

## LED Light



Light Output Ratio:	100.0%	
Luminaire Power:	7.1 W	
SHR Nominal:	1.25	Calculated using the TM5
SHR Maximum:	1.35	fine grid method.

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: TGB  
Test Date: 2016-03-02

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity: 65.0%  
Test Distance: 8.820m [K=1.0771]  
Remarks:

## LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

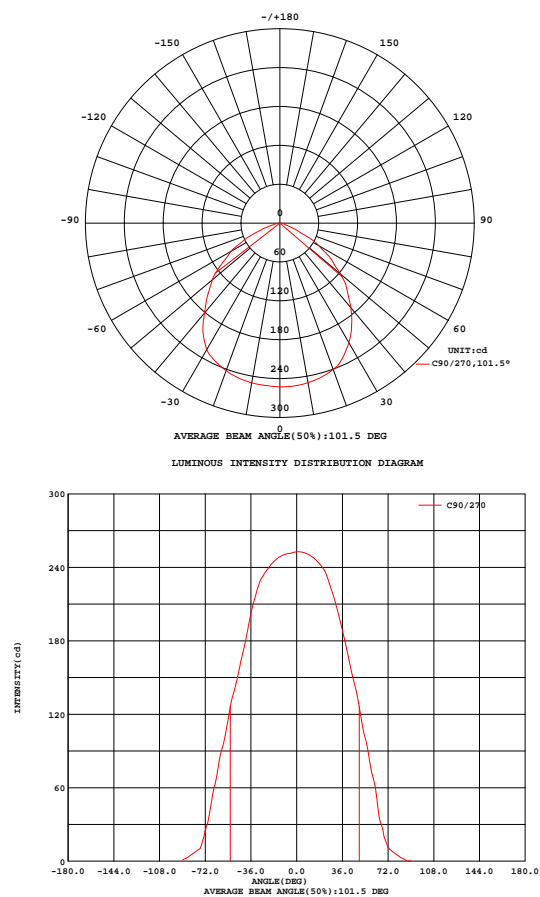
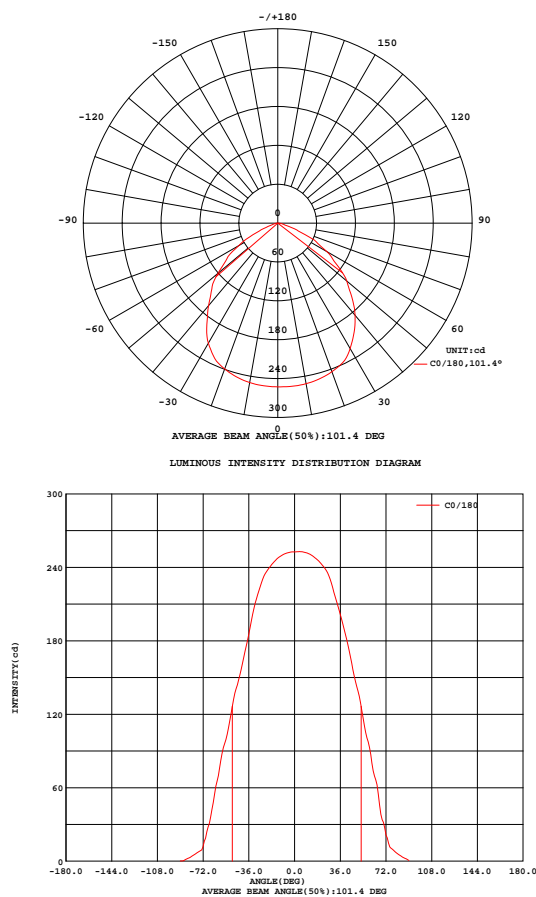


Fig. C0/C180



Fig. C90/C270

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:TGB  
Test Date:2016-03-02

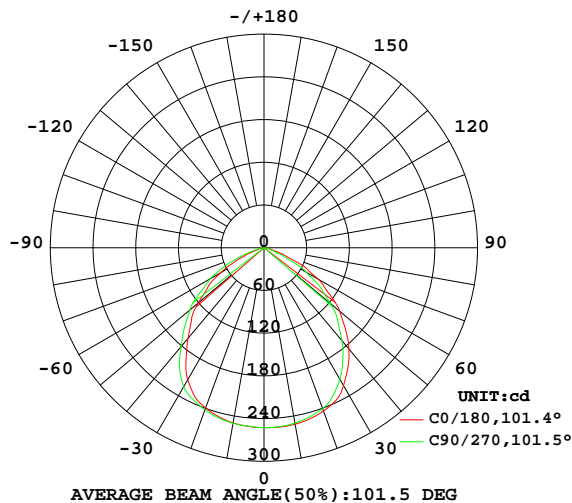
$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity:65.0%  
Test Distance:8.820m [K=1.0771]  
Remarks:

