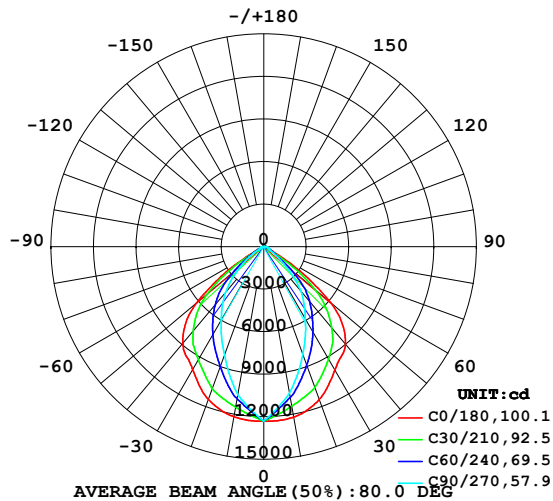


LUMINAIRE PHOTOMETRIC TEST REPORT

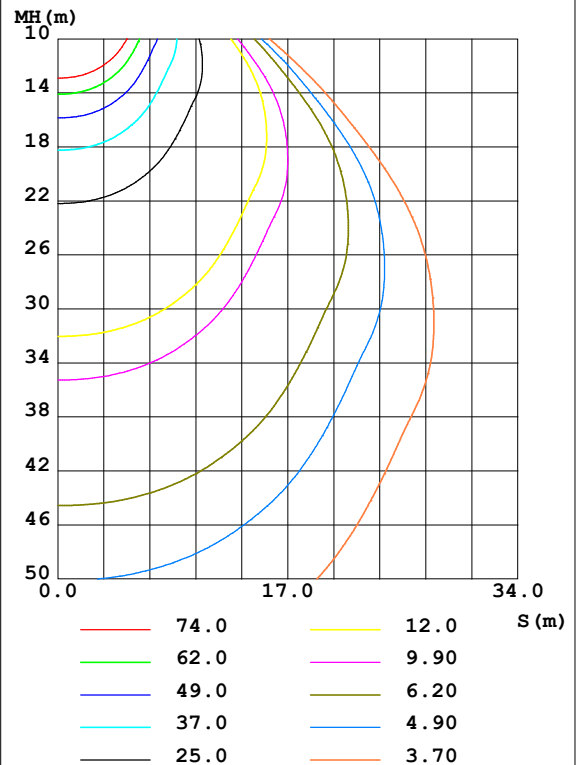
Test:U:220.0V I:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.65 lm/W			
MODEL	LHB-150W-6090	I _{max} (cd)	12317	S/MH(C0/180)	1.22
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	0.80
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	19327	η UP,DN(C0-180)	0.0,49.4
NOMINAL FLUX(lm)	19327.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.6
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: 2017-02-10

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	1231	1168	1141	1167	1230	1172	1146	1171	0- 5	285.5	285.5	1.48,1.48
10	1220	1109	1050	1106	1217	1118	1061	1112	5- 10	818.5	1104	5.71,5.71
15	1193	1048	928.1	1045	1190	1063	935.4	1053	10- 15	1285	2389	12.4,12.4
20	1147	968.6	806.7	966.1	1146	981.4	810.3	972.5	15- 20	1662	4051	21,21
25	1080	891.2	695.7	888.3	1079	904.5	705.6	894.0	20- 25	1948	5999	31,31
30	1005	807.7	584.6	805.3	1003	826.7	600.9	816.2	25- 30	2142	8141	42.1,42.1
35	950.9	711.4	496.9	711.0	948.6	740.3	510.7	733.4	30- 35	2253	10394	53.8,53.8
40	896.6	607.9	409.2	609.4	889.2	647.3	420.5	644.5	35- 40	2283	12677	65.6,65.6
45	790.8	489.0	286.9	488.9	786.3	535.4	311.5	530.7	40- 45	2178	14855	76.9,76.9
50	616.6	348.1	164.6	346.2	619.7	406.5	202.6	397.9	45- 50	1869	16724	86.5,86.5
55	362.0	188.0	102.8	185.2	369.5	224.6	119.8	217.1	50- 55	1316	18040	93.3,93.3
60	116.1	57.72	40.93	56.03	122.7	59.38	37.07	55.44	55- 60	667.2	18707	96.8,96.8
65	37.18	39.06	37.58	38.67	35.16	30.90	31.47	30.36	60- 65	235.9	18943	98,98
70	26.12	28.45	34.23	28.33	22.73	17.73	25.88	18.49	65- 70	142.2	19085	98.7,98.7
75	19.78	22.28	26.14	22.00	16.67	12.19	19.48	12.81	70- 75	108.4	19193	99.3,99.3
80	13.32	16.12	18.06	15.85	10.68	7.705	13.07	7.928	75- 80	78.86	19272	99.7,99.7
85	8.601	5.178	0	5.086	6.271	2.148	0	2.142	80- 85	45.71	19318	100,100
90	5.674	0	0	0	4.909	0	0	0	85- 90	9.207	19327	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): 14855 lm

