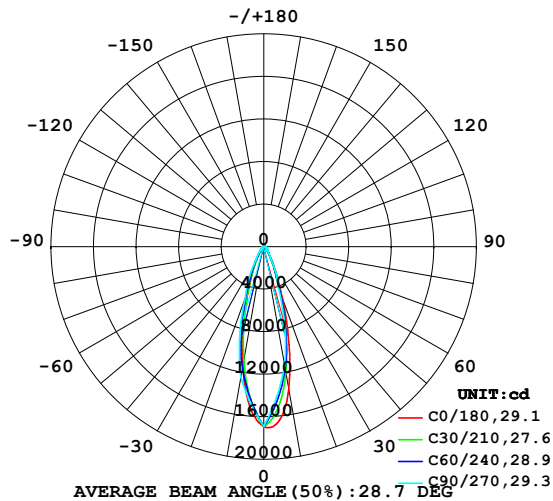


## LUMINAIRE PHOTOMETRIC TEST REPORT

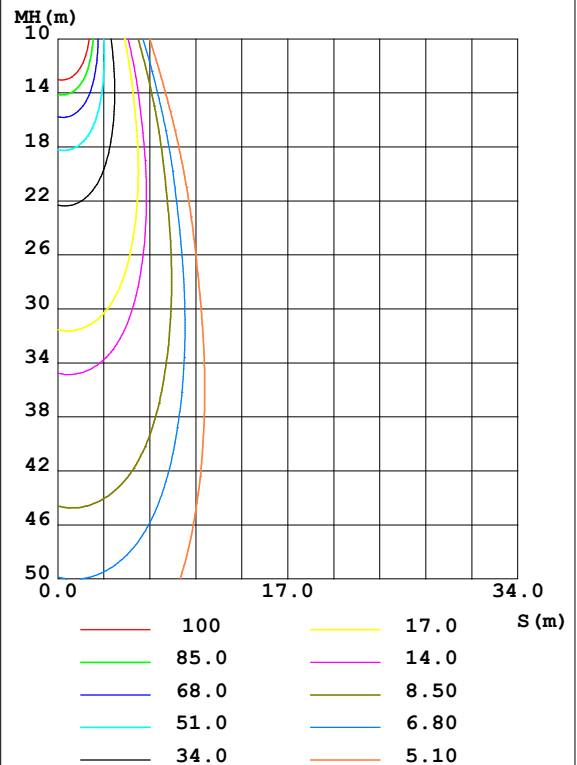
Test:U:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 119.35 lm/W			
MODEL	LHB-50W-3030	I <sub>max</sub> (cd)	17026	S/MH (C0/180)	0.45
NOMINAL POWER (W)	50	LOR (%)	100.0	S/MH (C90/270)	0.51
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	6043.2	η UP, DN (C0-180)	0.0, 48.3
NOMINAL FLUX (lm)	6043.21	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 51.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.50

