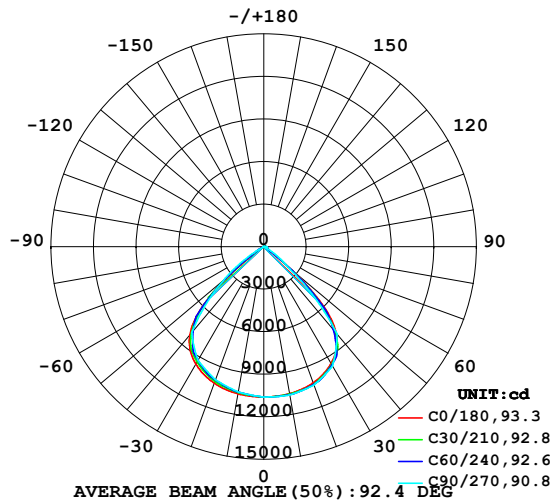


LUMINAIRE PHOTOMETRIC TEST REPORT

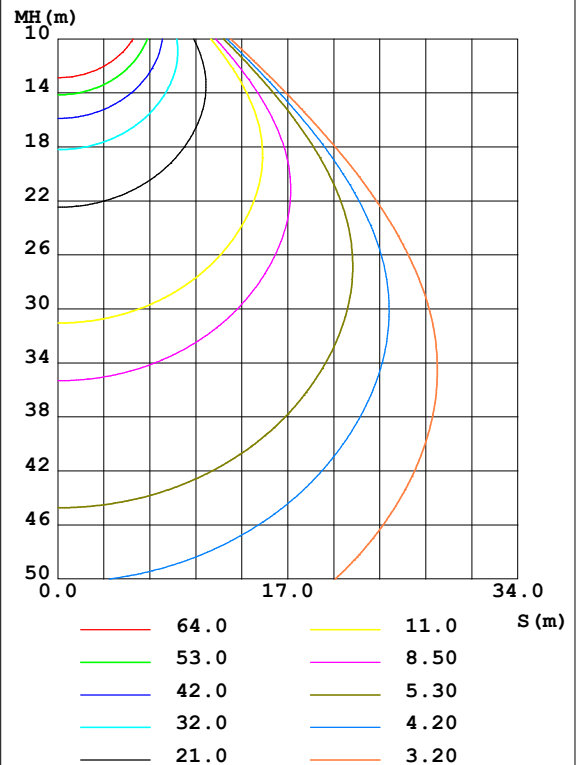
Test:U:220.0V I:0.6876A P:150.2W PF:0.9931 Lamp Flux:19604.8x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 130.50 lm/W			
MODEL	LHB-150W-9090	I _{max} (cd)	10622	S/MH(C0/180)	1.33
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	19605	η UP,DN(C0-180)	0.0,49.8
NOMINAL FLUX(lm)	19604.8	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	100.0	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:2017-02-10