%lum = 76.9%

%lamp = 76.9%

Conical surface Flux(120deg): 18707 lm

%lum = 96.8%

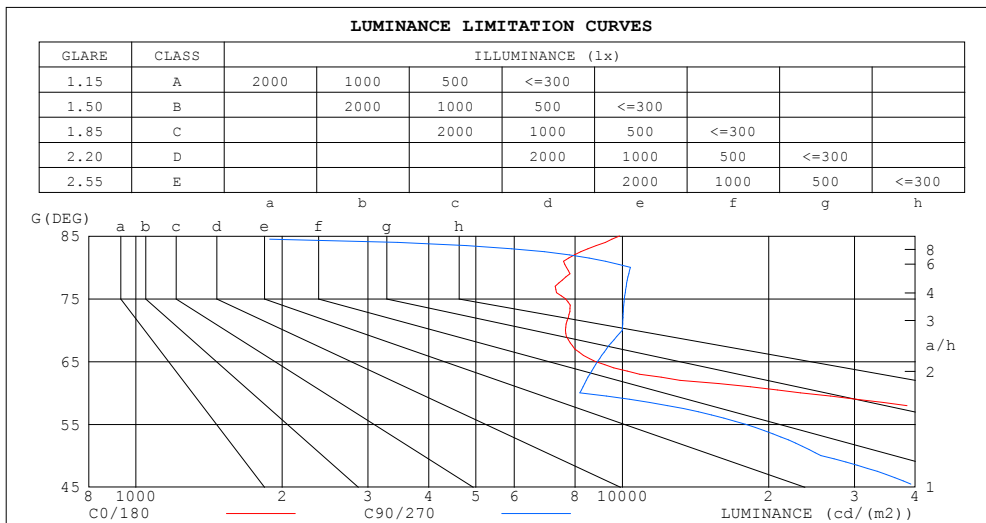
%lamp = 96.8%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 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	9869	0
80	7673	10400
75	7642	10101
70	7637	10008
65	8796	8892
60	23228	8186
55	63112	17917
50	95930	25608
45	111837	40571

