

Report No.	MC-20013-T4-W40
Applicant	Ligman Lighting Company Limited
Manufacturer	Ligman Lighting Company Limited 17/2 Moo 4, Monthong, Bangnampreaw, Chachoengsao Thailand.24150
Description of sample	Product name : Macaron 2 Post top luminaire Brand : LIGMAN Model / Type : MC-20013-T4-W40 Cover similar design : -
Sample characteristic and condition	Normal
Date received	21/11/2018
Test date	21/11/2018
Test standard	LM79-2008
Certified by  (CHAIYOD TOA-ARD) Engineer Photometric Laboratory Section Date 21/11/2018	 (PONGSIRI DUANGSEANG) Chief Laboratory Division Date 21/11/2018

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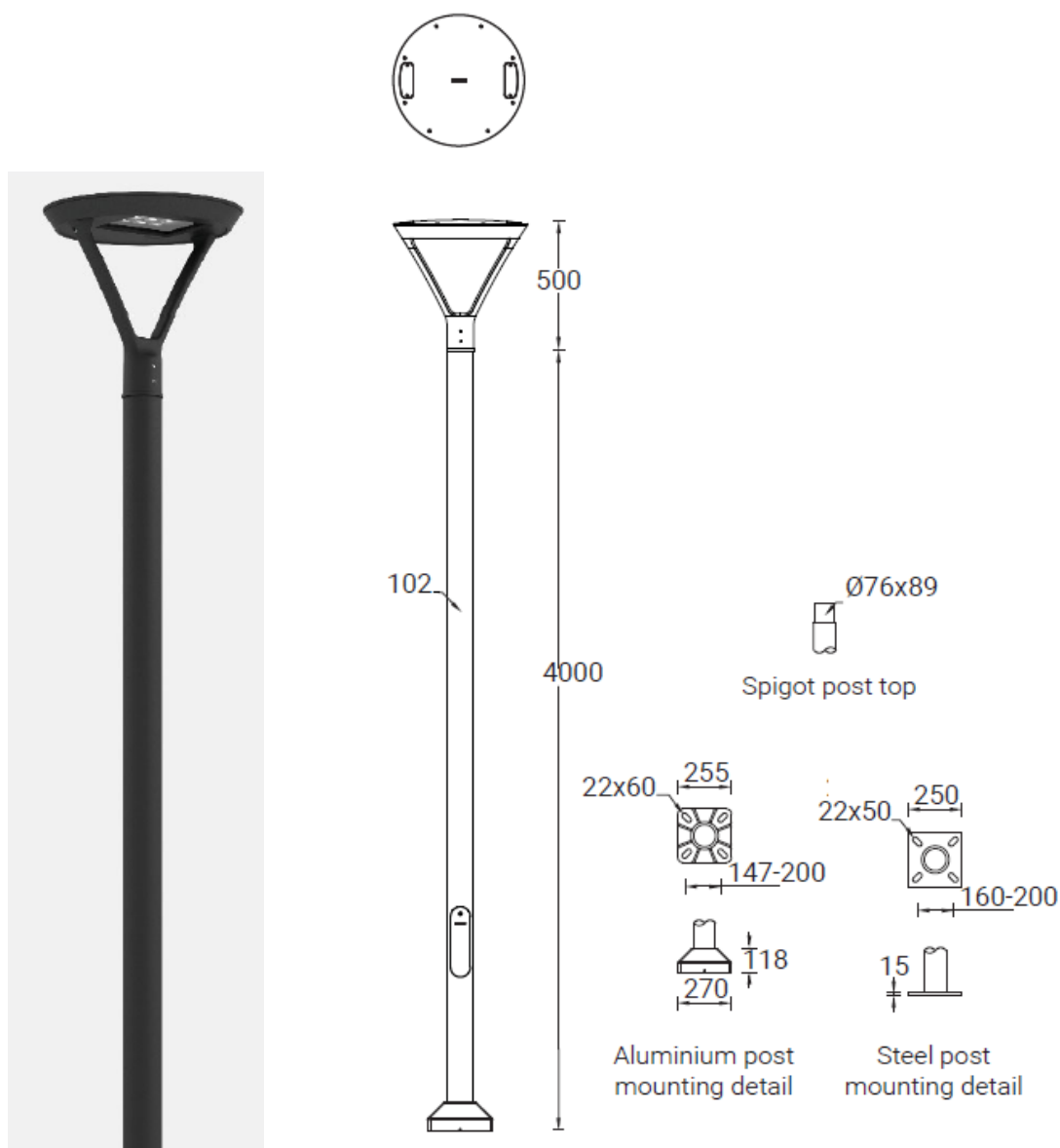
Luminaire		Measurem.		Lamp	
Code	MC-20013-T4-W40	Code	LIGMAN	Code	ITLC035740-5050
Name	Macaron 2 Post top luminaire	Name	Macaron 2 Post top luminaire	Number	1
Line	Iesna 2002 Absolute	Date	21-11-2018	Position	

