TEST REPORT

Reference No.	:	858-LU858-R01 ver.2
Applicant	:	VALUXILLUMINACION
Address	:	POL.OLIVERAL NORTE FASEIII NAVE 19, 46190 RIBA-ROJA DE TURIA VALENCIA ESPANA.
Manufacturer	:	VALUXILLUMINACION
Address	:	POL.OLIVERAL NORTE FASEIII NAVE 19, 46190 RIBA-ROJA DE TURIA VALENCIA ESPANA.
Product Name	:	Wall Surface luminaire
Model No	:	ORA
Ratings	:	200-240V~, 50-60Hz, 1.5W
Standards	:	IES LM-79-08 Electrical and Photometric Measurements of Solid-State Lighting Products
Date of Receipt sample	:	19-12-2017
Date of Test	:	20-12-2017 to 21-12-2017
Date of Issue	:	22-12-2017
Test Report Form No.	:	437-LU79085A-01B
Test Result	:	See the attached sheets

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
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Complied by:

Ing. Feliciano Bertina

Test engineer

Approved by:

Ing. Michael Paschier
Reviewer

VALUX ILUMINACION, S.L.
C.I.R. 8-98.329.097
C/.Morvedre.30-B
16117-BETERA (Valencia) SPAIN

Measurement Point: N
Characteristic data (not shown on the marking plate) N
Purpose of the product (Description of intended use) LED flood lighting for generally lighting purpose. Other information refers to photos in end page.
Possible test case verdicts: - test case does not apply to the test object:..... N(.A.) / not included in the order - test object does meet the requirement.....P(ass) - test object does not meet the requirement: ..... F(ail) **Possible suffixes to the verdicts:** - suffix for detailed information for the client ..... .: - C(omment) - suffix for important information for factory inspection .. .: - M(anufacturing)
General remarks: "(See Attachment #)" refers to additional information appended to the report. “(See remark #)” refers to a remark appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. Remark: 1. Measurement was conducted at voltage 240VAC 50Hz and at a stable ambient temperature 25°C±1°C.

Test summary:

Testing is performed in accordance with the procedures outlined in IES LM-79-08. The sample is evaluated for photometric and electrical characteristics using an integrating sphere and a goniophotometer, located in an accredited, temperature and humidity-controlled, draft free photometric laboratory.

☒ Test No. 1 : Integrating Sphere Test

The sample was tested according to the IES LM-79-08.

Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º C.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load. The AC power supply, while operating the product, shall have a sinusoidal voltage waveshape at the prescribed frequency 50Hz or 60Hz such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item. It was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

☒ Test No.2: Goniophotometer Test

The sample was tested according to the IES LM-79-08.

Photometric paramters were measured using a type C goniophotometer and software.

The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.

The sample was operated at Rated Volts(see Table 1). The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load. The AC power supply, while operating the product, shall have a sinusoidal voltage waveshape at the prescribed frequency 50Hz or 60Hz such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item. It was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 15° horizontal intervals and chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm by center test position.

IES LM-79-08			
Clause	Requirement – Test	Measuring result – Remark	Verdict
2.0	Ambient Conditions		P
2.1	General		P
2.2	Air Temperature		P
2.3	Thermal Condition for Mounting SSL Products		P
2.4	Air Movement		P
3.0	Power Supply Characteristics		P
3.1	Waveshape of AC power supply		N
3.2	Voltage regulation		N
4.0	Seasoning of SSL Product		N
	No seasoning of SSL product		N
5.0	Stabilisation of SSL Product		P
	SSL product has sufficiently stabilized before measurement	Stabilized 30 minute	P
6.0	Operation Orientation		P
	SSL product shall be stabilized and measured in intended operating orientation	As normal working	P
7.0	Electrical Settings		P
	SSL product shall be operated at rated voltage		P
	SSL product with dimming capability are tested at maximum input power condition		N
	SSL product with different modes are measured in all relevant modes		N
8.0	Electrical Instrumentations		P
8.1	Circuits		P
8.2	Uncertainties		P
9.0	Test Methods for Luminous Flux measurement		P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)		P
9.2	Integrating sphere with a photometer head (Sphere-photometer system)		N
9.3	Goniophotometer		P
10.0	Luminous Intensity Distribution		P
	Reporting acc. to IES LM-63		P
11.0	Luminous Efficacy		P
	Calculation	See table 1	P
12.0	Test Methods for Color Characteristics of SSL Products		P
	Measurements	See table 1	P
13.0	Uncertainty statement		N

