

T e s t R e p o r t

Report No : L17928

Client: : Astro Lighting Ltd
The Astro Building
Midas, River Way
Harlow
Essex
CM20 2GJ

Description : TAKETA

Manufacturer : Not Disclosed

Type/Model : TAKETA

Test Specification : BS EN 13032-4:2015 Clause 4.5.4

Date Testing Started : 21/11/2018

Conclusion : Refer to body of report

Date of Issue : 23/11/2018

Date of Expiry : 22/11/2023

Tested by: D CHAMBERS

Position: Lead Engineer



Approved by: N GABIR

Position: Head of Department –
Photometry



INTRODUCTION

Astro Lighting Ltd have supplied the product identified in page one for determination of light output distribution.

PRODUCT DETAILS

Table 1. Test Sample Details

Product Description	TAKETA
Model No.	TAKETA
Number of Samples	One
Condition on Receipt	Good
Nominal Dimensions (mm)	L.400 , W.400 , H.95
Product Supply Requirement	240V 50Hz
Lamp Type and Power	LED, 25W (Driver)
Sampling Method: Test samples selected and supplied by client, no sampling method specified by client.	

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PROCEDURE

Table 2. Test Procedure and Equipment Used for Photometric Measurements

Test Standard	BS EN 13032-4:2015 Clause 4.5.4
Equipment Used	LMT GO-DS 2000 goniophotometer (408)
Standard Lamp Used	LMT Photometer Unit 01B6081
Standard Lamp Traceability	Traceable to luminous intensity standard lamp type OSRAM Wi41/G lamp No. 934
Scan Setup	Elevation: 0°-180°, step size: 5° Azimuth: 0°-360°, step size: 5°
Power Supply	Hewlett Packard 6813A AC Power Source (478)
Power Measurement	N4L Single phase power analyser (394)
Temperature Measurement	Testo 405i Thermal Anemometer (419)

Table 3. Lamp Conditioning and Setup

Lamp ageing Time (Mins)	0
Stabilisation Time (Mins)	60
Total Operating Time (Mins)	82
Support Structure	LMT Goniophotometer Mounting Fixture

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TEST RESULTS

Table 4. Test Environmental and Operating Conditions

Ambient Temperature (°C)	25.1
Voltage (V)	240.1
Current (mA)	118.30
Power (W)	27.40
Power Factor	0.96

Table 5. Beam Angle Results

Luminous Flux of Luminaire (lm)	Luminous Efficacy (lm/W)	Centre Beam Intensity (cd)	Beam Angle (Lamp orientation)	Beam Angle Result (°)
2161	79	818	Horizontal	105.5
			Vertical	105.5

