REKABENTUK AWALAN

Data Fotometri
(Photometric data)

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Proses Rekabentuk Awalan

Lighting Class

Dialux - *Demonstration*

PROSES REKABENTUK AWALAN

❑   Pemilihan *Lighting Class* bagi *Traffic Route*

❑   Pemilihan *Lighting Class* bagi *Conflict Area*

❑   Penentuan - *mounting height, jenis lantern, jenis lampu, luminous flux, rating IP, jadual pembersihan lantern, kategori pencemaran, maintenance factor*
(Table D1: MS 825 Part 1), lebar *carriageway*, lebar *lane*, susunan *luminaire*, jenis permukaan jalan (r-table)

❑ **Arrangement**

 - Single-sided, twin central, staggered, opposite, combined twin central and opposite

❑ **Road Surface Classifications** – Table C3 & C4 MS 825

i) R3 : Q_o = 0.07 Asphalt road surface with dark aggregate

ii) R1 : Q_o = 0.1   Cement concrete road surface

| Class | Luminance of the road surface of the carriageway for the dry road surface condition | | | Disability glare | Lighting of surroundings |
	L in cd/m (minimum maintained)	Overall Uniformity Uo (minimum)	Longitudinal Uniformity Ul (minimum)	Tl in % a (maximum)	SR (minimum) b
ME1	2,0	0,4	0,7	10	0,5
ME2	1,5	0,4	0,7	10	0,5
ME3a	1,0	0,4	0,7	15	0,5
ME3b	1,0	0,4	0,6	15	0,5
ME3c	1,0	0,4	0,5	15	0,5
ME4a	0,75	0,4	0,6	15	0,5
ME4b	0,75	0,4	0,5	15	0,5
ME5	0,5	0,35	0,4	15	0,5
ME6	0,3	0,35	0,4	15	No requirement

a- An increase of 5 percentage points in TI can be permitted where low luminance light sources are used (see note 6)

b- This criterion can be applied only where there are no traffic areas with their own requirements adjacent to the carriageway

ME - Series of lighting classes

Class	Horizontal Illuminance	
	E in lux (minimum maintained)	U_o (minimum)
CE0	50	0,4
CE1	30	0,4
CE2	20	0,4
CE3	15	0,4
CE4	10	0,4
CE5	7,5	0,4

CE - Series of lighting classes

Terms and Definition

1) Average road surface luminance (of a carriageway of a road) – (L)

 - luminance of the road surface averaged over the carriageway

2) Longitudinal uniformity (of road surface luminance of a driving lane) – (U_{gl}) = Lmin/Lmax (each lane)

- ratio of the lowest to the highest road surface luminance found in a line in the centre along a driving lane

3) Longitudinal uniformity (of road surface luminance of a carriageway) – (U_l) = Lmin/Lmax

-lowest of the longitudinal uniformities of the driving lanes of the carriageway

4) Threshold increment *(TI)*

- measure of the loss of visibility caused by the disability glare of the luminaires of a road lighting installation

5) Surround ratio (of illumination of a carriageway of a road) *(SR)*

- average illuminance on strips just outside the edges of the carriageway in proportion to the average illuminance on strips just inside the edges

6) Overall uniformity (of road surface luminance,illuminance on a road area or hemispherical illuminance) - (U_0) = Lmin/Lave