Luminaire Flux	14866.80 lm	Luminaire Power	141.00 W	Efficacy	105.44 lm/W	Efficiency	100.00%
Lamps Flux	14866.80 lm	Maximum value	522.84 cd/klm	Position	C=47.50 G=52.50	CG	Asymmetrical

Test method: according to LM79-2008

- Photometric parameter was measured using a Intergrating sphere, a Mirror Goniophotometer, a spectro radiometer and software.
- The Stabilization time typical ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaires It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30min, taken 15 minutes apart, is less than 0.5 %.
- The ambient temperature condition inside the testing room was maintained at 25°C ± 1°C.
- The sample was operated at 230 Volts AC 50Hz. It was stabilized before measurement.
- Chromaticity coordinates, correlated color temperature and color rendering index was calculated from the spectral radiant flux measurements taken at 2.2 nm intervals over the range of 360 to 830 nm. Method using a gonio-spectroradiometer measured at two vertical planes (C=0°/180° and C=90°/270°) and at 10° for vertical angle (Section 12.2)

Sample photo



This report is certified only on the tested sample. Prohibit to reproduce some part of them without permission from the LIGMAN LABORATORY

Test person:

[Signature]

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[Signature]

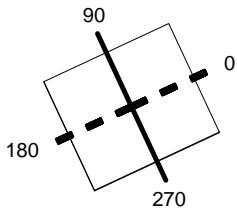
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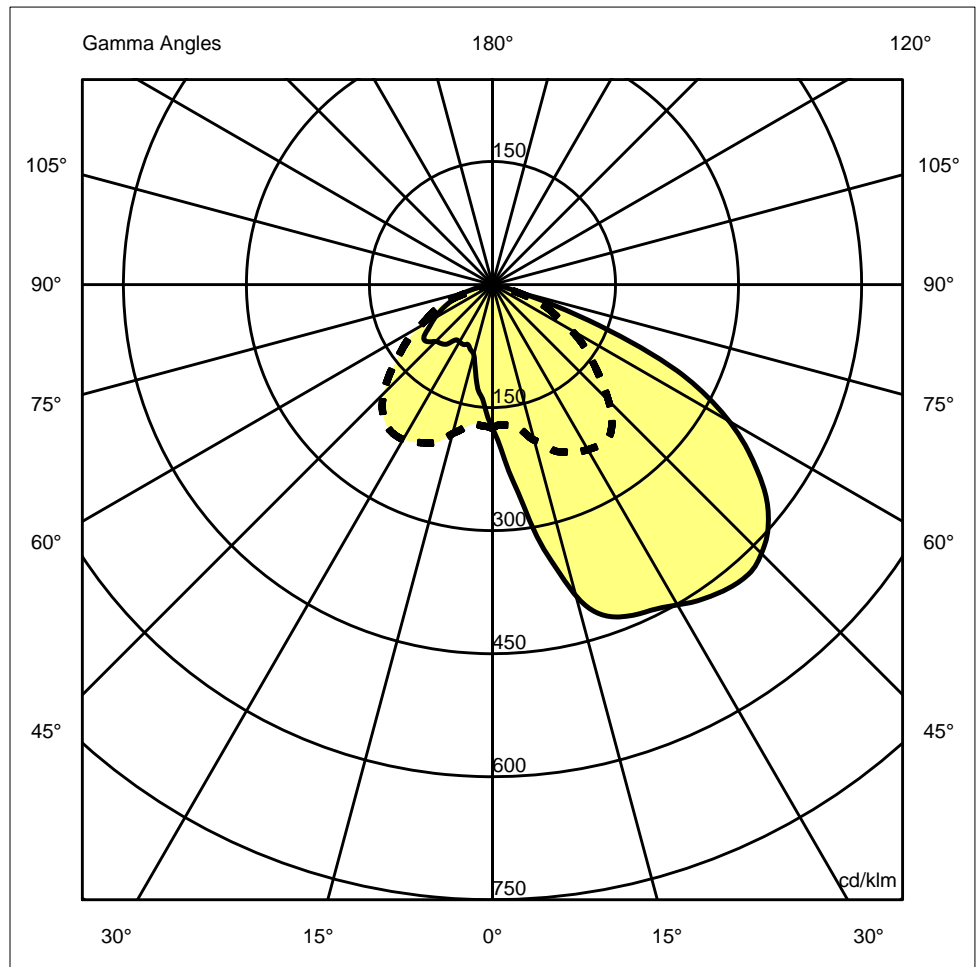
Luminaire		Measur.		Lamp			
Code	MC-20013-T4-W40	Code	LIGMAN	Code	ITLC035740-5050		
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Rectangular Luminaire	Length	200 mm	Width	230 mm	Height	1 mm	
Rectangular Luminous Area	Length	200 mm	Width	230 mm	Height	0 mm	
Horizontal Luminous Area	0.046000 m2		Emitting area on Plane 180°		0.000000 m2		
Emitting area on Plane 0°	0.000000 m2		Emitting area on Plane 270°		0.000000 m2		
Emitting area on Plane 90°	0.000000 m2		Glare area at 76°		0.011128 m2		
Coordinate system	CG	Symmetry Type		Asymmetrical			
Date	21-11-2018	Maximum Gamma Angle		90			
Measurement Distance	0.00	Measurement Flux		14866.80 lm			
Operator	25.00 °C		Source voltage				
Temperature	60.00 %		Source current				
Humidity			Photocell				
Notes							