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	1059	1060	1061	1060	1059	1052	1050	1052	0- 5	253.0	253.0	1.29,1.29
10	1053	1057	1062	1058	1054	1042	1040	1042	5- 10	753.8	1007	5.14,5.14
15	1041	1050	1050	1051	1043	1028	1019	1027	10- 15	1239	2246	11.5,11.5
20	1022	1030	1038	1032	1024	1004	998.5	1002	15- 20	1695	3940	20.1,20.1
25	992.8	1004	1005	1007	996.9	976.2	963.0	972.6	20- 25	2107	6047	30.8,30.8
30	951.1	960.9	971.4	964.9	957.2	934.1	927.4	929.2	25- 30	2453	8500	43.4,43.4
35	892.1	896.6	887.5	901.5	902.0	876.5	859.2	869.9	30- 35	2707	11207	57.2,57.2
40	793.5	792.6	803.7	800.7	811.5	793.4	790.9	783.8	35- 40	2802	14009	71.5,71.5
45	603.2	539.5	508.1	561.9	639.6	615.4	581.5	592.1	40- 45	2585	16594	84.6,84.6
50	263.1	230.6	212.6	261.7	316.8	375.2	372.1	333.4	45- 50	1800	18395	93.8,93.8
55	30.96	78.86	117.5	90.73	40.24	135.1	191.0	115.8	50- 55	741.8	19137	97.6,97.6
60	15.64	22.33	22.43	21.79	12.33	10.16	9.961	11.70	55- 60	209.2	19346	98.7,98.7
65	11.95	19.22	19.75	18.92	8.247	7.253	7.379	8.288	60- 65	73.28	19419	99.1,99.1
70	10.04	16.51	17.07	16.45	6.306	5.245	4.797	5.853	65- 70	58.44	19477	99.4,99.4
75	8.518	14.12	14.63	14.20	4.853	3.786	3.913	4.157	70- 75	50.08	19528	99.6,99.6
80	7.387	11.57	12.20	11.73	3.947	2.903	3.028	3.125	75- 80	42.54	19570	99.8,99.8
85	6.217	4.135	0	4.223	3.068	0.9954	0	1.052	80- 85	28.58	19599	100,100
90	5.125	0	0	0	3.972	0	0	0	85- 90	6.119	19605	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): 16594 lm

%lum = 84.6%

%lamp = 84.6%

Conical surface Flux(120deg): 19346 lm

%lum = 98.7%

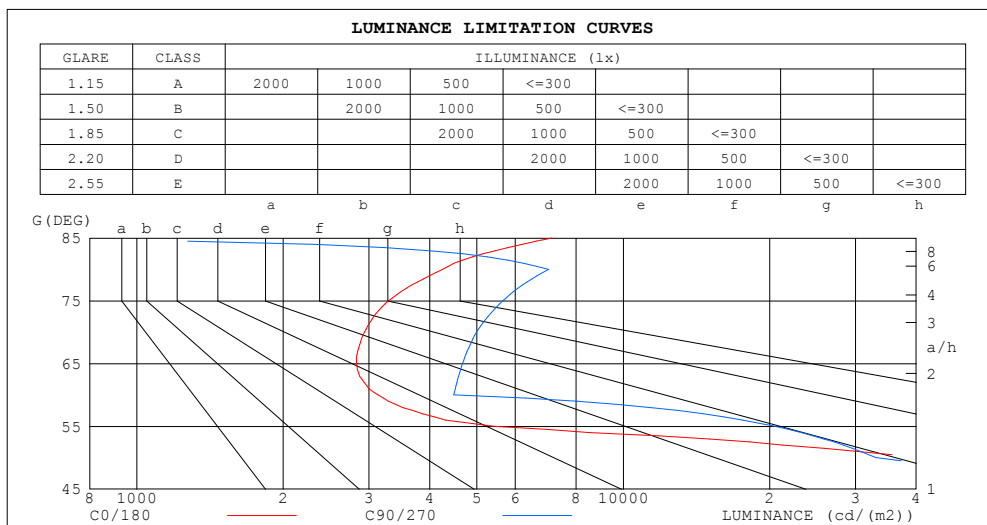
%lamp = 98.7%

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:19604.8x1 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	7133	0
80	4254	7025
75	3291	5654
70	2937	4991
65	2827	4673
60	3129	4485
55	5398	20484
50	40925	33069
45	85301	71860

