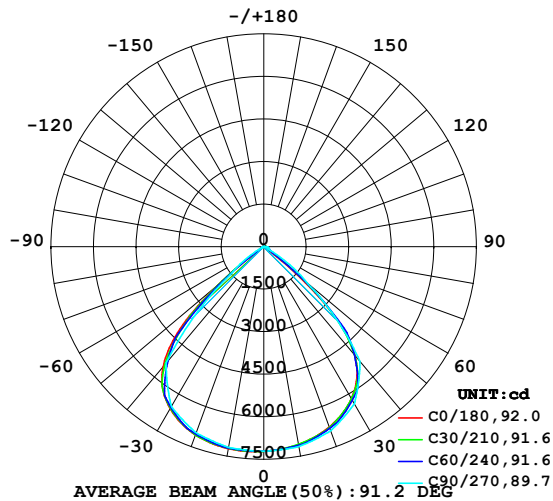


LUMINAIRE PHOTOMETRIC TEST REPORT

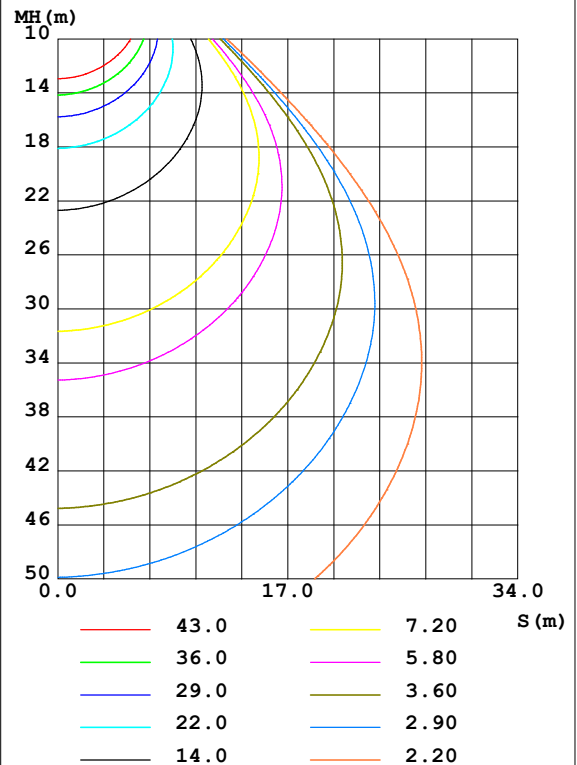
Test:U:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.03 lm/W			
MODEL	LHB-100W-9090	I _{max} (cd)	7243	S/MH(C0/180)	1.34
NOMINAL POWER(W)	100	LOR(%)	99.7	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	13078	η UP,DN(C0-180)	0.0,50.4
NOMINAL FLUX(lm)	13122.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.3
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:2017-02-11

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	7169	7163	7186	7214	7241	7223	7199	7172	0- 5	172.2	172.2	1.32,1.31
10	7083	7089	7155	7194	7231	7212	7181	7107	5- 10	513.3	685.5	5.24,5.22
15	6948	6975	7031	7132	7172	7160	7082	7002	10- 15	843.1	1529	11.7,11.6
20	6766	6779	6906	6985	7062	7033	6984	6823	15- 20	1152	2680	20.5,20.4
25	6520	6547	6651	6800	6879	6868	6750	6606	20- 25	1429	4109	31.4,31.3
30	6183	6212	6395	6503	6599	6574	6516	6271	25- 30	1658	5767	44.1,43.9
35	5721	5745	5834	6067	6192	6124	5935	5796	30- 35	1820	7587	58,57.8
40	4983	5061	5274	5413	5523	5437	5353	5073	35- 40	1865	9452	72.3,72
45	3687	3603	3652	4043	4311	3928	3451	3461	40- 45	1694	11145	85.2,84.9
50	1448	1782	2031	2315	2158	2046	1548	1485	45- 50	1152	12297	94,93.7
55	175.0	627.1	1117	879.3	257.9	696.9	824.6	442.2	50- 55	446.4	12743	97.4,97.1
60	112.3	180.1	203.3	174.1	93.17	95.18	101.6	93.30	55- 60	130.6	12874	98.4,98.1
65	87.82	150.2	171.6	149.4	65.69	66.90	75.26	67.89	60- 65	58.62	12933	98.9,98.6
70	70.87	127.2	139.9	129.3	47.19	47.44	48.95	49.05	65- 70	47.55	12980	99.2,98.9
75	67.45	107.4	119.7	110.2	44.30	33.10	36.32	34.38	70- 75	39.95	13020	99.6,99.2
80	52.44	87.57	99.53	90.97	29.92	23.47	23.70	23.94	75- 80	33.22	13053	99.8,99.5
85	35.72	31.25	0	32.70	14.63	7.438	0	7.465	80- 85	21.10	13074	100,99.6
90	33.58	0	0	0	25.13	0	0	0	85- 90	3.854	13078	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:cd									UNIT:lm		