Table 1	**Test data**		
Model:	ORA		
Rated Voltage:	200-240VAC	Rated Power (W):	15
Rated luminous flux (lm):	N	Ambient temperature 25 ±1 (°C):	Refer to below table
Test item		**Measured Value**	
		Integrating Sphere	**Goniophotometer**
Key Photometric Results			
Luminous Efficacy (Lumens/Watt)		---	92,2
Total Luminous Flux (Lumens)		---	902,8
Peak Intensity (cd)		---	8116
Total Radiant Flux (Watts)		---	---
Correlated Color Temperature (CCT)		3034K	---
Color Rendering Index (CRI)		86,0	---
Chromaticity (Chroma x / Chroma y)		0,4345/0,4032	---
Chromaticity (Chroma u' / Chroma v')		0,2494/0,5207	---
Duv Value		-2,99e-05	---
Stabilization Time (Light and Power) (Minutes)		30	30
Total Run Time (Minutes)		35	90
Electrical Input Results			
Input Power (Watts)		---	59,8
Input Voltage (Volts AC)		---	239,9
Input Current (Amps)		---	0,256
Input Frequency (Hertz)		---	50
Power Factor		---	0,976
Additional Information			
Test Geometry Configuration		4π	Type C
Ambient Temperature (°C):		25,1	24,9
ISTMT (In-Situ Temperature Measurement) (°C):		N	

Supplementary Information:

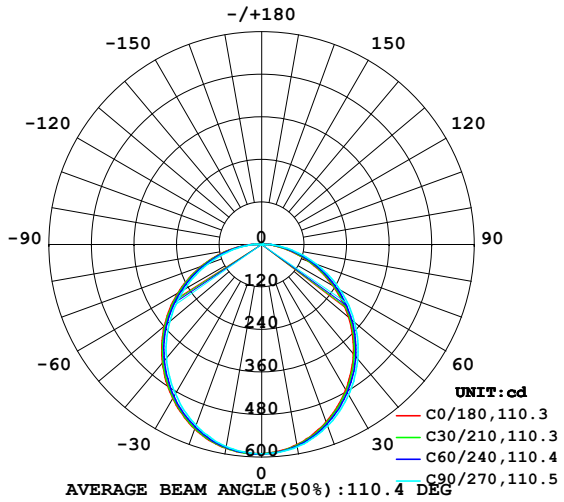
- Absorbtion Correction used: NO
- Stabilisation was considered reached by: the variation (maximum-minimum) of at least 3 readings of the light output and electrical power over a period of 30 minutes is less than 0,5%.

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

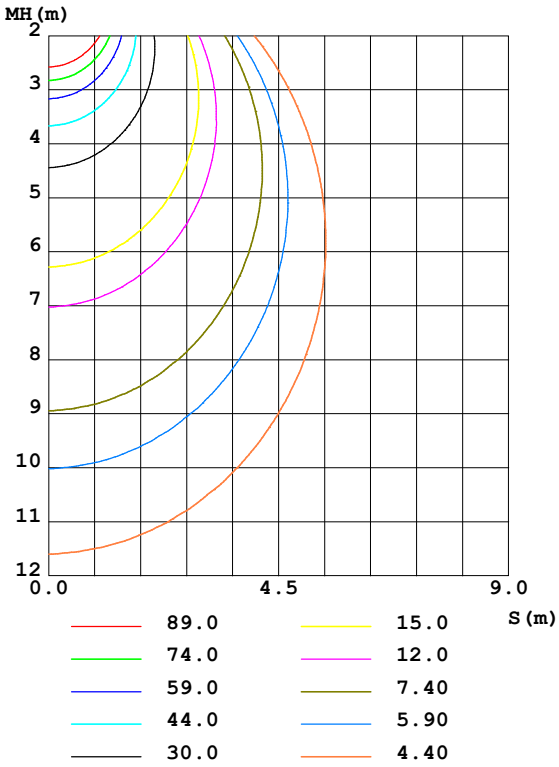
DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.20 lm/W			
MODEL	15W-3000K	Imax(cd)	592.0	S/MH(C0/180)	1.26
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	1.23
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1708.3	η UP,DN(C0-180)	0.8,48.9
NOMINAL FLUX(lm)	1708.26	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.8,49.5
LAMPS INSIDE	1	η up(%)	1.5	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	98.5	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):110.4 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	573.3	576.3	579.2	583.2	583.4	581.9	578.8	575.1	0- 10	55.83	55.83	3.27,3.27
20	532.5	537.3	545.0	551.5	553.3	549.9	541.9	536.4	10- 20	159.1	214.9	12.6,12.6
30	474.0	480.4	489.9	499.0	501.9	497.2	487.2	478.6	20- 30	238.7	453.6	26.6,26.6
40	402.1	409.9	421.4	432.7	436.2	430.2	418.2	408.2	30- 40	285.1	738.8	43.2,43.2
50	320.6	328.6	342.7	354.8	358.7	352.1	339.1	326.7	40- 50	294.2	1033	60.5,60.5
60	231.6	240.0	255.2	268.5	272.7	265.7	251.5	238.1	50- 60	265.9	1299	76,76
70	141.4	149.9	165.2	178.3	181.9	175.1	161.3	147.9	60- 70	205.7	1504	88.1,88.1
80	61.20	68.29	81.16	92.32	94.75	88.31	77.38	66.47	70- 80	126.2	1631	95.5,95.5
90	22.71	25.25	27.41	26.22	26.86	25.22	27.37	24.04	80- 90	51.29	1682	98.5,98.5
100	5.502	2.279	1.479	3.318	9.653	2.890	0.7803	1.897	90-100	12.37	1694	99.2,99.2
110	1.419	1.372	1.342	1.482	1.349	1.422	1.467	1.361	100-110	2.235	1697	99.3,99.3
120	1.940	1.930	1.922	1.790	1.729	1.731	1.790	1.896	110-120	1.563	1698	99.4,99.4
130	2.618	2.597	2.578	2.430	2.357	2.363	2.445	2.539	120-130	1.929	1700	99.5,99.5
140	3.351	3.317	3.295	3.148	3.085	3.077	3.156	3.233	130-140	2.196	1702	99.6,99.6
150	3.973	3.981	3.987	3.842	3.794	3.792	3.854	3.926	140-150	2.222	1704	99.8,99.8
160	4.639	4.580	4.573	4.498	4.522	4.465	4.479	4.551	150-160	1.942	1706	99.9,99.9
170	4.956	5.017	5.041	4.967	4.932	4.954	4.959	5.010	160-170	1.347	1708	100,100
180	5.137	5.166	5.178	5.188	5.143	5.188	5.147	5.179	170-180	0.4844	1708	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

