

Spectrum Test Report

Sample :
Specification : MR16-5-927-25D-DIM-G2
Sample No. :
Manufacturer : RAB LIGHTING INC

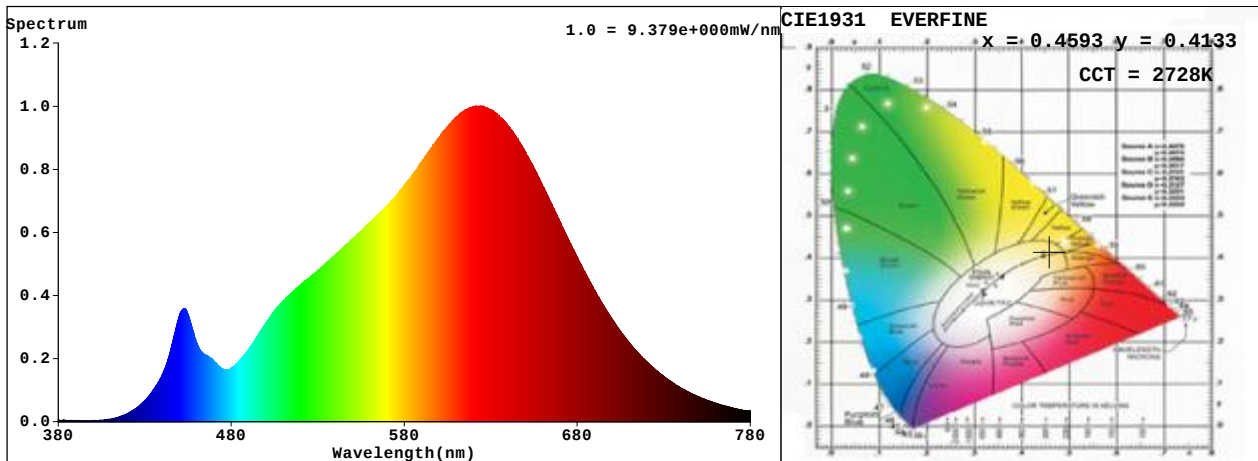
Date : 2019-11-11
Sam. Status :
Instrument : HaasSuite(EVERFINE)
Test by :
Assessor : damin

Test Condition

Temperature : 21.4Deg
WL Range : 380nm-780nm
Test Mode : Fast Test

RH : 65.0%
IP : 52162 (80%)
T : 122 ms
Sensitivity : High

Spectrum



Spectral Distribution

CIE1931 Chromaticity Diagram

Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4593$ $y = 0.4133$ / $u' = 0.2610$ $v' = 0.5283$ ($duv=1.02e-03$)

CCT= 2728K Prcp WL: Ld=583.7nm Purity=61.9%

Peak WL: Lp=621nm FWHM: =147.6nm Ratio:R=26.0% G=71.6% B=2.4%

Render Index: Ra = 92.1 CRI = 89.3 AvgR = 89.1

R1 =92 R2 =96 R3 =98 R4 =92 R5 =92 R6 =95 R7 =92

R8 =80 R9 =56 R10=89 R11=93 R12=83 R13=93 R14=98 R15=87

WHITE:ANSI_2700K

Photometric & Radiometric Parameters

Flux = 438.97 lm Eff. : 93.97 lm/W Fe = 1.5324 W

Flux of emitted photons(umol/s):7.6689 Fluo. and blue light ratio:14.22 Fluorescent eff.:286.0

Electrical parameters

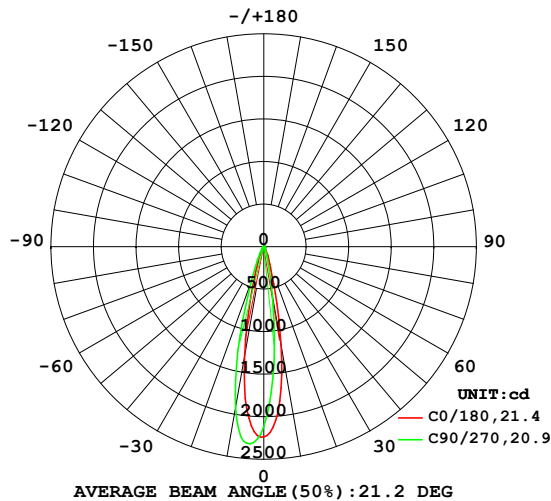
V = 11.95 V I = 0.4189 A P = 4.671 W PF = 0.9331 F=59.98 Hz

