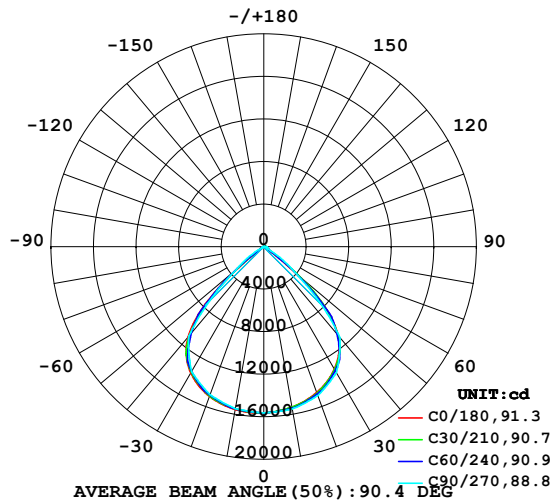


LUMINAIRE PHOTOMETRIC TEST REPORT

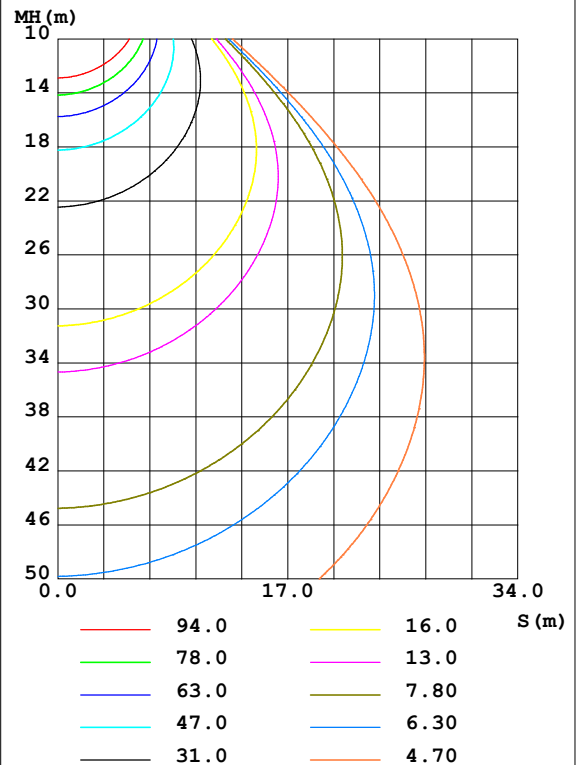
Test:U:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 132.40 lm/W			
MODEL	LHB-200W-9090	Imax(cd)	15652	S/MH(C0/180)	1.29
NOMINAL POWER(W)	200	LOR(%)	99.7	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	27552	η UP,DN(C0-180)	0.0,50.6
NOMINAL FLUX(lm)	27648	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	99.7	CIBSE SHR MAX	1.35

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: 2017-02-14

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	1553	1552	1557	1560	1565	1559	1554	1550	0- 5	372.7	372.7	1.35,1.35
10	1533	1536	1550	1551	1555	1548	1545	1533	5- 10	1109	1481	5.38,5.36
15	1501	1511	1520	1532	1533	1527	1513	1506	10- 15	1815	3296	12,11.9
20	1459	1466	1490	1493	1498	1486	1481	1460	15- 20	2468	5764	20.9,20.8
25	1403	1414	1429	1445	1446	1436	1420	1406	20- 25	3045	8809	32,31.9
30	1329	1338	1367	1370	1372	1361	1358	1330	25- 30	3513	12323	44.7,44.6
35	1231	1237	1242	1262	1269	1251	1228	1227	30- 35	3830	16153	58.6,58.4
40	1086	1095	1117	1104	1106	1089	1098	1081	35- 40	3899	20052	72.8,72.5
45	842.0	807.1	754.9	774.6	814.7	746.6	719.3	780.4	40- 45	3519	23571	85.6,85.3
50	425.8	446.8	392.7	367.7	304.8	327.4	340.3	407.9	45- 50	2373	25944	94.2,93.8
55	54.78	169.0	217.0	127.1	32.60	98.99	180.5	137.7	50- 55	916.2	26860	97.5,97.2
60	24.62	38.76	41.28	35.78	18.07	18.07	20.74	19.05	55- 60	270.2	27131	98.5,98.1
65	19.01	31.80	34.79	30.16	12.89	12.99	15.44	14.14	60- 65	120.4	27251	98.9,98.6
70	15.25	26.65	28.30	25.72	9.442	9.419	10.15	10.56	65- 70	97.52	27349	99.3,98.9
75	14.21	22.46	24.07	21.72	9.000	6.807	7.907	7.667	70- 75	82.16	27431	99.6,99.2
80	11.59	18.47	19.85	17.74	6.410	4.927	5.666	5.481	75- 80	69.04	27500	99.8,99.5
85	8.436	6.633	0	6.329	3.815	1.591	0	1.756	80- 85	44.40	27544	100,99.6
90	7.112	0	0	0	5.505	0	0	0	85- 90	8.328	27552	100,99.7
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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 23571 lm