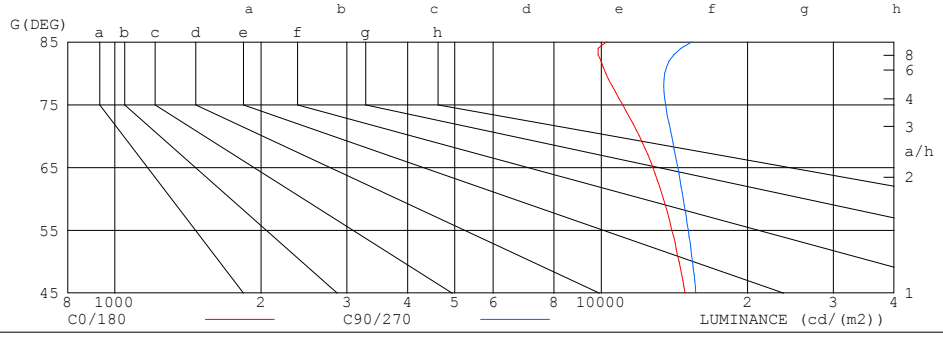
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	**TYPE:15W**	**WEIGHT:1**
SPEC.:3000K	**DIM.:**	**SERIAL No.:**
MFR.: Valux-iluminacion	**SUR.:0.0346**	**Shielding Angle:**

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	10255	15363
80	10216	13505
75	11077	13574
70	11986	13960
65	12779	14372
60	13430	14749
55	13970	15114
50	14457	15407
45	14880	15656

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

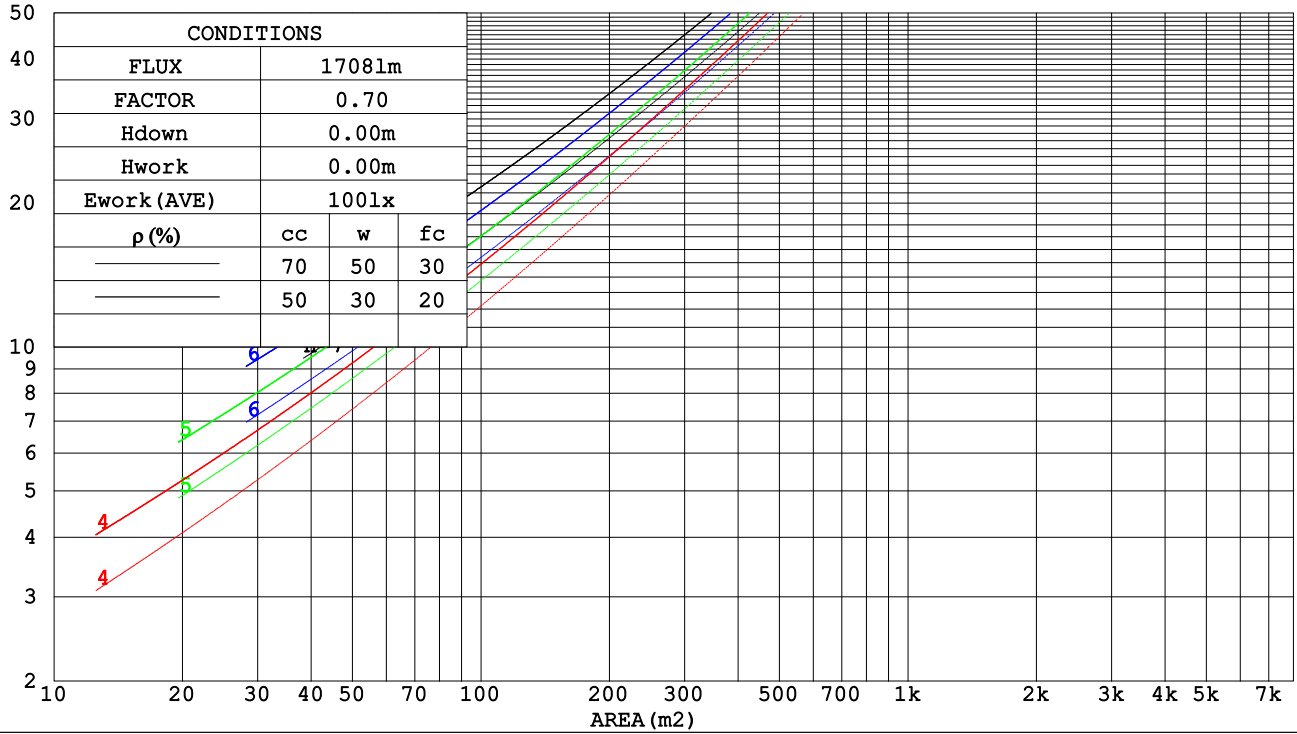
CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.98
1.0	1.03	.98	.94	1.00	.96	.93	.96	.92	.89	.92	.89	.86	.88	.86	.84	.81
2.0	.89	.82	.76	.87	.81	.75	.84	.78	.73	.80	.75	.71	.77	.73	.70	.67
3.0	.78	.70	.63	.77	.69	.63	.73	.67	.61	.70	.65	.60	.68	.63	.59	.57
4.0	.69	.60	.54	.68	.60	.53	.65	.58	.52	.63	.56	.51	.60	.55	.50	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.50	.44	.54	.48	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.40	.51	.44	.39	.49	.43	.39	.36
7.0	.51	.42	.36	.50	.41	.35	.48	.40	.35	.46	.40	.35	.45	.39	.34	.32
8.0	.46	.38	.32	.45	.37	.32	.44	.37	.31	.43	.36	.31	.41	.35	.31	.29
9.0	.42	.34	.28	.42	.34	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.25	.35	.29	.25	.23