Luminaire Lamps					
Line	Code	Name	Flux [lm]	Pow. [W]	Q.ty
	ITLC035740-5050	64 LED 4000K - 141.00 W	14866.80	141.00	1
C.I.E.	38 76 97 100 100	D DIN 5040	A20		
200mm x 230mm	1.00 E	B NBN	BZ 6 / 0.8 / BZ 5		



C Halfplanes
180.0 - - - - - 0.0
270.0 - - - - - 90.0

ULOR 0.00 %
DLOR 100.00 %
RN 0.00 %



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Luminaire

Code MC-20013-T4-W40
Name Macaron 2 Post top luminaire
Line lesna 2002 Absolute

Measur.

Code LIGMAN
Name Macaron 2 Post top luminaire
Date 21-11-2018

Lamp

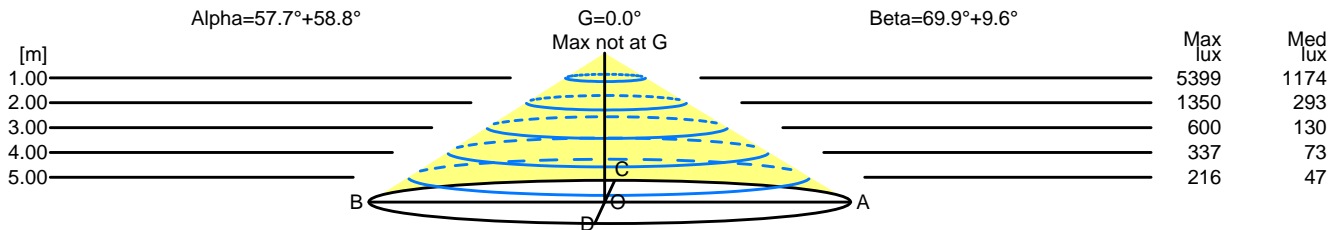
Code ITLC035740-5050
Number 1
Position

Luminaire Flux	14866.80 lm	Luminaire Power	141.00 W	Efficacy	105.44 lm/W	Efficiency	100.00%
Lamps Flux	14866.80 lm	Maximum value	522.84 cd/klm	Position	C=47.50 G=52.50	CG	Asymmetrical