Conical surface Flux(90deg): 11145 lm

%lum = 85.2%

%lamp = 84.9%

Conical surface Flux(120deg): 12874 lm

%lum = 98.4%

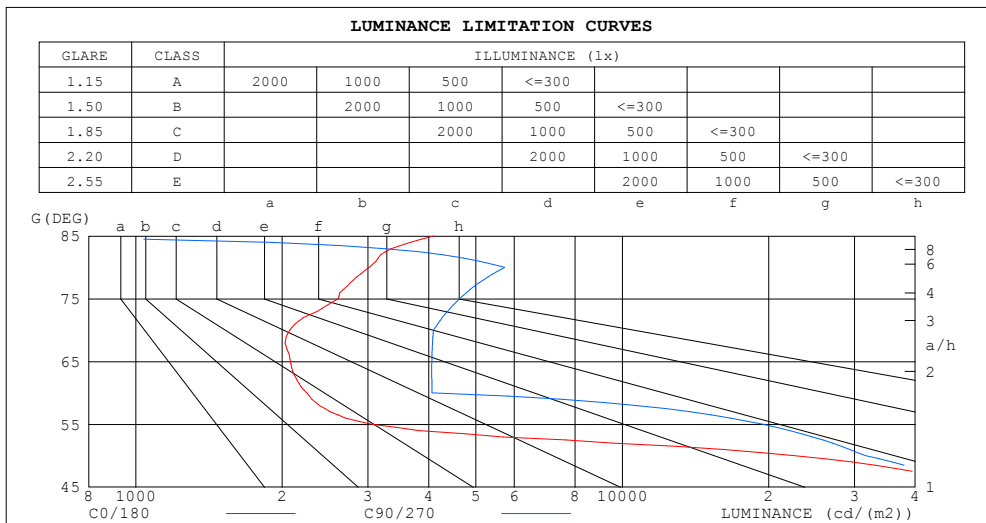
%lamp = 98.1%

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 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	4098	0
80	3020	5732
75	2606	4625
70	2072	4090
65	2078	4060
60	2246	4065
55	3051	19473
50	22521	31590
45	52148	51650

