Notes**
Entrance 0 – 15 m	800	160	Tauro Black with CECS / Chamaeleon / Vico (Permanently On)	Refer "enLighten Tauro Black Carpark Entry Spacing Guide" document.
Entrance 15 – 19 m	160	160		
Boom gates	160	160	Chamaeleon / Vico (Permanently On)	Minimum 2 fittings needed over each boom gate
Driveways, ramps	40	40	Chamaeleon / Vico (Permanently On)	Refer "enLighten Carpark spacing guide" document
Parking bays	40	40	Chamaeleon / Vico (Sensor)	Refer "enLighten Carpark spacing guide" document
Loading bays	80	80	Tauro Black / Chamaeleon / Vico	Permanently On / Set at 5-10 min. setting upon motion detection
Accessible Spots & other Key Areas like Crossings	> 80 lux; and Min. lux to be greater than Avg. lux in the carpark		Chamaeleon / Vico	This is not an AS/NZS 1680 recommendation. But considered as good practice to create better visibility in key areas.

Emergency Lighting: Maximum allowed distances between emergency lights as per AS/NZS 2293.1-2005 (old version)

Height (m) / Classification	**2.1**	**2.4**	**2.7**	**3**	**3.3**	**3.6**	**4**	**Notes**
D25	14.2	14.7	15.3	15.7	16.1	16.5	16.9	• Emergency lighting should provide 0.2 lux illuminance in case of power failure. • Distance between luminaire and adjacent wall / boundary should not be greater than half of the distances mentioned on left. • 2005 version of the standard is applicable for retrofit projects only. Certain retrofit projects may require compliance with 2018 version of the standard as well depending upon local council requirement, DA Application or a consultant's specification.
D32	15.4	16.1	16.7	17.2	17.6	18.0	18.5	
D40	16.7	17.4	18.0	18.6	19.1	19.6	20.1	
D50	18.0	18.7	19.4	20.1	20.7	21.2	21.8	
D63	19.4	20.3	21.1	21.8	22.4	23.0	23.7	
D80	21.1	22.0	22.8	23.6	24.3	25.0	25.8	

Emergency Lighting: Maximum allowed distances between emergency lights as per AS/NZS 2293.1-2018 (latest version)

Height (m) / Classification	**2.1**	**2.4**	**2.7**	**3**	**3.3**	**3.6**	**4**	**Notes**
D25	11.5	13.2	14.8	15.7	16.1	16.4	16.8	• Emergency lighting is supposed to provide minimum of 0.2 lux illuminance with > 0.5 lux average illuminance in case of power failure. • Distance between luminaire and adjacent wall/boundary should not be greater than half of the distances mentioned on left. Distance between fittings has been significantly reduced in the new standard to improve uniformity of light distribution for emergency lighting. • 2018 version is applicable for all new build projects. It may be applicable on retrofit projects as well. Check local council requirements, DA application or consultant's specification. • Maintained emergency lights are required to be de-rated to the next lower classification
D32	11.5	13.2	14.8	16.5	17.6	18.0	18.5	
D40	11.5	13.2	14.8	16.5	18.1	19.5	20.1	
D50	11.5	13.2	14.8	16.5	18.1	19.8	21.8	
D63	11.5	13.2	14.8	16.5	18.1	19.8	22.0	
D80	11.5	13.2	14.8	16.5	18.1	19.8	22.0	

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Pre-install Audit Procedure

Entrance (includes vehicle entry paths ONLY, not the EXIT)

1. Draw or obtain map (.dwg or PDF format) of area showing driveway width, ceiling heights & existing lighting locations & types
2. Mark 0 - 15 m and 15 - 19 m separately for all entry paths
3. Mark entry/exit boom gates if not within 0 - 19 m from entrance
4. As per Australian Standard, only the entry path is supposed to be lit to higher lux levels. However if both entry & exit paths are right next to each other, client may decide if they wish to illuminate both entry & exit sides in the same way for aesthetic reasons.

Driveways & Parking Bays

1. If distances fall within spacing tables, just count the lights and note down their type such as single tube or double tube, T5 or T8 or T12 tube, fitting length & width, CCT of the light source, etc. so that a suitable quote for replacement fittings can be prepared.
2. Count should show driveway & parking bay lights separately
3. Count standard & emergency lights separately as well.
4. If distances fall outside spacing tables, draw or obtain a map (.dwg or PDF format) showing driveway length & width; parking bay length & width; ceiling height(s); & existing light types & locations showing distances between driveway lights & parking bay lights.
5. Provide the above information to enLighten so that a quote and/or lighting design can be provided

Emergency & Exit Lighting

1. Check the type of emergency lighting:
    a. Maintained or non-maintained
    b. Monitored or non-monitored
    c. Central battery source or battery within every emergency fixture
2. Ask the client, when was the last emergency lighting test conducted & what was its result. Emergency lighting testing is required to be done every 6 months.
3. Measure distances between emergency lights to check if they fall within maximum allowable distances as per the table above. (Retrofit projects should mostly be required to comply with 2005 or earlier versions of AS/NZS 2293.1)
4. If distances fall outside emergency spacing tables above, additional emergency lighting may be required which will require additional wiring as well.
5. Provide the above information to enLighten so that a quote and/or lighting design can be provided
6. Exit signs are not in scope of this document. Refer BCA & AS/NZS 2293.1 for exit sign placement requirements.

Pictures & Videos

Click pictures & make videos of entrance and car park showing:

1. Type/colour of ceiling, walls & floor
2. Type of existing fittings
3. Mounting method of existing fittings