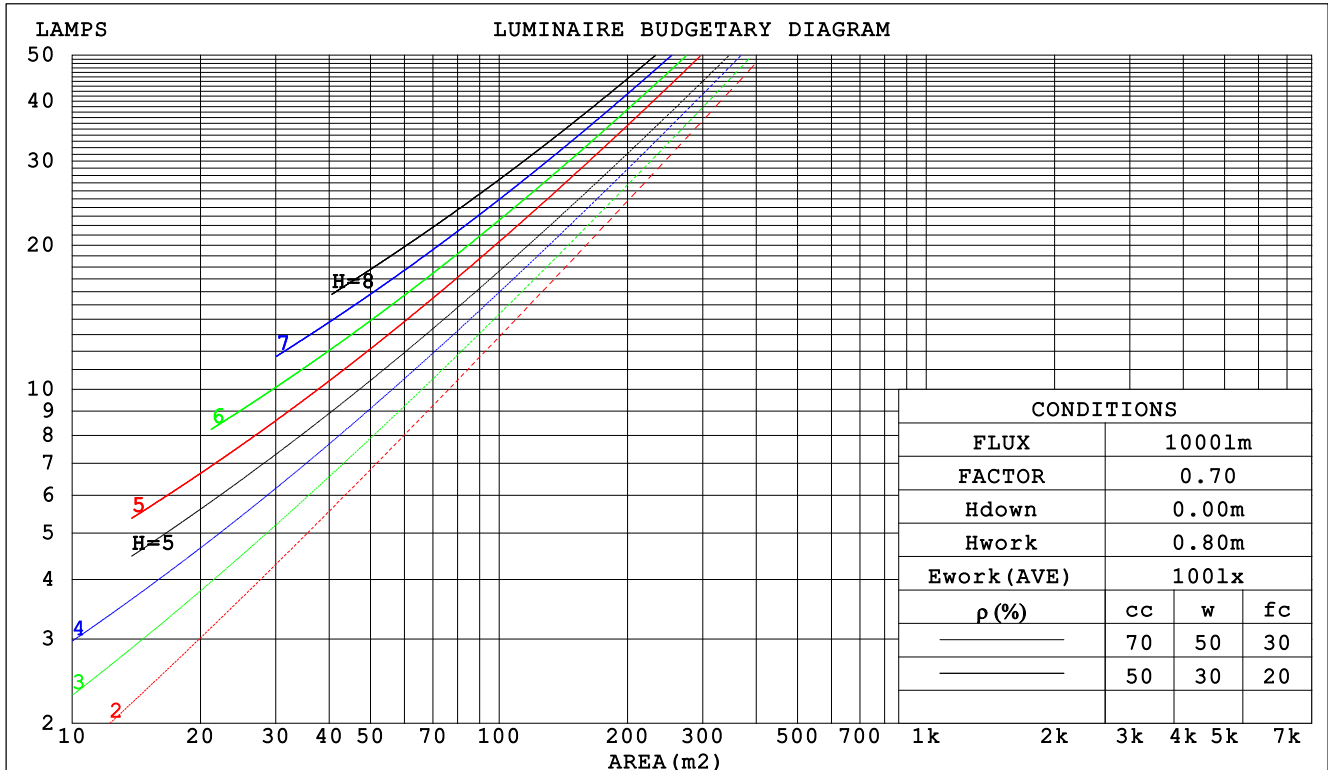
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:19604.8x1 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	1.07	1.04	1.02	1.03	1.00	.99	.99	.97	.96	.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	.79	.89	.83	.79	.86	.81	.78	.84	.80	.76	.81	.78	.75	.73
4.0	.82	.76	.71	.81	.75	.70	.79	.74	.69	.77	.72	.68	.75	.71	.68	.66
5.0	.75	.68	.63	.74	.68	.63	.72	.67	.62	.71	.66	.61	.69	.64	.61	.59
6.0	.69	.62	.57	.68	.61	.56	.67	.60	.56	.65	.60	.56	.64	.59	.55	.53
7.0	.64	.56	.51	.63	.56	.51	.61	.55	.51	.60	.54	.50	.59	.54	.50	.48
8.0	.59	.51	.46	.58	.51	.46	.57	.50	.46	.56	.50	.46	.54	.49	.46	.44
9.0	.54	.47	.42	.54	.47	.42	.53	.46	.42	.52	.46	.42	.51	.45	.42	.40
10.0	.50	.43	.39	.50	.43	.39	.49	.43	.38	.48	.42	.38	.47	.42	.38	.37