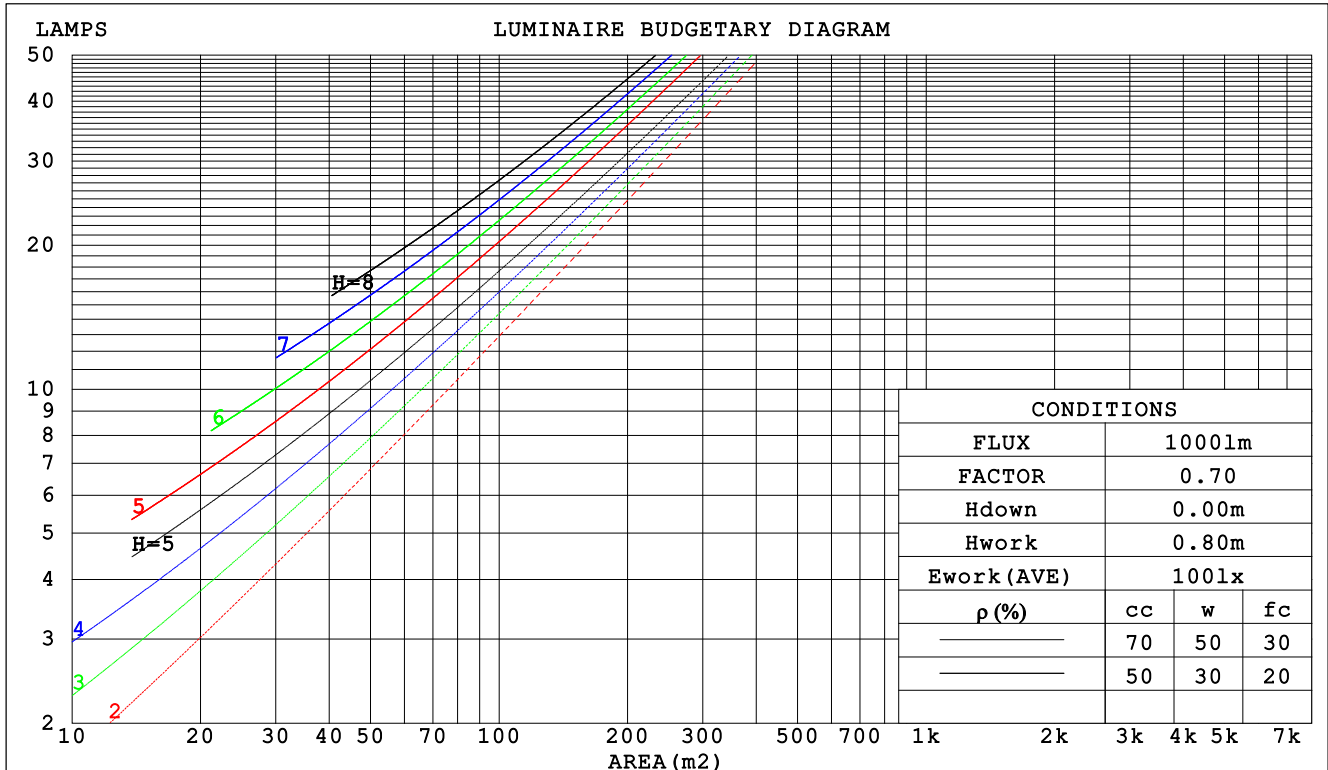
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 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	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	.92	.91
2.0	.99	.94	.90	.97	.93	.89	.94	.90	.87	.91	.88	.85	.88	.86	.83	.81
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.83	.80	.76	.81	.78	.75	.73
4.0	.82	.76	.71	.81	.75	.70	.79	.73	.69	.77	.72	.68	.75	.71	.68	.66
5.0	.75	.68	.63	.74	.68	.63	.72	.67	.62	.71	.66	.62	.69	.65	.61	.59
6.0	.69	.62	.57	.68	.61	.56	.67	.61	.56	.65	.60	.56	.64	.59	.55	.54
7.0	.64	.56	.51	.63	.56	.51	.61	.55	.51	.60	.55	.50	.59	.54	.50	.49
8.0	.59	.51	.47	.58	.51	.46	.57	.51	.46	.56	.50	.46	.55	.50	.46	.44
9.0	.54	.47	.42	.54	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.40
10.0	.50	.44	.39	.50	.43	.39	.49	.43	.39	.48	.43	.39	.47	.42	.38	.37