LUMINAIRE PHOTOMETRIC TEST REPORT

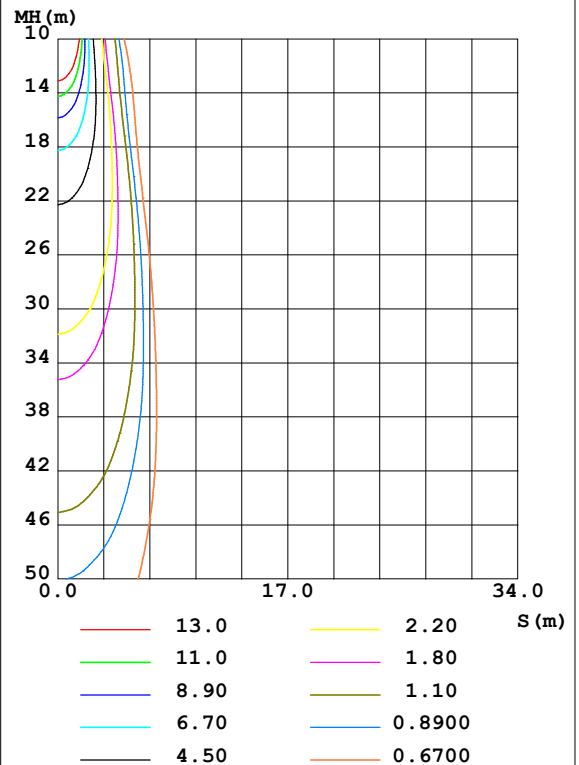
Test:U:12.09V I:0.4218A P:4.767W PF:0.9347 Freq:59.98Hz Lamp Flux:426.443x1 lm		
NAME: MR16-5-927-25D-DIM-G2	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 89.46 lm/W			
MODEL		I _{max} (cd)	2323	S/MH (C0/180)	0.37
NOMINAL POWER (W)	5	LOR (%)	100.0	S/MH (C90/270)	0.46
RATED VOLTAGE (V)	12	TOTAL FLUX (lm)	426.44	η UP, DN (C0-180)	0.0, 36.1
NOMINAL FLUX (lm)	426.443	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 63.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	12	η down (%)	100.0	CIBSE SHR MAX	1.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Testing Room
Test Date: 2019-11-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-3000H_V1 SYSTEM V2.0.361
Humidity: 65.0%
Test Distance: 11.160m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	1179	586.9	1310	1918					0- 10	161.5	161.5	37.9,37.9
20	195.9	109.3	225.4	407.9					10- 20	164.5	325.9	76.4,76.4
30	52.33	24.76	63.32	91.09					20- 30	55.44	381.4	89.4,89.4
40	16.15	12.09	19.51	24.56					30- 40	19.85	401.2	94.1,94.1
50	8.544	6.647	10.54	13.15					40- 50	10.64	411.8	96.6,96.6
60	5.525	4.427	5.729	6.551					50- 60	6.513	418.4	98.1,98.1
70	3.649	2.625	3.788	4.500					60- 70	4.547	422.9	99.2,99.2
80	1.518	0.7323	1.599	2.376					70- 80	2.738	425.6	99.8,99.8
90	0.0631	0.0474	0.0710	0.4498					80- 90	0.8005	426.4	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 407.08 lm

