

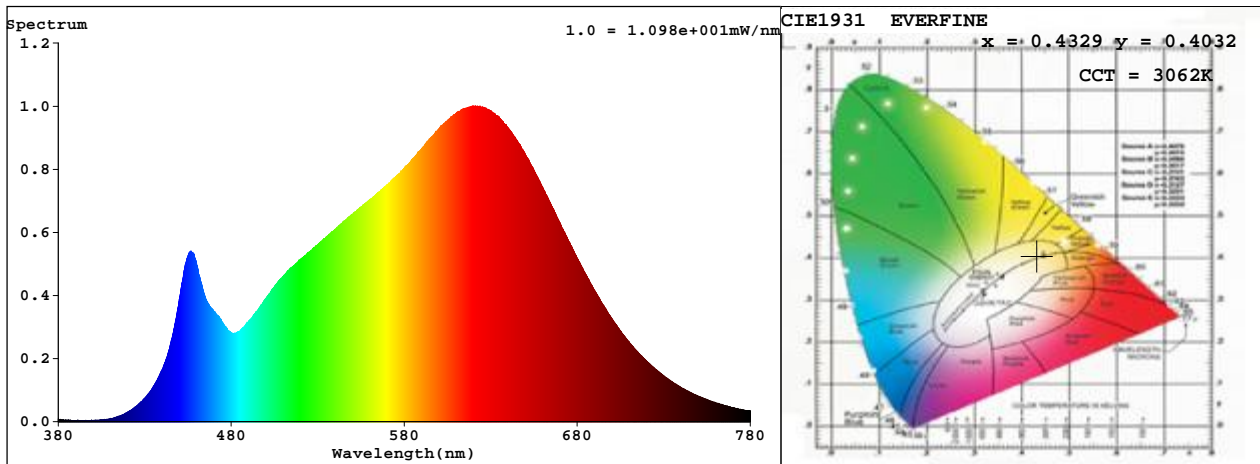
Spectrum Test Report

Sample :	Date :	2019-08-31 08:29:49
Specification : PAR16-6.5-930-35D-DIM-G2	Sam. Status :	
Sample No. :	Instrument :	HaasSuite(EVERFINE)
Manufacturer : RAB Lighting Inc	Test by :	
	Assessor :	damin

Test Condition

Temperature : 26.5Deg	RH :	65.0%
WL Range : 380nm-780nm	IP :	56382 (86%)
Test Mode : Fast Test	T :	101 ms
	Sensitivity :	High

Spectrum



Spectral Distribution

CIE1931 Chromaticity Diagram

Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4329$ $y = 0.4032$ / $u' = 0.2484$ $v' = 0.5204$ ($duv=2.02e-04$)

CCT= 3062K Prcp WL: Ld=582.5nm Purity=50.9%

Peak WL: Lp=620nm FWHM: =164.2nm Ratio:R=23.9% G=72.9% B=3.2%

Render Index: Ra = 93.4 CRI = 90.8 AvgR = 90.7

R1 =94 R2 =97 R3 =99 R4 =92 R5 =93 R6 =96 R7 =92

R8 =83 R9 =63 R10=93 R11=93 R12=81 R13=95 R14=99 R15=90

WHITE:ANSI_3000K

Photometric & Radiometric Parameters

Flux = 560.47 lm Eff. : 92.71 lm/W Fe = 1.9429 W

Flux of emitted photons(umol/s):9.5999 Flu. and blue light ratio:9.353 Fluorescent eff.:270.7