Width at 50.00 % of Max Intensity

H[m]	1.00	2.00	3.00	4.00	5.00	H[m]	1.00	2.00	3.00	4.00	5.00
OA	1.65	3.30	4.95	6.61	8.26	OC	2.73	5.46	8.18	10.91	13.64
OB	1.58	3.16	4.75	6.33	7.91	OD	0.17	0.34	0.51	0.68	0.85

	Luminous Intensities [cd/klm]										
	0	5	15	25	35	45	55	65	75	85	
OA	2606.10	2556.30	2922.60	3359.10	3509.80	2974.60	2080.90	1210.60	181.90	14.40	
OB	2606.10	2561.50	2797.90	3159.00	3234.40	2792.70	1971.80	1200.20	189.60	12.60	
OC	2606.10	3398.10	5837.50	6549.30	6892.20	6892.20	5850.50	3691.60	405.30	29.90	
OD	2606.10	2080.90	1311.90	1200.20	1244.40	1454.80	1449.60	974.20	472.80	45.80	



H[m]	D[m]	Max lux	Med lux	Alpha=57.7°+58.8°	G=0.0 Max not at G	
1.00	3.23	5399	1174			
2.00	6.47	1350	293			
3.00	9.70	600	130			
4.00	12.93	337	73			
5.00	16.17	216	47			

H[m]	D[m]	Max lux	Med lux	Beta=9.6°+69.9°	G=0.0 Max not at G	
1.00	2.90	5399	1174			
2.00	5.79	1350	293			
3.00	8.69	600	130			
4.00	11.59	337	73			
5.00	14.49	216	47			

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Luminaire

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Line lesna 2002 Absolute

Measur.