%lum = 85.6%

%lamp = 85.3%

Conical surface Flux(120deg): 27131 lm

%lum = 98.5%

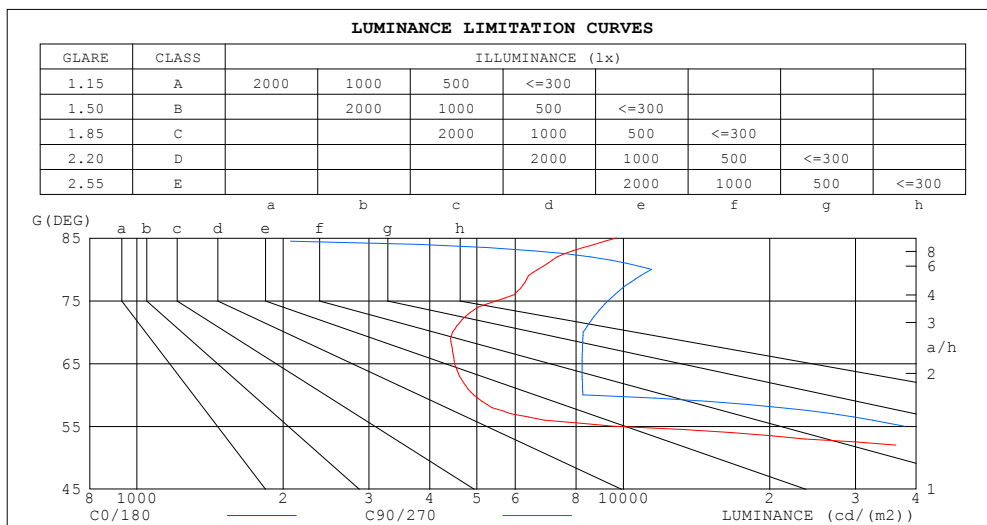
%lamp = 98.1%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 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	9679	0
80	6674	11433
75	5490	9302
70	4459	8273
65	4498	8231
60	4923	8255
55	9550	37835
50	66246	61101
45	119076	106756