## LUMINAIRE PHOTOMETRIC TEST REPORT

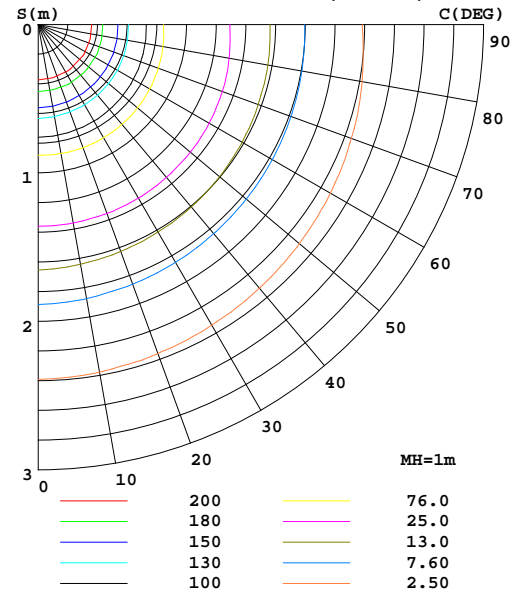
Test:U:12.00V I:0.5900A P:7.100W PF:0 Lamp Flux:605.687x1 lm		
NAME: Led Spot Light	TYPE:LED	WEIGHT:
DIM.: D50x52mm	SPEC.:	SERIAL No.:
MFR.: Shenzhen Centrix Electronics Co., Ltd.	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 85.31 lm/W			
MODEL	CT-4016-7	Imax(cd)	253.0	S/MH(C0/180)	1.29
NOMINAL POWER(W)	7	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	12	TOTAL FLUX(lm)	605.69	$\eta$ UP,DN(C0-180)	0.0,49.0
NOMINAL FLUX(lm)	605.687	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,51.0
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	12	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:TGB  
Test Date:2016-03-02

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity:65.0%  
Test Distance:8.820m [K=1.0771]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

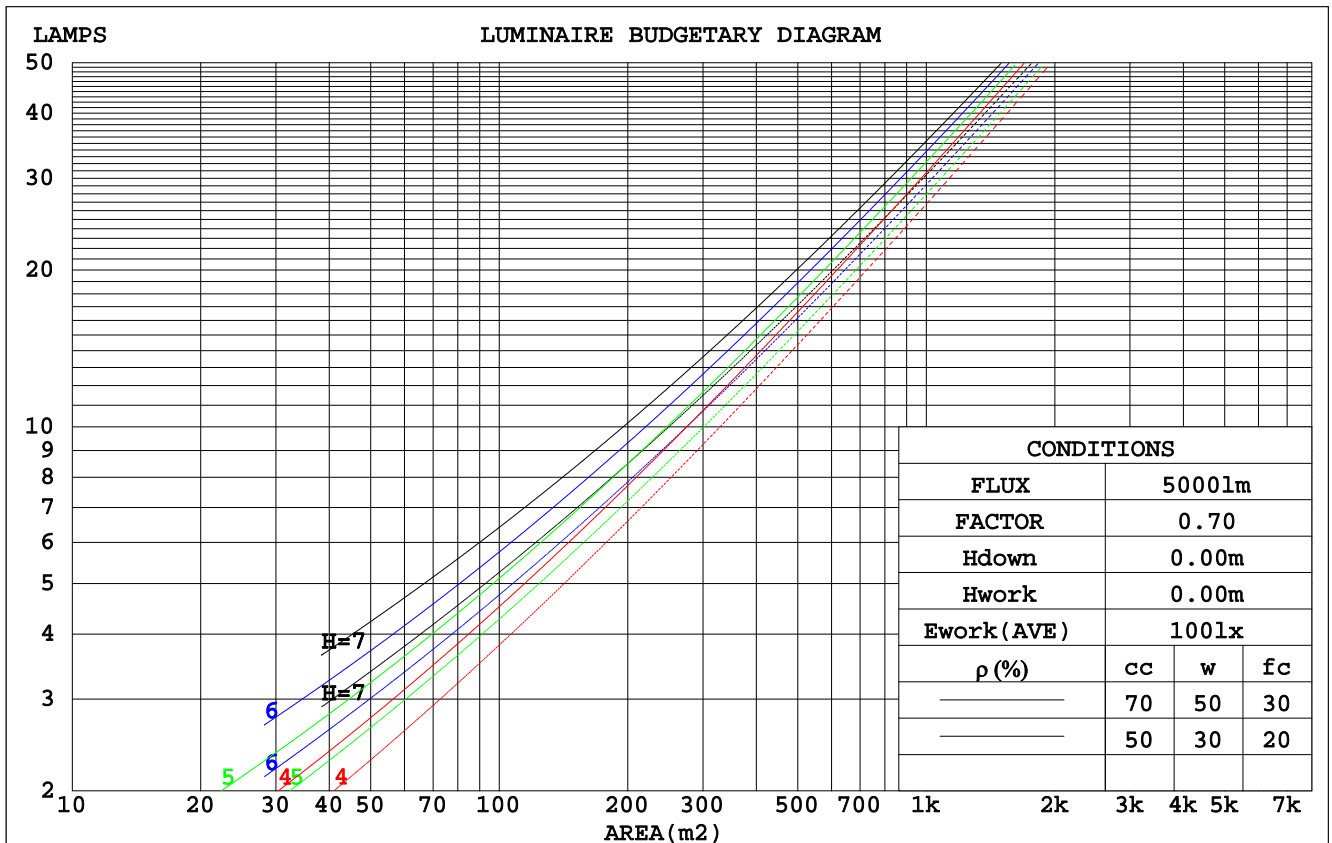
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
10	251.7	251.4	250.1	249.1	249.8	250.2	250.3	251.3	0- 10	24.02	24.02	3.97,3.97
20	244.1	242.8	240.4	238.8	239.5	241.3	242.4	244.2	10- 20	69.80	93.82	15.5,15.5
30	223.5	218.4	213.1	208.6	214.3	213.9	225.3	226.5	20- 30	106.9	200.7	33.1,33.1
40	185.5	183.6	170.3	173.7	166.3	181.1	180.9	190.1	30- 40	124.5	325.2	53.7,53.7
50	139.0	136.7	122.0	122.2	120.4	139.9	136.2	151.0	40- 50	121.2	446.4	73.7,73.7
60	87.07	76.12	68.81	60.66	69.83	71.08	87.39	89.96	50- 60	93.41	539.8	89.1,89.1
70	31.74	24.21	16.77	17.94	18.87	24.52	31.09	36.33	60- 70	49.11	588.9	97.2,97.2
80	7.057	6.331	4.446	4.055	4.674	6.518	7.367	9.044	70- 80	13.66	602.6	99.5,99.5
90	0.5256	0.2083	0.2462	0.2699	0.1941	0.1941	0.8427	1.553	80- 90	3.108	605.7	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		