LAMPS

LUMINAIRE BUDGETARY DIAGRAM



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.323	.184	.058	.315	.180	.057	.301	.173	.055	.288	.166	.053	.276	.160	.052	
2.0	.298	.163	.050	.292	.161	.049	.279	.155	.048	.267	.150	.047	.257	.145	.046	
3.0	.274	.146	.044	.268	.143	.043	.257	.139	.042	.246	.135	.041	.237	.131	.041	
4.0	.252	.131	.038	.246	.129	.038	.236	.125	.037	.227	.122	.037	.219	.119	.036	
5.0	.232	.118	.034	.227	.117	.034	.218	.114	.033	.210	.111	.033	.203	.108	.033	
6.0	.215	.108	.031	.210	.106	.031	.203	.104	.030	.195	.101	.030	.188	.099	.029	
7.0	.199	.099	.028	.196	.098	.028	.189	.095	.027	.182	.093	.027	.176	.091	.027	
8.0	.186	.091	.026	.183	.090	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025	
9.0	.174	.084	.024	.171	.083	.023	.166	.082	.023	.160	.080	.023	.155	.079	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.076	.022	.151	.075	.021	.146	.074	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.202	.202	.202	.173	.173	.173	.118	.118	.118	.068	.068	.068	.022	.022	.022	
1.0	.193	.168	.145	.165	.144	.125	.113	.099	.086	.065	.057	.050	.021	.018	.016	
2.0	.185	.144	.109	.158	.124	.094	.109	.086	.066	.063	.050	.039	.020	.016	.013	
3.0	.177	.126	.086	.152	.109	.074	.104	.076	.052	.060	.044	.031	.019	.014	.010	
4.0	.169	.113	.070	.145	.098	.061	.100	.068	.043	.058	.040	.025	.019	.013	.008	
5.0	.162	.103	.059	.139	.089	.051	.096	.062	.036	.055	.036	.021	.018	.012	.007	
6.0	.155	.094	.051	.133	.082	.044	.092	.057	.031	.053	.034	.019	.017	.011	.006	
7.0	.148	.087	.045	.127	.076	.039	.088	.053	.028	.051	.031	.017	.016	.010	.005	
8.0	.141	.082	.041	.122	.071	.036	.084	.050	.025	.049	.029	.015	.016	.010	.005	
9.0	.135	.077	.037	.116	.067	.033	.081	.047	.023	.047	.028	.014	.015	.009	.005	
10.0	.129	.072	.035	.112	.063	.030	.077	.044	.021	.045	.026	.013	.015	.009	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