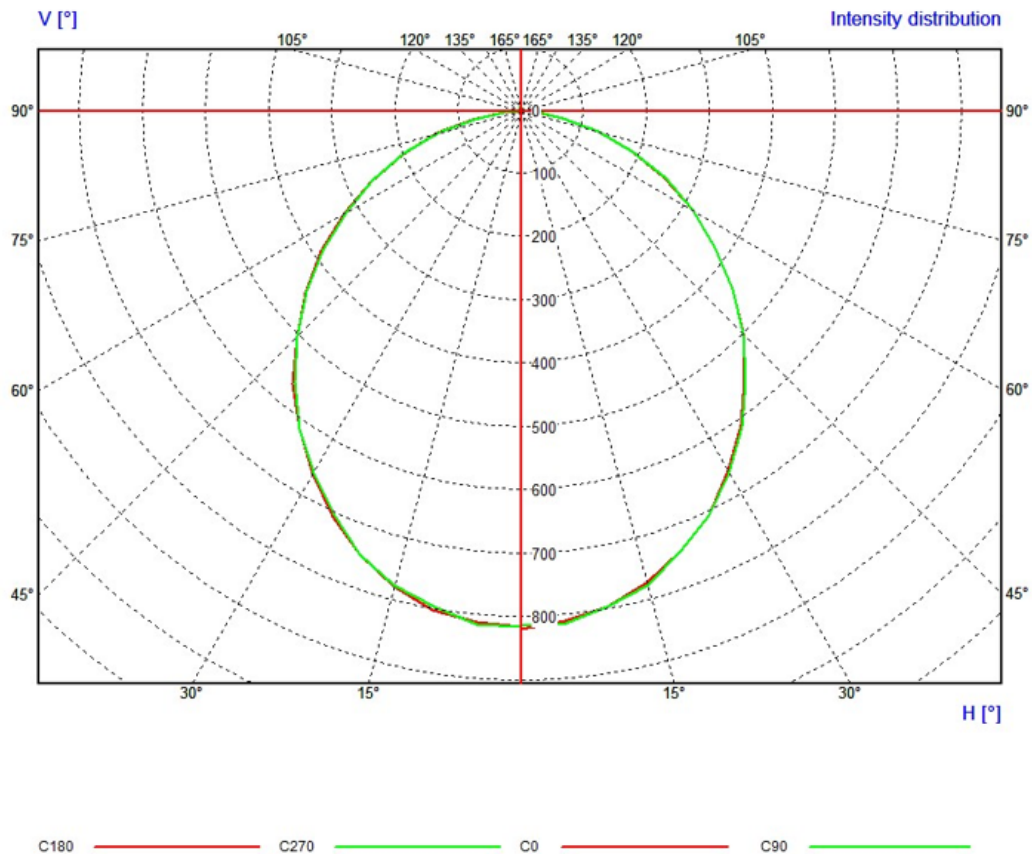


Figure 1. Polar Diagram

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Table 6. Luminous Intensities (cd)

Gamma	0	5	10	15	20	25	30	35	40	45	50	55
0	817.8	815.4	817.8	817.0	814.1	814.6	814.1	813.3	814.1	817.2	814.9	816.4
5	808.0	809.3	807.7	809.6	812.7	812.5	811.7	807.2	808.0	811.9	811.7	809.0
10	794.7	793.7	795.8	798.4	796.0	794.5	792.9	797.4	797.4	793.1	794.5	794.5
15	771.4	771.1	770.6	774.3	774.3	774.3	771.4	772.2	774.1	769.6	770.9	770.9
20	739.4	739.4	739.1	742.8	742.5	742.3	740.7	739.6	742.5	738.3	739.1	739.6
25	704.4	704.1	701.2	700.2	703.3	703.6	704.1	700.9	699.1	703.3	703.3	701.5
30	654.9	655.6	654.9	657.5	658.8	657.5	655.9	655.9	657.8	657.8	658.0	654.6
35	606.1	605.1	606.4	608.2	608.2	608.0	605.8	605.1	606.4	608.2	607.7	606.1
40	551.3	551.5	551.0	552.3	553.9	553.9	554.5	551.0	550.7	553.4	551.5	554.2
45	497.2	497.0	496.2	494.1	494.1	494.1	494.1	496.7	496.7	493.8	495.4	493.8
50	438.7	438.2	437.9	436.6	435.5	435.8	435.5	435.0	436.0	437.4	437.1	437.1
55	375.6	376.2	375.4	374.1	373.8	373.5	373.8	375.4	375.6	375.1	374.6	373.5
60	312.9	312.1	312.1	312.3	313.1	312.9	313.1	312.6	312.3	311.0	312.3	311.0
65	250.9	250.9	250.3	249.8	249.3	249.3	249.0	248.5	248.5	249.3	248.2	249.5
70	187.6	187.2	186.8	186.5	186.3	186.1	185.9	185.7	185.5	185.6	185.6	185.7
75	125.5	125.2	124.7	124.4	124.2	124.1	123.9	123.8	123.8	123.8	123.8	123.9
80	66.9	66.5	66.1	65.9	65.6	65.5	65.3	65.2	65.1	65.1	65.2	65.3
85	20.3	20.1	19.9	19.7	19.6	19.5	19.4	19.4	19.4	19.4	19.4	19.5
90	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
110	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
115	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
120	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
125	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
130	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135	1.6	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
140	2.0	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
145	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
150	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.0
155	3.6	3.7	3.7	3.6	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.5
160	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
165	4.6	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.6
170	5.2	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
175	5.9	5.9	5.8	5.9	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9
180	6.3	6.3	6.3	6.3	6.3	6.3	6.2	6.2	6.3	6.3	6.3	6.3

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Table 6 Continued...