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:19604.8x1 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	.213	.121	.038	.206	.117	.037	.193	.111	.035	.181	.105	.034	.171	.099	.032		
2.0	.207	.114	.035	.202	.111	.034	.191	.106	.033	.181	.101	.032	.171	.097	.031		
3.0	.199	.106	.032	.194	.104	.031	.185	.100	.030	.176	.096	.030	.168	.093	.029		
4.0	.190	.099	.029	.186	.097	.029	.178	.094	.028	.170	.091	.028	.163	.088	.027		
5.0	.182	.093	.027	.178	.091	.027	.170	.089	.026	.163	.086	.026	.157	.084	.025		
6.0	.173	.087	.025	.170	.086	.025	.163	.084	.024	.157	.081	.024	.151	.080	.024		
7.0	.165	.081	.023	.162	.081	.023	.156	.079	.023	.150	.077	.022	.145	.075	.022		
8.0	.157	.077	.022	.154	.076	.021	.149	.074	.021	.144	.073	.021	.139	.072	.021		
9.0	.150	.072	.020	.147	.072	.020	.142	.070	.020	.138	.069	.020	.134	.068	.020		
10.0	.143	.068	.019	.141	.068	.019	.136	.067	.019	.132	.066	.019	.128	.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	.142	.149	.135	.122	.102	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.161	.132	.108	.138	.114	.094	.094	.079	.065	.054	.046	.038	.017	.015	.012	
3.0	.151	.114	.084	.129	.098	.073	.089	.068	.051	.051	.040	.030	.016	.013	.010	
4.0	.142	.100	.067	.122	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.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	.123	.073	.038	.105	.063	.033	.073	.044	.023	.042	.026	.014	.014	.009	.005	
8.0	.117	.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	.107	.058	.025	.093	.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:2017-02-10

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:19604.8x1 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	24.1	25.3	24.4	25.5	25.7	24.0	25.2	24.3	25.4	25.6
3H	24.0	25.1	24.2	25.3	25.5	23.9	25.0	24.2	25.2	25.4
4H	23.9	24.9	24.2	25.1	25.4	23.8	24.9	24.1	25.1	25.3
6H	23.8	24.8	24.1	25.0	25.3	23.8	24.8	24.1	25.0	25.3
8H	23.8	24.7	24.1	25.0	25.2	23.8	24.7	24.1	24.9	25.2
12H	23.8	24.6	24.1	24.9	25.2	23.7	24.6	24.1	24.9	25.2
4H 2H	23.9	24.9	24.2	25.1	25.4	23.8	24.8	24.1	25.0	25.3
3H	23.7	24.6	24.1	24.9	25.2	23.7	24.5	24.0	24.8	25.1
4H	23.7	24.5	24.0	24.8	25.1	23.6	24.4	24.0	24.7	25.0
6H	23.6	24.3	24.0	24.7	25.0	23.6	24.3	24.0	24.7	25.0
8H	23.6	24.2	24.0	24.6	25.0	23.6	24.3	24.0	24.6	25.0
12H	23.6	24.2	24.0	24.6	25.0	23.6	24.2	24.0	24.5	24.9
8H 4H	23.6	24.2	24.0	24.6	24.9	23.5	24.2	23.9	24.5	24.9
6H	23.6	24.1	24.0	24.5	24.9	23.6	24.1	24.0	24.5	24.9
8H	23.6	24.0	24.0	24.4	24.9	23.6	24.0	24.0	24.4	24.9
12H	23.6	24.0	24.1	24.4	24.9	23.5	23.9	24.0	24.4	24.8
12H 4H	23.5	24.1	23.9	24.5	24.9	23.5	24.1	23.9	24.4	24.8
6H	23.5	24.0	24.0	24.4	24.9	23.5	24.0	24.0	24.4	24.9
8H	23.6	24.0	24.0	24.4	24.9	23.6	23.9	24.0	24.4	24.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.7 / - 8.0					+ 2.5 / - 6.1				
1.5H	+ 2.3 / - 8.6					+ 2.5 / - 8.4				
2.0H	+ 6.6 / - 7.3					+ 5.6 / - 6.4				