-ratio of the lowest to the average value
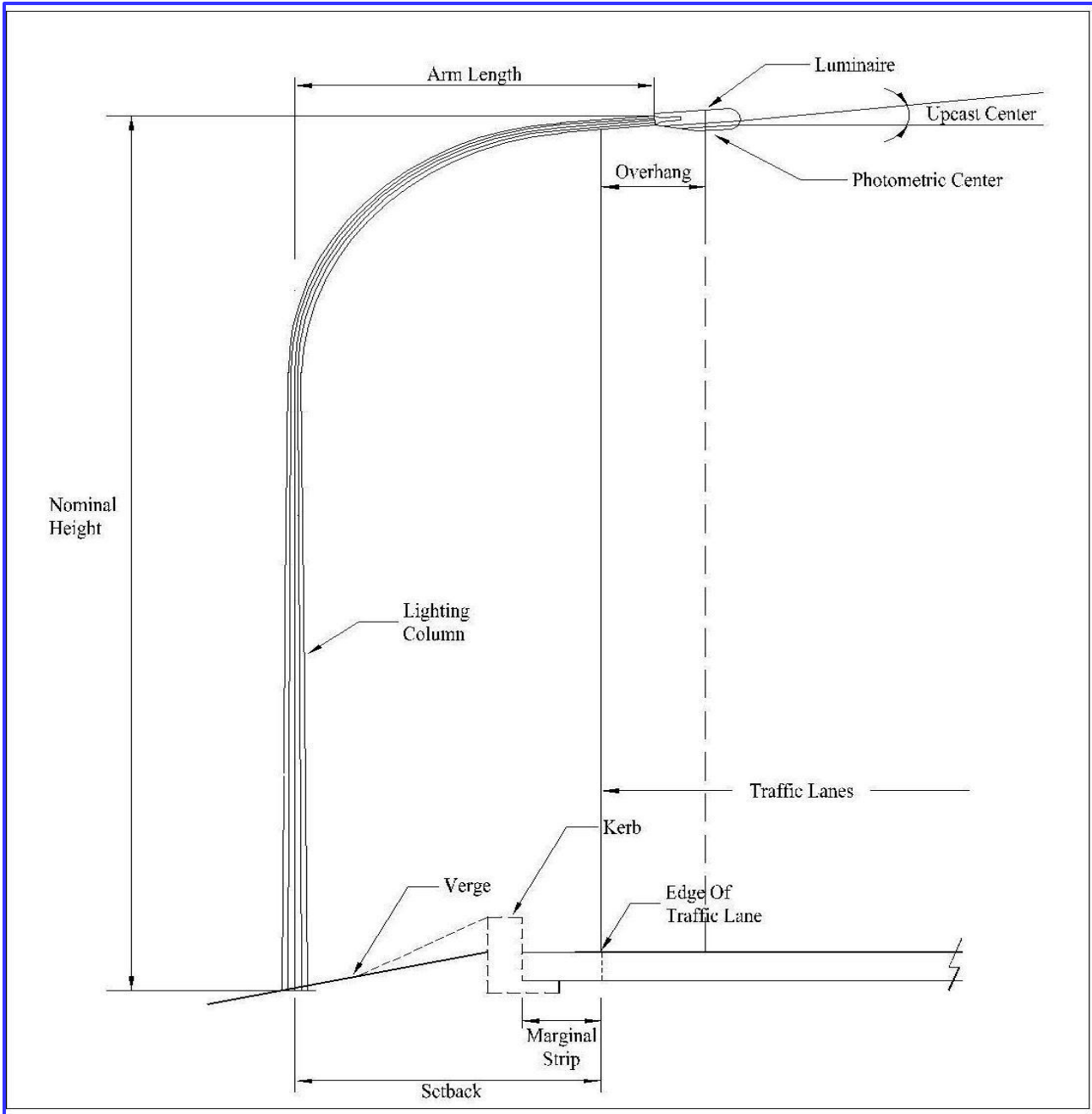
To be filled by designer and attached in tender document

APPENDIX D1 – 1.1A
DESIGN CRITERIA

*Road Lighting Class	: ME_____ / CE_____
*Road Surface Type	: Asphalt / Concrete
Luminance Coefficient, Q_o	= __
Average Luminance, L_{ave}	$\geq$ _____
Overall Uniformity, U_o	$\geq$ _____
Longitudinal Uniformity, U_l	$\geq$ _____
Threshold Increment, TI	$\leq$ _____
Surround Ratio, SR	$\geq$ _____
*Maintenance Factor , MF	: __
*Column Height , H	: __ m
* Column spacing (m)	: __ m
*Lamp Type	: __
*Lamp Wattage	: __ W
Flux (klm)	: __ klm
Lamp Tilting Angle	: __
*Arm Length	: __
*Overhang	: __
*Setback	: __

Note :

* Data to be filled by Designer

Maintenance Factor , MF =   Luminaire MF   X   Lamp Lumen MF

Dialux - Demonstration

THANK YOU