Gamma	60	65	70	75	80	85	90	95	100	105	110	115
0	814.6	812.2	813.0	814.9	817.0	814.3	813.0	813.3	813.5	817.0	815.9	813.0
5	807.4	811.9	809.6	811.9	808.8	809.8	813.0	812.5	808.8	808.8	813.0	810.9
10	797.9	793.7	795.3	794.5	797.6	795.5	794.5	795.3	798.7	795.3	796.0	799.0
15	774.1	770.4	771.1	773.5	773.5	770.6	775.1	775.9	772.7	773.3	776.7	773.5
20	742.3	740.2	740.9	740.4	743.6	739.9	740.4	740.7	744.7	740.9	744.9	744.7
25	700.2	702.8	702.0	703.9	700.9	704.4	705.5	705.2	702.3	704.4	705.5	703.1
30	657.0	658.3	659.1	656.7	655.6	660.4	659.1	658.6	657.5	660.7	658.8	659.1
35	604.5	608.2	606.6	609.3	608.5	606.4	609.3	610.1	609.3	607.4	610.9	612.5
40	553.4	551.3	551.3	554.2	555.5	554.2	553.1	553.4	556.6	556.8	554.7	556.0
45	494.1	497.0	495.9	497.2	495.9	495.6	497.8	497.5	499.6	498.3	498.6	500.7
50	436.6	435.2	436.3	436.0	437.9	438.4	437.6	438.4	437.6	439.0	441.6	440.8
55	374.1	375.9	374.8	376.7	376.2	375.1	376.2	376.2	378.0	379.3	378.0	378.0
60	311.3	313.1	312.1	313.7	314.2	313.4	313.1	313.4	314.4	316.0	317.1	317.1
65	249.8	248.7	249.5	248.7	249.3	250.6	251.7	252.2	251.9	251.7	253.0	254.0
70	185.9	186.1	186.3	186.5	186.8	187.2	187.7	188.1	188.7	189.5	190.1	190.7
75	124.0	124.1	124.3	124.6	124.9	125.3	125.8	126.2	126.8	127.3	127.9	128.6
80	65.4	65.6	65.8	66.0	66.3	66.7	67.0	67.5	67.9	68.4	69.0	69.6
85	19.6	19.7	19.9	20.1	20.3	20.5	20.7	21.0	21.4	21.7	22.1	22.5
90	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
110	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8
115	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9
120	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
125	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
130	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5
140	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9
145	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.4
150	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0
155	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.5	3.5	3.5
160	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.0
165	4.6	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.6
170	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
175	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
180	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.4	6.3

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Table 6 Continued...