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:TGB  
 Test Date:2016-03-02

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
 Humidity:65.0%  
 Test Distance:8.820m [K=1.0771]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.07	1.03	.00	1.04	1.01	.98	1.00	.97	.95	.96	.94	.92	.93	.91	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.84	.77	.71	.83	.76	.71	.80	.74	.69	.77	.72	.68	.75	.71	.67	.65
4.0	.75	.67	.61	.74	.67	.61	.72	.65	.60	.69	.64	.59	.67	.63	.59	.57
5.0	.68	.60	.53	.67	.59	.53	.65	.58	.53	.63	.57	.52	.61	.56	.51	.50
6.0	.61	.53	.47	.60	.53	.47	.59	.52	.46	.57	.51	.46	.56	.50	.46	.44
7.0	.56	.48	.42	.55	.47	.42	.54	.47	.41	.52	.46	.41	.51	.45	.41	.39
8.0	.51	.43	.37	.50	.43	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.35
9.0	.47	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.33	.43	.37	.33	.32
10.0	.43	.36	.31	.43	.36	.31	.42	.35	.31	.41	.35	.30	.40	.34	.30	.29



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: TGB  
 Test Date: 2016-03-02

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
 Humidity: 65.0%  
 Test Distance: 8.820m [K=1.0771]  
 Remarks:

## WEC AND CCEC

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	.258	.147	.047	.252	.143	.046	.238	.137	.044	.227	.131	.042	.216	.125	.040		
2.0	.252	.138	.042	.245	.135	.042	.234	.130	.040	.224	.125	.039	.214	.121	.038		
3.0	.239	.127	.038	.233	.125	.038	.223	.121	.037	.214	.117	.036	.206	.114	.035		
4.0	.225	.117	.034	.220	.115	.034	.211	.112	.033	.203	.109	.033	.195	.106	.032		
5.0	.211	.107	.031	.207	.106	.031	.199	.104	.030	.192	.101	.030	.185	.099	.030		
6.0	.198	.099	.028	.194	.098	.028	.187	.096	.028	.181	.094	.028	.175	.092	.027		
7.0	.186	.092	.026	.183	.091	.026	.176	.089	.026	.171	.087	.025	.165	.086	.025		
8.0	.175	.086	.024	.172	.085	.024	.167	.083	.024	.161	.082	.024	.156	.080	.023		
9.0	.165	.080	.022	.162	.079	.022	.157	.078	.022	.153	.077	.022	.148	.075	.022		
10.0	.156	.075	.021	.154	.074	.021	.149	.073	.021	.145	.072	.020	.141	.071	.020		