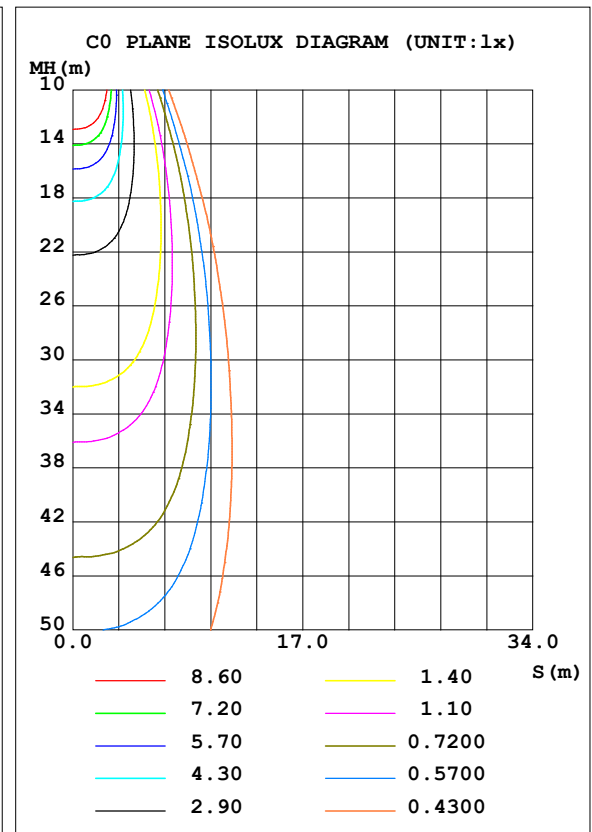
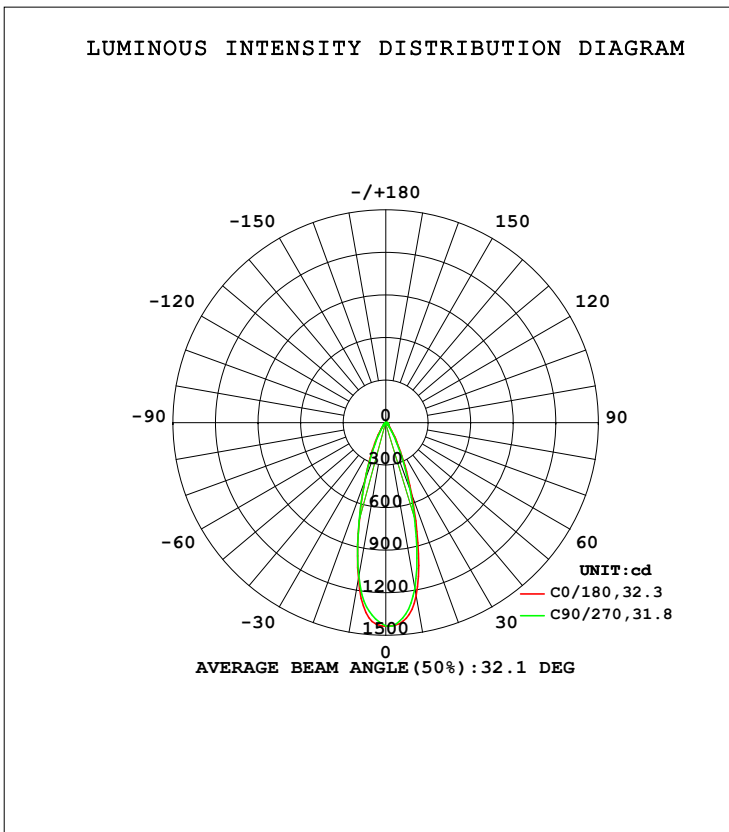
Electrical parameters

V = 120.1 V I = 0.05401 A P = 6.045 W PF = 0.9322 F=59.98 Hz

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.0540A P:6.040W PF:0.9311 Freq:59.98Hz Lamp Flux:555.097x1 lm		
NAME: PAR16-6.5-930-35D-DIM-G2	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB Lighting Inc	SUR.:0.0572	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	PAR16	Imax (cd)	1435	S/MH (C0/180)	0.51
NOMINAL POWER (W)	6.5	LOR (%)	100.0	S/MH (C90/270)	0.51
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	555.10	η UP, DN (C0-180)	0.0, 53.3
NOMINAL FLUX (lm)	555.097	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 46.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	120	η down (%)	100.0	CIBSE SHR MAX	0.55



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Testing Room
 Test Date: 2019-08-31