Gamma	120	125	130	135	140	145	150	155	160	165	170	175
0	812.2	812.2	815.9	817.0	813.0	814.9	812.7	814.3	817.5	816.4	815.9	813.0
5	808.8	809.3	812.5	809.6	809.0	808.8	812.5	809.0	812.7	813.3	812.7	810.1
10	799.0	794.7	798.4	798.7	794.7	794.7	800.0	797.1	798.4	799.5	797.9	795.5
15	772.5	774.1	775.7	771.9	776.7	776.4	775.1	773.0	777.8	774.3	773.0	776.7
20	742.8	741.2	746.0	743.1	743.9	744.9	744.1	742.3	746.8	745.2	743.1	745.2
25	704.1	707.0	705.5	703.6	708.1	708.6	704.7	706.5	708.6	705.7	705.2	708.4
30	661.2	662.8	659.1	659.6	663.3	663.6	659.9	663.3	661.7	660.2	660.7	664.4
35	612.5	609.6	611.9	613.5	610.3	611.7	612.2	614.6	611.4	612.5	613.5	615.9
40	557.1	559.2	556.3	557.4	560.3	560.5	558.4	557.9	561.6	560.0	559.2	559.8
45	501.2	502.0	499.9	500.1	502.3	501.7	503.9	503.3	502.3	504.7	505.2	504.4
50	440.8	440.5	442.1	443.7	442.7	443.7	443.2	444.8	446.1	445.0	444.8	444.5
55	378.8	380.7	382.3	382.0	380.7	381.5	383.9	384.6	383.3	383.3	383.6	385.2
60	317.6	317.1	318.9	320.0	319.7	321.1	319.7	320.5	322.9	322.7	322.9	322.4
65	254.8	255.9	255.4	255.6	257.2	257.0	258.8	259.1	258.0	259.1	259.3	260.7
70	191.3	192.0	192.7	193.4	193.8	194.4	195.0	195.7	196.3	196.7	197.1	197.6
75	129.2	129.9	130.5	131.1	131.7	132.3	133.0	133.6	134.1	134.6	135.1	135.5
80	70.2	70.8	71.3	71.9	72.5	73.0	73.6	74.2	74.7	75.2	75.6	76.0
85	22.9	23.3	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.5	26.8	27.1
90	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.7	1.9
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
110	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
115	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
120	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0
125	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1
130	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
135	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7
140	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1
145	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.6
150	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.2
155	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.7
160	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2
165	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.7	4.7	4.7	4.6
170	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
175	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.8	5.8	5.7	5.7
180	6.3	6.3	6.3	6.3	6.2	6.2	6.2	6.2	6.3	6.3	6.2	6.1

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Table 6 Continued...

Gamma	180	185	190	195	200	205	210	215	220	225	230	235
0	814.6	817.5	815.7	816.4	813.8	814.6	817.0	814.9	817.0	813.3	812.5	813.8
5	809.3	813.5	812.5	812.5	809.6	811.7	813.5	809.6	810.4	808.2	810.1	813.0
10	799.8	798.2	796.3	798.4	800.6	796.0	797.1	800.0	800.0	794.7	797.6	798.4
15	776.7	773.5	777.8	778.6	774.6	777.0	778.6	773.8	774.6	775.4	777.5	772.7
20	745.7	743.3	747.3	747.8	744.7	746.2	747.0	742.8	742.8	746.0	746.5	742.0
25	707.6	706.8	710.0	710.2	708.4	706.8	709.7	705.7	706.8	705.5	707.6	707.8
30	662.8	662.5	665.4	665.4	663.1	662.5	665.2	661.7	661.7	663.1	664.4	662.3
35	613.3	613.5	616.2	615.9	613.0	614.3	615.6	614.1	614.6	611.9	614.1	614.9
40	562.9	561.6	559.8	560.0	562.9	561.1	560.0	561.6	559.5	562.4	561.1	558.2
45	502.8	505.4	506.2	506.2	503.9	506.0	506.8	504.1	505.4	502.8	503.3	505.2
50	447.2	446.9	445.6	445.8	445.6	448.2	448.2	445.3	445.8	445.0	445.6	447.2
55	386.5	384.6	385.2	385.2	386.8	387.0	386.0	385.2	384.4	385.7	386.0	386.0
60	322.4	324.2	322.9	323.2	323.5	325.3	325.3	324.0	324.5	322.7	322.7	323.7
65	261.5	260.9	260.4	260.7	261.2	262.5	262.5	261.5	262.3	260.7	260.4	261.2
70	198.1	198.5	198.7	198.8	198.9	199.2	199.3	199.3	199.3	199.2	199.0	198.8
75	136.0	136.3	136.5	136.8	137.0	137.3	137.5	137.5	137.5	137.3	137.1	137.1
80	76.4	76.7	77.1	77.4	77.6	77.8	77.9	78.0	78.0	78.0	77.9	77.7
85	27.4	27.7	27.9	28.2	28.4	28.5	28.6	28.7	28.7	28.7	28.7	28.6
90	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7
110	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
115	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9
120	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0
125	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
130	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.4
135	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.9	1.8	1.8	1.8
140	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.3	2.3
145	2.5	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.6	2.6	2.7
150	3.1	3.1	3.2	3.2	3.1	3.2	3.2	3.3	3.4	3.3	3.3	3.3
155	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.8	3.9
160	4.1	4.2	4.1	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.2
165	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
170	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.1	5.1	5.1
175	5.7	5.8	5.8	5.7	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7
180	6.1	6.2	6.2	6.3	6.2	6.1	6.2	6.2	6.2	6.3	6.3	6.4

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This page is to be read in conjunction with the first page of this report

Table 6 Continued...