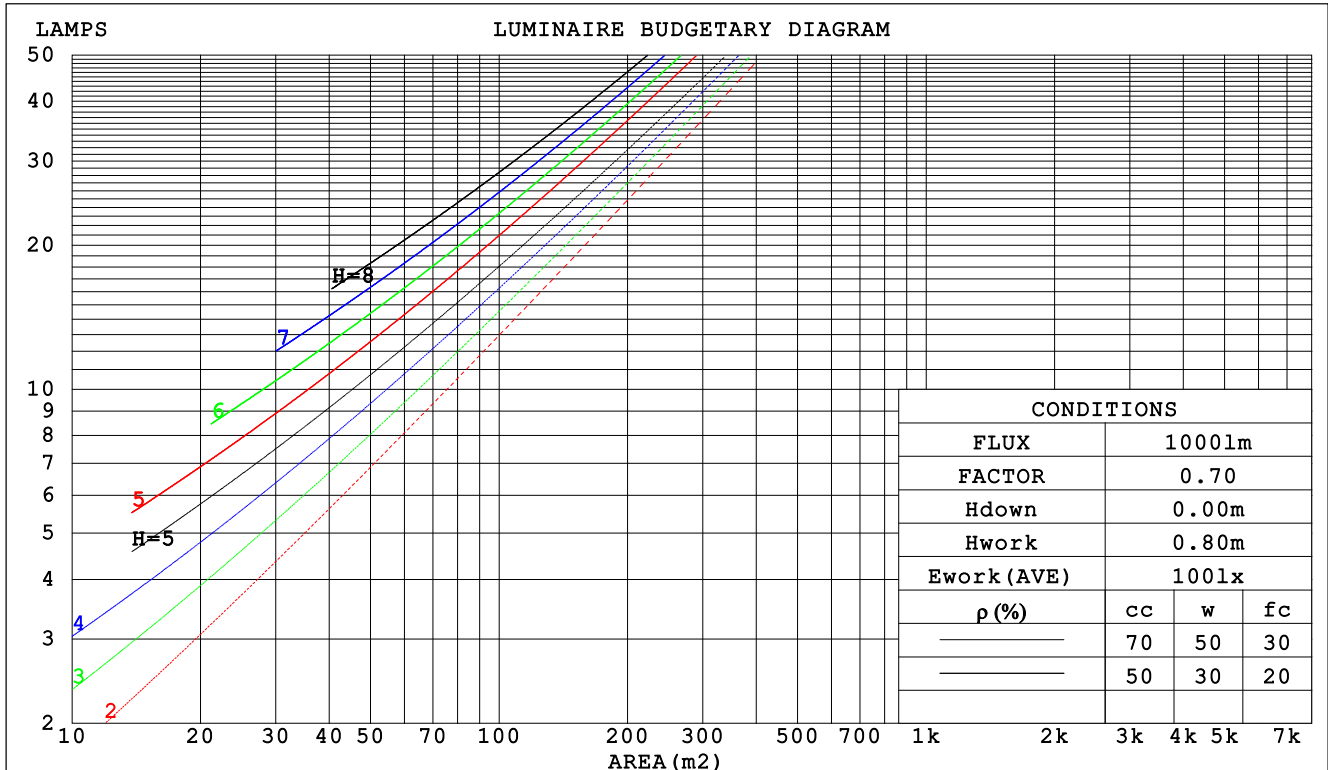
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 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	1.02	1.06	1.03	1.01	1.02	.00	.98	.98	.96	.95	.95	.93	.92	.90
2.0	.98	.93	.89	.96	.92	.88	.93	.89	.86	.90	.87	.84	.87	.84	.82	.80
3.0	.89	.82	.77	.87	.82	.77	.85	.80	.75	.82	.78	.74	.80	.76	.73	.71
4.0	.81	.74	.68	.79	.73	.68	.77	.71	.67	.75	.70	.66	.73	.69	.65	.63
5.0	.74	.66	.61	.73	.66	.60	.71	.64	.60	.69	.63	.59	.67	.62	.59	.57
6.0	.67	.60	.54	.66	.59	.54	.65	.58	.54	.63	.58	.53	.62	.57	.53	.51
7.0	.62	.54	.49	.61	.54	.49	.60	.53	.49	.58	.53	.48	.57	.52	.48	.46
8.0	.57	.50	.45	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.37	.49	.42	.37	.48	.41	.37	.47	.41	.37	.46	.41	.37	.35