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	1236	1186	1115	1101				0- 10	124.7	124.7	22.5,22.5
20	528.6	503.0	431.6	427.4				10- 20	216.8	341.5	61.5,61.5
30	154.5	132.1	133.3	109.8				20- 30	121.5	463.0	83.4,83.4
40	46.80	37.84	37.40	35.33				30- 40	45.92	508.9	91.7,91.7
50	21.49	18.26	16.72	18.01				40- 50	20.60	529.5	95.4,95.4
60	11.16	10.08	9.383	9.449				50- 60	12.41	542.0	97.6,97.6
70	6.418	5.779	5.490	5.416				60- 70	7.670	549.6	99,99
80	2.963	2.434	2.166	2.322				70- 80	4.314	553.9	99.8,99.8
90	0.1736	0.0947	0.1184	0.1026				80- 90	1.162	555.1	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): 520.69 lm

%lum = 93.8%

%lamp = 93.8%

Conical surface Flux(120deg): 541.95 lm

%lum = 97.6%

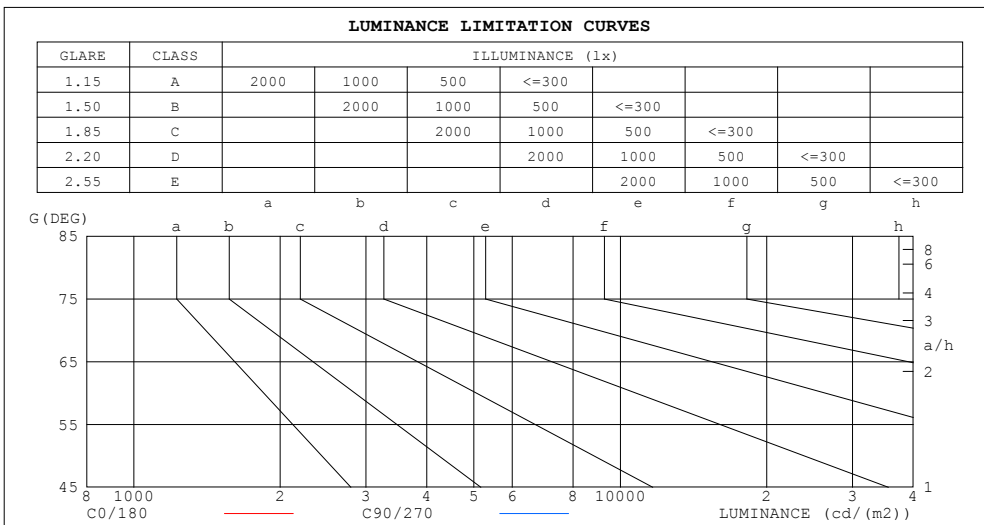
%lamp = 97.6%

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LUMINANCE LIMITATION CURVES

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SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB Lighting Inc	SUR.:0.0572	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	271	183
80	298	245
75	312	273
70	328	295
65	353	318
60	390	353
55	482	414
50	584	497
45	748	622

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WEC AND CCEC

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SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB Lighting Inc	SUR.:0.0572	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 Coefficients (WEC)									
0.0																
1.0	.166	.095	.030	.160	.091	.029	.147	.084	.027	.136	.078	.025	.125	.073	.023	
2.0	.156	.086	.026	.151	.083	.026	.140	.078	.024	.131	.073	.023	.122	.069	.022	
3.0	.147	.078	.023	.142	.076	.023	.133	.072	.022	.125	.068	.021	.117	.065	.020	
4.0	.138	.072	.021	.134	.070	.021	.126	.067	.020	.119	.064	.019	.113	.061	.019	
5.0	.130	.066	.019	.126	.065	.019	.120	.062	.018	.114	.060	.018	.108	.058	.017	
6.0	.123	.062	.018	.120	.061	.017	.114	.059	.017	.109	.057	.017	.104	.055	.016	
7.0	.117	.058	.016	.114	.057	.016	.109	.055	.016	.104	.054	.016	.100	.052	.015	
8.0	.111	.054	.015	.109	.054	.015	.104	.052	.015	.100	.051	.015	.096	.049	.014	
9.0	.106	.051	.014	.104	.051	.014	.100	.049	.014	.096	.048	.014	.093	.047	.014	
10.0	.101	.049	.014	.100	.048	.013	.096	.047	.013	.093	.046	.013	.090	.045	.013	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.170	.157	.146	.146	.135	.125	.100	.093	.087	.057	.054	.050	.018	.017	.016	
2.0	.154	.133	.114	.132	.114	.099	.090	.079	.069	.052	.046	.040	.017	.015	.013	
3.0	.141	.113	.092	.121	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.129	.099	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.096	.067	.045	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.104	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.098	.063	.038	.085	.054	.033	.058	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Testing Room
 Test Date:2019-08-31