Gamma	240	245	250	255	260	265	270	275	280	285	290	295
0	815.7	816.2	817.2	815.4	814.6	812.5	813.8	812.5	814.9	816.4	817.8	815.4
5	811.7	810.6	808.8	810.6	812.5	813.3	813.5	812.5	808.8	809.0	813.0	809.8
10	796.3	795.3	795.3	799.5	797.1	795.8	794.7	797.4	799.5	796.6	795.0	794.2
15	773.8	774.3	775.9	774.9	771.9	775.7	775.7	776.4	773.0	771.4	774.9	774.1
20	744.9	746.0	746.2	742.3	742.0	746.0	745.7	742.5	740.9	742.5	745.2	744.9
25	704.9	704.1	705.7	708.1	706.8	703.6	703.6	705.2	707.6	705.5	703.1	703.9
30	660.4	660.4	662.0	662.0	659.9	659.6	658.8	660.4	662.3	659.9	658.3	658.0
35	614.3	613.3	610.9	612.2	613.8	611.4	612.5	610.6	609.3	611.1	612.7	611.9
40	559.0	558.7	559.2	560.5	559.0	557.1	556.8	556.6	558.2	558.7	557.9	558.4
45	503.9	503.6	502.5	501.2	502.0	503.9	502.8	502.3	500.1	499.1	499.6	498.6
50	446.4	445.8	444.5	443.2	442.9	444.3	442.9	443.2	444.3	444.0	442.4	443.5
55	384.9	384.6	383.6	382.8	382.8	384.1	382.3	383.1	382.8	381.7	380.1	381.5
60	323.7	323.5	323.5	321.9	320.8	320.5	320.0	319.5	319.7	320.0	320.3	319.5
65	261.2	260.7	260.4	260.7	260.1	258.8	259.1	258.0	257.0	256.4	256.4	255.6
70	198.5	198.3	198.0	197.7	197.3	196.8	196.4	196.0	195.5	195.1	194.6	194.2
75	136.7	136.5	136.1	135.7	135.3	135.0	134.5	134.1	133.7	133.3	132.9	132.4
80	77.5	77.2	77.0	76.6	76.3	75.9	75.5	75.0	74.6	74.2	73.8	73.4
85	28.4	28.3	28.1	27.8	27.6	27.3	26.9	26.6	26.3	26.0	25.6	25.3
90	2.1	2.1	2.1	2.1	2.1	2.1	2.0	1.8	1.6	1.5	1.2	1.0
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
110	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
115	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
120	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
125	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
130	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
135	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
140	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.2
145	2.7	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.8	2.8
150	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.3	3.3
155	3.9	3.8	3.8	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8
160	4.2	4.2	4.3	4.3	4.3	4.3	4.4	4.4	4.3	4.3	4.3	4.2
165	4.6	4.6	4.6	4.6	4.7	4.6	4.6	4.6	4.7	4.7	4.7	4.7
170	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3
175	5.7	5.8	5.9	5.9	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9
180	6.4	6.4	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3

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Table 6 Continued...