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 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	.224	.127	.040	.217	.124	.039	.204	.117	.037	.193	.111	.036	.182	.105	.034		
2.0	.218	.120	.037	.213	.117	.036	.202	.112	.035	.191	.107	.034	.182	.103	.032		
3.0	.209	.111	.033	.204	.109	.033	.194	.105	.032	.185	.102	.031	.177	.098	.030		
4.0	.199	.103	.030	.194	.102	.030	.186	.099	.029	.178	.096	.029	.171	.093	.028		
5.0	.189	.096	.028	.185	.095	.028	.177	.092	.027	.170	.090	.027	.164	.087	.026		
6.0	.179	.090	.026	.175	.089	.025	.169	.086	.025	.162	.084	.025	.157	.082	.024		
7.0	.169	.084	.024	.166	.083	.024	.160	.081	.023	.155	.079	.023	.150	.078	.023		
8.0	.161	.079	.022	.158	.078	.022	.153	.076	.022	.148	.075	.022	.143	.073	.021		
9.0	.153	.074	.021	.150	.073	.021	.145	.072	.020	.141	.071	.020	.137	.069	.020		
10.0	.145	.070	.019	.143	.069	.019	.139	.068	.019	.134	.067	.019	.131	.066	.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	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.107	.139	.114	.092	.095	.079	.064	.055	.046	.038	.018	.015	.012	
3.0	.153	.114	.083	.131	.098	.072	.090	.068	.050	.052	.040	.030	.017	.013	.010	
4.0	.144	.100	.066	.124	.086	.057	.085	.060	.040	.049	.035	.024	.016	.011	.008	
5.0	.137	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006	
6.0	.130	.080	.044	.112	.069	.038	.077	.049	.027	.045	.029	.016	.014	.009	.005	
7.0	.124	.073	.037	.107	.063	.032	.074	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.119	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.113	.062	.028	.098	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.109	.058	.024	.094	.050	.021	.065	.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:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 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	26.8	28.1	27.1	28.2	28.4	22.2	23.4	22.4	23.6	23.8
3H	26.7	27.8	27.0	28.0	28.2	22.2	23.3	22.5	23.6	23.8
4H	26.6	27.7	26.9	27.9	28.2	22.3	23.3	22.6	23.6	23.8
6H	26.6	27.6	26.9	27.8	28.1	22.3	23.3	22.7	23.6	23.9
8H	26.5	27.5	26.8	27.8	28.0	22.4	23.3	22.7	23.6	23.9
12H	26.5	27.4	26.8	27.7	28.0	22.3	23.2	22.7	23.5	23.8
4H 2H	26.6	27.6	26.9	27.9	28.1	22.2	23.3	22.5	23.5	23.8
3H	26.5	27.4	26.8	27.7	27.9	22.3	23.3	22.7	23.5	23.8
4H	26.4	27.3	26.8	27.6	27.9	22.5	23.3	22.8	23.6	23.9
6H	26.4	27.1	26.8	27.5	27.8	22.6	23.3	23.0	23.7	24.0
8H	26.4	27.1	26.8	27.4	27.8	22.6	23.3	23.0	23.7	24.0
12H	26.4	27.0	26.8	27.4	27.8	22.6	23.2	23.0	23.6	24.0
8H 4H	26.3	27.0	26.7	27.4	27.7	22.4	23.1	22.8	23.5	23.8
6H	26.3	26.9	26.8	27.3	27.7	22.7	23.2	23.1	23.6	24.0
8H	26.4	26.9	26.8	27.3	27.7	22.7	23.2	23.2	23.6	24.1
12H	26.4	26.8	26.9	27.3	27.7	22.7	23.1	23.2	23.6	24.0
12H 4H	26.3	26.9	26.7	27.3	27.7	22.4	23.0	22.8	23.4	23.8
6H	26.3	26.8	26.8	27.2	27.7	22.7	23.2	23.1	23.6	24.0
8H	26.4	26.8	26.8	27.2	27.7	22.8	23.2	23.2	23.6	24.1
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 1.8					+ 1.7 / - 2.6				
1.5H	+ 1.5 / - 2.8					+ 1.7 / - 2.3				
2.0H	+ 3.8 / - 7.8					+ 2.8 / - 3.2				