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:120.0V I:0.0540A P:6.040W PF:0.9311 Freq:59.98Hz Lamp Flux:555.097x1 lm										
NAME: PAR16-6.5-930-35D-DIM-G2					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: RAB Lighting Inc					SUR.:0.0572			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	7.6	8.4	7.8	8.5	8.7	6.9	7.7	7.1	7.9	8.0
3H	8.2	8.9	8.4	9.1	9.3	7.5	8.3	7.8	8.5	8.7
4H	8.5	9.2	8.7	9.4	9.6	7.8	8.5	8.1	8.8	9.0
6H	8.7	9.4	9.0	9.6	9.9	8.0	8.7	8.3	9.0	9.2
8H	8.8	9.5	9.1	9.7	10.0	8.1	8.8	8.4	9.0	9.3
12H	8.9	9.5	9.2	9.8	10.0	8.1	8.8	8.4	9.0	9.3
4H 2H	7.7	8.4	8.0	8.6	8.9	7.1	7.9	7.4	8.1	8.3
3H	8.5	9.1	8.8	9.4	9.7	8.0	8.6	8.3	8.9	9.1
4H	8.9	9.5	9.3	9.8	10.1	8.4	8.9	8.7	9.2	9.5
6H	9.3	9.8	9.7	10.1	10.5	8.7	9.2	9.1	9.5	9.9
8H	9.5	9.9	9.8	10.3	10.6	8.8	9.3	9.2	9.6	10.0
12H	9.5	10.0	10.0	10.4	10.7	8.9	9.3	9.3	9.7	10.1
8H 4H	9.0	9.5	9.4	9.9	10.2	8.5	9.0	8.9	9.3	9.7
6H	9.5	9.9	9.9	10.3	10.7	9.0	9.4	9.4	9.8	10.2
8H	9.7	10.1	10.2	10.5	10.9	9.1	9.5	9.6	9.9	10.3
12H	9.9	10.2	10.4	10.6	11.1	9.2	9.5	9.7	10.0	10.4
12H 4H	9.0	9.4	9.4	9.8	10.2	8.5	8.9	8.9	9.3	9.7
6H	9.5	9.9	10.0	10.3	10.7	9.0	9.3	9.4	9.8	10.2
8H	9.8	10.1	10.2	10.5	11.0	9.2	9.5	9.7	9.9	10.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 0.8					+ 0.6 / - 0.8				
1.5H	+ 1.5 / - 0.6					+ 1.0 / - 0.6				
2.0H	+ 1.1 / - 0.6					+ 0.9 / - 0.7				

CIE Pub.117, 555.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.0)