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: 2017-02-28

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	1648	1484	1415	1399	1511	1435	1470	1529	0- 5	372.5	372.5	6.16, 6.16
10	1359	1173	1138	1050	1141	1112	1248	1276	5- 10	941.4	1314	21.7, 21.7
15	906.1	806.9	765.3	699.8	733.5	773.7	878.3	942.2	10- 15	1158	2472	40.9, 40.9
20	510.2	471.7	393.0	404.5	414.6	460.3	508.5	571.5	15- 20	1015	3487	57.7, 57.7
25	275.3	248.3	263.8	221.7	229.2	254.2	331.2	306.3	20- 25	730.8	4218	69.8, 69.8
30	145.2	139.4	134.5	128.8	126.7	143.2	153.8	167.4	25- 30	501.5	4719	78.1, 78.1
35	82.03	81.90	93.53	75.82	73.06	80.27	102.6	93.52	30- 35	323.7	5043	83.4, 83.4
40	46.65	46.07	52.54	42.34	40.35	43.14	51.33	51.05	35- 40	215.9	5259	87, 87
45	30.85	33.45	43.09	31.88	27.41	30.19	38.07	34.13	40- 45	144.6	5403	89.4, 89.4
50	24.74	26.36	33.64	25.97	22.04	22.80	24.81	24.26	45- 50	116.8	5520	91.3, 91.3
55	21.79	23.88	30.06	23.65	19.62	20.45	23.42	21.34	50- 55	105.2	5625	93.1, 93.1
60	20.40	21.62	26.49	21.22	18.45	18.81	22.03	19.40	55- 60	100.6	5726	94.7, 94.7
65	18.34	18.63	20.39	18.11	17.11	17.35	17.81	17.18	60- 65	92.95	5819	96.3, 96.3
70	17.09	15.10	14.30	14.43	17.07	14.81	13.58	14.06	65- 70	82.39	5901	97.7, 97.7
75	10.78	11.07	10.22	10.28	8.959	11.09	9.782	10.33	70- 75	68.81	5970	98.8, 98.8
80	7.007	7.035	6.148	6.620	5.537	6.589	5.979	6.375	75- 80	46.70	6017	99.6, 99.6
85	3.917	1.992	0	1.899	2.980	1.758	0	1.774	80- 85	23.23	6040	99.9, 99.9
90	1.532	0	0	0	0.9198	0	0	0	85- 90	3.261	6043	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): 5403.3 lm

%lum = 89.4%

%lamp = 89.4%

Conical surface Flux(120deg): 5725.9 lm

%lum = 94.7%

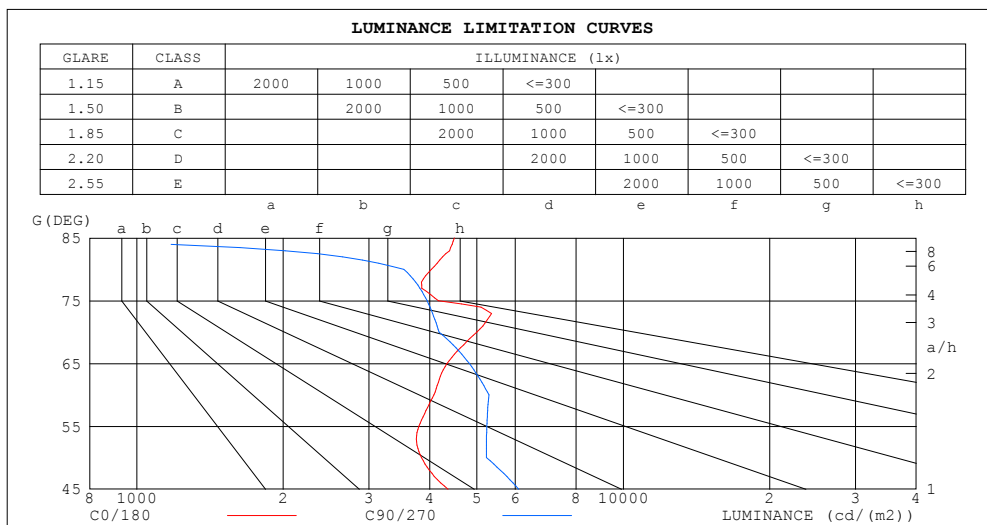
%lamp = 94.7%

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-02-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 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	4494	0
80	4035	3540
75	4166	3950
70	4997	4181
65	4341	4825
60	4080	5297
55	3798	5241
50	3849	5233
45	4363	6094