CIE Pub.117 Corrected 19605 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:19604.8x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

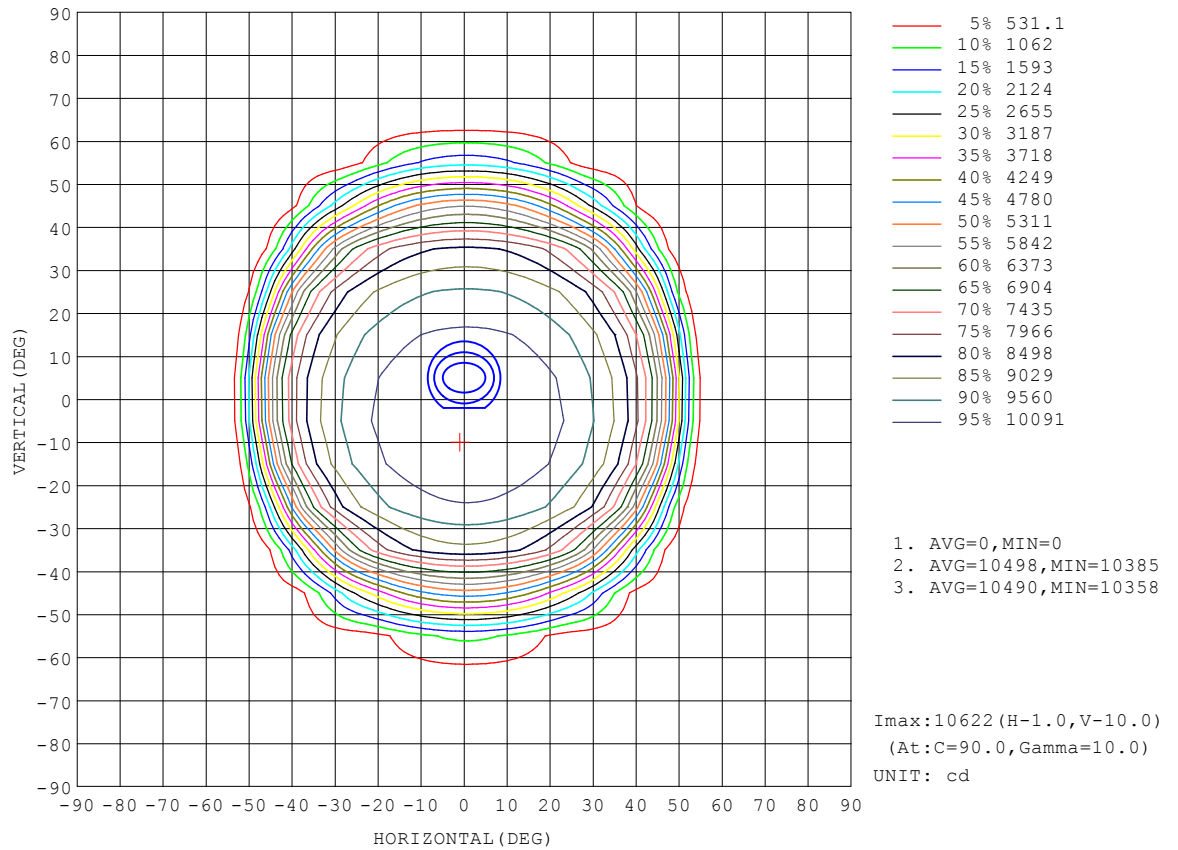
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	73	64	59	72	64	59	54
0.80	83	75	69	82	74	69	81	74	69	64
1.00	91	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	105	99	95	103	98	94	100	96	93	87
2.50	107	102	98	105	101	97	102	98	95	89
3.00	109	105	101	107	103	100	103	100	98	91
4.00	111	108	105	109	106	103	105	103	101	93
5.00	113	110	107	110	108	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:2017-02-10