CIE Pub.117 Corrected 19327 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.3)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

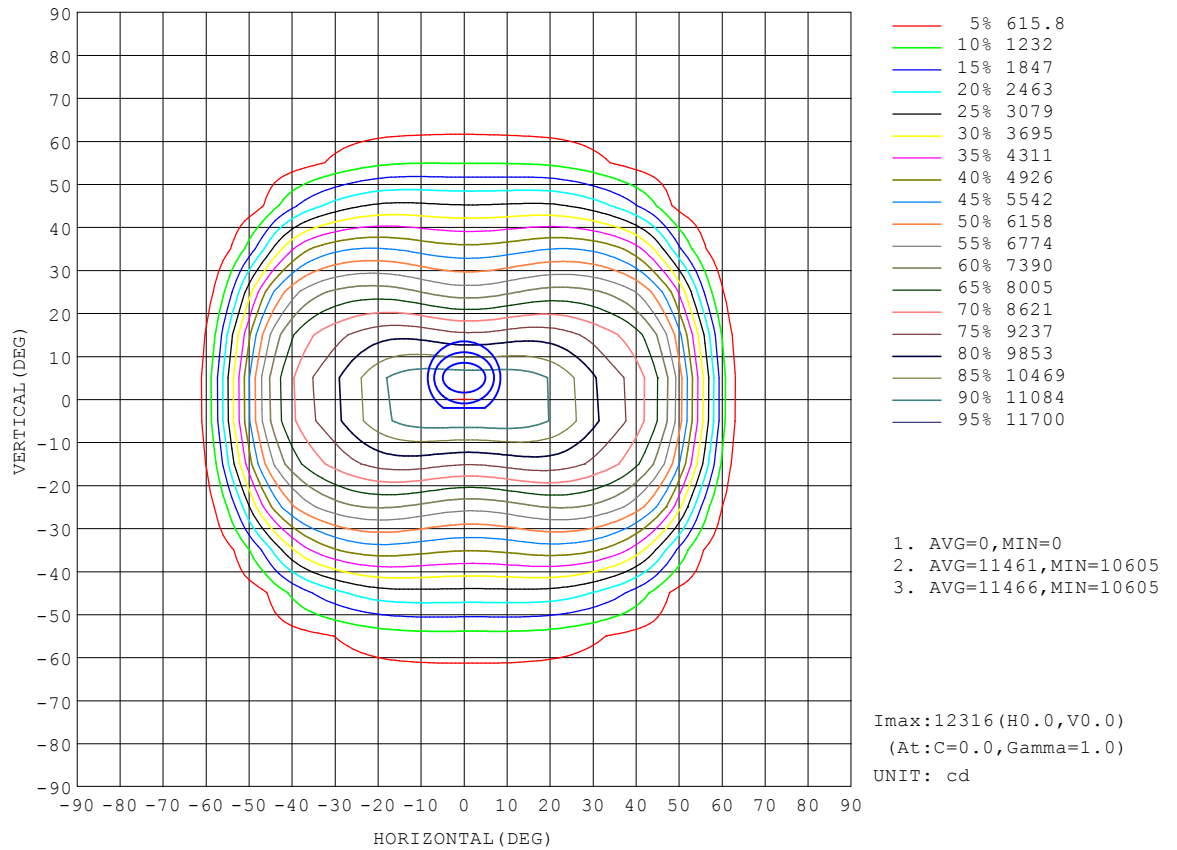
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	69	60	54	69	59	54	68	59	54	48
0.80	79	70	65	79	70	64	77	69	64	59
1.00	88	79	74	87	79	73	85	79	73	67
1.25	94	86	81	93	86	81	90	84	80	74
1.50	98	91	86	97	90	85	94	88	84	79
2.00	103	97	93	101	96	92	98	94	90	84
2.50	105	100	96	104	99	95	100	96	93	86
3.00	108	103	99	106	102	98	102	99	96	89
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	108	106	110	107	104	105	103	101	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:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