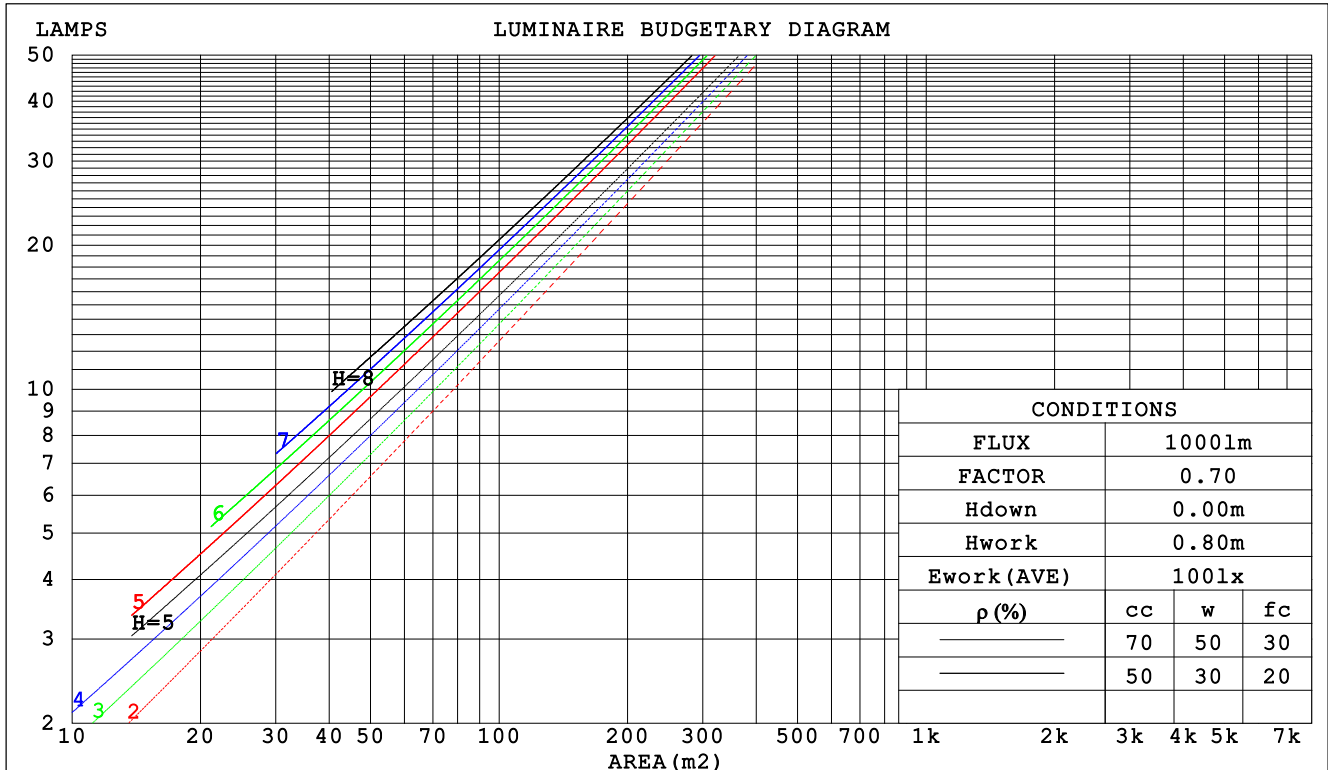
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.10	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.01	.99	.98	.97	.96	.95	.93
2.0	1.03	.99	.96	1.01	.98	.94	.98	.95	.92	.95	.93	.90	.92	.90	.89	.87
3.0	.97	.92	.88	.95	.91	.87	.93	.89	.86	.90	.87	.84	.88	.85	.83	.82
4.0	.91	.86	.82	.90	.85	.81	.88	.84	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.86	.81	.77	.85	.80	.76	.84	.79	.76	.82	.78	.75	.80	.77	.74	.73
6.0	.82	.76	.72	.81	.76	.72	.80	.75	.72	.78	.74	.71	.77	.74	.71	.69
7.0	.78	.73	.69	.78	.72	.69	.76	.72	.68	.75	.71	.68	.74	.70	.68	.66
8.0	.75	.69	.66	.74	.69	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.63
9.0	.72	.66	.63	.71	.66	.63	.70	.66	.62	.69	.65	.62	.69	.65	.62	.61
10.0	.69	.64	.60	.68	.63	.60	.68	.63	.60	.67	.63	.60	.66	.62	.60	.58



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-02-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 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	.183	.104	.033	.177	.101	.032	.164	.094	.030	.152	.088	.028	.142	.082	.026		
2.0	.171	.094	.029	.166	.091	.028	.155	.086	.027	.145	.082	.026	.136	.077	.024		
3.0	.160	.085	.025	.155	.083	.025	.146	.079	.024	.138	.075	.023	.130	.072	.022		
4.0	.149	.077	.023	.145	.076	.022	.137	.073	.022	.130	.070	.021	.123	.067	.020		
5.0	.140	.071	.021	.136	.070	.020	.130	.067	.020	.123	.065	.019	.117	.063	.019		
6.0	.132	.066	.019	.128	.065	.019	.123	.063	.018	.117	.061	.018	.112	.059	.018		
7.0	.124	.061	.017	.122	.061	.017	.116	.059	.017	.112	.057	.017	.107	.056	.016		
8.0	.118	.058	.016	.115	.057	.016	.111	.055	.016	.107	.054	.016	.103	.053	.015		
9.0	.112	.054	.015	.110	.054	.015	.106	.052	.015	.102	.051	.015	.098	.050	.014		
10.0	.107	.051	.014	.105	.051	.014	.101	.050	.014	.098	.049	.014	.095	.048	.014		

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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.156	.132	.113	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.143	.114	.090	.123	.098	.078	.084	.068	.055	.049	.040	.032	.016	.013	.011	
4.0	.132	.099	.073	.113	.085	.064	.078	.059	.045	.045	.035	.027	.015	.011	.009	
5.0	.123	.087	.061	.105	.075	.053	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.114	.077	.051	.098	.067	.044	.068	.047	.031	.039	.028	.019	.013	.009	.006	
7.0	.107	.070	.043	.092	.060	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.101	.063	.037	.087	.055	.033	.060	.039	.023	.035	.023	.014	.011	.007	.005	
9.0	.095	.058	.033	.082	.050	.028	.057	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.090	.053	.029	.078	.046	.025	.054	.033	.018	.032	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 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	13.3	14.2	13.5	14.3	14.5	14.2	15.0	14.4	15.2	15.4
3H	15.0	15.8	15.3	16.0	16.2	15.5	16.4	15.8	16.6	16.8
4H	15.9	16.7	16.2	16.9	17.1	16.1	16.9	16.4	17.1	17.3
6H	16.5	17.2	16.8	17.5	17.7	16.5	17.3	16.8	17.5	17.7
8H	16.7	17.4	17.0	17.6	17.9	16.6	17.3	16.9	17.6	17.8
12H	16.8	17.5	17.1	17.7	18.0	16.6	17.3	16.9	17.5	17.8
4H 2H	14.0	14.8	14.3	15.0	15.2	14.7	15.5	15.0	15.7	15.9
3H	15.8	16.5	16.1	16.8	17.1	16.3	17.0	16.7	17.3	17.6
4H	16.8	17.4	17.2	17.7	18.0	17.1	17.7	17.4	18.0	18.3
6H	17.5	18.1	17.9	18.4	18.8	17.6	18.2	18.0	18.5	18.8
8H	17.8	18.3	18.1	18.6	19.0	17.7	18.2	18.1	18.6	19.0
12H	17.9	18.4	18.3	18.8	19.1	17.7	18.2	18.1	18.5	18.9
8H 4H	17.1	17.6	17.5	18.0	18.4	17.4	17.9	17.8	18.2	18.6
6H	18.0	18.4	18.4	18.8	19.2	18.1	18.5	18.5	18.9	19.3
8H	18.3	18.7	18.8	19.1	19.6	18.2	18.6	18.7	19.0	19.5
12H	18.6	18.9	19.1	19.4	19.8	18.2	18.5	18.7	19.0	19.4
12H 4H	17.1	17.6	17.6	18.0	18.4	17.4	17.9	17.8	18.2	18.6
6H	18.1	18.4	18.5	18.9	19.3	18.1	18.5	18.6	18.9	19.4
8H	18.4	18.8	18.9	19.2	19.7	18.3	18.6	18.8	19.1	19.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.2				
1.5H	+ 0.3 / - 0.2					+ 0.5 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 6043 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.3)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

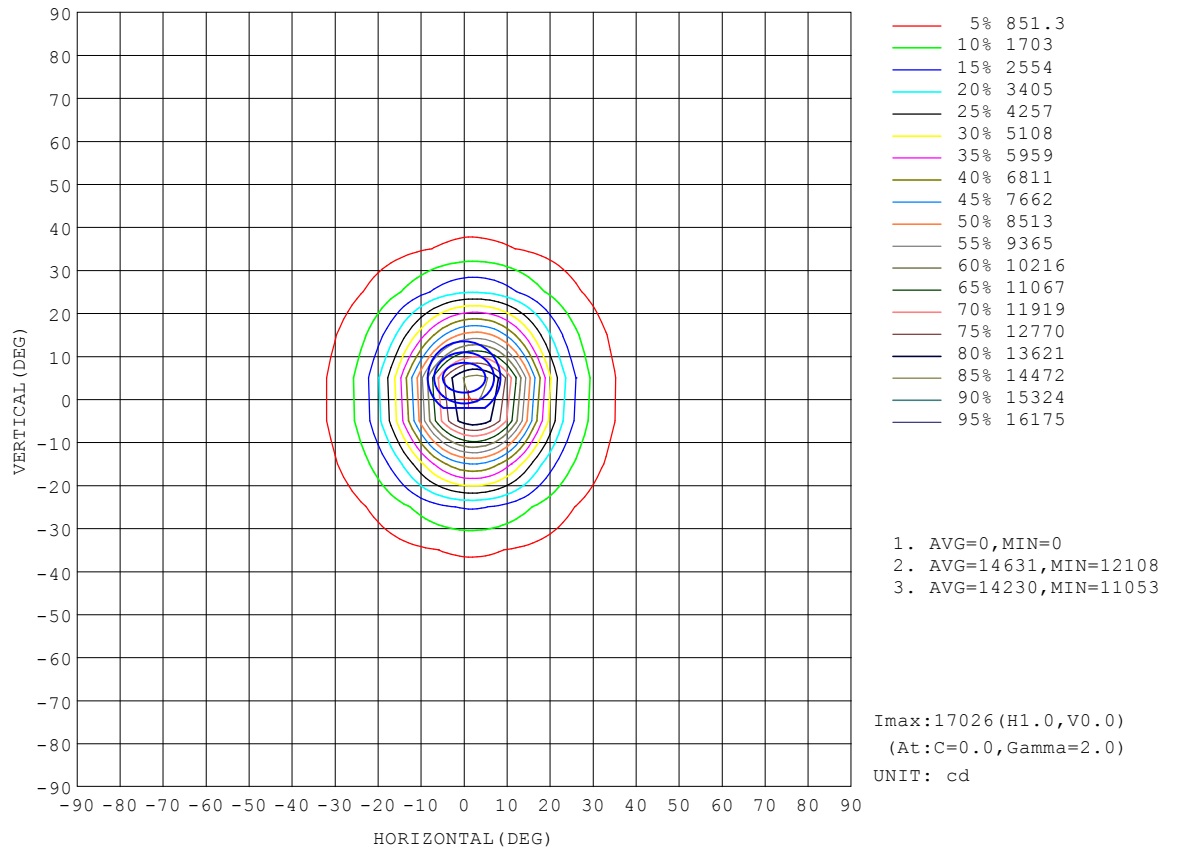
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	77	72	82	76	72	68
0.80	91	85	80	91	84	80	89	84	80	76
1.00	96	90	85	95	89	85	93	89	85	80
1.25	100	94	90	99	94	90	97	92	89	84
1.50	103	98	94	102	97	93	100	95	92	87
2.00	106	102	98	105	100	97	102	98	96	90
2.50	108	104	101	107	103	100	104	100	98	91
3.00	110	106	103	108	105	102	105	102	100	93
4.00	113	109	107	111	108	105	107	105	103	95
5.00	114	111	109	112	110	108	108	106	105	97
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:2017-02-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



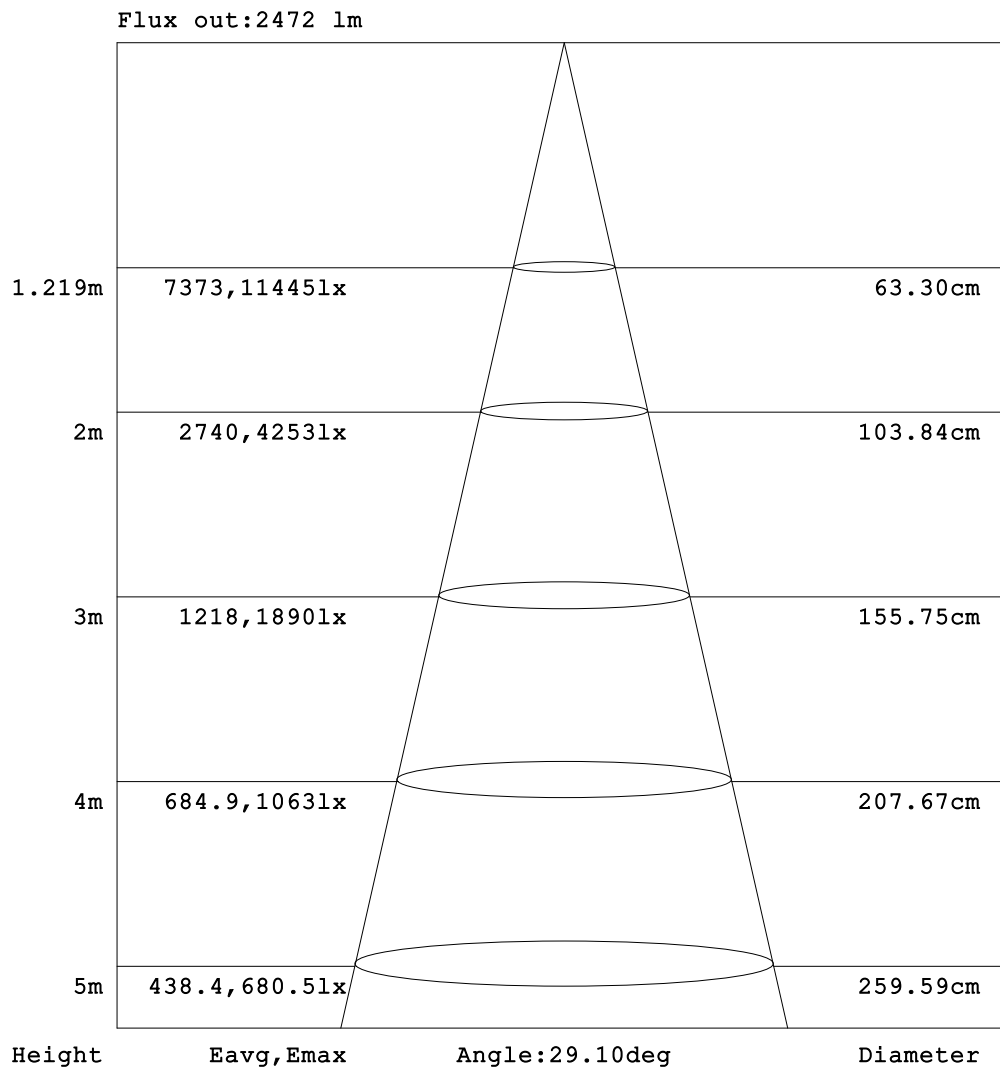
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



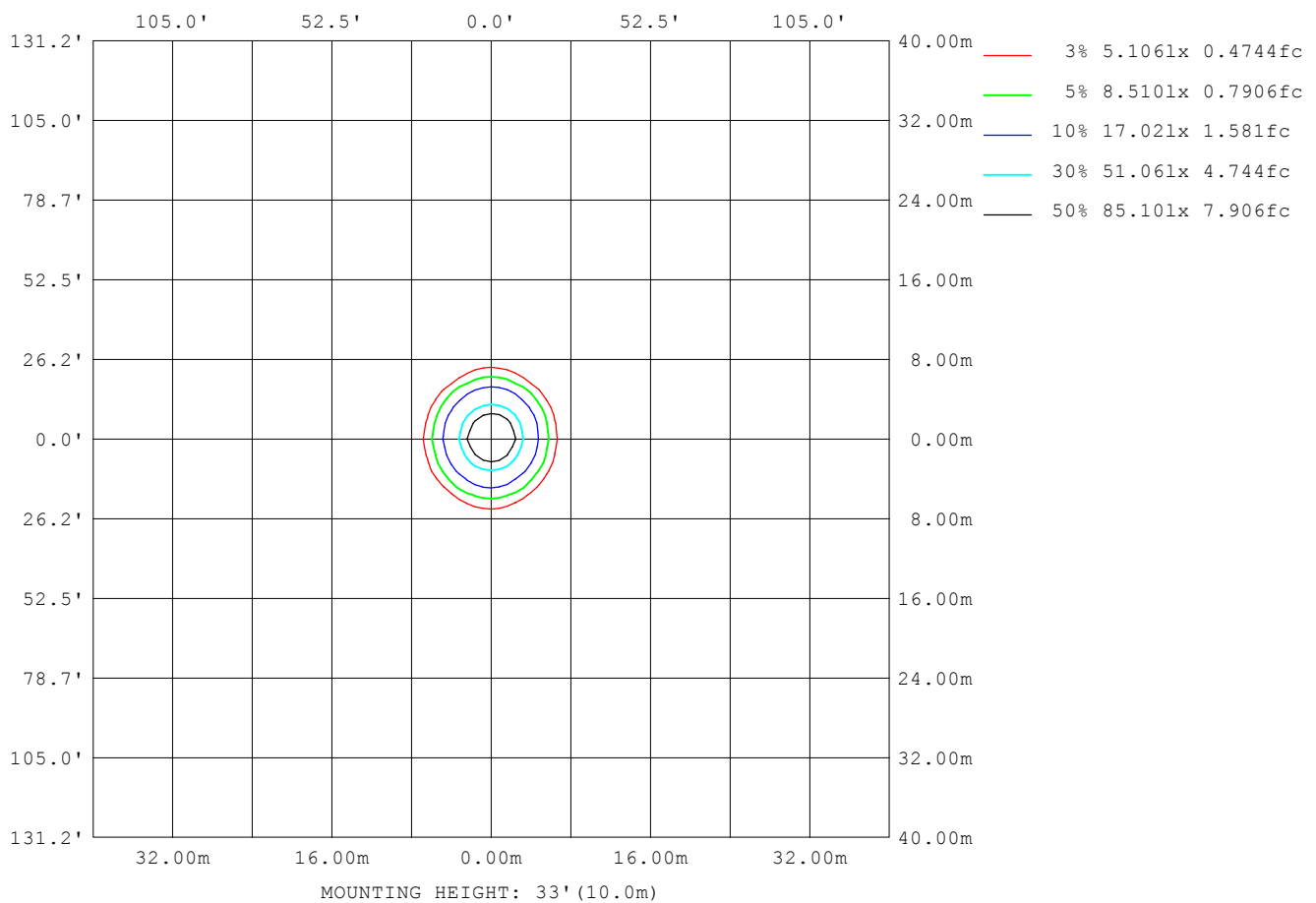
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 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:2017-02-28

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:220.1V I:0.2356A P:50.63W PF:0.9765 Lamp Flux:6043.21x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

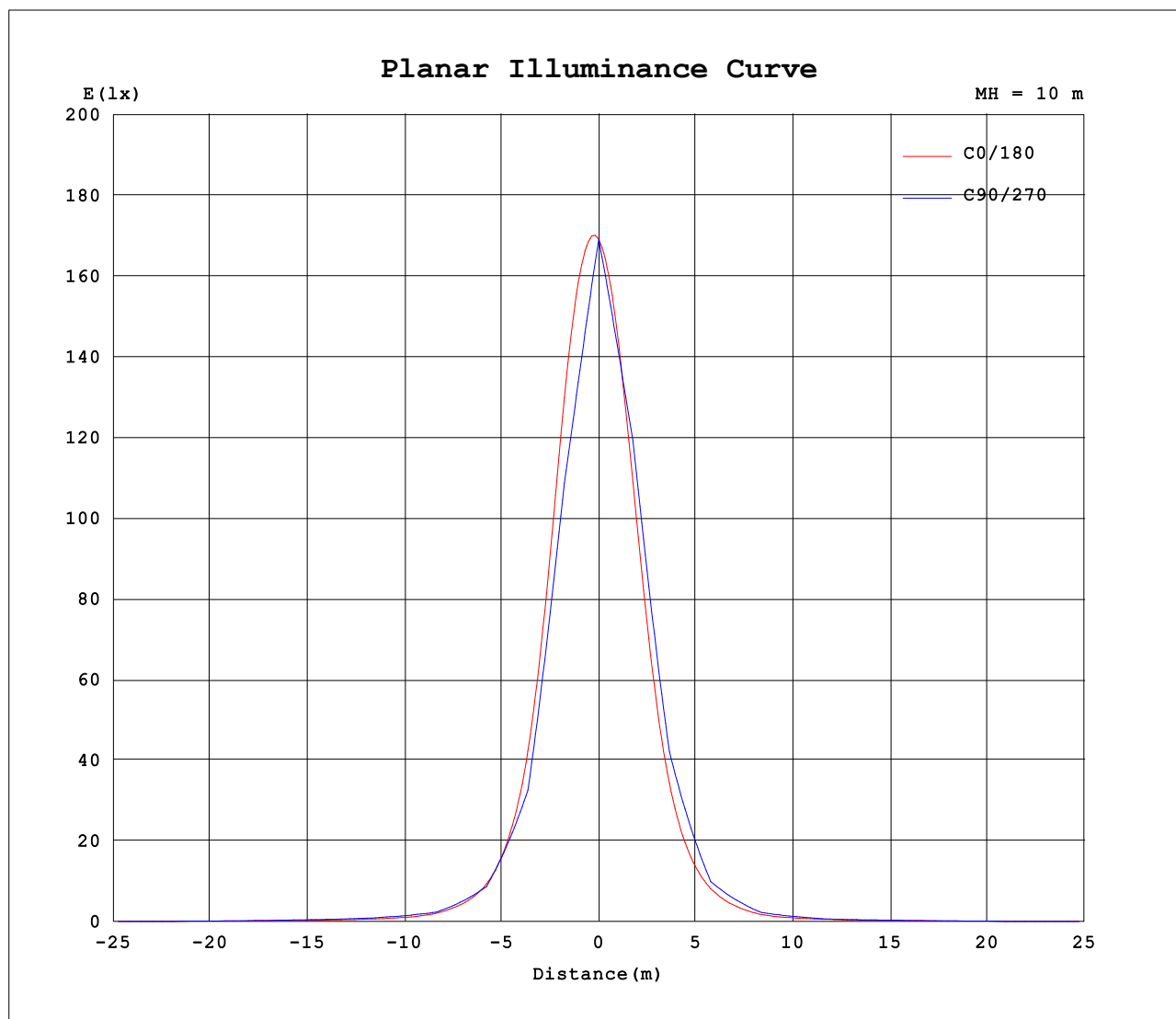
AvgL	cd/m2
L_0~180 (65) av	4195
L_0~180 (75) av	3814
L_0~180 (85) av	3957
L_90~270 (65) av	4520
L_90~270 (75) av	3865
L_90~270 (85) av	0
L_45 (65) av	4215
L_45 (75) av	4131
L_45 (85) av	2129

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-28

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: 2017-02-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```