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:19604.8x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

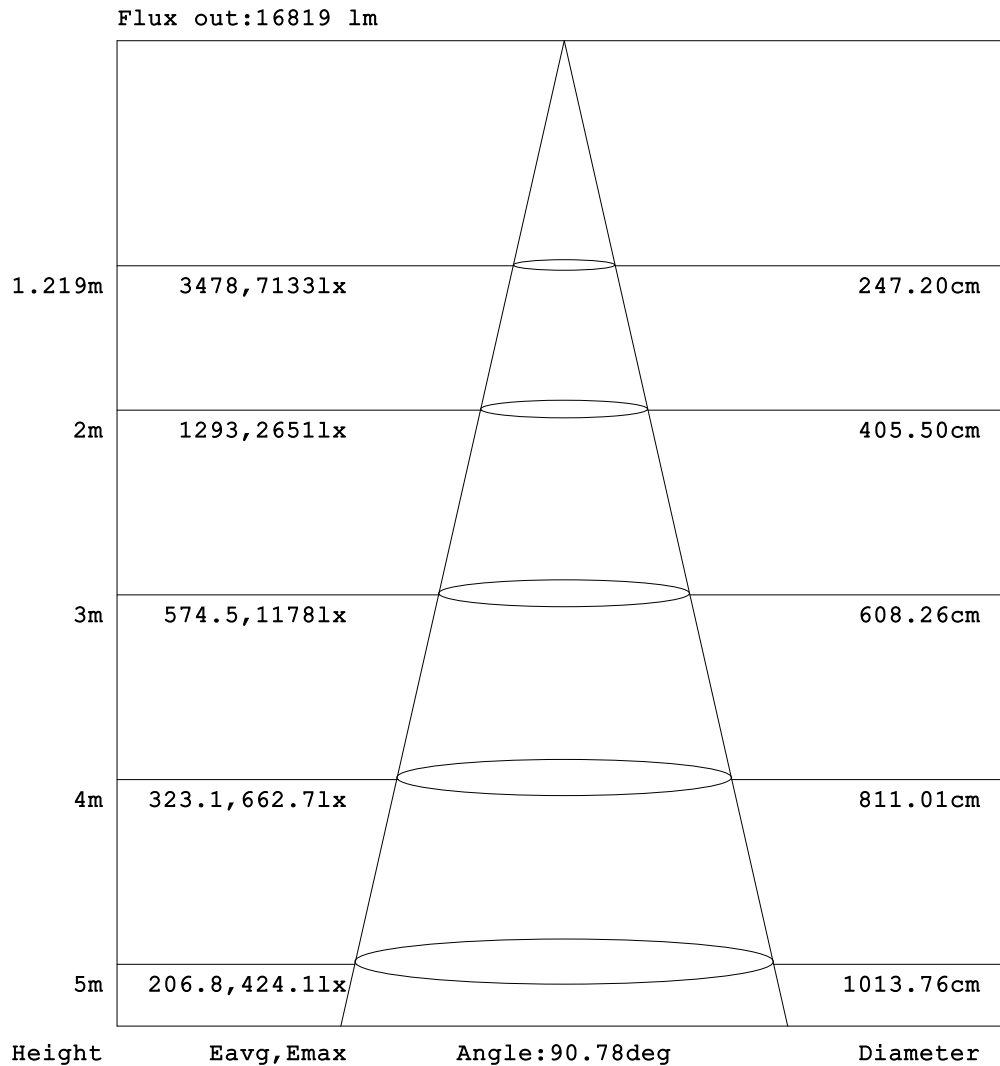


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-10

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:19604.8x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