%lum = 95.5%

%lamp = 95.5%

Conical surface Flux(120deg): 418.36 lm

%lum = 98.1%

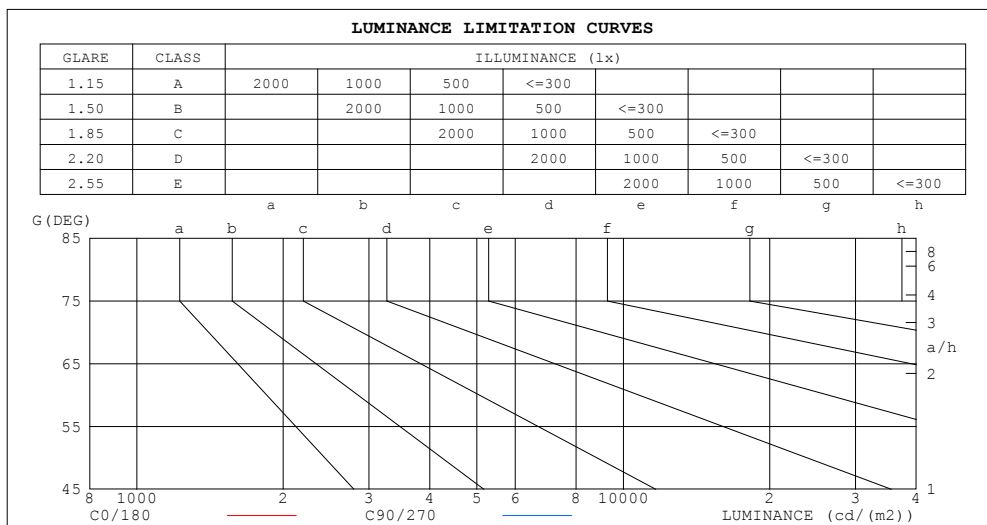
%lamp = 98.1%

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Testing Room
 Test Date:2019-11-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
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LUMINANCE LIMITATION CURVES

Test:U:12.09V I:0.4218A P:4.767W PF:0.9347 Freq:59.98Hz Lamp Flux:426.443x1 lm		
NAME: MR16-5-927-25D-DIM-G2	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	39	6
80	50	24
75	57	36
70	60	44
65	62	48
60	63	50
55	66	52
50	75	59
45	105	74

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Testing Room
Test Date: 2019-11-18

γ Range: 0 - 90DEG
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Remarks:

WEC AND CCEC

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SPEC.:			DIM.:		SERIAL No.:
MFR.: RAB LIGHTING INC			SUR.:		Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.148	.084	.027	.141	.080	.026	.129	.074	.024	.117	.068	.022	.107	.062	.020		
2.0	.137	.075	.023	.131	.072	.022	.121	.067	.021	.112	.063	.020	.103	.058	.018		
3.0	.127	.068	.020	.122	.066	.020	.114	.062	.019	.106	.058	.018	.098	.055	.017		
4.0	.118	.062	.018	.115	.060	.018	.107	.057	.017	.101	.054	.016	.094	.051	.016		
5.0	.111	.057	.016	.108	.055	.016	.102	.053	.016	.096	.051	.015	.090	.048	.015		
6.0	.105	.052	.015	.102	.051	.015	.096	.049	.014	.091	.047	.014	.087	.046	.014		
7.0	.099	.049	.014	.096	.048	.014	.092	.046	.013	.087	.045	.013	.083	.043	.013		
8.0	.094	.046	.013	.092	.045	.013	.088	.044	.012	.084	.042	.012	.080	.041	.012		
9.0	.089	.043	.012	.087	.043	.012	.084	.041	.012	.080	.040	.012	.077	.039	.011		
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.169	.158	.147	.145	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.016	
2.0	.152	.133	.117	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013	
3.0	.137	.113	.095	.117	.098	.082	.081	.068	.057	.047	.040	.034	.015	.013	.011	
4.0	.125	.098	.078	.107	.085	.068	.074	.059	.048	.043	.035	.028	.014	.011	.009	
5.0	.114	.086	.065	.098	.074	.056	.068	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.091	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.098	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.091	.061	.040	.078	.053	.035	.054	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Testing Room
Test Date:2019-11-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.0.361
Humidity:65.0%
Test Distance:11.160m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:12.09V I:0.4218A P:4.767W PF:0.9347 Freq:59.98Hz Lamp Flux:426.443x1 lm										
NAME: MR16-5-927-25D-DIM-G2					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: RAB LIGHTING INC					SUR.:			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	-1.0	-0.4	-0.8	-0.2	-0.0	-2.2	-1.5	-2.0	-1.4	-1.2
3H	0.2	0.8	0.4	1.0	1.2	-1.1	-0.5	-0.9	-0.3	-0.1
4H	0.7	1.4	1.0	1.6	1.8	-0.7	-0.1	-0.5	0.1	0.3
6H	1.1	1.7	1.4	1.9	2.2	-0.6	0.0	-0.3	0.3	0.5
8H	1.2	1.8	1.5	2.1	2.3	-0.6	0.0	-0.3	0.3	0.5
12H	1.3	1.8	1.6	2.1	2.4	-0.6	-0.0	-0.3	0.2	0.5
4H 2H	-0.7	-0.1	-0.4	0.2	0.4	-1.7	-1.0	-1.4	-0.8	-0.6
3H	0.8	1.3	1.1	1.6	1.8	-0.3	0.2	-0.0	0.5	0.7
4H	1.4	1.9	1.8	2.2	2.5	0.1	0.6	0.5	0.9	1.2
6H	1.9	2.4	2.3	2.7	3.0	0.4	0.8	0.8	1.2	1.5
8H	2.1	2.5	2.4	2.8	3.2	0.4	0.8	0.8	1.2	1.5
12H	2.1	2.5	2.5	2.9	3.3	0.4	0.8	0.8	1.1	1.5
8H 4H	1.6	2.0	1.9	2.3	2.7	0.4	0.8	0.8	1.2	1.5
6H	2.1	2.5	2.6	2.9	3.3	0.7	1.1	1.2	1.5	1.9
8H	2.3	2.6	2.8	3.1	3.5	0.8	1.1	1.2	1.5	1.9
12H	2.5	2.7	2.9	3.2	3.6	0.8	1.0	1.2	1.5	1.9
12H 4H	1.5	1.9	1.9	2.3	2.7	0.4	0.8	0.8	1.1	1.5
6H	2.1	2.4	2.6	2.8	3.3	0.8	1.1	1.2	1.5	1.9
8H	2.3	2.6	2.8	3.0	3.5	0.8	1.1	1.3	1.5	2.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.4					+ 0.5 / - 0.5				
1.5H	+ 0.6 / - 0.3					+ 0.3 / - 0.5				
2.0H	+ 1.0 / - 0.5					+ 0.6 / - 0.5				