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 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	.212	.120	.038	.205	.117	.037	.192	.110	.035	.180	.104	.033	.170	.098	.032		
2.0	.206	.113	.035	.200	.110	.034	.189	.105	.033	.179	.101	.032	.170	.096	.030		
3.0	.198	.105	.032	.193	.103	.031	.183	.099	.030	.175	.096	.029	.167	.092	.029		
4.0	.189	.098	.029	.185	.097	.029	.176	.094	.028	.169	.091	.027	.161	.088	.027		
5.0	.180	.092	.027	.176	.090	.026	.169	.088	.026	.162	.086	.025	.156	.083	.025		
6.0	.172	.086	.025	.168	.085	.024	.162	.083	.024	.156	.081	.024	.150	.079	.023		
7.0	.163	.081	.023	.160	.080	.023	.155	.078	.023	.149	.076	.022	.144	.075	.022		
8.0	.156	.076	.021	.153	.075	.021	.148	.074	.021	.143	.072	.021	.138	.071	.021		
9.0	.148	.072	.020	.146	.071	.020	.141	.070	.020	.137	.069	.020	.133	.067	.019		
10.0	.142	.068	.019	.139	.067	.019	.135	.066	.019	.131	.065	.019	.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	.142	.099	.067	.122	.086	.058	.084	.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	.016	.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	.054	.024	.066	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.107	.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:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 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	22.4	23.6	22.7	23.8	24.0	22.9	24.1	23.2	24.3	24.5
3H	22.3	23.4	22.5	23.6	23.8	22.8	23.9	23.1	24.1	24.3
4H	22.2	23.2	22.5	23.4	23.7	22.7	23.8	23.0	24.0	24.2
6H	22.1	23.1	22.4	23.3	23.6	22.7	23.7	23.0	23.9	24.2
8H	22.1	23.0	22.4	23.3	23.5	22.7	23.6	23.0	23.9	24.1
12H	22.1	22.9	22.4	23.2	23.5	22.6	23.5	23.0	23.8	24.1
4H 2H	22.2	23.2	22.5	23.4	23.7	22.7	23.7	22.9	23.9	24.1
3H	22.1	22.9	22.4	23.2	23.5	22.6	23.4	22.9	23.7	24.0
4H	22.0	22.8	22.4	23.1	23.4	22.5	23.3	22.9	23.6	24.0
6H	22.0	22.6	22.3	23.0	23.3	22.6	23.3	23.0	23.6	24.0
8H	21.9	22.6	22.3	22.9	23.3	22.6	23.2	23.0	23.6	23.9
12H	21.9	22.5	22.3	22.9	23.3	22.5	23.1	23.0	23.5	23.9
8H 4H	21.9	22.5	22.3	22.9	23.3	22.4	23.1	22.8	23.4	23.8
6H	21.9	22.4	22.3	22.8	23.2	22.5	23.1	23.0	23.5	23.9
8H	21.9	22.4	22.4	22.8	23.3	22.6	23.0	23.0	23.4	23.9
12H	22.0	22.4	22.4	22.8	23.3	22.5	22.9	23.0	23.4	23.8
12H 4H	21.9	22.5	22.3	22.8	23.2	22.4	23.0	22.8	23.4	23.8
6H	21.9	22.4	22.4	22.8	23.2	22.5	23.0	23.0	23.4	23.8
8H	21.9	22.3	22.4	22.8	23.2	22.6	22.9	23.0	23.4	23.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.6 / - 7.4					+ 2.2 / - 4.6				
1.5H	+ 2.3 / - 7.9					+ 2.0 / - 7.1				
2.0H	+ 6.3 / - 6.6					+ 5.2 / - 5.8				

CIE Pub.117 Corrected 13122 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.9)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

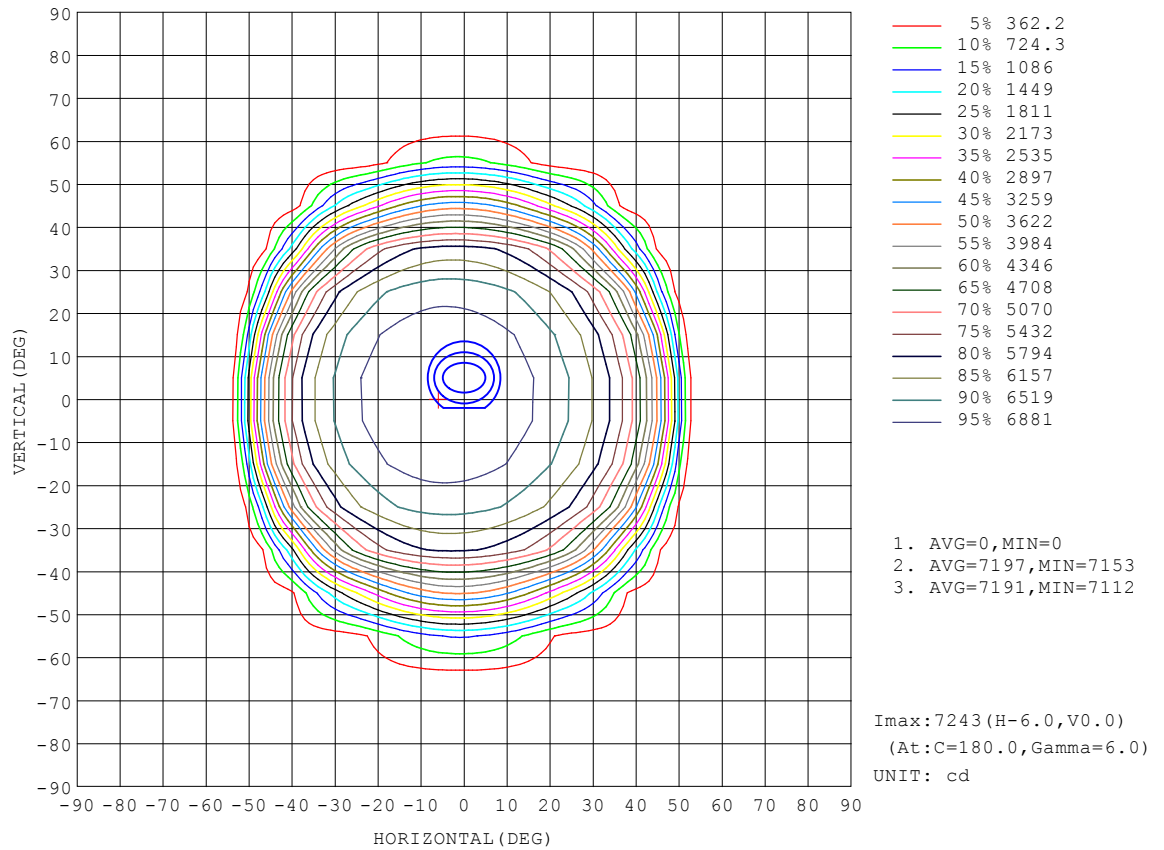
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	74	65	60	73	65	60	72	64	59	55
0.80	83	75	70	82	75	70	81	74	69	64
1.00	90	83	78	90	82	78	88	83	77	72
1.25	96	89	85	95	89	84	93	87	83	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	88
3.00	109	104	101	107	103	100	103	100	97	91
4.00	111	107	104	109	106	103	105	102	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:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