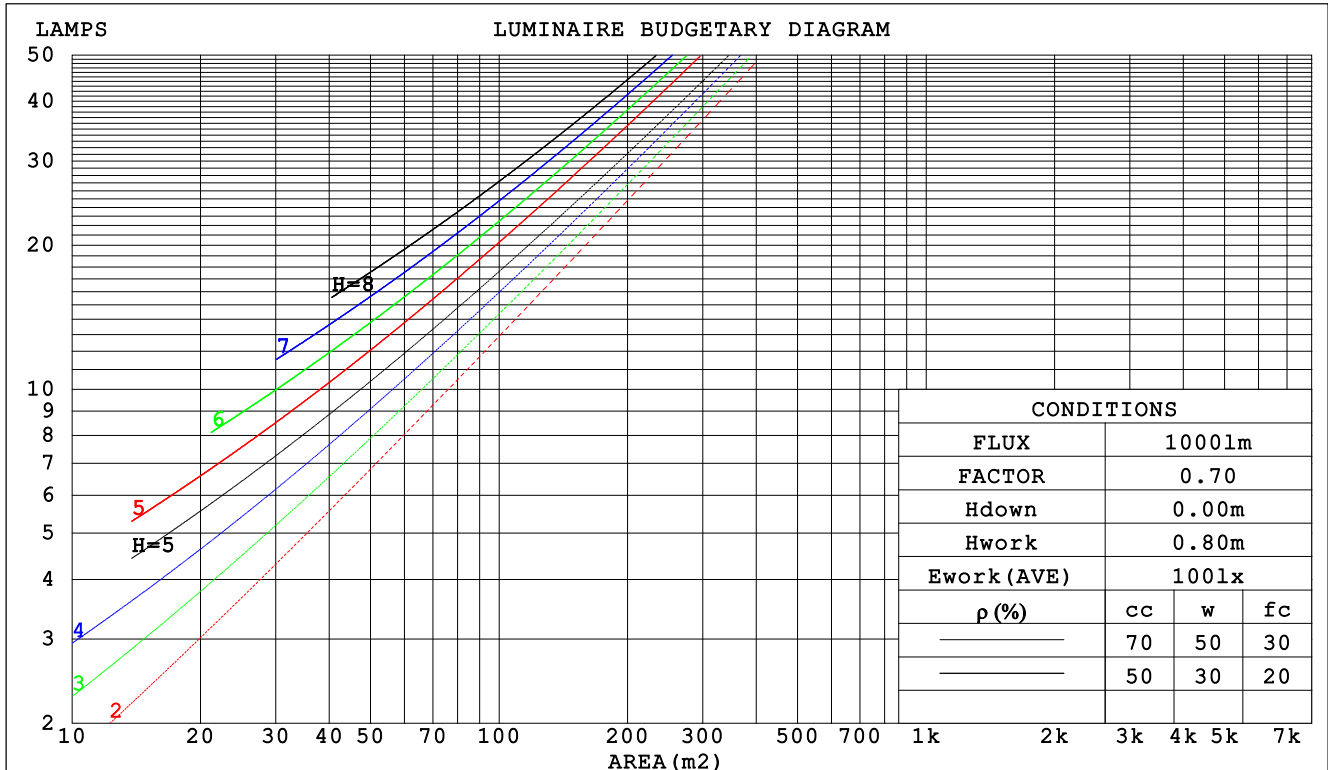
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 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	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	.00
1.0	1.09	1.06	1.03	1.06	1.04	1.01	1.02	1.00	.98	.99	.97	.95	.95	.94	.93	.91
2.0	.99	.94	.90	.97	.93	.89	.94	.90	.87	.91	.88	.85	.88	.86	.83	.82
3.0	.90	.84	.80	.89	.83	.79	.86	.81	.78	.84	.80	.76	.81	.78	.75	.73
4.0	.83	.76	.71	.81	.75	.70	.79	.74	.69	.77	.72	.69	.75	.71	.68	.66
5.0	.76	.69	.63	.75	.68	.63	.73	.67	.62	.71	.66	.62	.69	.65	.61	.59
6.0	.69	.62	.57	.68	.62	.57	.67	.61	.56	.65	.60	.56	.64	.59	.55	.54
7.0	.64	.57	.52	.63	.56	.51	.62	.56	.51	.60	.55	.51	.59	.54	.50	.49
8.0	.59	.52	.47	.58	.51	.47	.57	.51	.47	.56	.50	.46	.55	.50	.46	.44
9.0	.55	.48	.43	.54	.47	.43	.53	.47	.43	.52	.46	.42	.51	.46	.42	.41
10.0	.51	.44	.39	.50	.44	.39	.49	.43	.39	.48	.43	.39	.48	.42	.39	.37



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 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	.211	.120	.038	.204	.116	.037	.191	.110	.035	.180	.104	.033	.169	.098	.032		
2.0	.205	.112	.035	.199	.110	.034	.189	.105	.033	.179	.100	.031	.169	.096	.030		
3.0	.197	.105	.031	.192	.103	.031	.183	.099	.030	.174	.095	.029	.166	.092	.028		
4.0	.188	.098	.029	.184	.096	.028	.175	.093	.028	.168	.090	.027	.161	.087	.027		
5.0	.179	.091	.026	.175	.090	.026	.168	.088	.026	.161	.085	.025	.155	.083	.025		
6.0	.171	.086	.025	.167	.085	.024	.161	.082	.024	.155	.080	.024	.149	.079	.023		
7.0	.163	.080	.023	.160	.080	.023	.154	.078	.022	.148	.076	.022	.143	.074	.022		
8.0	.155	.076	.021	.152	.075	.021	.147	.073	.021	.142	.072	.021	.138	.071	.021		
9.0	.148	.072	.020	.145	.071	.020	.141	.070	.020	.136	.068	.020	.132	.067	.019		
10.0	.141	.068	.019	.139	.067	.019	.135	.066	.019	.131	.065	.018	.127	.064	.018		

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	.162	.162	.162	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.173	.156	.142	.148	.134	.122	.101	.092	.084	.058	.053	.049	.019	.017	.016	
2.0	.160	.132	.108	.137	.114	.093	.094	.079	.065	.054	.046	.038	.017	.015	.012	
3.0	.150	.113	.084	.129	.098	.073	.088	.068	.051	.051	.040	.030	.016	.013	.010	
4.0	.141	.099	.067	.121	.086	.058	.083	.060	.041	.048	.035	.024	.016	.011	.008	
5.0	.134	.088	.054	.115	.076	.047	.079	.053	.033	.046	.031	.020	.015	.010	.007	
6.0	.128	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.122	.072	.038	.105	.063	.033	.072	.044	.023	.042	.026	.014	.014	.008	.005	
8.0	.116	.067	.032	.100	.058	.028	.069	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.111	.062	.028	.096	.053	.025	.066	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.106	.057	.025	.092	.050	.022	.064	.035	.015	.037	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 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	25.6	26.8	25.9	27.0	27.2	25.7	26.9	25.9	27.0	27.2
3H	25.4	26.5	25.7	26.7	27.0	25.5	26.6	25.8	26.8	27.0
4H	25.4	26.4	25.7	26.6	26.9	25.5	26.5	25.8	26.7	27.0
6H	25.3	26.2	25.6	26.5	26.8	25.4	26.4	25.8	26.7	26.9
8H	25.3	26.2	25.6	26.4	26.7	25.4	26.3	25.7	26.6	26.9
12H	25.2	26.1	25.6	26.4	26.7	25.4	26.3	25.7	26.5	26.8
4H 2H	25.4	26.4	25.7	26.6	26.9	25.4	26.4	25.7	26.7	26.9
3H	25.2	26.1	25.6	26.4	26.7	25.3	26.2	25.6	26.5	26.7
4H	25.2	26.0	25.5	26.3	26.6	25.3	26.1	25.7	26.4	26.7
6H	25.1	25.8	25.5	26.2	26.5	25.3	26.0	25.7	26.3	26.7
8H	25.1	25.7	25.5	26.1	26.5	25.3	25.9	25.7	26.3	26.7
12H	25.1	25.7	25.5	26.1	26.5	25.3	25.8	25.7	26.2	26.6
8H 4H	25.1	25.7	25.5	26.1	26.4	25.2	25.8	25.6	26.2	26.6
6H	25.1	25.6	25.5	26.0	26.4	25.3	25.8	25.7	26.2	26.6
8H	25.1	25.5	25.5	26.0	26.4	25.3	25.7	25.7	26.2	26.6
12H	25.1	25.5	25.6	25.9	26.4	25.2	25.6	25.7	26.1	26.5
12H 4H	25.0	25.6	25.5	26.0	26.4	25.2	25.7	25.6	26.1	26.5
6H	25.0	25.5	25.5	25.9	26.4	25.2	25.7	25.7	26.1	26.6
8H	25.1	25.5	25.6	25.9	26.4	25.3	25.7	25.7	26.1	26.6
Variations with the observer position at spacings:										
S = 1.0H	+ 2.6 / - 7.4					+ 2.3 / - 4.6				
1.5H	+ 1.9 / - 7.2					+ 2.0 / - 7.1				
2.0H	+ 5.9 / - 7.3					+ 5.0 / - 6.1				

CIE Pub.117 Corrected 27648 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.5)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

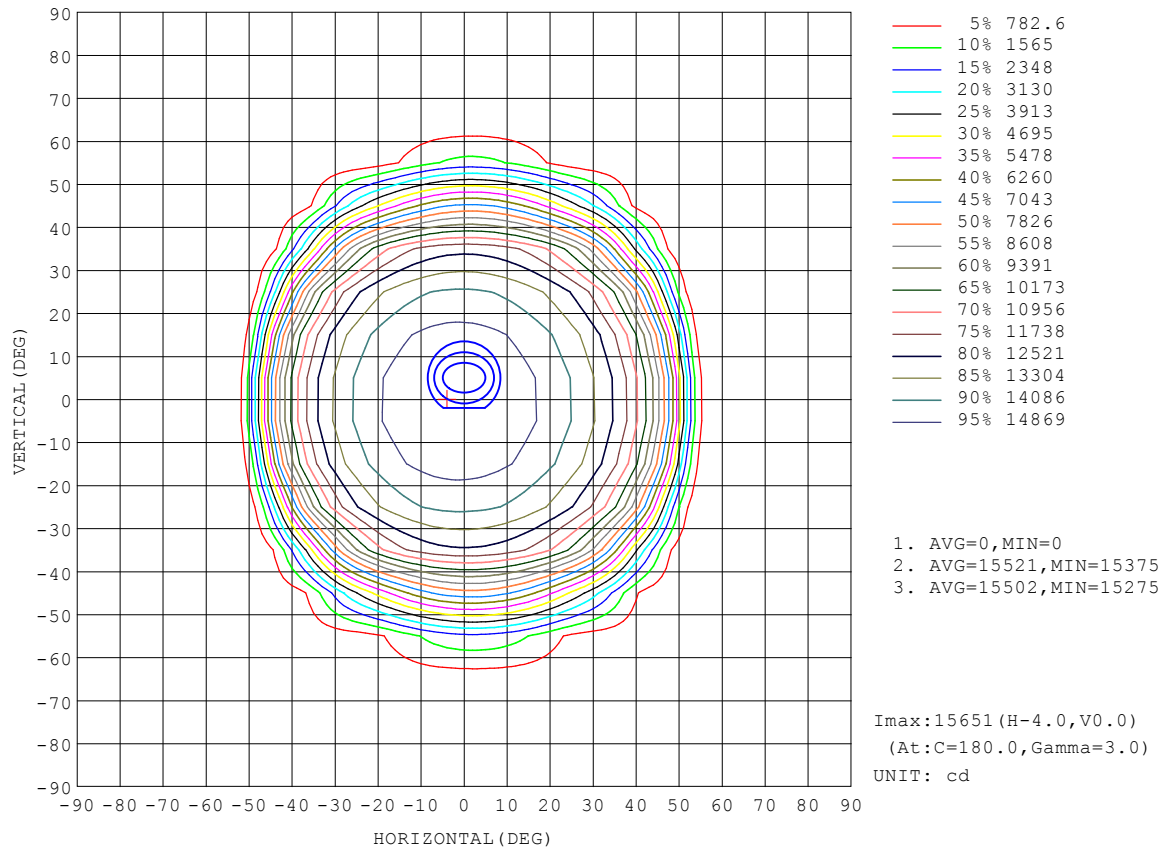
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	74	65	60	73	65	60	72	65	60	55
0.80	84	75	70	83	75	70	81	74	70	65
1.00	91	83	78	90	83	78	88	83	77	72
1.25	96	89	85	95	89	84	93	88	84	78
1.50	100	94	89	99	93	89	96	91	88	82
2.00	104	99	95	103	98	94	100	96	93	87
2.50	107	102	98	105	100	97	102	98	95	89
3.00	109	104	101	107	103	100	103	100	98	91
4.00	111	107	104	109	106	103	105	103	100	93
5.00	112	109	107	110	107	105	106	104	102	94
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:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

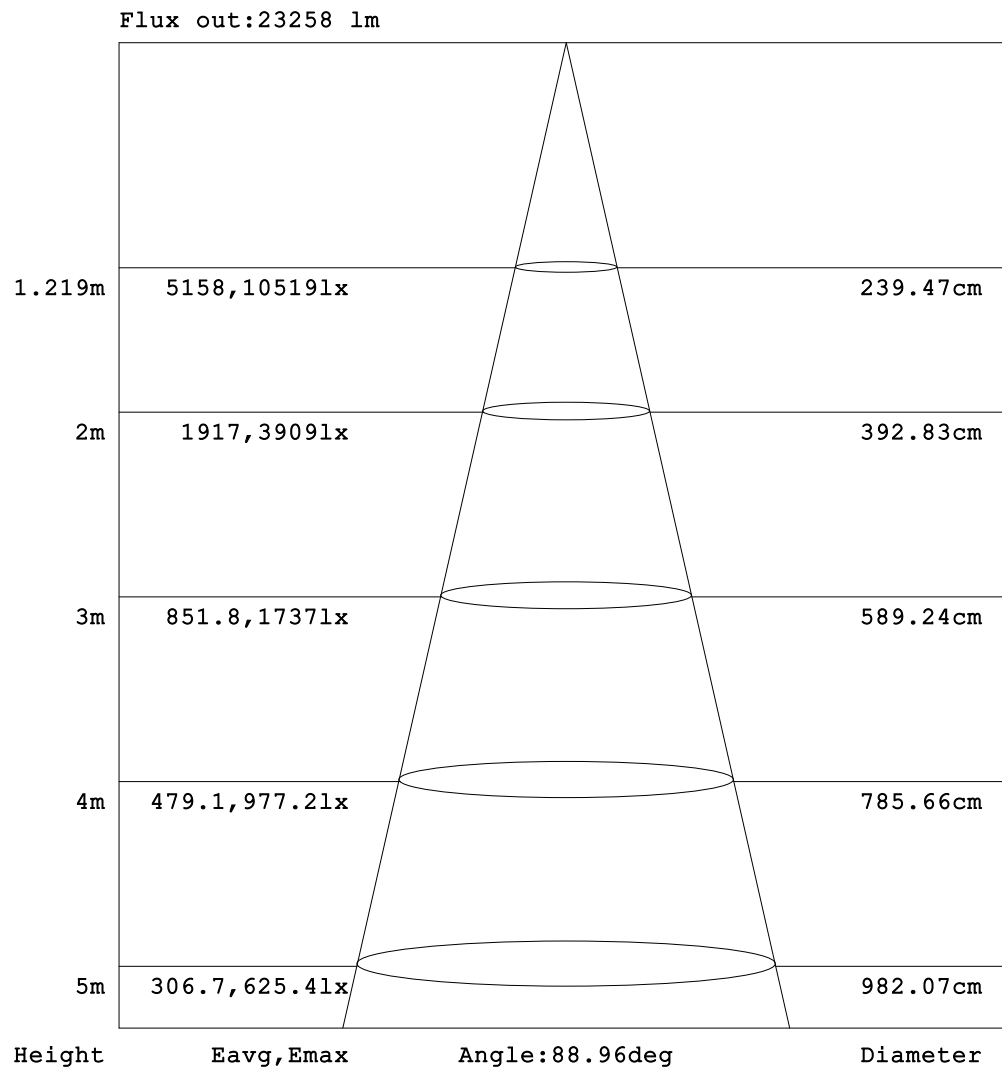


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



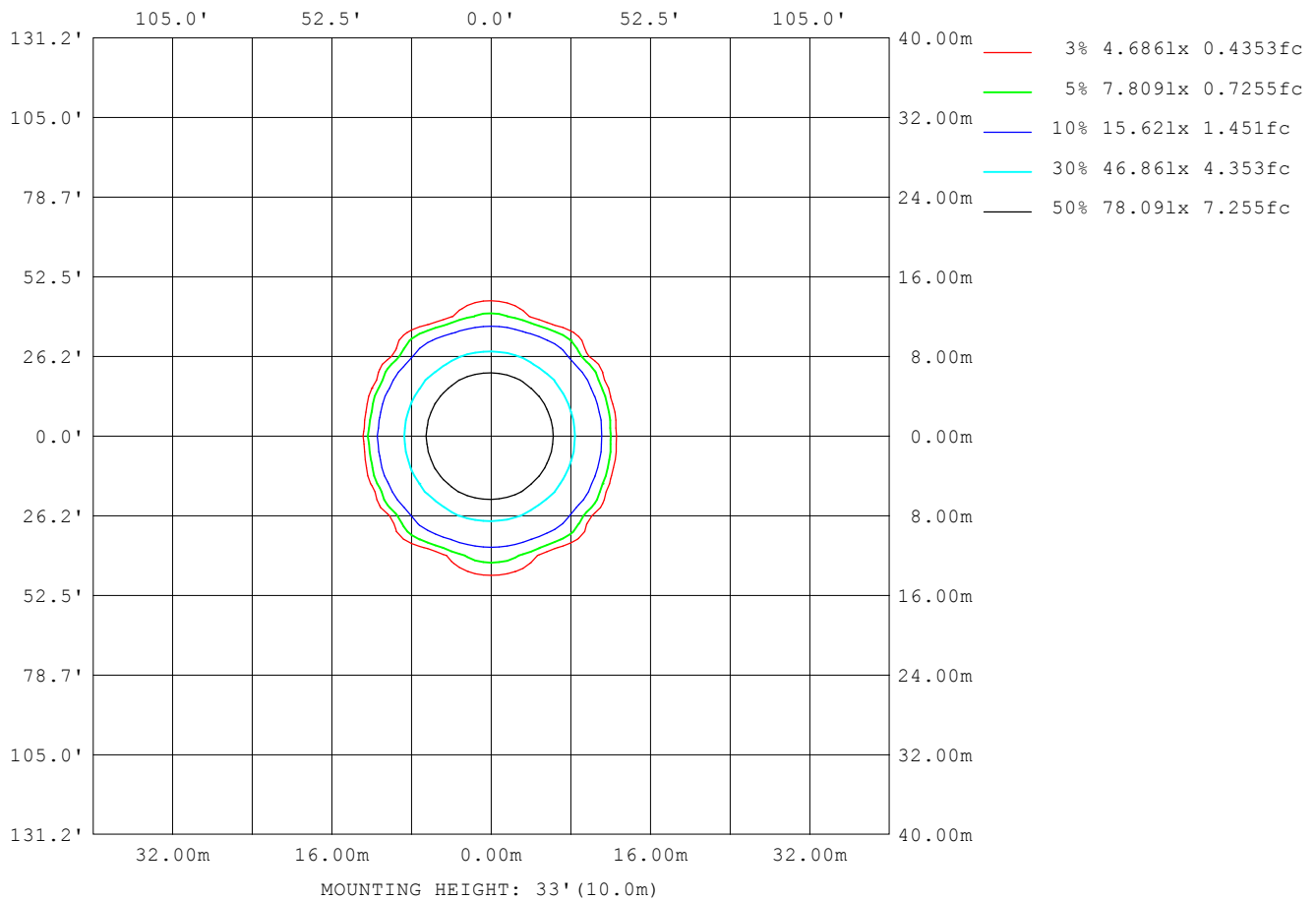
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 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:2017-02-14

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:219.8V I:0.9613A P:208.1W PF:0.9848 Lamp Flux:27648x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

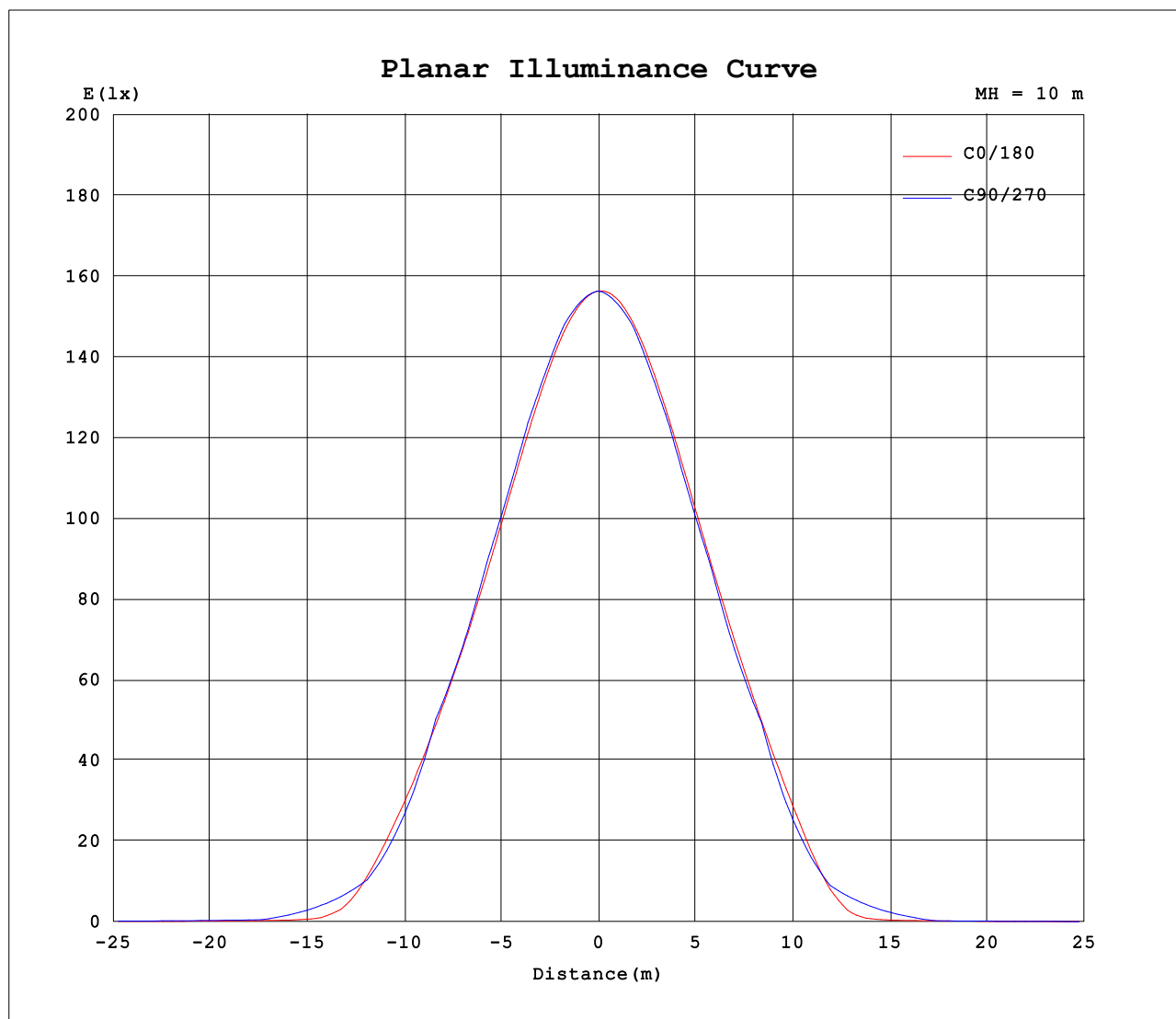
AvgL	cd/m2
L_0~180 (65) av	3774
L_0~180 (75) av	4484
L_0~180 (85) av	7028
L_90~270 (65) av	5943
L_90~270 (75) av	6178
L_90~270 (85) av	0
L_45 (65) av	5271
L_45 (75) av	5666
L_45 (85) av	4678

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-14

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: 2017-02-14

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:

```

```

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:

```

```

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:

```