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 Test System:EVERFINE GO-3000H_V1 SYSTEM V2.0.361
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 Test Distance:11.160m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.0V I:0.0540A P:6.040W PF:0.9311 Freq:59.98Hz Lamp Flux:555.097x1 lm		
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SPEC.:	DIM.:	SERIAL No.:
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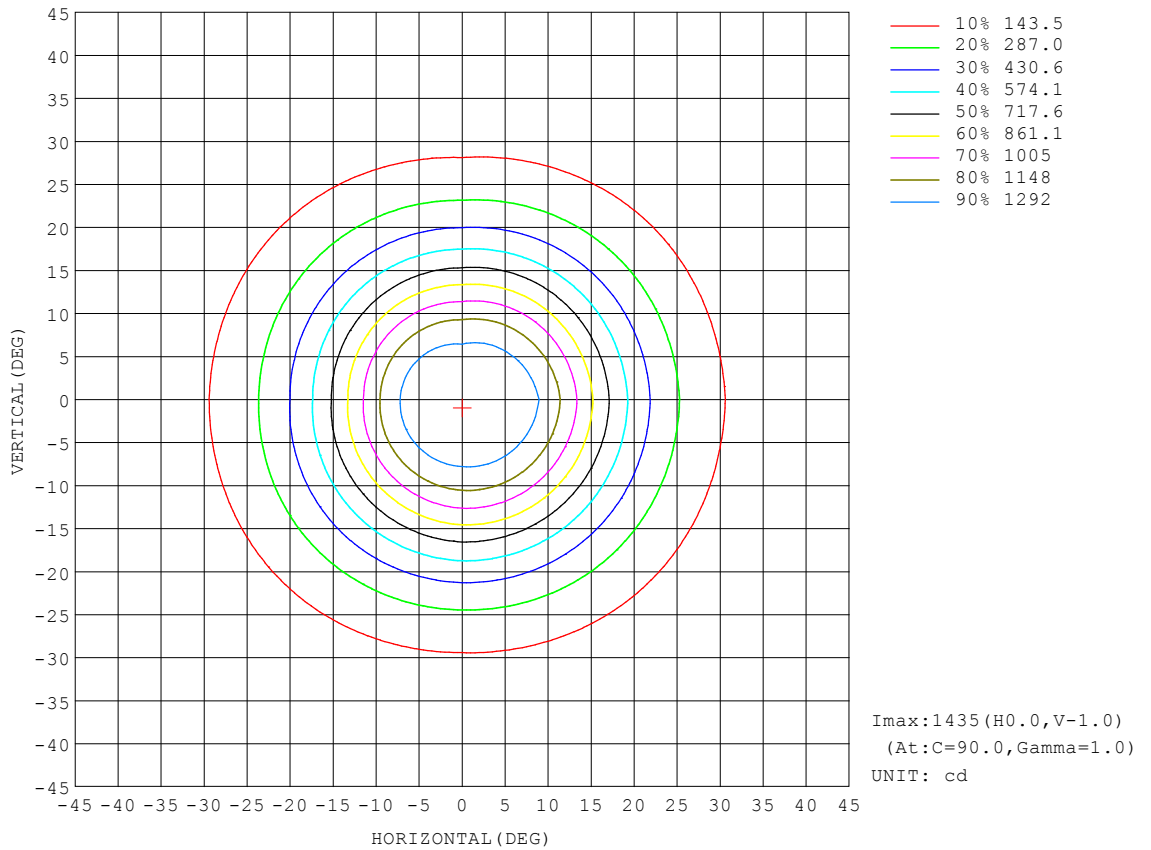
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	80	76	86	80	76	85	79	76	72
0.80	94	88	84	93	87	84	92	87	83	80
1.00	98	93	89	97	92	88	96	92	88	84
1.25	102	97	93	101	96	93	99	95	92	88
1.50	105	100	97	104	99	96	102	98	95	91
2.00	108	104	100	107	103	99	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	106	104	106	104	102	95
4.00	113	111	108	111	109	107	108	106	104	97
5.00	115	112	110	113	111	109	109	107	106	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

