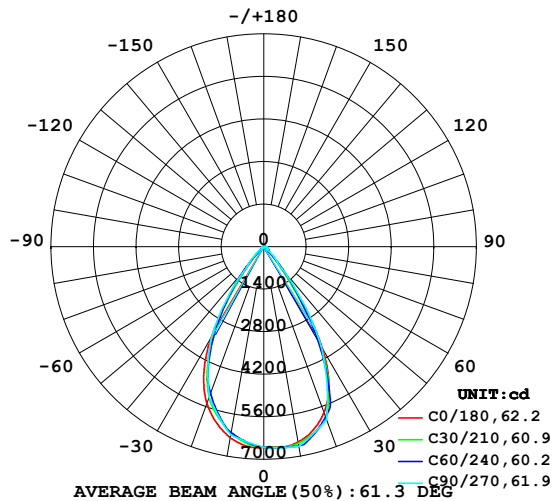


LUMINAIRE PHOTOMETRIC TEST REPORT

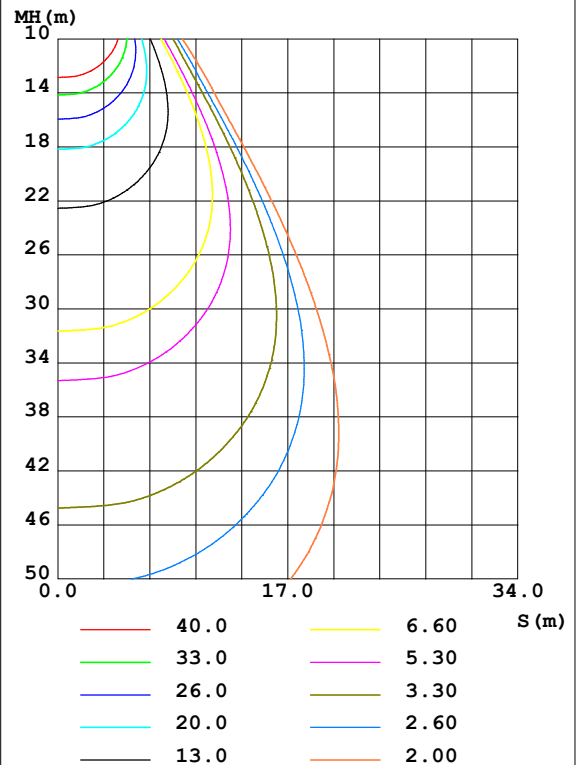
Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 124.40 lm/W			
MODEL	LHB-50W-6060	I _{max} (cd)	6679	S/MH (C0/180)	0.90
NOMINAL POWER (W)	50	LOR (%)	100.0	S/MH (C90/270)	0.91
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	6310.2	η UP, DN (C0-180)	0.0, 51.5
NOMINAL FLUX (lm)	6310.19	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 48.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.95

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity: 65.0%
 Test Distance: 7.290m [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
5	6614	6630	6640	6612	6588	6469	6447	6494	0- 5	157.3	157.3	2.49,2.49
10	6529	6609	6674	6496	6381	6198	6288	6328	5- 10	464.7	622.0	9.86,9.86
15	6260	6419	6361	6243	6007	5795	5773	6002	10- 15	742.8	1365	21.6,21.6
20	5806	5895	6048	5672	5479	5143	5259	5404	15- 20	961.8	2327	36.9,36.9
25	5085	5158	4915	4910	4692	4381	4354	4674	20- 25	1087	3414	54.1,54.1
30	3872	3776	3782	3572	3483	3281	3449	3556	25- 30	1051	4465	70.8,70.8
35	2054	2031	2287	1945	1909	1940	2174	2126	30- 35	818.0	5283	83.7,83.7
40	801.7	812.6	791.2	803.5	783.2	861.8	898.4	909.5	35- 40	471.0	5754	91.2,91.2
45	239.8	384.6	478.0	367.3	228.9	374.1	496.3	401.1	40- 45	211.1	5965	94.5,94.5
50	119.0	143.9	164.7	139.5	101.9	93.17	94.22	99.25	45- 50	87.57	6052	95.9,95.9
55	103.1	131.1	153.1	126.3	84.02	82.13	86.62	86.82	50- 55	49.87	6102	96.7,96.7
60	99.11	122.5	141.5	118.5	79.89	76.89	79.02	82.73	55- 60	47.12	6149	97.4,97.4
65	94.65	110.8	120.9	107.2	75.12	71.12	69.27	75.30	60- 65	46.42	6196	98.2,98.2
70	86.97	93.82	100.3	90.01	67.08	61.98	59.52	64.19	65- 70	42.31	6238	98.9,98.9
75	71.48	69.81	70.76	64.55	52.84	46.69	40.71	44.76	70- 75	34.72	6273	99.4,99.4
80	40.46	45.04	41.25	41.69	23.27	26.09	21.90	24.85	75- 80	23.91	6297	99.8,99.8
85	23.12	13.09	0	12.30	11.44	6.156	0	6.191	80- 85	11.81	6308	100,100
90	15.88	0	0	0	9.387	0	0	0	85- 90	1.826	6310	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 5964.6 lm

%lum = 94.5%

%lamp = 94.5%

Conical surface Flux(120deg): 6149.2 lm

%lum = 97.4%

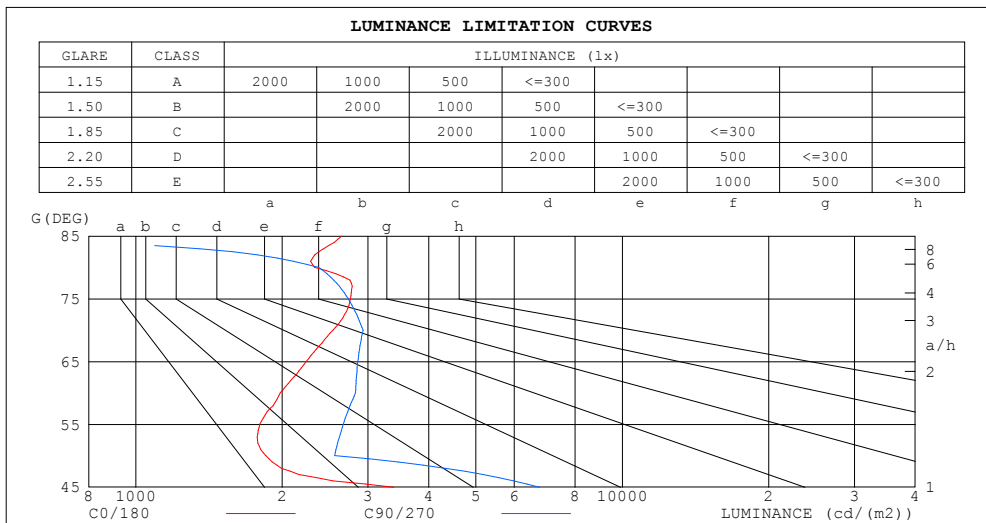
%lamp = 97.4%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.0%
 Test Distance:7.290m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2653	0
80	2330	2375
75	2762	2734
70	2543	2932
65	2240	2861
60	1982	2830
55	1798	2669
50	1851	2562
45	3392	6759

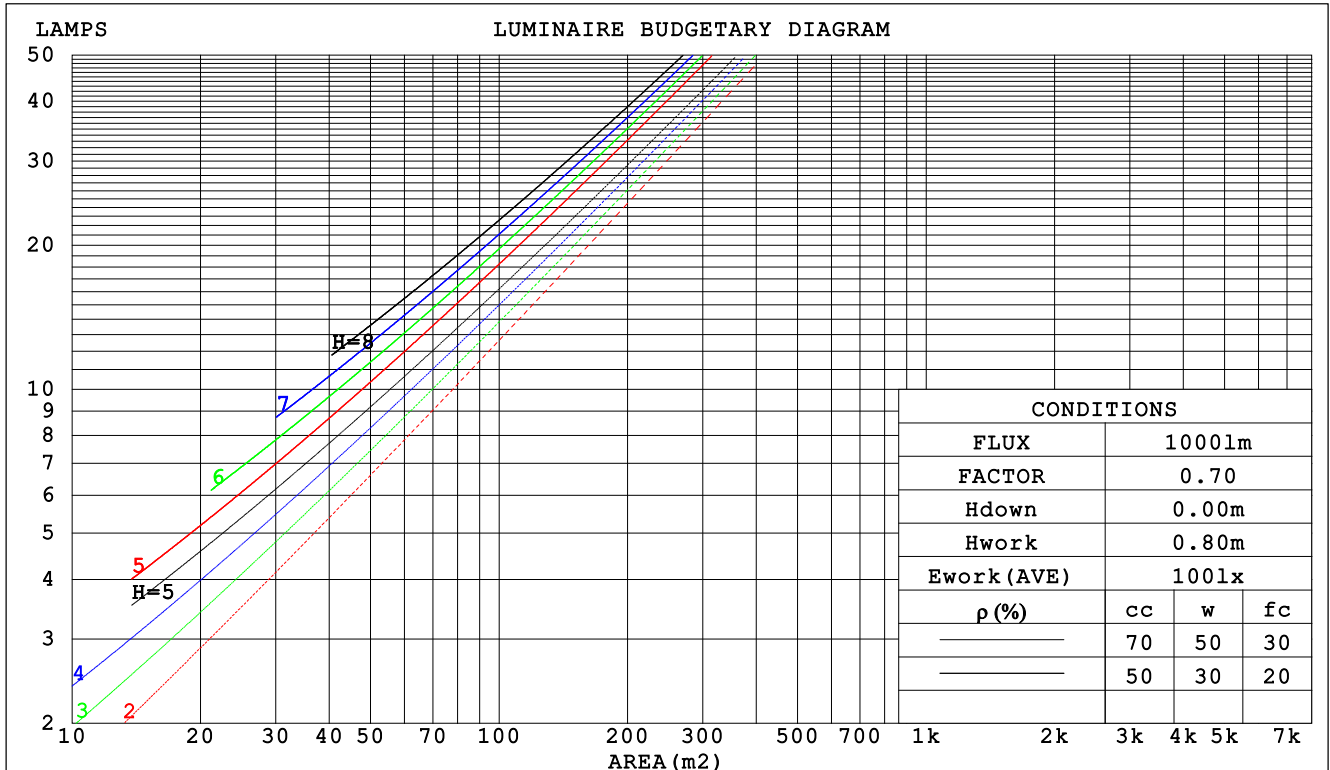
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	Coefficients of Utilization(CU)															
RCR:Room Cavity Ratio																
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	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.95	.93
2.0	1.02	.98	.94	1.01	.97	.93	.97	.94	.91	.94	.92	.89	.91	.89	.88	.86
3.0	.95	.90	.86	.94	.89	.85	.91	.87	.84	.89	.85	.82	.86	.84	.81	.80
4.0	.89	.83	.79	.88	.82	.78	.85	.81	.77	.83	.79	.76	.81	.78	.75	.74
5.0	.83	.77	.73	.82	.76	.72	.80	.75	.72	.79	.74	.71	.77	.73	.70	.69
6.0	.78	.72	.67	.77	.71	.67	.75	.70	.67	.74	.70	.66	.73	.69	.66	.64
7.0	.73	.67	.63	.72	.67	.62	.71	.66	.62	.70	.65	.62	.69	.65	.61	.60
8.0	.69	.63	.59	.68	.62	.58	.67	.62	.58	.66	.61	.58	.65	.61	.58	.56
9.0	.65	.59	.55	.64	.59	.55	.63	.58	.55	.63	.58	.54	.62	.57	.54	.53
10.0	.61	.56	.52	.61	.55	.52	.60	.55	.51	.59	.55	.51	.59	.54	.51	.50



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.0%
 Test Distance:7.290m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm					
NAME:			TYPE:LED		WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ			DIM.:		SERIAL No.:1
MFR.: EVERFINE			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	.187	.107	.034	.181	.103	.033	.168	.096	.031	.156	.090	.029	.146	.084	.027		
2.0	.179	.098	.030	.173	.095	.029	.162	.090	.028	.152	.085	.027	.143	.081	.026		
3.0	.169	.090	.027	.164	.088	.026	.155	.084	.026	.147	.080	.025	.139	.077	.024		
4.0	.160	.083	.025	.156	.082	.024	.148	.079	.023	.141	.076	.023	.134	.073	.022		
5.0	.152	.078	.022	.149	.076	.022	.142	.074	.022	.135	.071	.021	.129	.069	.021		
6.0	.145	.073	.021	.142	.072	.021	.136	.070	.020	.130	.068	.020	.125	.066	.020		
7.0	.138	.068	.019	.135	.067	.019	.130	.066	.019	.125	.064	.019	.120	.062	.018		
8.0	.132	.065	.018	.130	.064	.018	.125	.062	.018	.120	.061	.018	.116	.060	.017		
9.0	.126	.061	.017	.124	.061	.017	.120	.059	.017	.116	.058	.017	.112	.057	.016		
10.0	.121	.058	.016	.119	.058	.016	.115	.056	.016	.112	.055	.016	.108	.054	.016		

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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.135	.114	.097	.092	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.072	.116	.086	.062	.080	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.109	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.071	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.113	.071	.041	.097	.061	.036	.067	.043	.026	.039	.025	.015	.013	.008	.005	
8.0	.107	.065	.036	.092	.056	.031	.064	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.102	.059	.031	.088	.052	.027	.061	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.097	.055	.027	.084	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm										
NAME:					TYPE:LED			WEIGHT:		
SPEC.:C470SP-Q2-P-03A 230V50HZ					DIM.:			SERIAL No.:1		
MFR.: EVERFINE					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	14.8	15.7	15.0	15.9	16.1	15.4	16.4	15.7	16.6	16.8
3H	15.0	15.9	15.3	16.1	16.3	15.8	16.7	16.0	16.9	17.1
4H	15.2	16.1	15.5	16.3	16.5	15.9	16.8	16.2	17.0	17.2
6H	15.4	16.2	15.7	16.4	16.7	16.1	16.9	16.4	17.1	17.4
8H	15.4	16.2	15.8	16.5	16.7	16.1	16.9	16.4	17.1	17.4
12H	15.5	16.2	15.8	16.5	16.8	16.1	16.8	16.4	17.1	17.3
4H 2H	14.7	15.6	15.0	15.8	16.0	15.4	16.2	15.7	16.4	16.7
3H	15.1	15.9	15.5	16.1	16.4	15.9	16.6	16.2	16.9	17.2
4H	15.4	16.1	15.8	16.4	16.7	16.2	16.9	16.5	17.2	17.5
6H	15.7	16.3	16.1	16.7	17.0	16.5	17.0	16.8	17.4	17.7
8H	15.8	16.4	16.2	16.7	17.1	16.5	17.0	16.9	17.4	17.8
12H	15.9	16.4	16.3	16.8	17.2	16.5	17.0	16.9	17.3	17.7
8H 4H	15.6	16.1	16.0	16.5	16.8	16.3	16.8	16.7	17.2	17.5
6H	16.0	16.4	16.4	16.8	17.2	16.6	17.1	17.1	17.5	17.9
8H	16.2	16.6	16.6	17.0	17.4	16.7	17.1	17.2	17.5	18.0
12H	16.3	16.7	16.8	17.1	17.6	16.7	17.0	17.2	17.5	17.9
12H 4H	15.6	16.1	16.0	16.4	16.8	16.2	16.7	16.7	17.1	17.5
6H	16.0	16.4	16.5	16.8	17.3	16.7	17.0	17.1	17.5	17.9
8H	16.2	16.6	16.7	17.0	17.5	16.8	17.1	17.2	17.5	18.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.8 / - 1.6					+ 2.0 / - 1.9				
1.5H	+ 3.7 / - 1.5					+ 3.8 / - 2.0				
2.0H	+ 0.6 / - 0.4					+ 2.1 / - 0.6				

CIE Pub.117 Corrected 6310 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.4)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

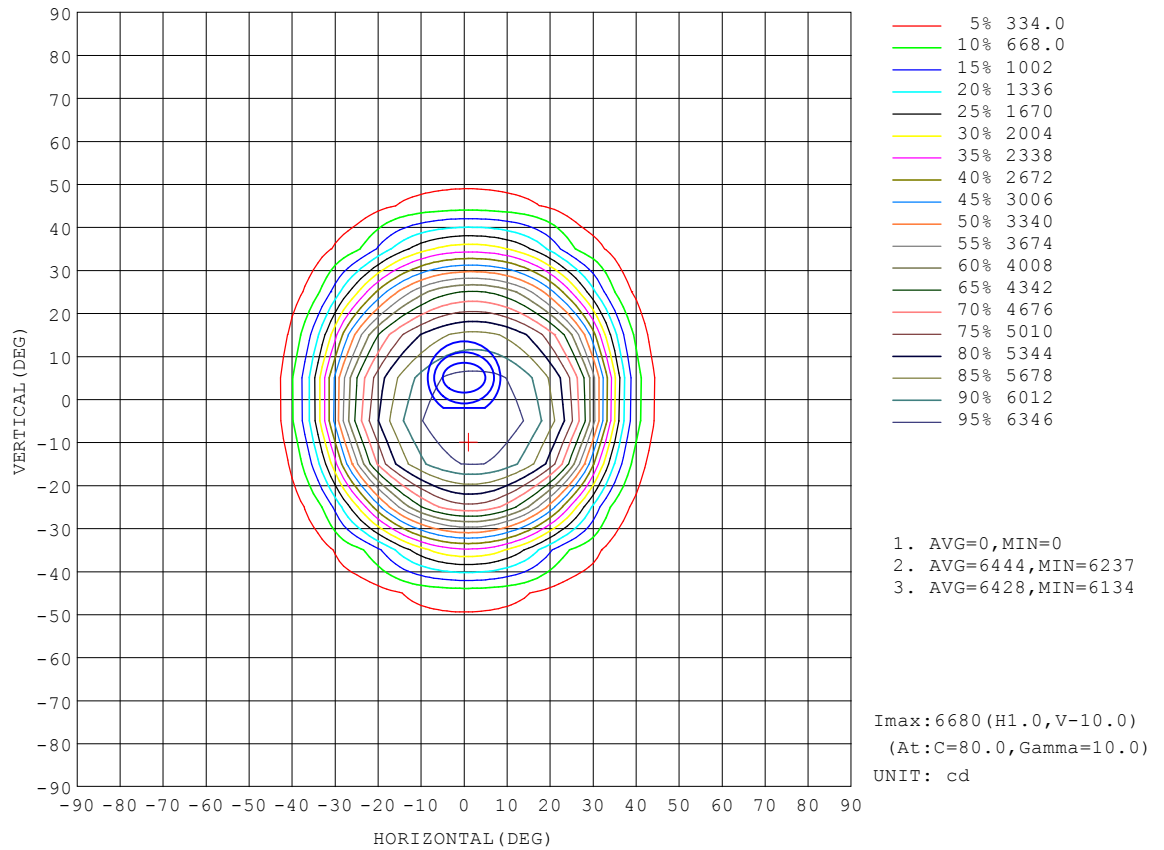
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	80	76	86	79	76	85	79	75	72
0.80	94	88	84	93	87	84	92	87	83	79
1.00	98	92	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	101	98	95	90
2.00	108	103	100	106	102	99	104	100	98	92
2.50	110	106	102	108	104	102	105	102	100	94
3.00	111	108	105	109	106	104	106	104	102	95
4.00	113	110	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		

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

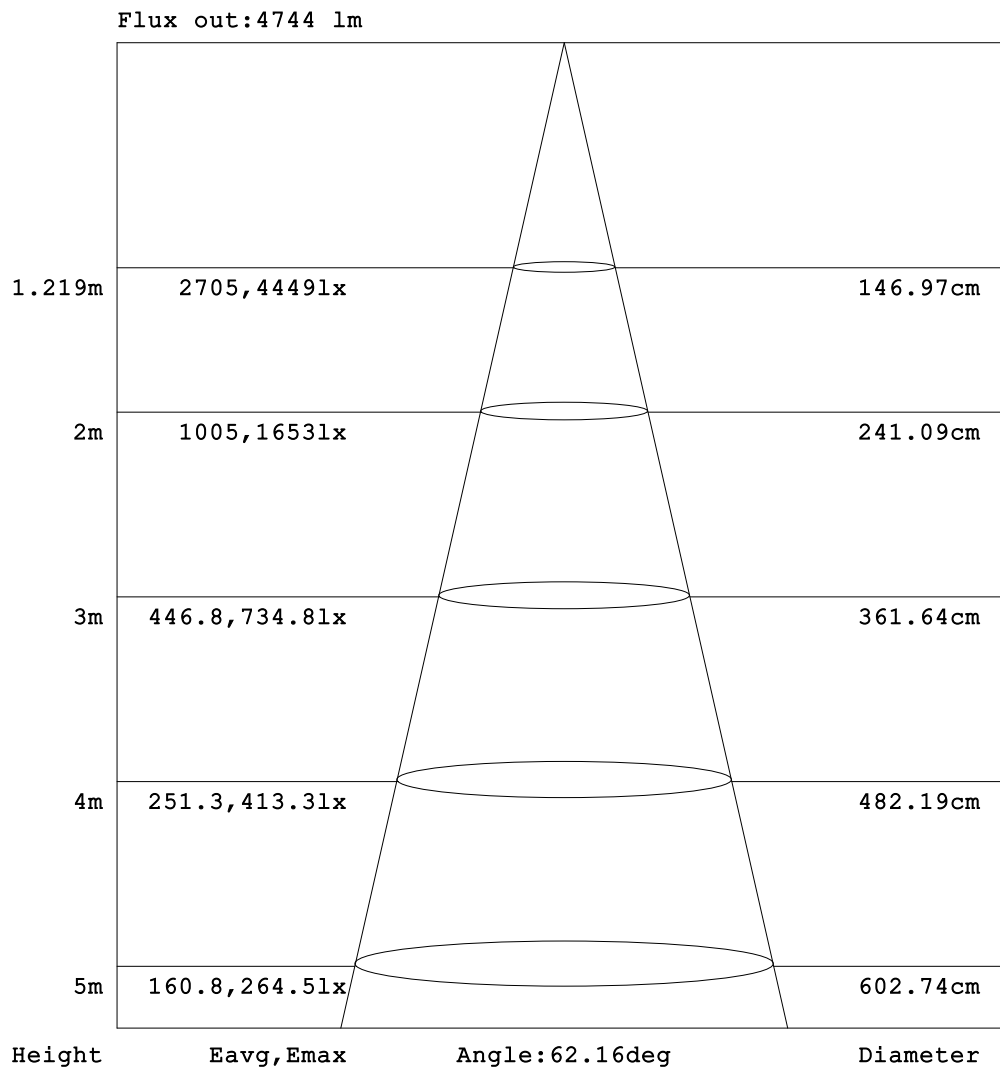


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



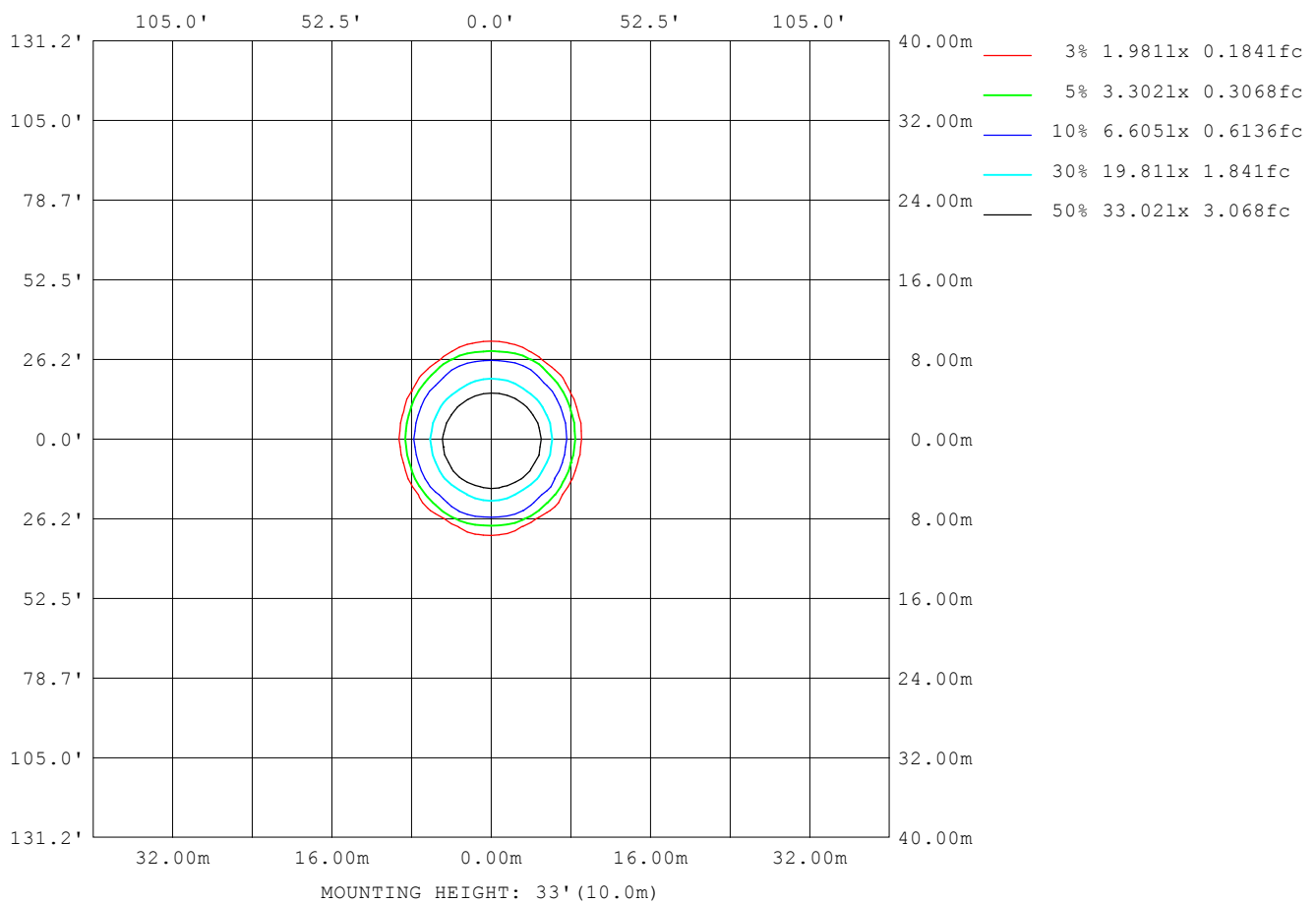
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.0%
 Test Distance:7.290m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.4V I:0.2357A P:50.72W PF:0.9765 Lamp Flux:6310.19x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

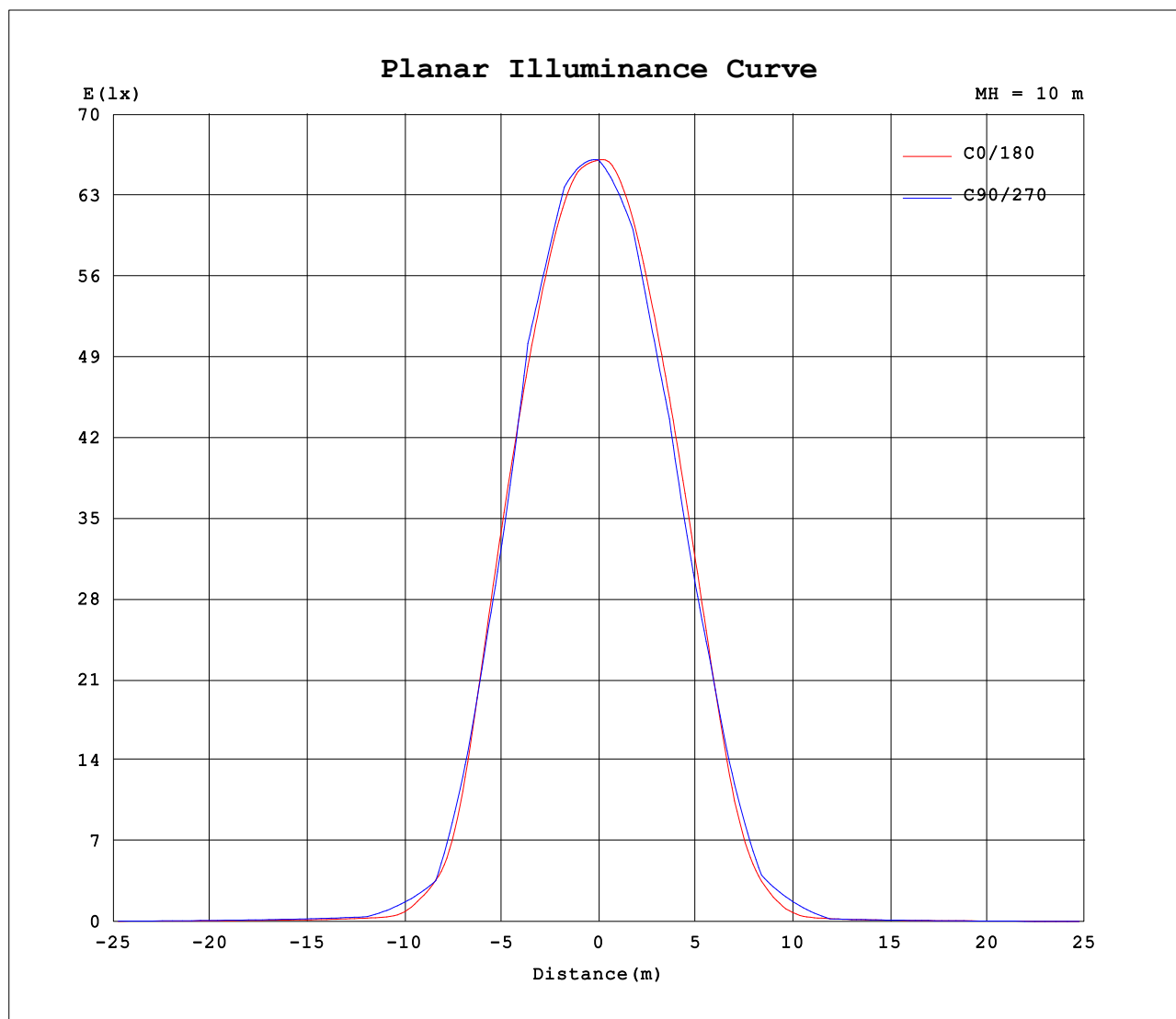
AvgL	cd/m2
L_0~180 (65) av	2009
L_0~180 (75) av	2402
L_0~180 (85) av	1982
L_90~270 (65) av	2250
L_90~270 (75) av	2153
L_90~270 (85) av	0
L_45 (65) av	2156
L_45 (75) av	2181
L_45 (85) av	1082

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.0%
 Test Distance:7.290m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-02-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 7.290m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

```

```

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Remarks:

```

```

γ Range: 0 - 90DEG
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Humidity:65.0%
Test Distance:7.290m [K=1.0000]
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```

```

γ Range: 0 - 90DEG
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Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

```