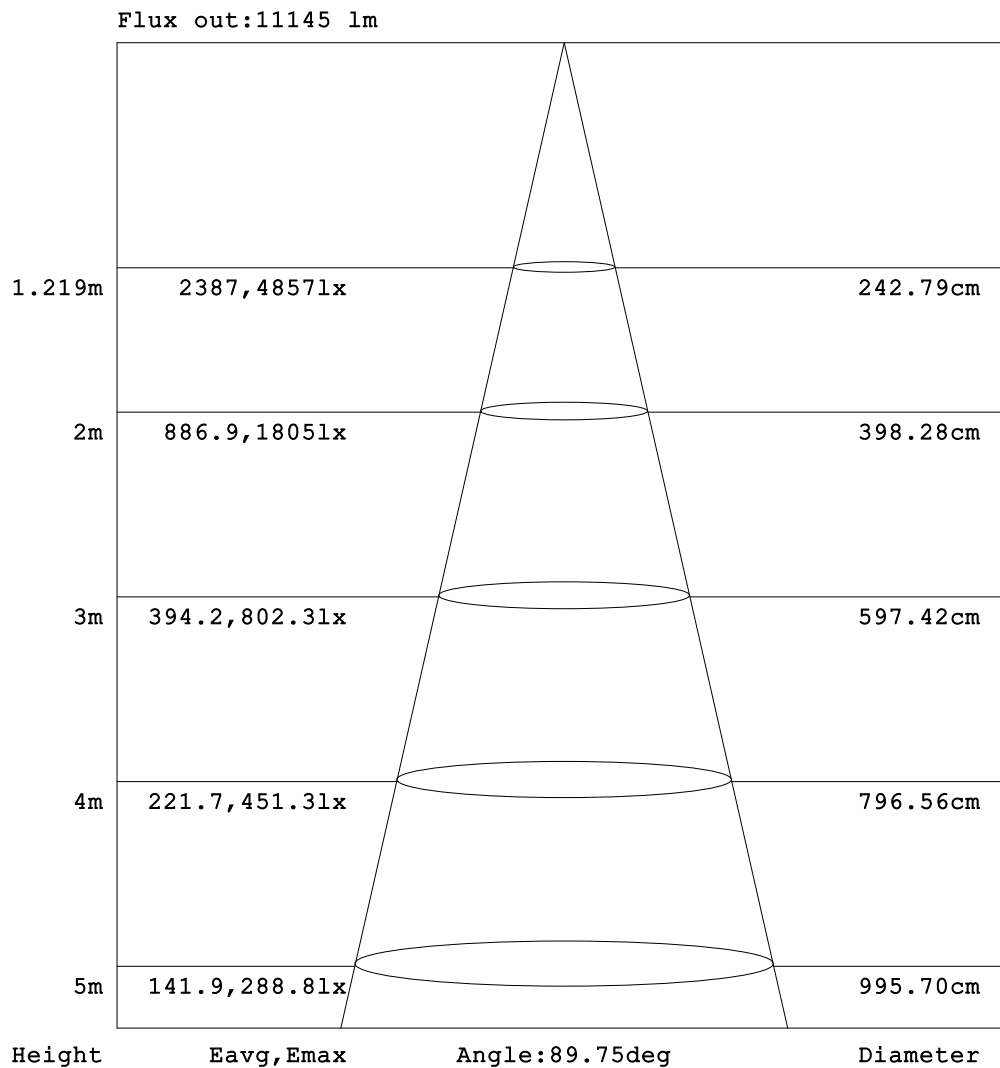


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



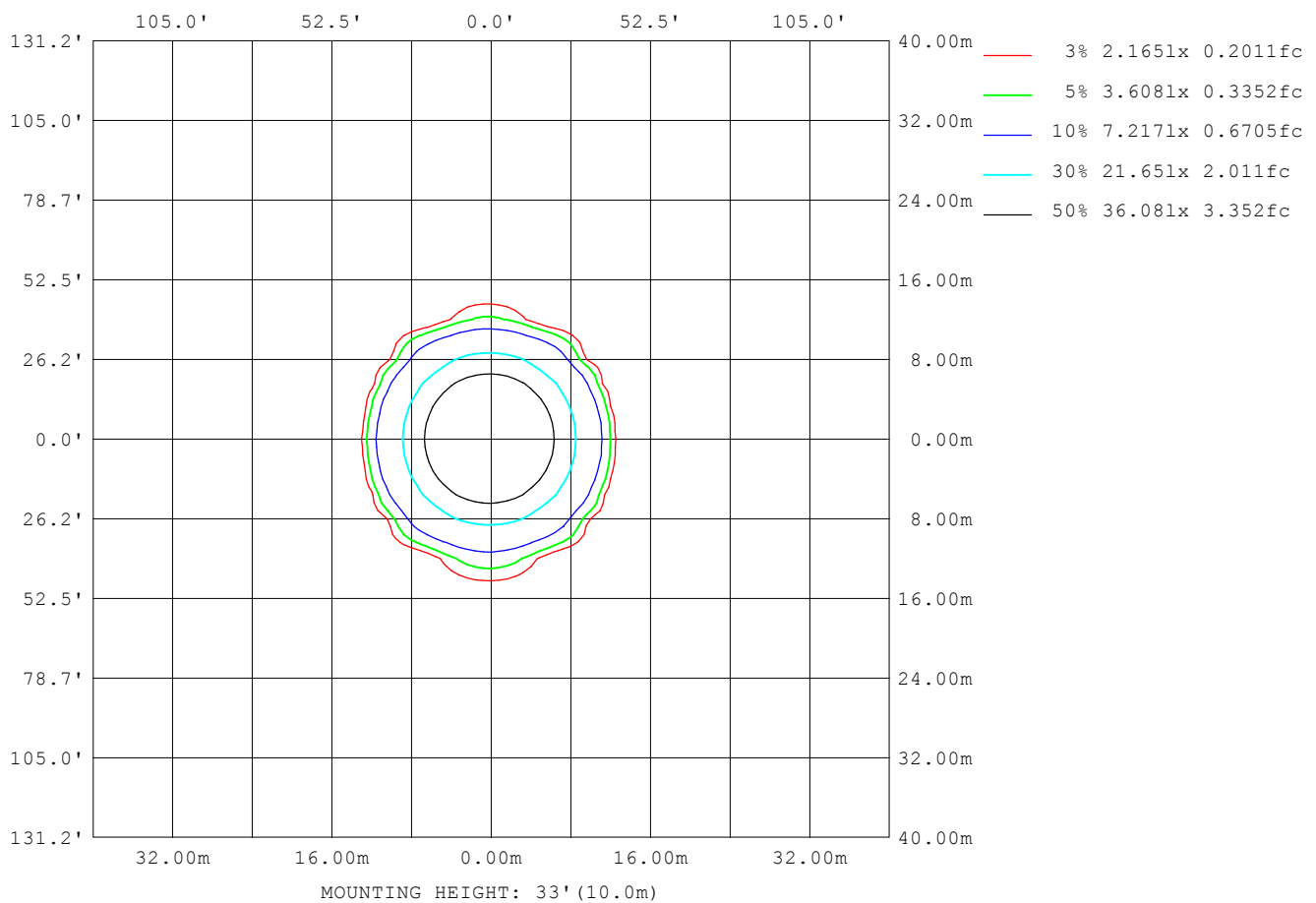
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 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:2017-02-11