Gamma	300	305	310	315	320	325	330	335	340	345	350	355
0	817.5	817.0	813.3	815.9	812.7	812.5	812.7	813.0	812.7	813.5	817.2	817.8
5	813.0	813.0	809.0	810.9	807.2	807.4	811.1	811.7	811.9	812.7	809.6	807.7
10	798.2	798.7	796.6	797.9	793.4	793.4	797.4	797.9	797.9	797.9	793.4	793.9
15	775.1	772.2	771.1	770.4	772.5	774.9	771.1	769.8	769.8	771.1	774.6	772.7
20	741.2	739.9	743.6	740.9	743.6	742.3	738.8	740.2	741.5	742.8	741.5	739.9
25	702.8	704.4	704.7	705.2	702.0	700.9	701.7	702.8	699.9	700.4	704.1	704.1
30	658.6	659.4	660.4	660.4	657.2	655.9	657.0	657.0	657.2	658.6	656.7	654.9
35	611.7	610.3	607.2	608.2	606.6	608.2	609.8	609.6	609.6	608.8	605.6	605.8
40	555.5	554.5	554.2	553.7	553.4	554.5	555.8	555.0	555.0	554.5	552.1	551.5
45	500.4	500.7	498.8	499.9	498.0	496.7	496.2	496.4	496.7	497.0	497.8	497.2
50	441.6	440.0	439.2	439.0	438.2	437.9	439.5	439.2	439.0	439.2	438.7	438.2
55	379.6	378.8	378.8	377.8	378.3	378.3	378.8	378.6	378.0	377.8	376.2	375.4
60	319.5	319.2	317.9	318.2	316.6	315.5	314.7	314.2	313.9	313.1	313.4	313.7
65	255.6	255.6	255.6	253.8	253.5	253.3	253.3	253.0	252.5	251.9	251.4	250.9
70	193.5	192.9	192.4	191.7	191.3	190.8	190.3	189.8	189.3	188.8	188.3	187.9
75	131.9	131.3	130.6	130.0	129.5	129.0	128.4	127.9	127.4	127.0	126.3	125.9
80	72.8	72.3	71.7	71.2	70.7	70.1	69.6	69.1	68.7	68.2	67.7	67.2
85	24.9	24.5	24.1	23.7	23.3	22.9	22.5	22.1	21.7	21.4	21.0	20.6
90	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
95	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8
110	0.8	0.8	0.8	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.0	1.0
115	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0
120	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1
125	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1
130	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.3
135	1.8	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.6	1.6
140	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.0	2.0	2.0
145	2.8	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5
150	3.3	3.3	3.3	3.3	3.4	3.3	3.2	3.2	3.1	3.1	3.1	3.1
155	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.7	3.6
160	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.1
165	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
170	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
175	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.9	5.9	5.9	5.9
180	6.4	6.4	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3