ceiling/cavity		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
x = 2H	y = 2H	21.7	23.2	22.0	23.4	23.7	22.0	23.5	22.3	23.8	24.0
	3H	23.1	24.5	23.5	24.8	25.1	23.6	25.0	23.9	25.3	25.6
	4H	23.7	25.0	24.0	25.3	25.6	24.3	25.6	24.6	25.9	26.2
	6H	24.1	25.4	24.5	25.7	26.0	24.9	26.1	25.2	26.4	26.7
	8H	24.3	25.5	24.6	25.8	26.1	25.1	26.3	25.5	26.6	27.0
	12H	24.4	25.5	24.7	25.9	26.2	25.3	26.5	25.7	26.8	27.1
4H	2H	22.3	23.6	22.7	23.9	24.2	22.6	23.9	22.9	24.2	24.5
	3H	23.9	25.1	24.3	25.4	25.8	24.3	25.5	24.7	25.8	26.2
	4H	24.6	25.7	25.0	26.1	26.4	25.2	26.2	25.6	26.6	26.9
	6H	25.2	26.1	25.6	26.5	26.9	25.9	26.8	26.3	27.2	27.6
	8H	25.4	26.3	25.8	26.7	27.1	26.2	27.1	26.6	27.5	27.9
	12H	25.5	26.4	26.0	26.8	27.2	26.5	27.3	26.9	27.7	28.1
8H	4H	24.9	25.8	25.4	26.2	26.6	25.4	26.3	25.8	26.7	27.1
	6H	25.6	26.4	26.1	26.8	27.3	26.3	27.0	26.7	27.4	27.9
	8H	25.9	26.6	26.4	27.1	27.5	26.7	27.3	27.2	27.8	28.3
	12H	26.2	26.8	26.7	27.2	27.8	27.1	27.6	27.6	28.1	28.6
12H	4H	25.0	25.8	25.4	26.2	26.6	25.4	26.2	25.9	26.6	27.1
	6H	25.7	26.4	26.2	26.8	27.3	26.3	27.0	26.8	27.4	27.9
	8H	26.1	26.7	26.6	27.1	27.6	26.8	27.4	27.3	27.8	28.3
Variations with the observer position at spacings:											
S = 1.0H		+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.3					+ 0.2 / - 0.2				

CIE Pub.117, 1708 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 1.9)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

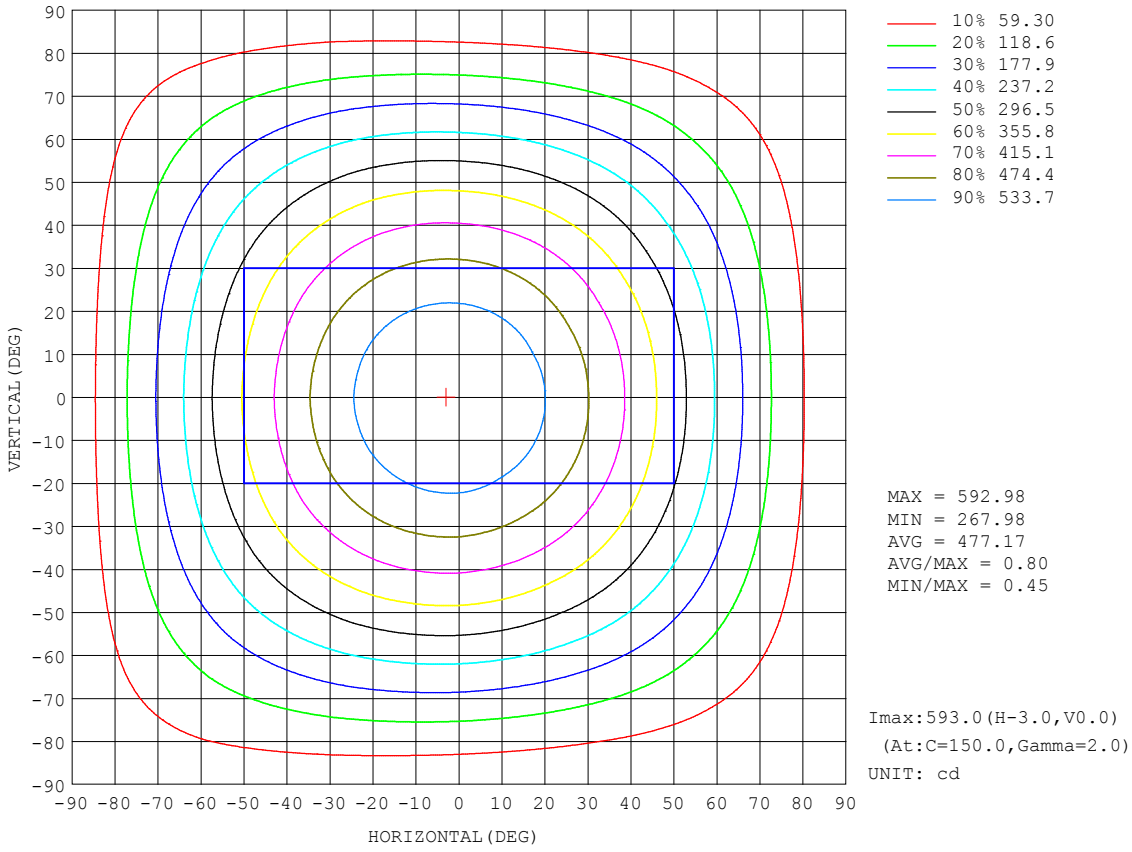
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	57	45	38	56	45	38	55	44	38	31
0.80	67	55	47	66	54	47	64	54	47	40
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	80	70	63	78	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	78	92	84	77	88	81	76	68
2.50	98	90	83	96	88	82	91	85	80	72
3.00	101	94	88	99	92	87	95	89	85	76
4.00	105	99	94	103	97	93	98	94	90	81
5.00	108	103	98	105	100	97	100	97	93	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:



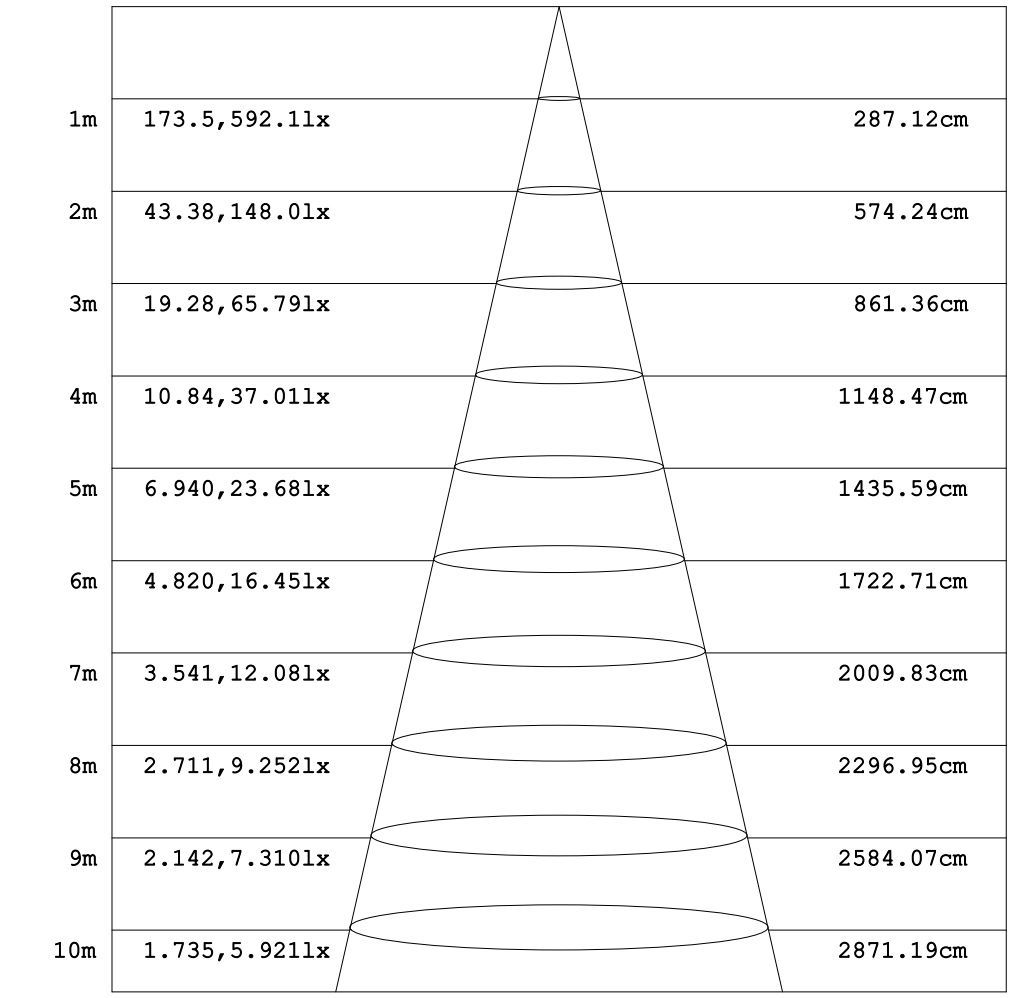
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