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ISOCANDELA DIAGRAM

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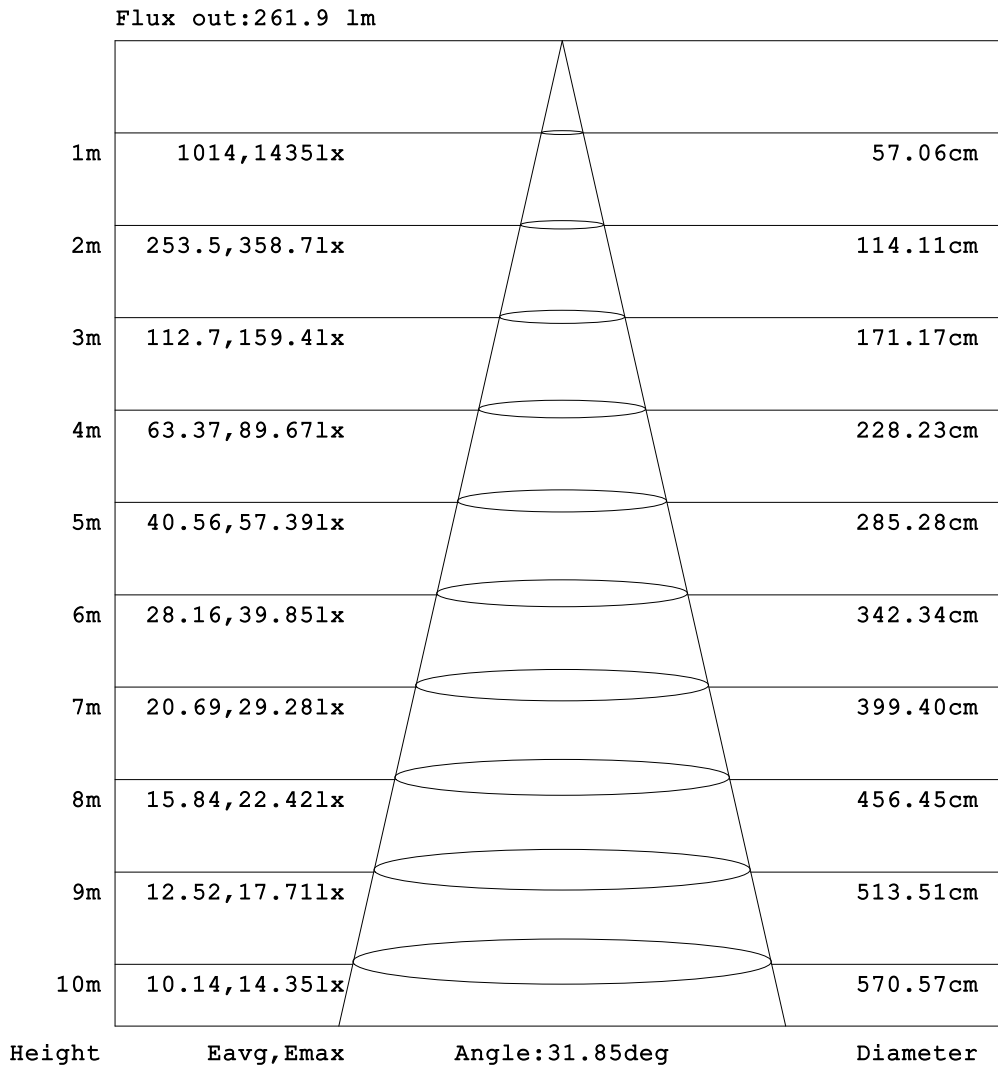