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CONE DIAGRAM

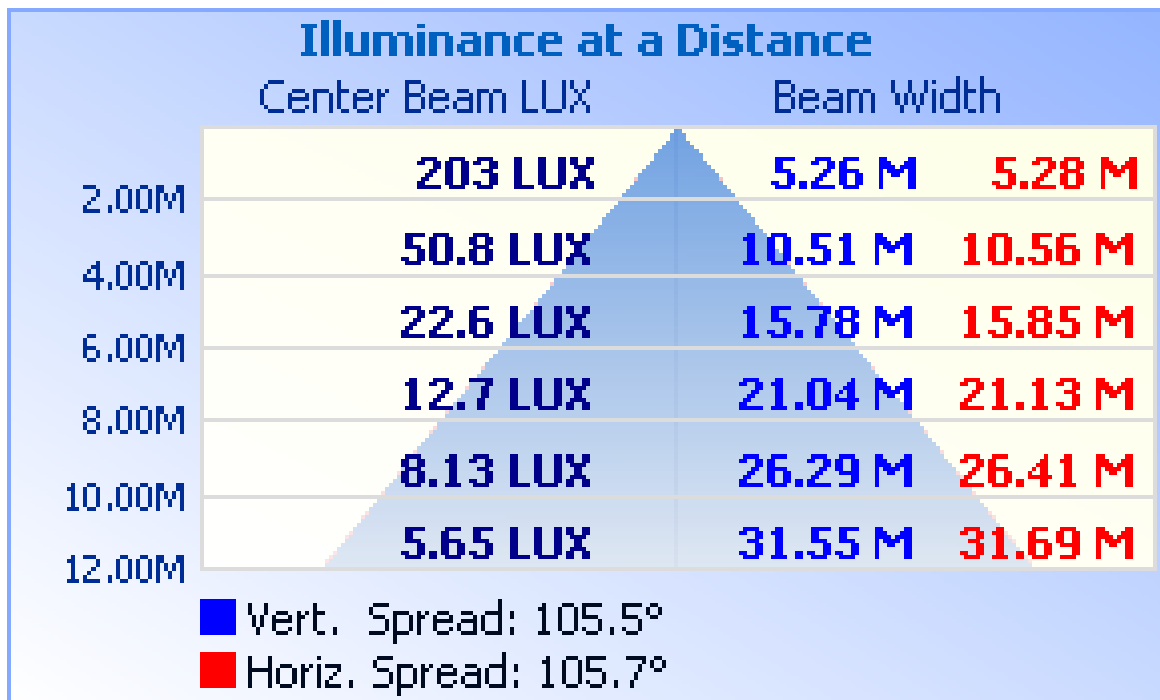


Figure 2. Cone diagram for mounting height up to 12 metres

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UNIFIED GLARE RATING

Table 7. Unified Glare Rating

Ceiling Reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall Reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Floor Cavity Reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room Dimension		Viewed endwise					Viewed crosswise				
2H	2H	17.6	19.2	17.9	19.5	19.8	17.7	19.3	18.1	19.6	19.9
2H	3H	19	20.5	19.4	20.8	21.2	19.2	20.7	19.6	21	21.4
2H	4H	19.6	21	20	21.3	21.7	19.8	21.2	20.2	21.6	21.9
2H	6H	20	21.2	20.4	21.6	22	20.3	21.5	20.7	21.9	22.3
2H	8H	20	21.2	20.4	21.6	22	20.3	21.6	20.7	21.9	22.3
2H	12H	20	21.2	20.4	21.6	22	20.4	21.5	20.8	21.9	22.4
4H	2H	18.3	19.6	18.7	20	20.4	18.4	19.8	18.8	20.1	20.5
4H	3H	19.9	21.1	20.3	21.5	21.9	20.1	21.3	20.5	21.7	22.1
4H	4H	20.6	21.6	21.1	22.1	22.5	20.9	21.9	21.3	22.3	22.8
4H	6H	21	21.9	21.5	22.4	22.8	21.3	22.3	21.8	22.7	23.2
4H	8H	21.1	22	21.6	22.4	22.9	21.5	22.3	22	22.8	23.3
4H	12H	21.2	22	21.7	22.4	22.9	21.6	22.4	22.1	22.8	23.3
8H	4H	20.9	21.7	21.3	22.2	22.6	21.1	22	21.6	22.4	22.9
8H	6H	21.4	22.1	21.9	22.6	23.1	21.7	22.4	22.2	22.9	23.4
8H	8H	21.6	22.2	22.1	22.7	23.2	22	22.6	22.5	23.1	23.6
8H	12H	21.7	22.2	22.2	22.7	23.2	22.1	22.6	22.6	23.1	23.6
12H	4H	20.9	21.7	21.4	22.1	22.6	21.1	21.9	21.6	22.4	22.9
12H	6H	21.5	22.1	22	22.6	23.1	21.8	22.4	22.3	22.9	23.4
12H	8H	21.6	22.2	22.2	22.7	23.2	22	22.6	22.6	23.1	23.6

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DEVIATION(S) FROM TEST STANDARD

No reported deviations from test standard.

Continued on following page

IDENTIFICATION OF PHOTOMETRIC CENTRE

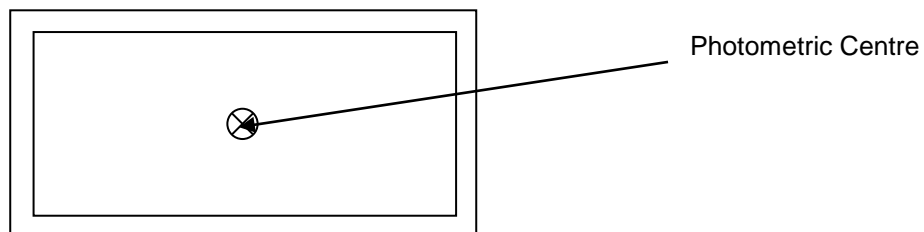


Figure 3. *Product photometric centre*

ILLUSTRATION



Figure 4. *Product image*

End