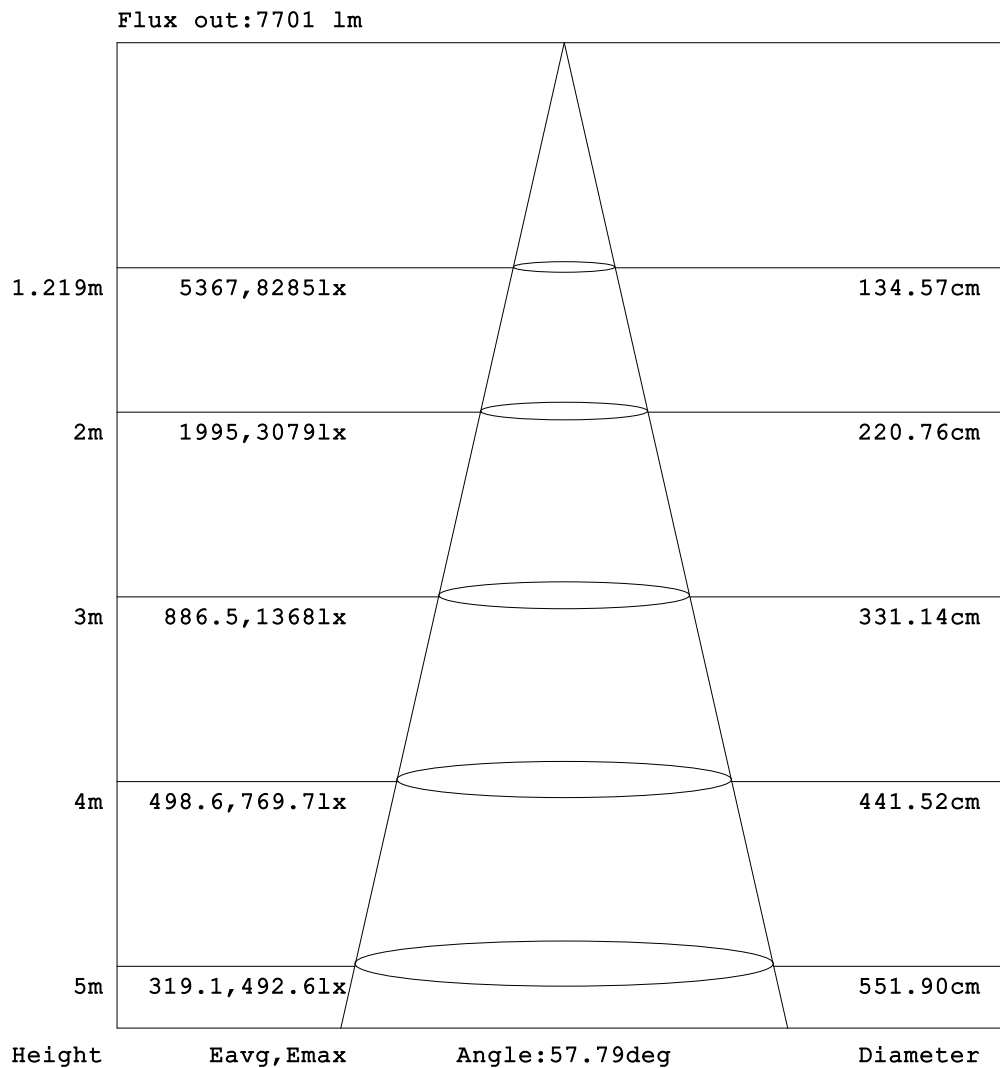


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



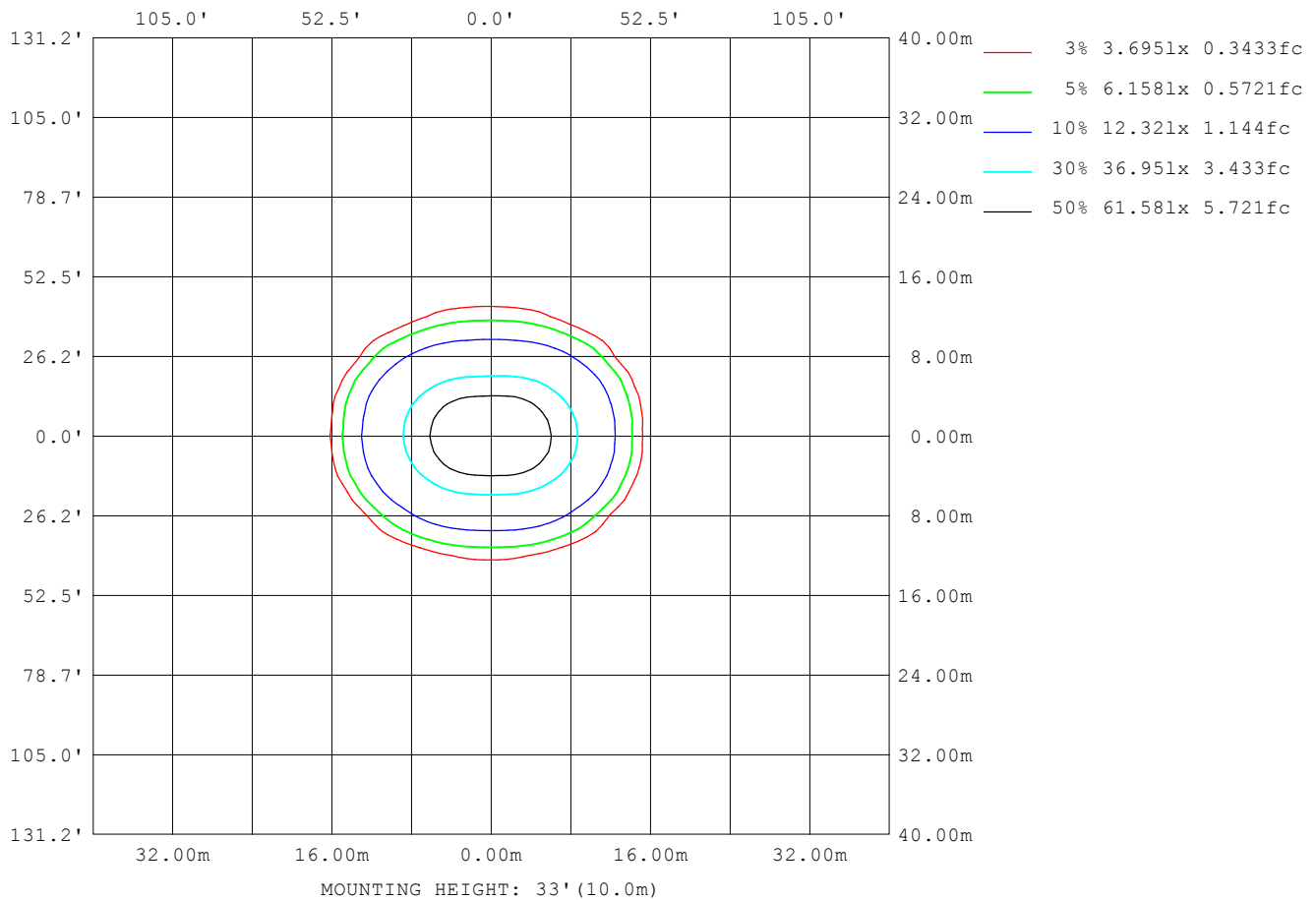
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 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:2017-02-10

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:0.6876A P:150.2W PF:0.9931 Lamp Flux:19327.1x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