Flux out:1198 lm



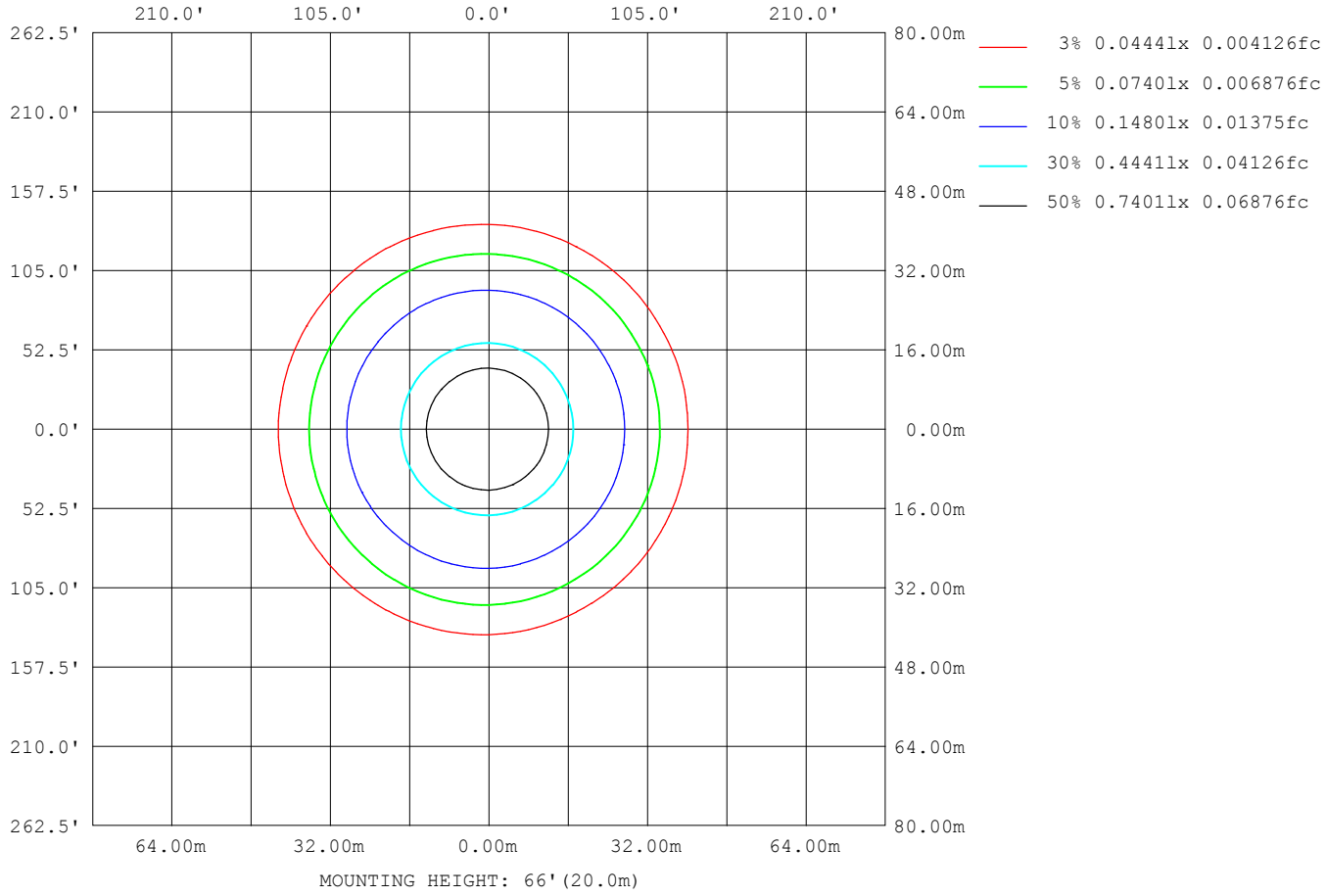
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

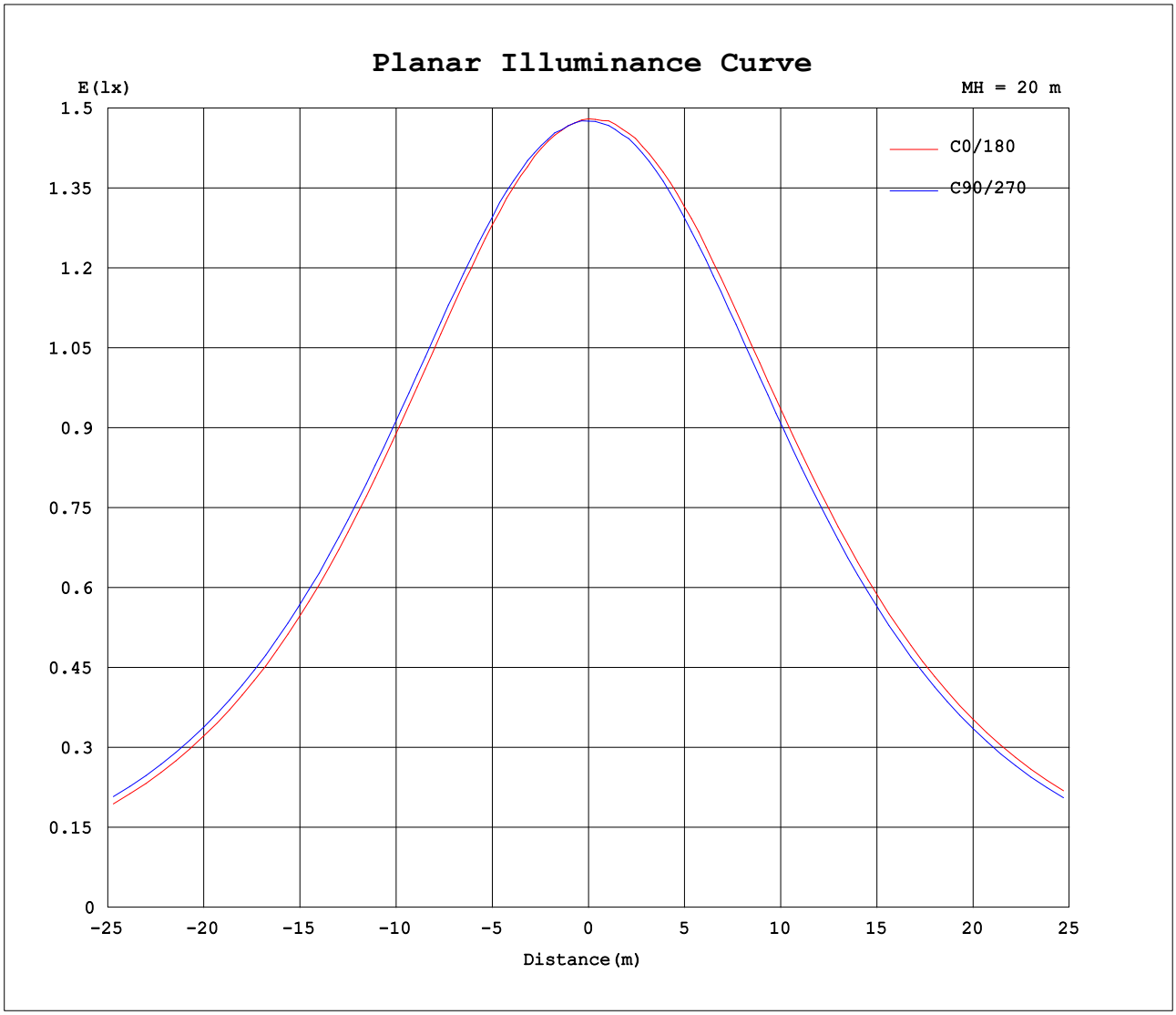
AvgL	cd/m2
L_0~180(65)av	14153
L_0~180(75)av	13174
L_0~180(85)av	14391
L_90~270(65)av	14222
L_90~270(75)av	13358
L_90~270(85)av	14866
L_45(65)av	14221
L_45(75)av	13314
L_45(85)av	14616