CIE Pub.117, 426.4 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -3.0)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Testing Room
Test Date:2019-11-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.0.361
Humidity:65.0%
Test Distance:11.160m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:12.09V I:0.4218A P:4.767W PF:0.9347 Freq:59.98Hz Lamp Flux:426.443x1 lm		
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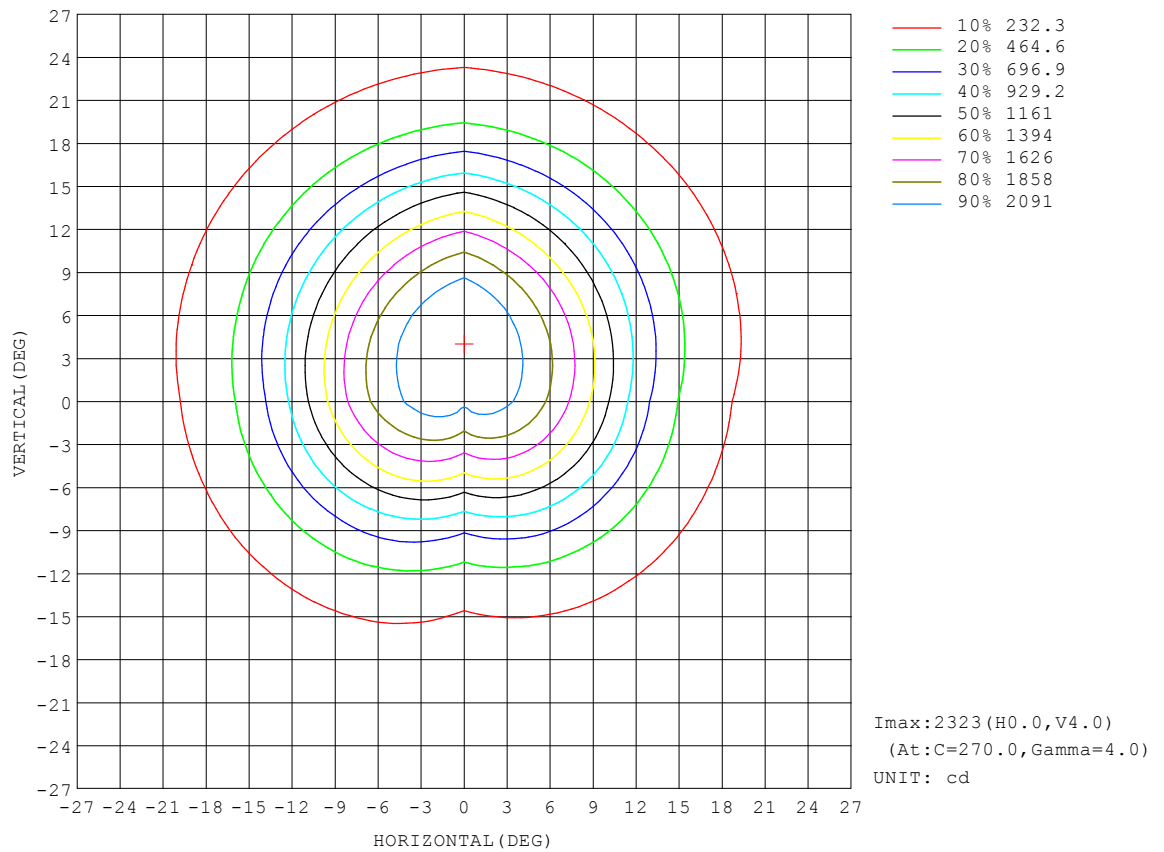
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	78	87	82	78	87	81	78	74
0.80	95	89	86	94	89	86	93	88	85	82
1.00	99	94	90	99	93	90	97	93	89	86
1.25	103	98	95	102	98	94	100	96	93	89
1.50	106	101	98	105	100	97	102	99	96	92
2.00	108	104	101	107	103	100	104	101	99	94
2.50	110	106	103	109	105	102	105	103	101	95
3.00	112	108	106	110	107	104	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	99
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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Test System: EVERFINE GO-3000H_V1 SYSTEM V2.0.361
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ISOCANDELA DIAGRAM