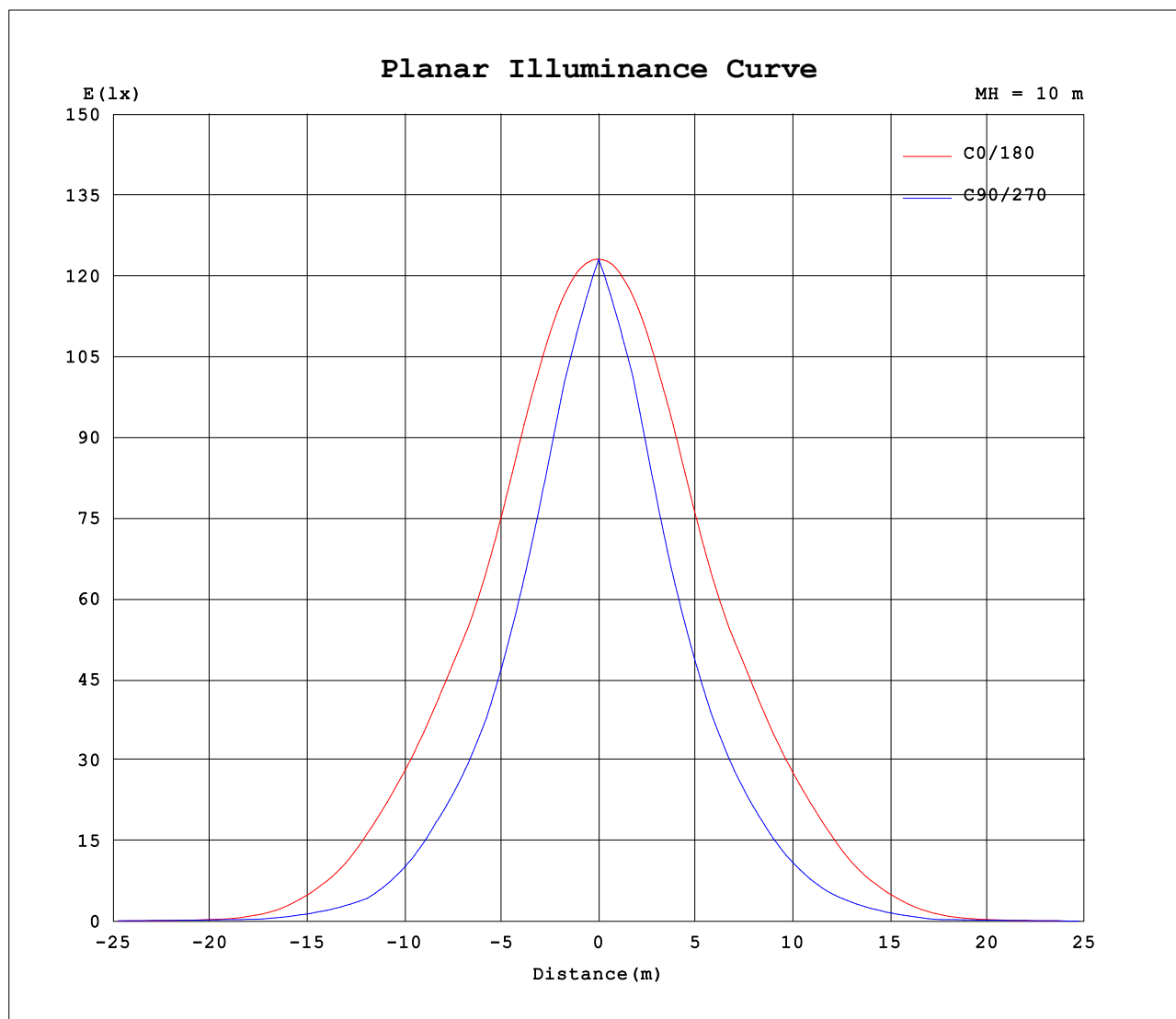
AvgL	cd/m2
L_0~180 (65) av	8558
L_0~180 (75) av	7041
L_0~180 (85) av	8532
L_90~270 (65) av	8170
L_90~270 (75) av	8813
L_90~270 (85) av	0
L_45 (65) av	8222
L_45 (75) av	6692
L_45 (85) av	4175

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-10

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: 2017-02-10

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
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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:

```

```

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:

```