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	.177	.157	.138	.151	.134	.119	.103	.092	.082	.060	.054	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.136	.098	.068	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.151	.100	.062	.129	.087	.054	.089	.060	.038	.051	.035	.022	.017	.012	.007	
5.0	.144	.090	.050	.123	.078	.044	.085	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.137	.081	.041	.118	.070	.036	.081	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.131	.074	.035	.112	.064	.030	.078	.045	.022	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.107	.059	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.102	.055	.023	.071	.039	.016	.041	.023	.010	.013	.008	.003	
10.0	.114	.059	.023	.098	.052	.020	.068	.036	.014	.040	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: TGB  
 Test Date: 2016-03-02

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
 Humidity: 65.0%  
 Test Distance: 8.820m [K=1.0771]  
 Remarks:

### Uncorrected UGR Table

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	29.6	31.0	29.9	31.2	31.4	29.0	30.4	29.2	30.6	30.8
3H	30.2	31.5	30.5	31.7	31.9	29.2	30.5	29.5	30.7	30.9
4H	30.2	31.4	30.5	31.7	31.9	29.2	30.4	29.5	30.6	30.9
6H	30.2	31.3	30.5	31.6	31.9	29.1	30.3	29.4	30.5	30.8
8H	30.2	31.3	30.5	31.5	31.8	29.1	30.2	29.4	30.5	30.7
12H	30.1	31.2	30.5	31.5	31.8	29.0	30.1	29.4	30.4	30.7
4H 2H	29.9	31.1	30.2	31.3	31.6	29.3	30.5	29.6	30.7	31.0
3H	30.5	31.5	30.8	31.8	32.1	29.6	30.6	29.9	30.9	31.2
4H	30.5	31.5	30.9	31.8	32.1	29.6	30.6	30.0	30.9	31.2
6H	30.6	31.4	30.9	31.7	32.1	29.6	30.4	30.0	30.8	31.1
8H	30.6	31.3	31.0	31.7	32.1	29.6	30.3	30.0	30.7	31.1
12H	30.5	31.2	31.0	31.6	32.0	29.5	30.2	30.0	30.6	31.0
8H 4H	30.5	31.2	30.9	31.6	32.0	29.6	30.4	30.0	30.7	31.1
6H	30.5	31.2	31.0	31.6	32.0	29.6	30.2	30.0	30.6	31.1
8H	30.6	31.1	31.0	31.5	32.0	29.6	30.2	30.1	30.6	31.0
12H	30.6	31.1	31.0	31.5	32.0	29.6	30.1	30.1	30.5	31.0
12H 4H	30.4	31.1	30.9	31.5	31.9	29.5	30.3	30.0	30.6	31.0
6H	30.5	31.1	31.0	31.5	31.9	29.6	30.1	30.0	30.6	31.0
8H	30.5	31.0	31.0	31.5	31.9	29.6	30.1	30.1	30.5	31.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.6					+ 0.7 / - 0.7				
1.5H	+ 0.4 / - 0.5					+ 0.3 / - 0.7				
2.0H	+ 1.0 / - 1.0					+ 0.8 / - 1.3				

CIE Pub.117 Corrected 605.7 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.7)

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:TGB  
Test Date:2016-03-02

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity:65.0%  
Test Distance:8.820m [K=1.0771]  
Remarks:

### UTILIZATION FACTORS TABLE

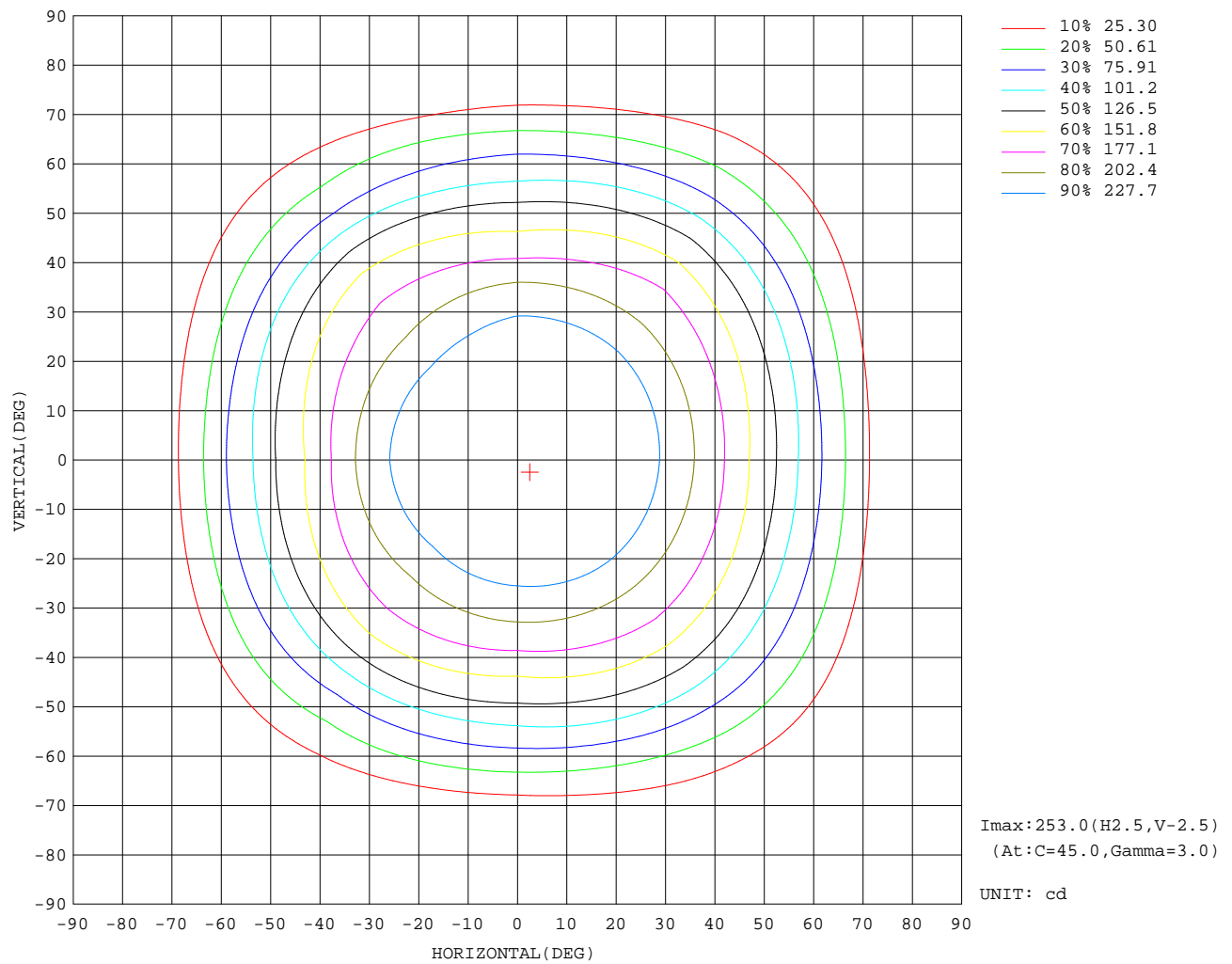
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	62	51	45	61	51	45	60	51	45	39
0.80	73	62	55	72	62	55	70	61	55	49
1.00	81	72	65	80	71	65	78	72	64	58
1.25	88	79	73	87	78	73	84	77	72	65
1.50	93	85	79	91	84	78	89	82	77	70
2.00	99	92	87	97	91	86	94	89	84	77
2.50	102	96	91	101	95	90	97	92	88	80
3.00	105	100	95	103	98	94	99	95	92	84
4.00	109	104	100	106	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended				SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: TGB  
 Test Date: 2016-03-02

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
 Humidity: 65.0%  
 Test Distance: 8.820m [K=1.0771]  
 Remarks:



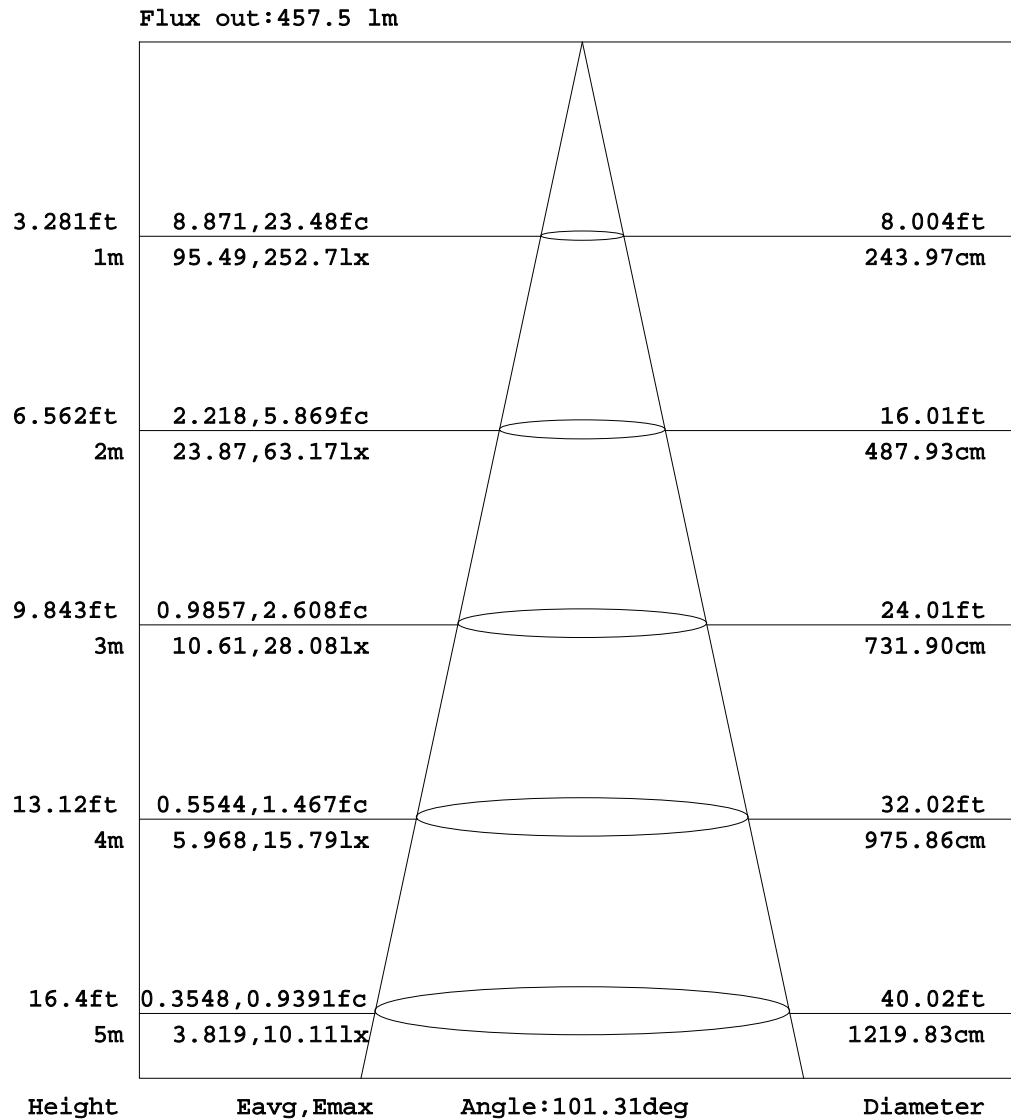
## ISOCANDELA DIAGRAM



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: TGB  
Test Date: 2016-03-02

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity: 65.0%  
Test Distance: 8.820m [K=1.0771]  
Remarks:

## AAI Figure

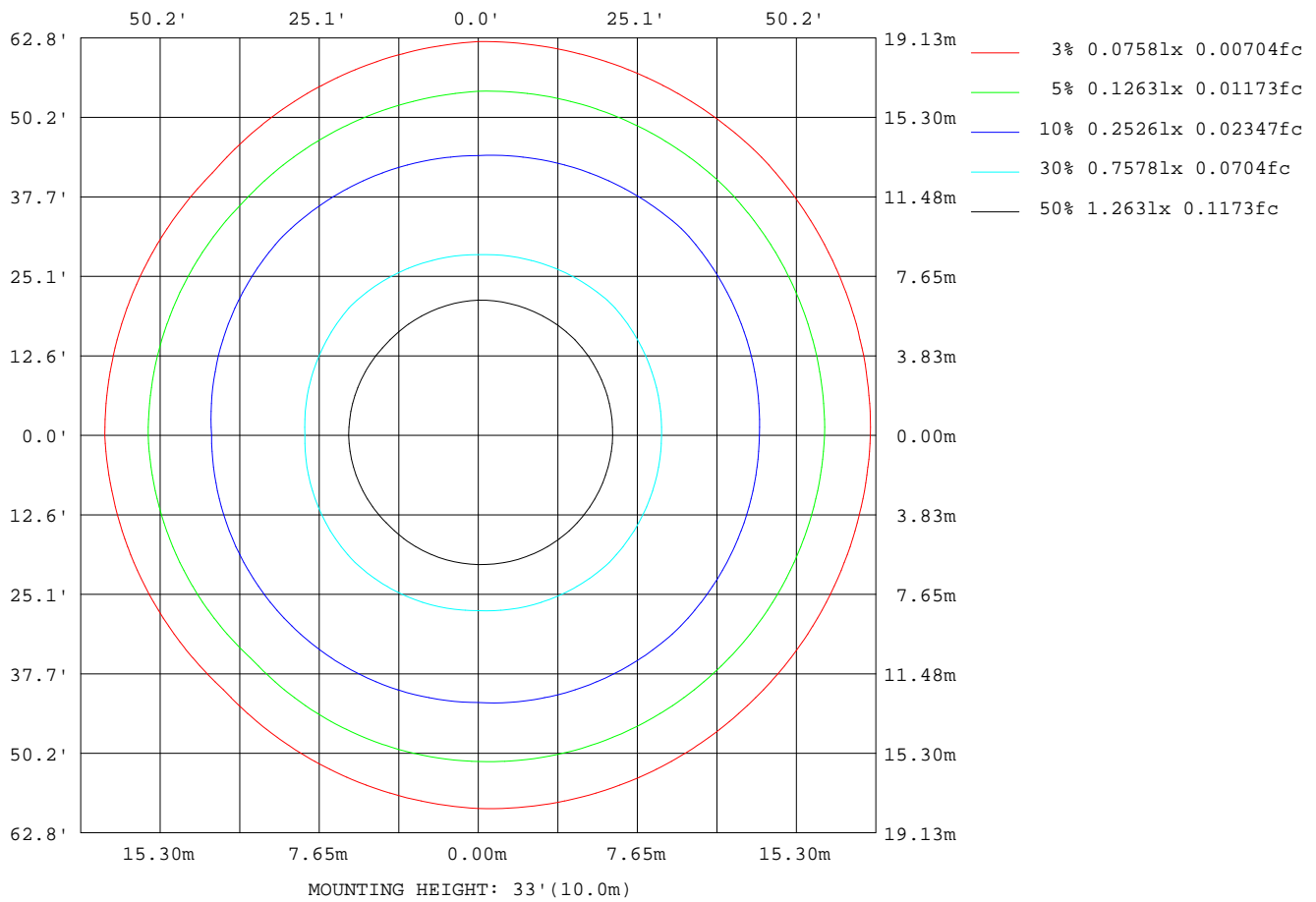


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: TGB  
Test Date: 2016-03-02

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity: 65.0%  
Test Distance: 8.820m [K=1.0771]  
Remarks:

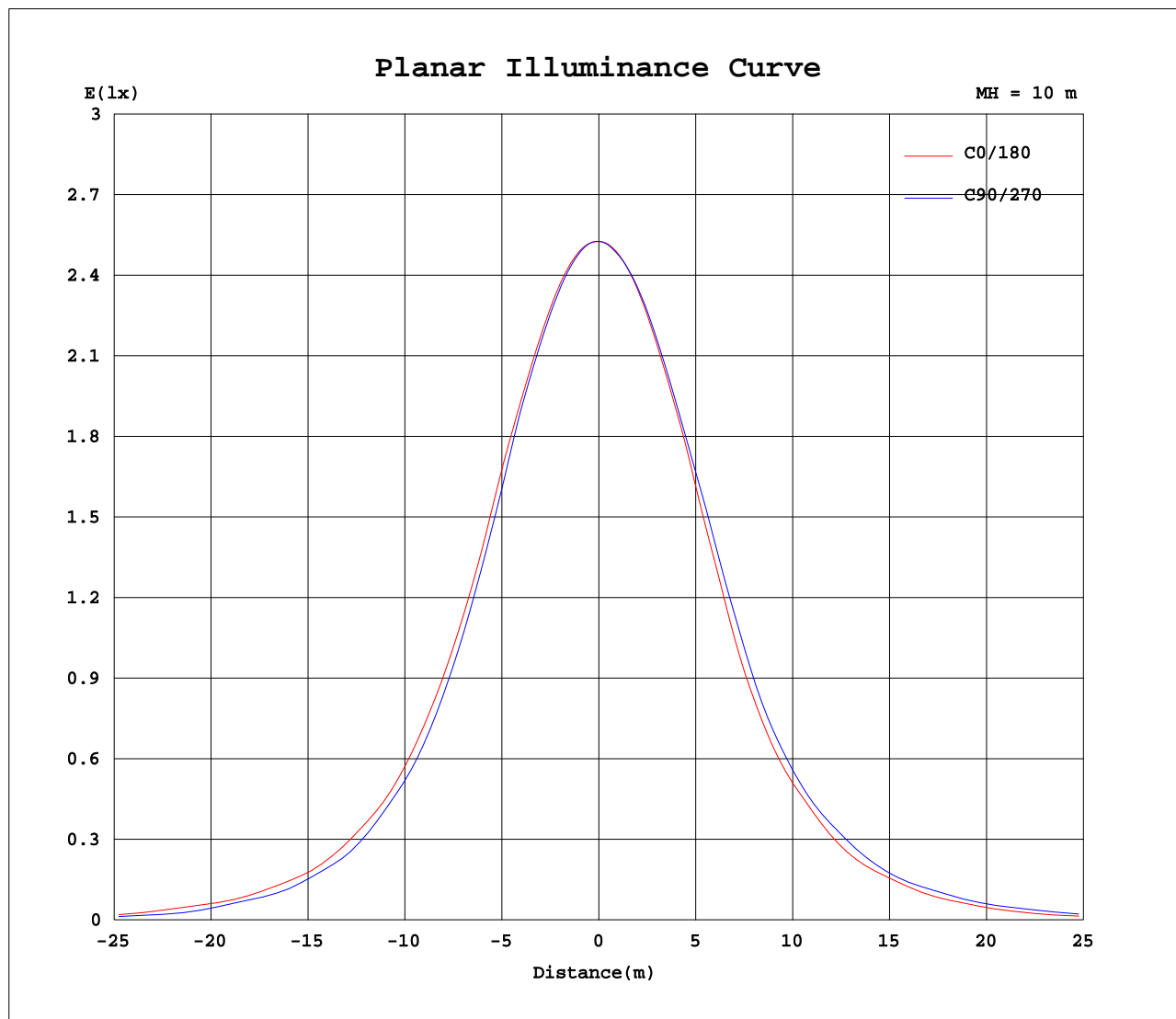
## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: TGB  
Test Date: 2016-03-02