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AAI Figure

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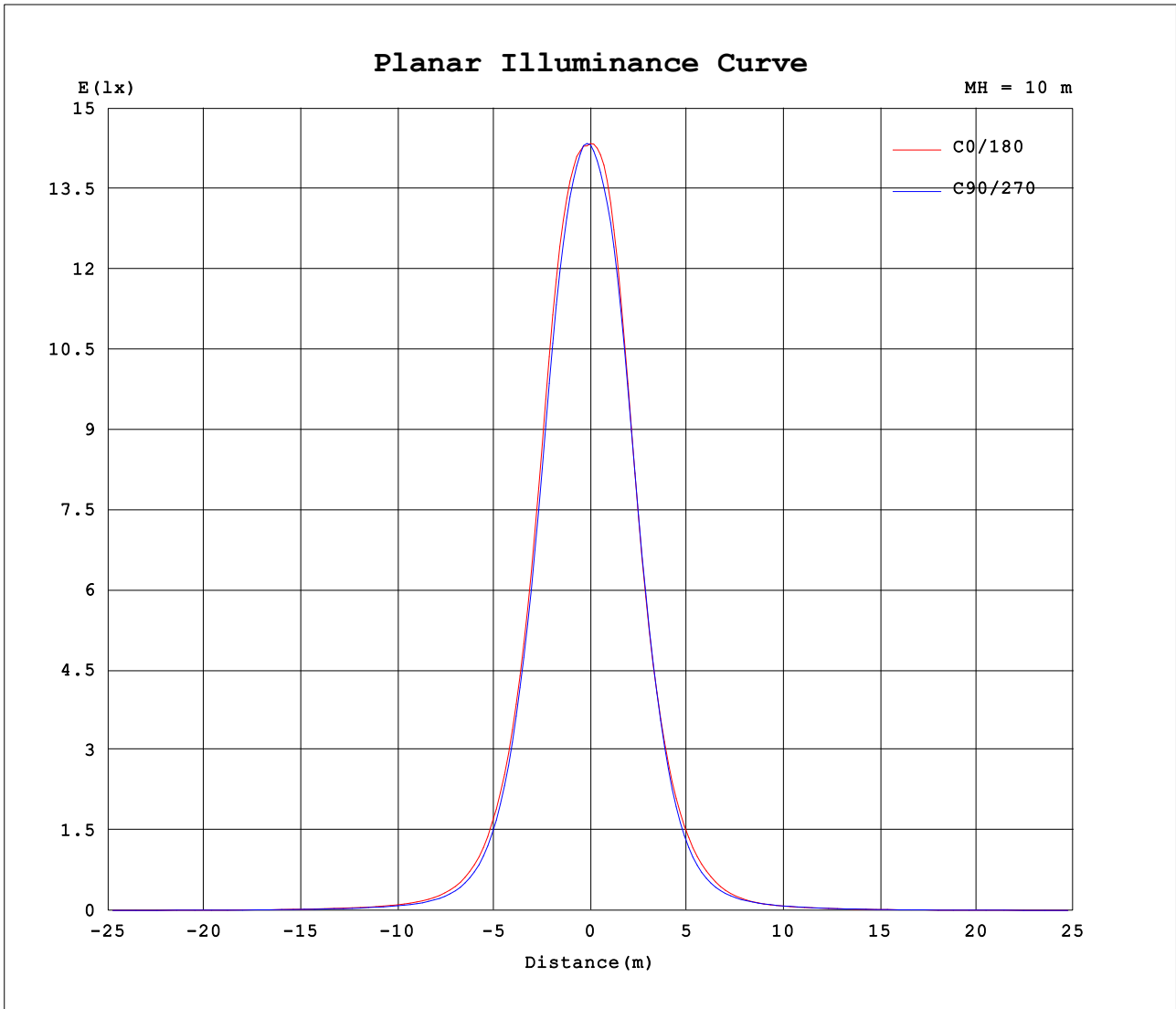


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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Planar Illuminance Curve



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LUMINOUS DISTRIBUTION INTENSITY DATA

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MFR.: RAB Lighting Inc	SUR.:0.0572	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	1435	1433	1435	1433															
5	1406	1383	1381	1338															
10	1236	1186	1115	1101															
15	878	832	732	737															
20	529	503	432	427															
25	297	268	245	221															
30	155	132	133	110															
35	82.5	67.2	69.5	58.5															
40	46.8	37.8	37.4	35.3															
45	30.2	25.2	23.6	24.5															
50	21.5	18.3	16.7	18.0															
55	15.8	13.6	12.5	13.0															
60	11.2	10.1	9.38	9.45															
65	8.53	7.70	7.27	7.28															
70	6.42	5.78	5.49	5.42															
75	4.62	4.04	3.78	3.83															
80	2.96	2.43	2.17	2.32															
85	1.35	0.91	0.64	0.91															
90	0.17	0.09	0.12	0.10															

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