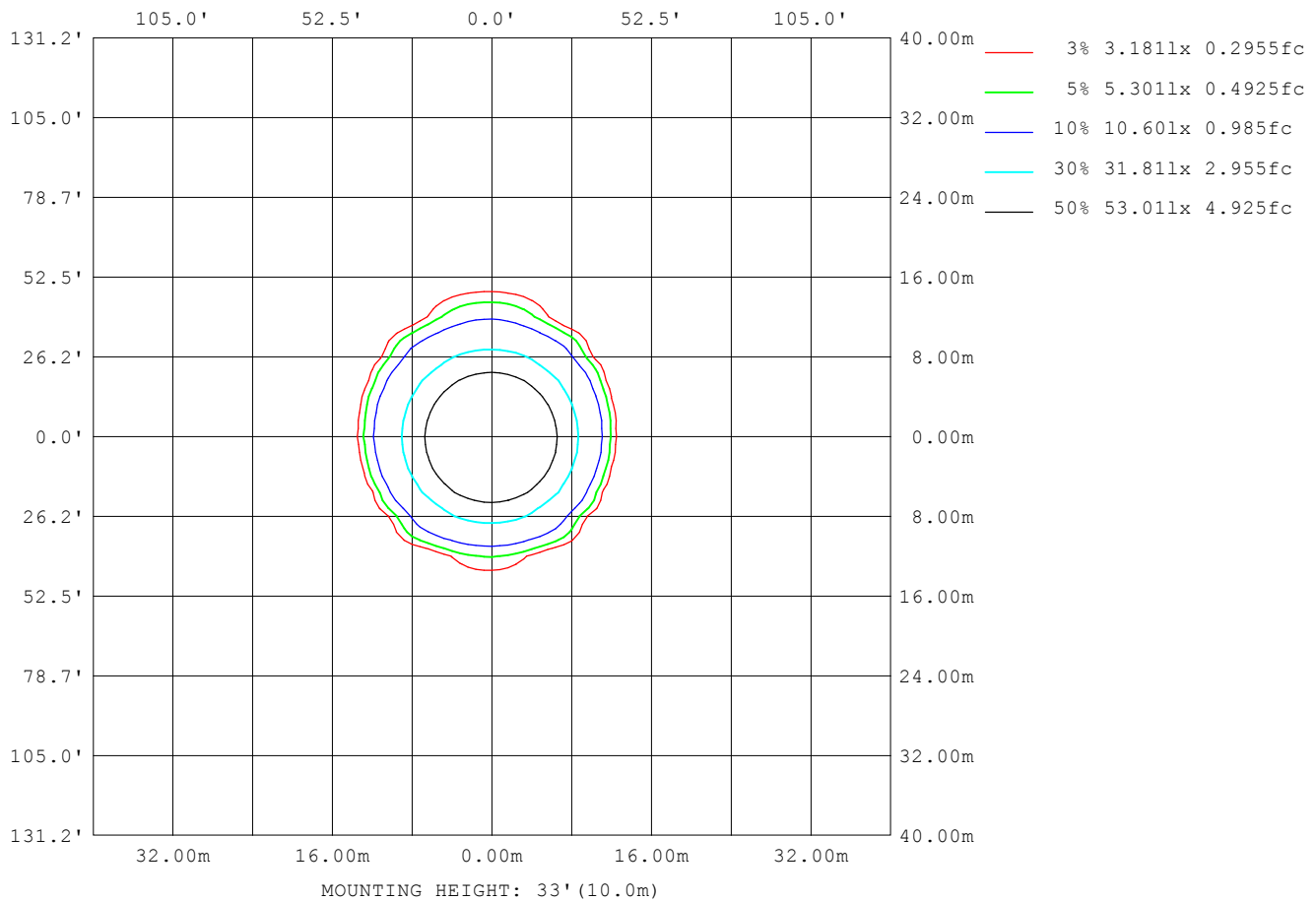
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:19604.8x1 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:19604.8x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

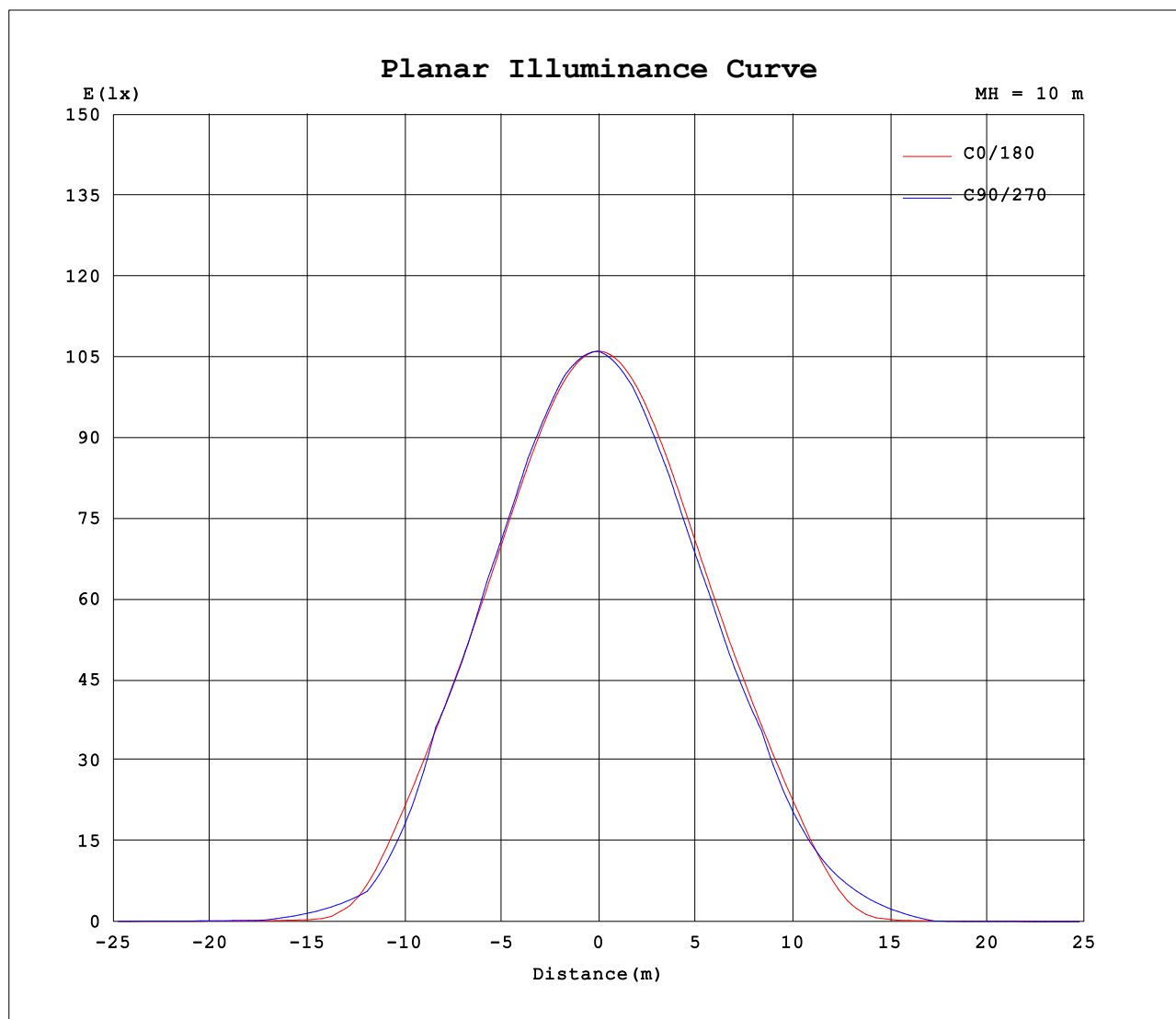
AvgL	cd/m2
L_0~180 (65) av	2389
L_0~180 (75) av	2583
L_0~180 (85) av	5326
L_90~270 (65) av	3209
L_90~270 (75) av	3583
L_90~270 (85) av	0
L_45 (65) av	3175
L_45 (75) av	3504
L_45 (85) av	2985

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:

```

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Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

```