Code LIGMAN
Name Macaron 2 Post top luminaire
Date 21-11-2018

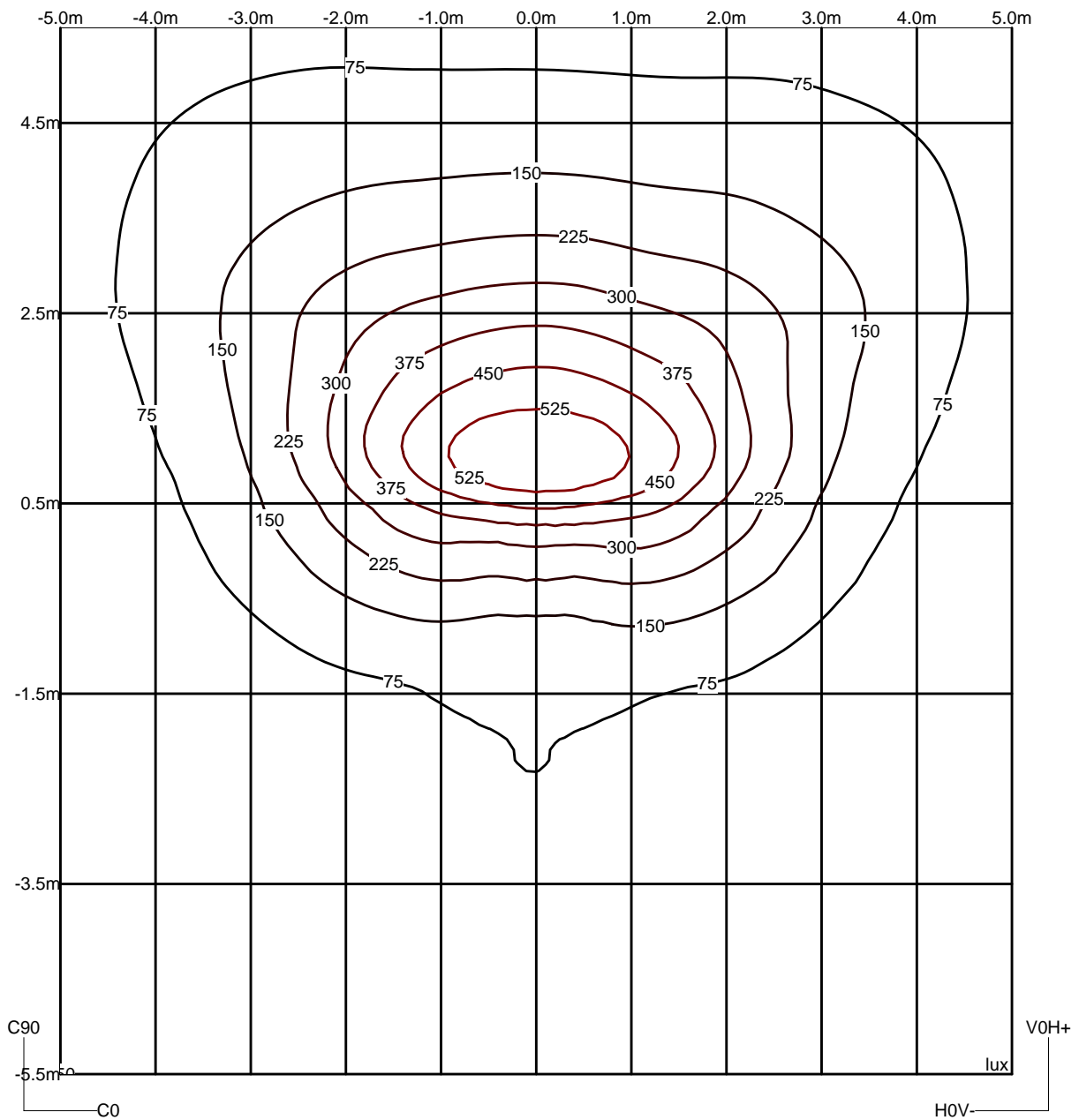
Lamp

Code ITLC035740-5050
Number 1
Position

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Isolux (Floor)

Luminaire position X=0.00m Y=0.00m Z=3.00m



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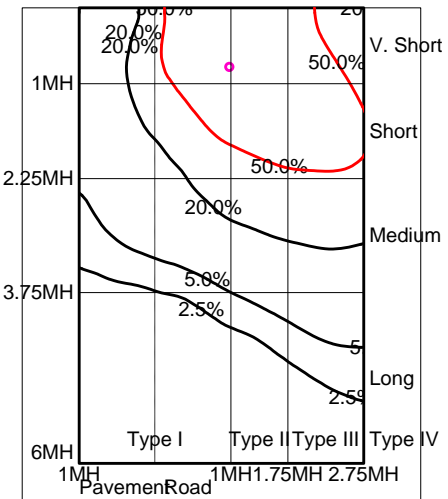
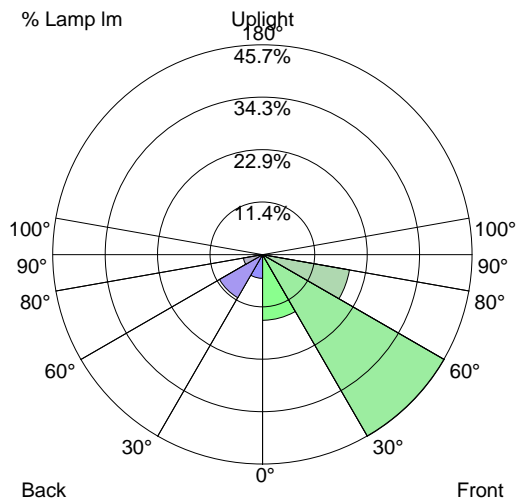
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US ROAD STANDARDS



Luminaire Classification System (LCS)			
LCS Zone		Lumens	%Lamp
FL	0° -- 30°	2128.5 lm	14.3 %
FM	30° -- 60°	6798.8 lm	45.7 %
FH	60° -- 80°	2863.3 lm	19.3 %
FVH	80° -- 90°	34.6 lm	0.2 %
BL	0° -- 30°	770.1 lm	5.2 %
BM	30° -- 60°	1612.6 lm	10.8 %
BH	60° -- 80°	629.7 lm	4.2 %
BVH	80° -- 90°	29.3 lm	0.2 %
UL	90° -- 100°	0.0 lm	0.0 %
UH	100° -- 180°	0.0 lm	0.0 %
TOTALS		14866.8 lm	100.0 %
BUG B2 U0 G2 Type III Very Short Asymmetrical			

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