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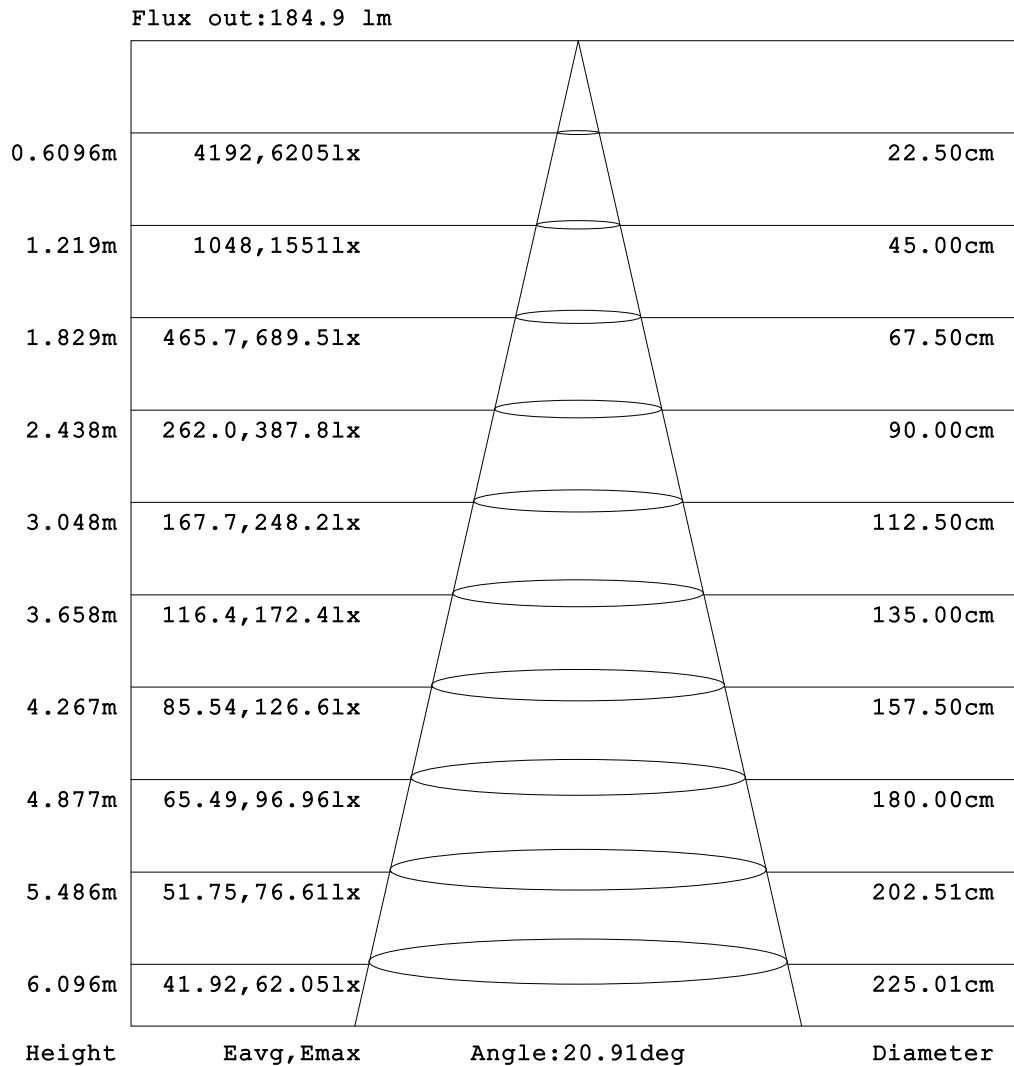