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:220.2V I:0.4542A P:98.31W PF:0.9830 Lamp Flux:13122.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

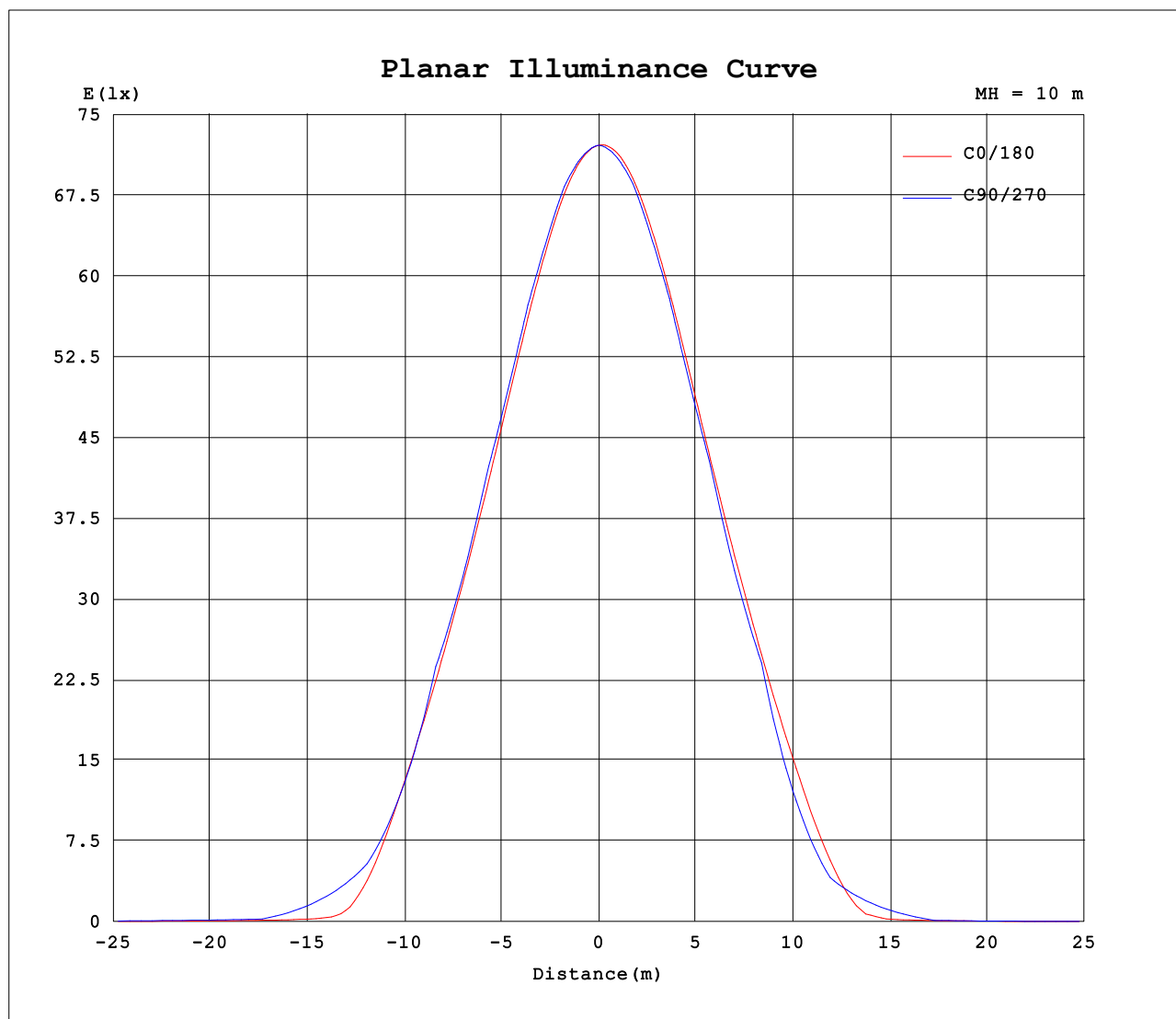
AvgL	cd/m2
L_0~180 (65) av	1816
L_0~180 (75) av	2159
L_0~180 (85) av	2888
L_90~270 (65) av	2920
L_90~270 (75) av	3014
L_90~270 (85) av	0
L_45 (65) av	2570
L_45 (75) av	2753
L_45 (85) av	2262

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-11

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: 2017-02-11

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:

```