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.14V I:0.0661A P:14.701W PF:0.9667 Freq:50.09Hz Lamp Flux:1708.26x1 lm		
NAME: ORA-15W-3000K	TYPE:15W	WEIGHT:1
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Valux-iluminacion	SUR.:0.0346	Shielding Angle:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0	590	590	590	590	590	590	590	590	590	590	590	590
5	585	586	587	588	589	591	589	590	588	587	587	586
10	573	575	578	579	582	585	583	583	581	579	576	574
15	556	558	561	564	569	572	572	571	568	563	560	557
20	532	535	539	545	550	553	553	551	548	542	539	534
25	505	508	513	519	525	530	529	527	524	517	512	507
30	474	478	482	490	497	501	502	500	495	487	481	476
35	440	444	448	457	465	470	470	468	462	454	448	442
40	402	407	413	421	430	435	436	432	428	418	412	405
45	363	368	374	383	392	398	398	396	390	380	372	365
50	321	326	332	343	351	358	359	355	349	339	331	323
55	276	282	289	300	309	316	316	312	307	296	287	279
60	232	236	244	255	265	272	273	269	263	252	242	234
65	186	191	199	210	220	227	228	224	217	206	197	189
70	141	146	154	165	175	181	182	178	172	161	152	144
75	98.9	103	111	122	131	137	137	134	128	118	109	101
80	61.2	65.0	71.6	81.2	89.5	95.1	94.7	90.6	86.0	77.4	69.6	63.3
85	30.8	34.4	39.0	46.3	53.0	57.4	56.0	50.3	49.7	43.3	37.6	31.3
90	22.7	24.1	26.4	27.4	25.4	27.0	26.9	23.9	26.5	27.4	26.7	21.4
95	16.6	8.42	4.70	8.47	3.44	8.62	18.6	8.49	5.57	11.5	7.70	8.42
100	5.50	0.97	3.59	1.48	2.41	4.23	9.65	4.13	1.65	0.78	2.78	1.01
105	1.09	1.14	2.26	3.34	2.63	0.98	1.21	0.93	2.92	3.64	3.10	1.02
110	1.42	1.42	1.32	1.34	1.57	1.39	1.35	1.46	1.39	1.47	1.42	1.30
115	1.67	1.69	1.59	1.62	1.47	1.51	1.43	1.40	1.49	1.49	1.60	1.57
120	1.94	1.98	1.88	1.92	1.78	1.80	1.73	1.67	1.79	1.79	1.91	1.88
125	2.29	2.32	2.20	2.23	2.08	2.10	2.03	1.98	2.09	2.11	2.22	2.19
130	2.62	2.66	2.54	2.58	2.42	2.44	2.36	2.31	2.42	2.45	2.54	2.54
135	2.98	3.01	2.91	2.95	2.77	2.80	2.72	2.67	2.77	2.81	2.89	2.88
140	3.35	3.38	3.25	3.29	3.13	3.16	3.08	3.03	3.13	3.16	3.24	3.22
145	3.67	3.69	3.60	3.64	3.50	3.52	3.45	3.39	3.49	3.51	3.60	3.57
150	3.97	4.05	3.92	3.99	3.81	3.88	3.79	3.75	3.84	3.85	3.94	3.91
155	4.27	4.34	4.23	4.29	4.15	4.21	4.12	4.10	4.19	4.17	4.28	4.22
160	4.64	4.62	4.54	4.57	4.49	4.51	4.52	4.41	4.52	4.48	4.58	4.52
165	4.79	4.86	4.82	4.88	4.76	4.78	4.71	4.69	4.79	4.76	4.87	4.76
170	4.96	5.03	5.00	5.04	4.93	5.00	4.93	4.92	4.99	4.96	5.06	4.95
175	5.06	5.16	5.12	5.16	5.08	5.17	5.11	5.07	5.17	5.10	5.17	5.13
180	5.14	5.16	5.17	5.18	5.16	5.21	5.14	5.16	5.22	5.15	5.17	5.19

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.405.8
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks: