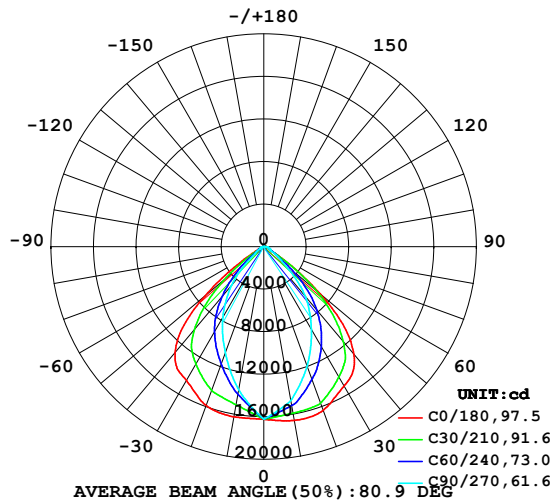


LUMINAIRE PHOTOMETRIC TEST REPORT

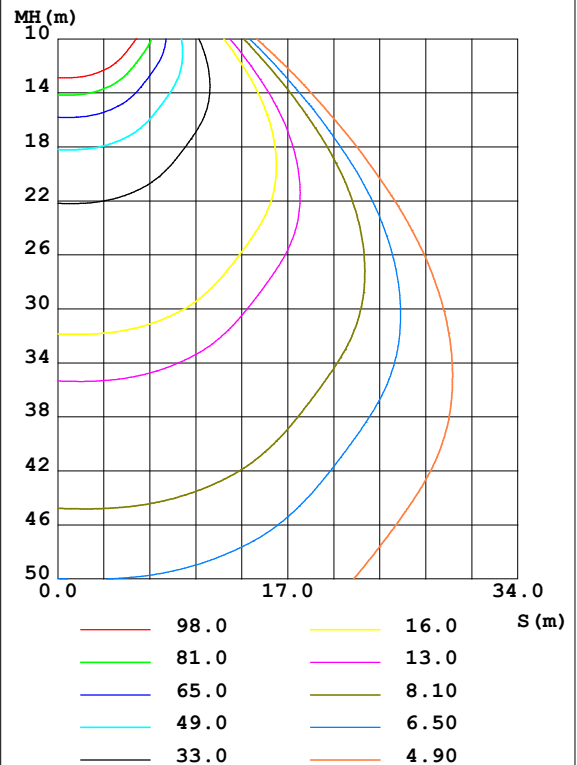
Test:U:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.42 lm/W			
MODEL	LHB-200W-6090	I _{max} (cd)	16619	S/MH(C0/180)	1.35
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	0.80
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	25926	η UP,DN(C0-180)	0.0,53.5
NOMINAL FLUX(lm)	25926.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,46.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.10

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:2017-02-17

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	1641	1583	1547	1566	1621	1532	1496	1545	0- 5	378.4	378.4	1.46,1.46
10	1658	1553	1471	1518	1624	1455	1368	1475	5- 10	1097	1475	5.69,5.69
15	1660	1521	1333	1471	1617	1388	1214	1410	10- 15	1750	3226	12.4,12.4
20	1636	1445	1194	1394	1589	1299	1060	1322	15- 20	2311	5536	21.4,21.4
25	1572	1365	1046	1314	1522	1206	916.3	1229	20- 25	2759	8296	32,32
30	1512	1261	896.8	1213	1454	1098	773.0	1117	25- 30	3080	11376	43.9,43.9
35	1453	1121	753.5	1085	1412	957.9	620.5	969.6	30- 35	3263	14639	56.5,56.5
40	1318	954.4	610.2	933.0	1298	785.7	467.9	788.2	35- 40	3249	17888	69,69
45	1074	736.6	422.9	722.9	1083	555.4	291.0	547.9	40- 45	2940	20828	80.3,80.3
50	697.1	484.9	235.7	478.8	726.0	297.8	114.1	284.0	45- 50	2260	23087	89.1,89.1
55	323.7	257.8	155.2	253.1	342.3	149.9	79.13	143.3	50- 55	1347	24435	94.2,94.2
60	102.9	85.15	74.59	83.45	99.83	48.81	44.16	49.65	55- 60	608.5	25043	96.6,96.6
65	54.65	60.74	63.68	60.15	50.43	35.01	39.25	36.12	60- 65	289.2	25333	97.7,97.7
70	41.17	46.28	52.77	45.81	35.88	25.35	34.34	26.20	65- 70	214.7	25547	98.5,98.5
75	31.42	36.83	41.70	36.06	26.62	17.63	23.62	18.23	70- 75	169.3	25717	99.2,99.2
80	22.02	27.25	30.63	26.47	17.67	10.69	12.90	11.01	75- 80	124.4	25841	99.7,99.7
85	14.13	8.901	0	8.614	10.30	2.814	0	2.864	80- 85	71.71	25913	99.9,99.9
90	7.632	0	0	0	6.055	0	0	0	85- 90	13.56	25926	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 20828 lm

%lum = 80.3%

%lamp = 80.3%

Conical surface Flux(120deg): 25043 lm

%lum = 96.6%

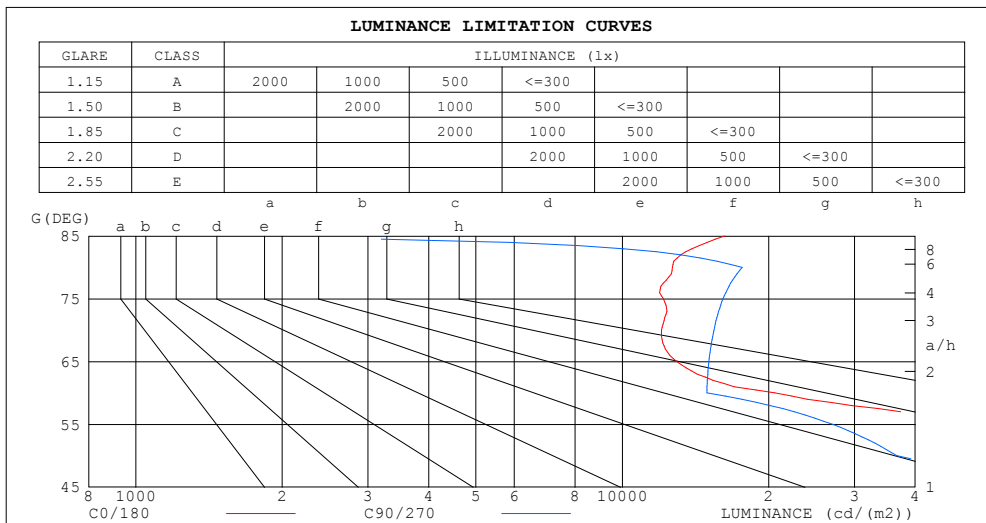
%lamp = 96.6%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 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	16218	0
80	12679	17640
75	12140	16112
70	12038	15429
65	12931	15068
60	20583	14919
55	56427	27050
50	108448	36670
45	151825	59814

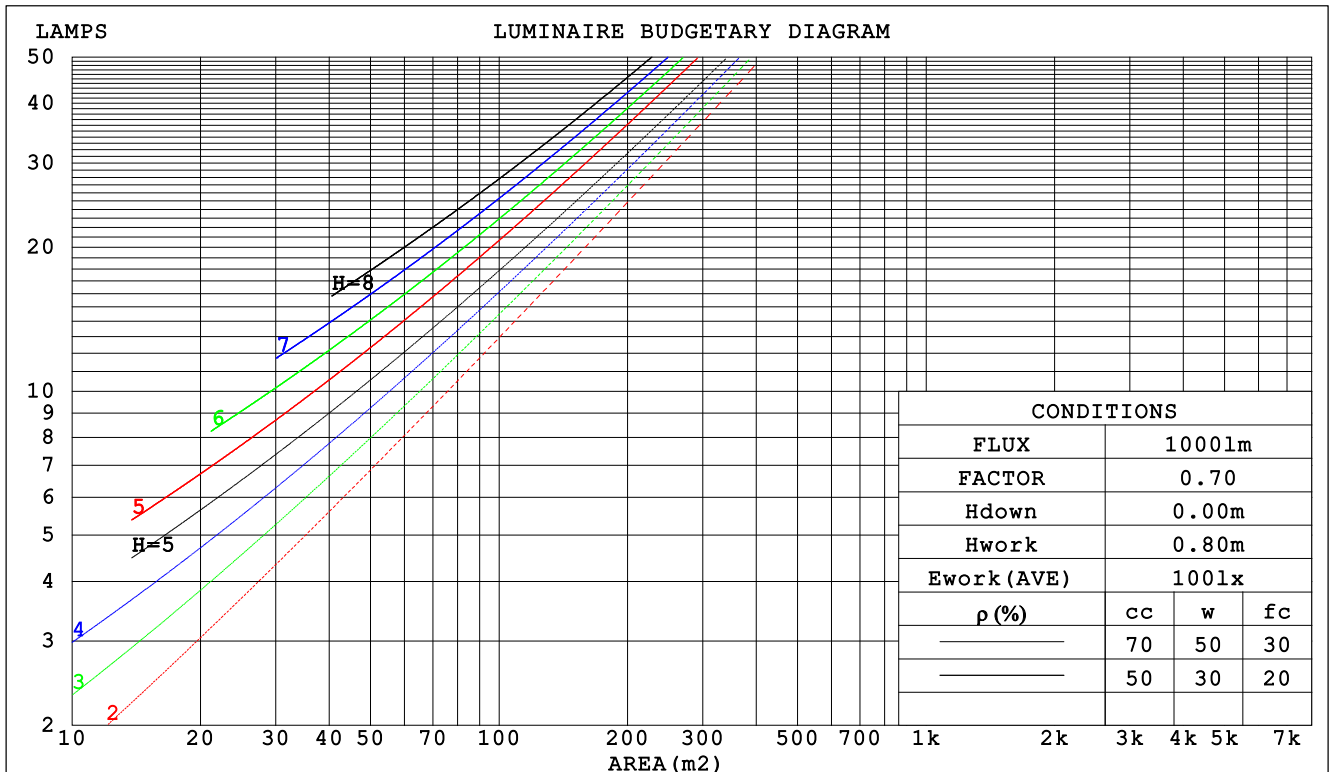
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 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	1.08	1.05	1.03	1.06	1.04	1.01	1.02	.00	.98	.98	.97	.95	.95	.93	.92	.90
2.0	.98	.93	.89	.97	.92	.88	.93	.89	.86	.90	.87	.84	.87	.85	.82	.81
3.0	.89	.83	.78	.88	.82	.78	.85	.80	.76	.83	.79	.75	.80	.77	.74	.72
4.0	.81	.75	.69	.80	.74	.69	.78	.72	.68	.76	.71	.67	.74	.70	.66	.64
5.0	.74	.67	.62	.73	.67	.62	.71	.65	.61	.70	.64	.60	.68	.63	.60	.58
6.0	.68	.61	.56	.67	.60	.55	.66	.60	.55	.64	.59	.54	.63	.58	.54	.52
7.0	.63	.55	.50	.62	.55	.50	.61	.54	.50	.59	.54	.49	.58	.53	.49	.47
8.0	.58	.51	.46	.57	.50	.46	.56	.50	.45	.55	.49	.45	.54	.49	.45	.43
9.0	.54	.47	.42	.53	.46	.42	.52	.46	.41	.51	.45	.41	.50	.45	.41	.40
10.0	.50	.43	.38	.49	.43	.38	.49	.42	.38	.48	.42	.38	.47	.42	.38	.36



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 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	.221	.126	.040	.215	.122	.039	.202	.116	.037	.190	.110	.035	.179	.104	.033		
2.0	.215	.118	.036	.209	.115	.035	.198	.110	.034	.188	.105	.033	.178	.101	.032		
3.0	.205	.109	.033	.200	.107	.032	.191	.103	.031	.182	.100	.031	.174	.096	.030		
4.0	.195	.101	.030	.191	.100	.029	.182	.097	.029	.175	.094	.028	.167	.091	.028		
5.0	.185	.094	.027	.181	.093	.027	.174	.091	.027	.167	.088	.026	.160	.086	.026		
6.0	.176	.088	.025	.172	.087	.025	.166	.085	.025	.159	.083	.024	.154	.081	.024		
7.0	.167	.082	.023	.164	.082	.023	.158	.080	.023	.152	.078	.023	.147	.076	.022		
8.0	.158	.077	.022	.156	.077	.022	.150	.075	.021	.145	.074	.021	.141	.072	.021		
9.0	.151	.073	.020	.148	.072	.020	.143	.071	.020	.139	.070	.020	.135	.068	.020		
10.0	.143	.069	.019	.141	.068	.019	.137	.067	.019	.133	.066	.019	.129	.065	.019		

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	.174	.157	.141	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.107	.139	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.083	.130	.098	.072	.089	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.144	.100	.066	.123	.086	.058	.085	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.136	.089	.054	.117	.077	.047	.080	.054	.033	.047	.032	.020	.015	.010	.006	
6.0	.129	.080	.045	.111	.069	.039	.077	.049	.027	.045	.029	.016	.014	.009	.005	
7.0	.123	.073	.038	.106	.063	.033	.073	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.118	.067	.032	.101	.058	.028	.070	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.112	.062	.028	.097	.054	.024	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.108	.058	.025	.093	.050	.021	.064	.035	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 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	27.8	29.0	28.0	29.2	29.3	24.0	25.2	24.2	25.4	25.6
3H	27.6	28.7	27.9	29.0	29.2	24.1	25.2	24.3	25.4	25.6
4H	27.6	28.6	27.9	28.9	29.1	24.2	25.2	24.4	25.4	25.7
6H	27.5	28.5	27.9	28.8	29.0	24.3	25.3	24.6	25.5	25.8
8H	27.5	28.5	27.8	28.7	29.0	24.3	25.2	24.6	25.5	25.8
12H	27.5	28.4	27.8	28.7	29.0	24.3	25.2	24.6	25.4	25.7
4H 2H	27.5	28.6	27.8	28.8	29.1	24.0	25.0	24.3	25.3	25.5
3H	27.5	28.4	27.8	28.6	28.9	24.2	25.1	24.5	25.3	25.6
4H	27.4	28.3	27.8	28.6	28.9	24.3	25.2	24.7	25.5	25.8
6H	27.5	28.2	27.8	28.5	28.9	24.6	25.3	24.9	25.6	26.0
8H	27.5	28.1	27.9	28.5	28.9	24.6	25.3	25.0	25.6	26.0
12H	27.5	28.1	27.9	28.5	28.9	24.6	25.2	25.0	25.6	25.9
8H 4H	27.4	28.0	27.8	28.4	28.8	24.3	25.0	24.7	25.4	25.7
6H	27.4	28.0	27.9	28.4	28.8	24.7	25.2	25.1	25.6	26.0
8H	27.5	28.0	27.9	28.4	28.8	24.7	25.2	25.2	25.6	26.1
12H	27.6	28.0	28.0	28.4	28.9	24.7	25.1	25.2	25.6	26.0
12H 4H	27.3	27.9	27.7	28.3	28.7	24.3	24.9	24.7	25.3	25.7
6H	27.4	27.9	27.9	28.3	28.7	24.7	25.1	25.1	25.6	26.0
8H	27.5	27.9	28.0	28.3	28.8	24.8	25.2	25.3	25.6	26.1
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 3.2					+ 1.7 / - 2.3				
1.5H	+ 1.6 / - 3.1					+ 1.6 / - 2.2				
2.0H	+ 4.4 / - 6.1					+ 2.7 / - 2.5				

CIE Pub.117 Corrected 25926 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.3)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

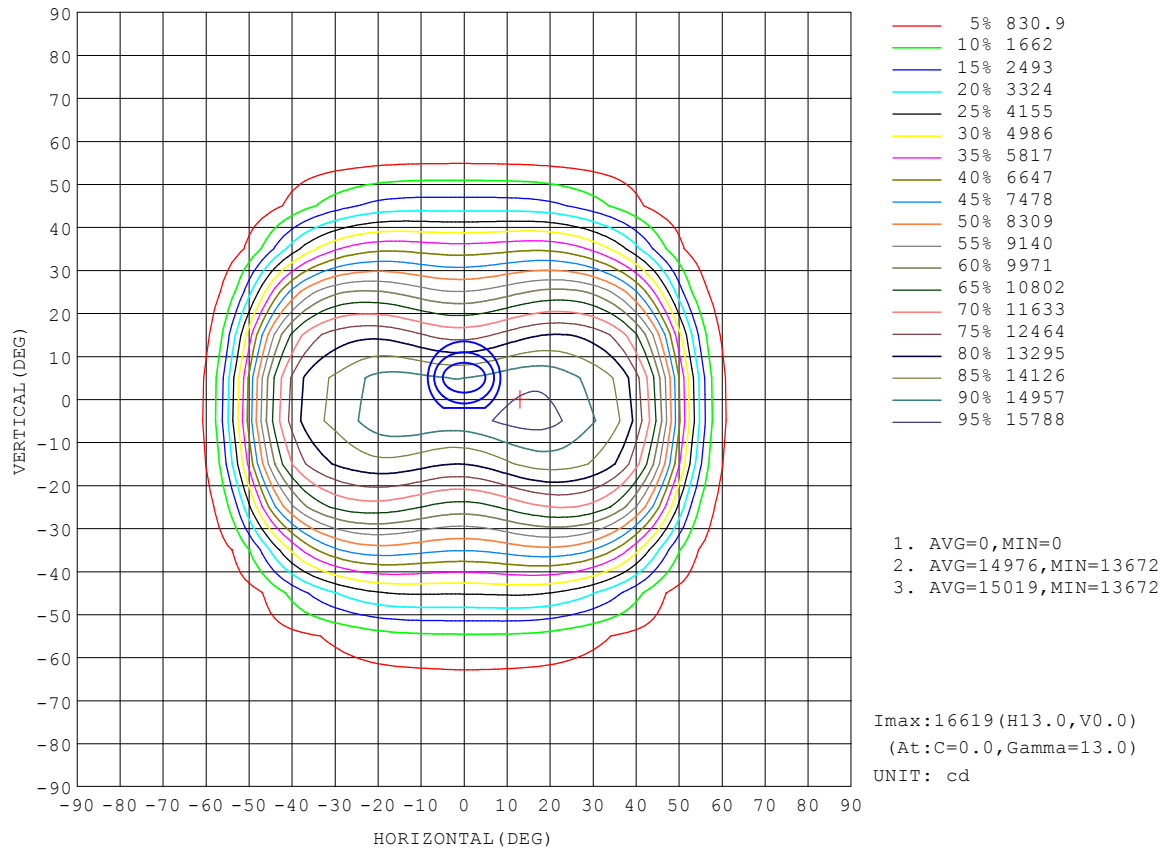
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	72	63	57	71	62	57	70	62	57	52
0.80	81	73	67	81	72	67	79	72	67	62
1.00	89	81	76	88	80	75	86	81	75	70
1.25	95	88	83	94	87	82	91	86	81	76
1.50	99	92	87	97	91	87	95	90	86	80
2.00	104	98	93	102	97	93	99	95	91	85
2.50	106	101	97	104	99	96	101	97	94	87
3.00	108	104	100	106	102	99	103	99	97	89
4.00	111	107	104	109	105	102	105	102	100	92
5.00	112	109	106	110	107	105	106	104	102	93
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:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

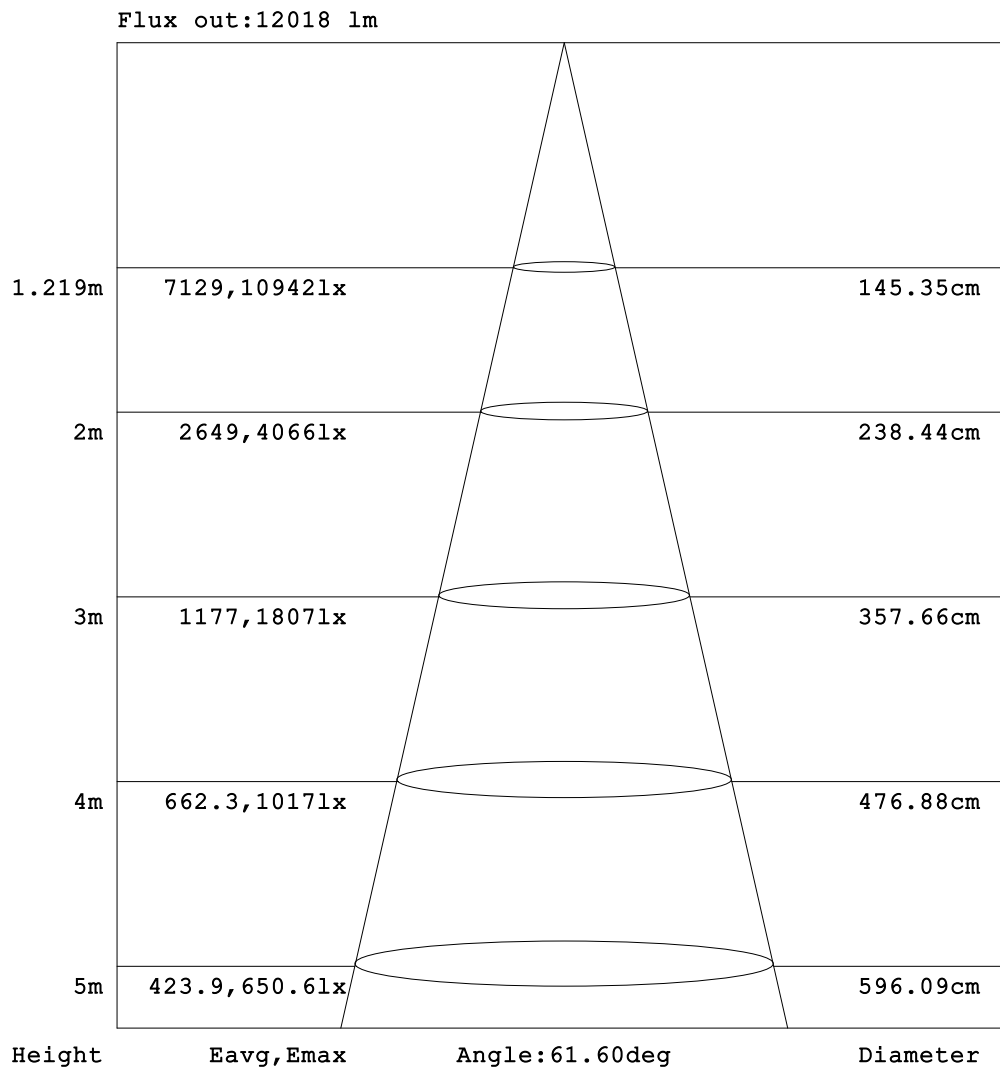


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



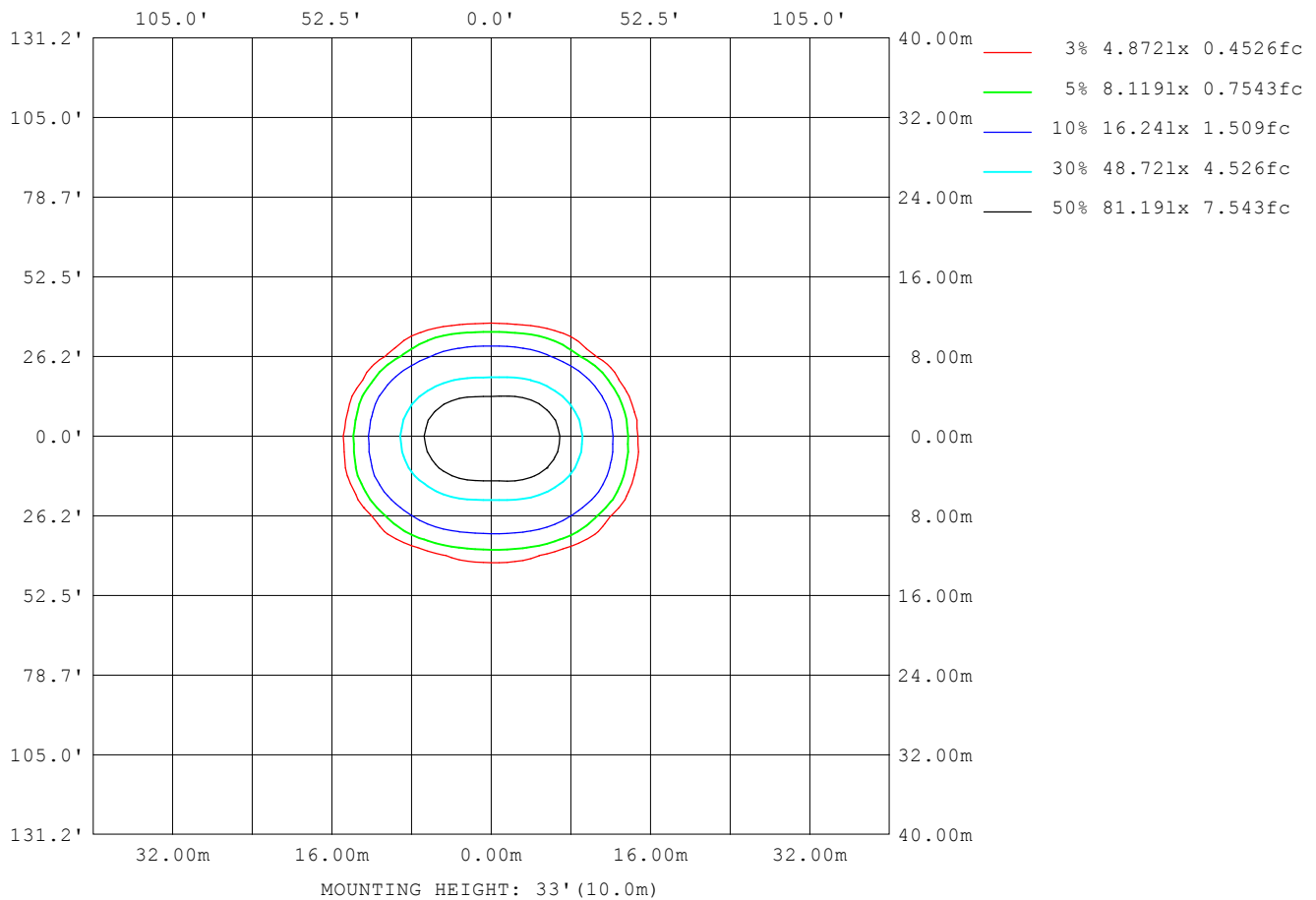
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 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:2017-02-17

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:220.0V I:0.9332A P:201.9W PF:0.9834 Lamp Flux:25926.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

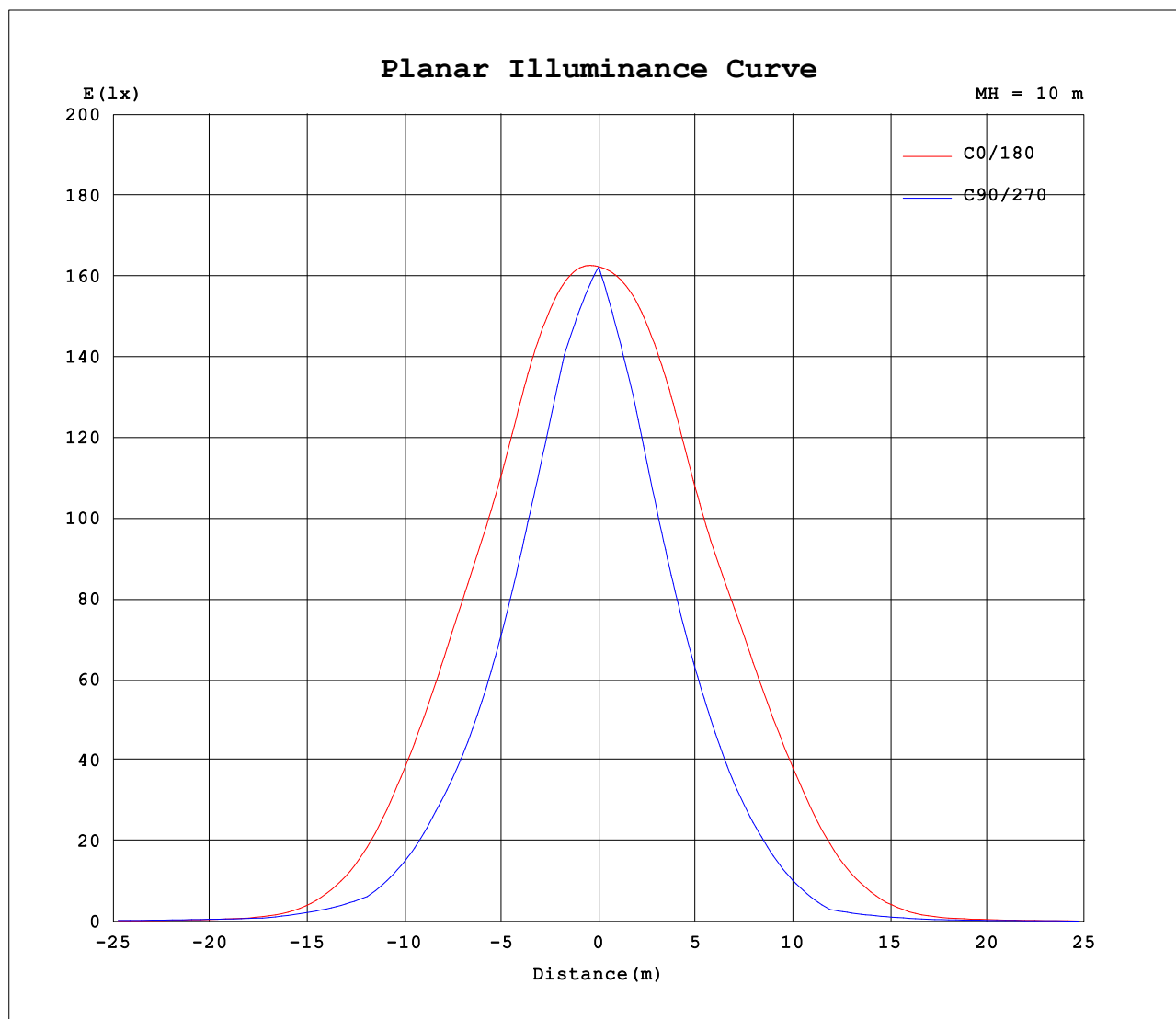
AvgL	cd/m2
L_0~180 (65) av	12432
L_0~180 (75) av	11213
L_0~180 (85) av	14017
L_90~270 (65) av	12178
L_90~270 (75) av	12619
L_90~270 (85) av	0
L_45 (65) av	11359
L_45 (75) av	10504
L_45 (85) av	6653

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-17

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: 2017-02-17

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