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AAI Figure

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SPEC.:	DIM.:	SERIAL No.:
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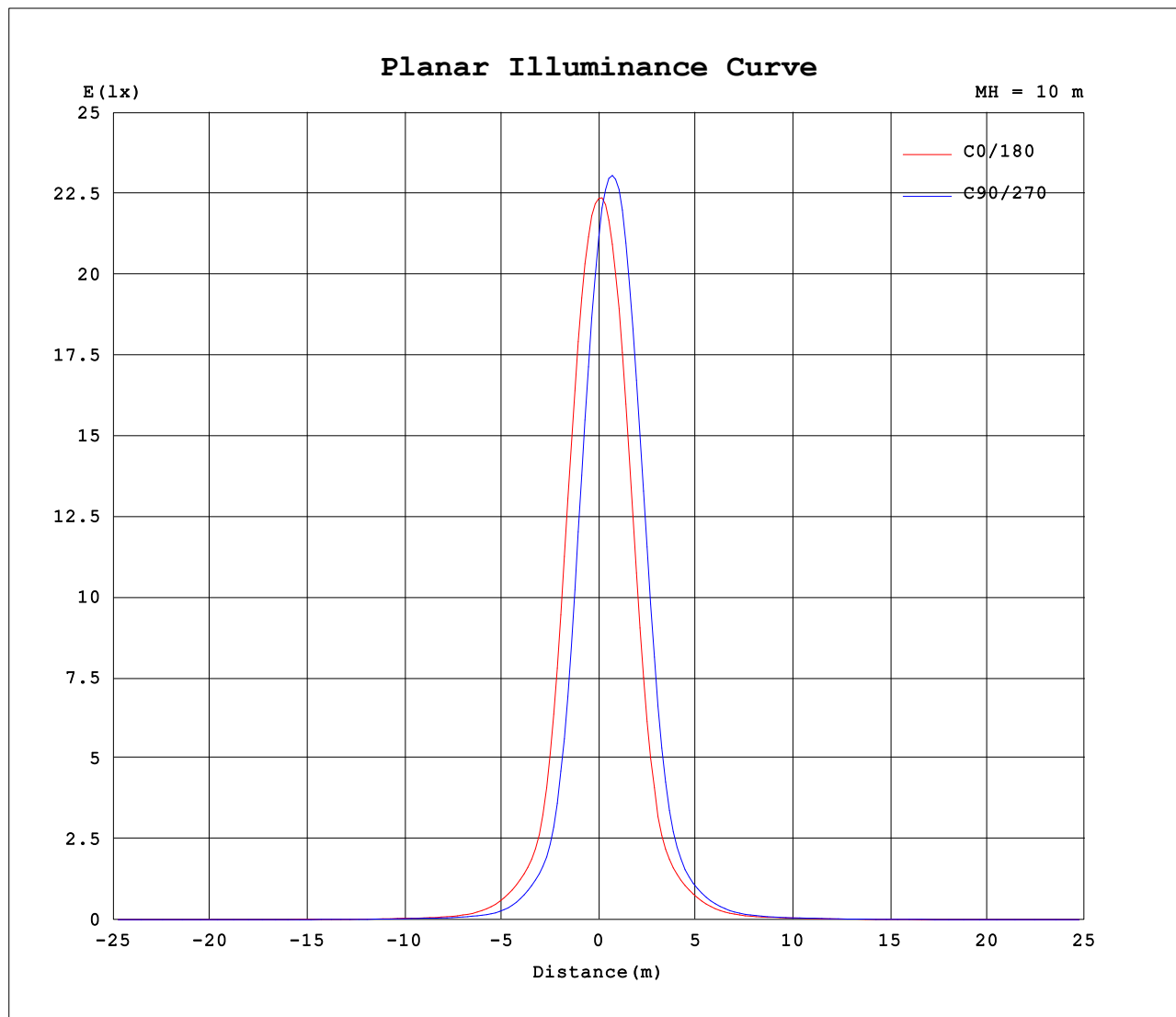


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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Planar Illuminance Curve



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