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity: 65.0%  
Test Distance: 8.820m [K=1.0771]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: TGB  
Test Date: 2016-03-02

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
Humidity: 65.0%  
Test Distance: 8.820m [K=1.0771]  
Remarks:



## Photometric Data Table [cd]

G/C	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0
0.0	252.6	252.6	252.6	252.6	252.6	252.6	252.6	252.6
3.0	252.8	253.0	252.7	252.2	252.4	252.3	252.0	252.2
6.0	252.7	252.7	251.9	251.3	251.7	251.7	251.3	252.0
9.0	252.0	251.9	250.7	249.8	250.4	250.6	250.6	251.6
12.0	250.8	250.3	248.7	247.7	248.4	248.9	249.4	250.6
15.0	248.7	248.1	246.2	244.9	245.7	246.6	247.4	248.7
18.0	246.2	245.1	243.0	241.5	242.2	243.7	244.6	246.2
21.0	242.9	241.5	239.0	237.1	238.1	239.9	241.2	243.1
24.0	239.0	237.3	232.4	228.8	233.1	232.7	237.0	239.2
27.0	233.2	229.1	222.9	219.3	224.1	223.0	232.1	234.7
30.0	223.5	218.4	213.1	208.6	214.3	213.9	225.3	226.5
33.0	212.8	207.6	201.8	197.3	201.6	202.9	214.7	216.1
36.0	201.8	196.3	188.8	188.4	185.5	192.7	202.3	205.2
39.0	189.7	187.2	175.2	177.9	171.2	184.4	186.3	193.6
42.0	176.8	175.4	160.4	165.1	156.4	174.9	171.4	184.6
45.0	161.8	161.0	146.9	151.4	144.2	164.0	157.9	174.4
48.0	147.0	146.6	134.1	135.4	132.2	150.1	143.9	160.8
51.0	134.8	130.8	115.7	116.2	114.5	134.0	132.5	146.1
54.0	117.1	112.8	100.6	94.49	99.35	113.7	115.5	130.0
57.0	100.8	93.40	84.83	76.61	88.10	89.84	98.44	111.2
60.0	87.07	76.12	68.81	60.66	69.83	71.08	87.39	89.96
63.0	69.55	59.66	53.01	46.65	54.62	54.79	69.11	72.81
66.0	54.77	43.37	31.67	31.92	36.46	45.24	55.55	56.09
69.0	33.88	30.09	19.47	19.26	24.13	29.94	36.69	42.83
72.0	21.36	19.28	10.96	11.49	11.87	18.28	24.92	28.42
75.0	11.56	11.56	8.340	8.234	7.978	10.85	12.97	19.00
78.0	8.909	8.385	5.919	5.689	5.991	8.293	8.910	10.93
81.0	6.221	5.451	3.682	3.276	3.950	5.696	6.666	8.075
84.0	4.061	3.103	2.080	1.754	2.241	3.229	4.487	5.375
87.0	2.320	1.485	0.2463	0.2273	0.5381	1.707	2.389	3.006
90.0	0.5256	0.2083	0.2462	0.2699	0.1941	0.1941	0.8427	1.553

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: TGB  
 Test Date: 2016-03-02

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.266  
 Humidity: 65.0%  
 Test Distance: 8.820m [K=1.0771]  
 Remarks: