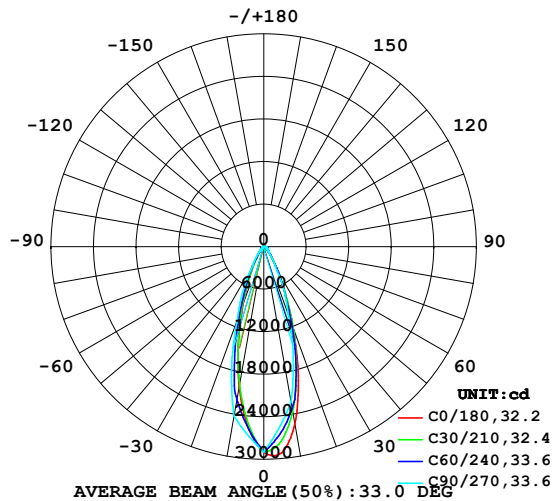


## LUMINAIRE PHOTOMETRIC TEST REPORT

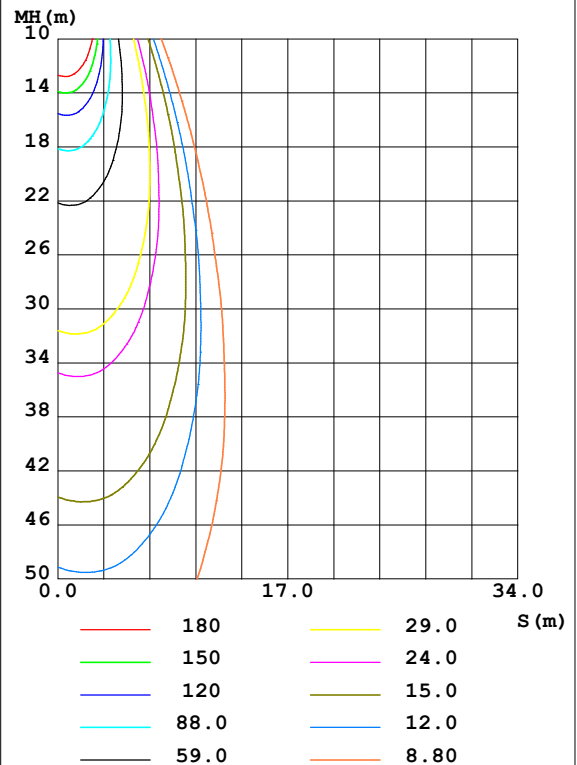
Test:U:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 126.82 lm/W			
MODEL	LHB-100W-3030	I <sub>max</sub> (cd)	29520	S/MH(C0/180)	0.48
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	0.57
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	12401	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	12406.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	0.55

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: 2017-03-10

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	2918	2702	2558	2456	2554	2526	2662	2765	0- 5	653.7	653.7	5.27,5.27
10	2535	2330	2220	1938	2010	2059	2427	2424	5- 10	1729	2383	19.2,19.2
15	1885	1826	1614	1392	1382	1516	1756	1909	10- 15	2277	4660	37.6,37.6
20	1210	1195	1008	873.3	845.3	933.4	1086	1225	15- 20	2166	6826	55,55
25	705.9	693.8	674.0	509.7	486.7	533.2	705.0	691.6	20- 25	1687	8513	68.7,68.6
30	396.1	400.9	340.3	297.0	268.0	299.3	323.9	389.6	25- 30	1188	9701	78.2,78.2
35	225.8	232.3	228.2	167.7	147.2	163.0	208.1	219.0	30- 35	760.8	10462	84.4,84.3
40	125.8	125.6	116.1	87.79	80.91	82.35	92.39	112.1	35- 40	489.0	10951	88.3,88.3
45	67.79	78.32	87.01	60.29	51.54	54.72	66.22	66.83	40- 45	302.6	11253	90.7,90.7
50	49.88	52.52	57.89	46.37	41.62	39.92	40.06	42.72	45- 50	223.0	11476	92.5,92.5
55	46.03	46.05	50.92	41.43	39.94	35.27	36.05	37.26	50- 55	189.9	11666	94.1,94
60	41.53	41.37	43.96	37.48	39.27	31.46	32.04	33.22	55- 60	179.1	11845	95.5,95.5
65	38.53	35.62	37.90	32.41	28.32	26.82	27.47	28.39	60- 65	166.4	12012	96.9,96.8
70	28.63	29.58	31.85	26.70	22.53	21.51	22.89	23.08	65- 70	145.1	12157	98,98
75	20.95	22.49	22.51	19.74	14.58	15.42	15.96	17.07	70- 75	117.1	12274	99,98.9
80	13.48	15.04	13.17	13.16	9.132	9.723	9.032	10.71	75- 80	81.16	12355	99.6,99.6
85	5.627	4.357	0	3.775	2.465	2.563	0	2.830	80- 85	40.78	12396	100,99.9
90	3.205	0	0	0	1.921	0	0	0	85- 90	5.133	12401	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): 11253 lm

%lum = 90.7%

%lamp = 90.7%

Conical surface Flux(120deg): 11845 lm

%lum = 95.5%

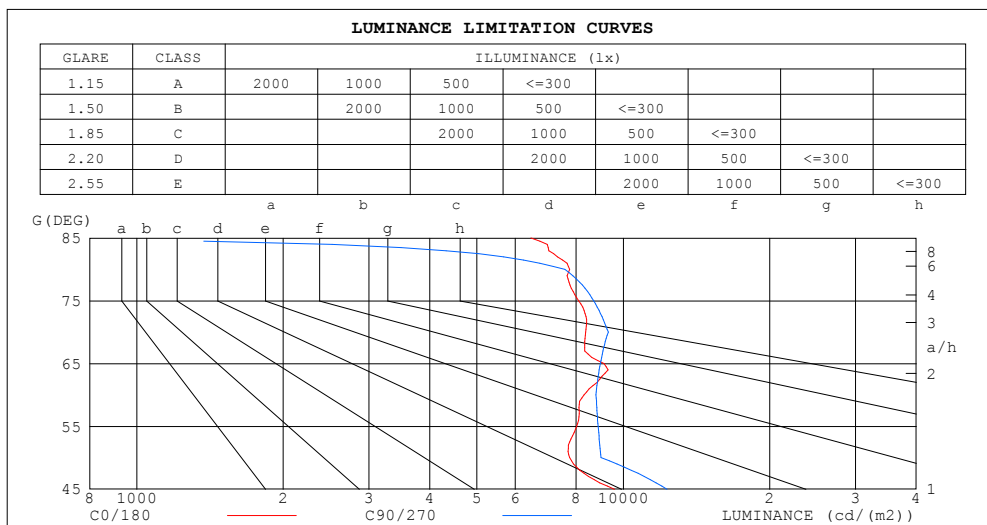
%lamp = 95.5%

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-03-10

$\gamma$  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:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 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	6457	0
80	7763	7583
75	8095	8697
70	8370	9313
65	9117	8969
60	8306	8791
55	8025	8878
50	7760	9007
45	9587	12306

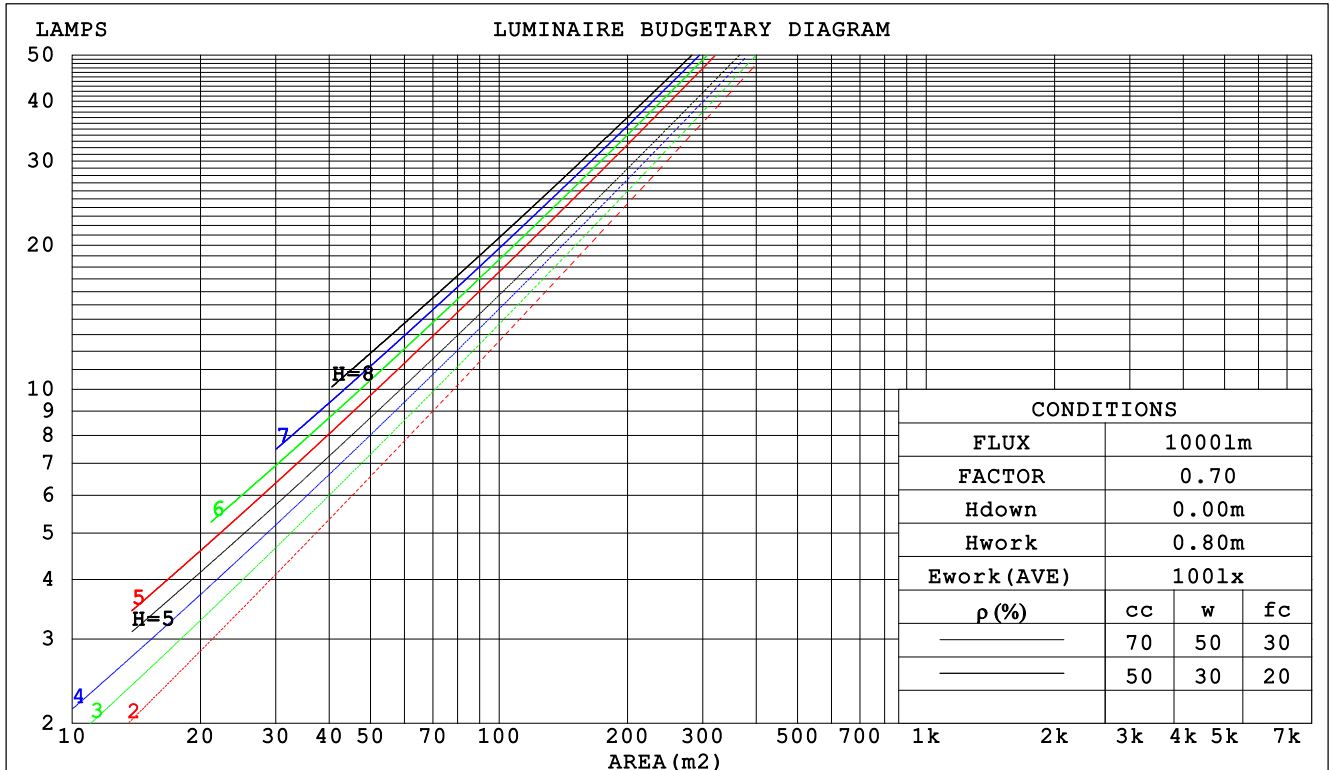
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-03-10

$\gamma$  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:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 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	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	.00
1.0	1.11	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	.95	.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	.83	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.86	.80	.76	.85	.80	.76	.83	.79	.75	.82	.78	.75	.80	.77	.74	.73
6.0	.82	.76	.72	.81	.76	.72	.79	.75	.71	.78	.74	.71	.77	.73	.70	.69
7.0	.78	.72	.68	.77	.72	.68	.76	.71	.68	.75	.70	.67	.73	.70	.67	.66
8.0	.74	.69	.65	.74	.68	.65	.72	.68	.64	.71	.67	.64	.71	.67	.64	.63
9.0	.71	.65	.62	.70	.65	.62	.69	.65	.61	.69	.64	.61	.68	.64	.61	.60
10.0	.68	.63	.59	.67	.62	.59	.67	.62	.59	.66	.62	.59	.65	.61	.59	.57



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-03-10

$\gamma$  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:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 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	.182	.103	.033	.175	.100	.032	.162	.093	.030	.151	.087	.028	.140	.081	.026		
2.0	.171	.094	.029	.165	.091	.028	.154	.086	.027	.145	.081	.025	.136	.077	.024		
3.0	.160	.085	.025	.155	.083	.025	.146	.079	.024	.137	.075	.023	.130	.072	.022		
4.0	.149	.078	.023	.145	.076	.022	.138	.073	.022	.130	.070	.021	.124	.067	.020		
5.0	.141	.072	.021	.137	.070	.020	.130	.068	.020	.124	.065	.019	.118	.063	.019		
6.0	.133	.066	.019	.130	.065	.019	.124	.063	.018	.118	.061	.018	.113	.060	.018		
7.0	.126	.062	.018	.123	.061	.017	.118	.060	.017	.113	.058	.017	.108	.056	.017		
8.0	.119	.058	.016	.117	.058	.016	.112	.056	.016	.108	.055	.016	.104	.053	.016		
9.0	.114	.055	.015	.111	.054	.015	.107	.053	.015	.104	.052	.015	.100	.051	.015		
10.0	.108	.052	.014	.107	.051	.014	.103	.050	.014	.099	.049	.014	.096	.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	.171	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.018	.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	.026	.015	.011	.009	
5.0	.123	.087	.060	.106	.075	.053	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.115	.078	.051	.099	.067	.044	.068	.047	.031	.039	.028	.019	.013	.009	.006	
7.0	.108	.070	.043	.093	.060	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.102	.063	.037	.087	.055	.032	.060	.039	.023	.035	.023	.014	.011	.007	.005	
9.0	.096	.058	.032	.083	.050	.028	.057	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.091	.053	.028	.079	.046	.025	.055	.033	.018	.032	.019	.011	.010	.006	.003	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-03-10

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:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 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	16.0	16.8	16.2	17.0	17.2	16.9	17.8	17.1	18.0	18.1
3H	17.2	18.1	17.5	18.3	18.5	18.3	19.1	18.5	19.3	19.5
4H	17.9	18.7	18.1	18.9	19.1	18.9	19.7	19.2	19.9	20.1
6H	18.3	19.0	18.6	19.3	19.5	19.4	20.1	19.7	20.4	20.6
8H	18.4	19.1	18.7	19.4	19.6	19.5	20.2	19.8	20.5	20.7
12H	18.5	19.2	18.8	19.5	19.7	19.5	20.1	19.8	20.4	20.7
4H 2H	16.5	17.3	16.8	17.5	17.8	17.3	18.1	17.6	18.3	18.6
3H	18.1	18.8	18.4	19.1	19.3	19.0	19.7	19.3	20.0	20.2
4H	18.9	19.5	19.2	19.8	20.1	19.8	20.4	20.1	20.7	21.0
6H	19.4	20.0	19.8	20.3	20.7	20.4	21.0	20.8	21.3	21.7
8H	19.6	20.1	20.0	20.5	20.9	20.6	21.1	21.0	21.4	21.8
12H	19.7	20.2	20.2	20.6	21.0	20.5	21.0	21.0	21.4	21.8
8H 4H	19.3	19.8	19.7	20.2	20.5	20.1	20.6	20.5	20.9	21.3
6H	20.0	20.5	20.5	20.9	21.3	20.9	21.3	21.3	21.7	22.1
8H	20.3	20.7	20.8	21.1	21.6	21.1	21.4	21.5	21.9	22.3
12H	20.6	20.9	21.0	21.3	21.8	21.1	21.4	21.5	21.8	22.3
12H 4H	19.3	19.8	19.7	20.2	20.6	20.1	20.5	20.5	20.9	21.3
6H	20.1	20.5	20.6	20.9	21.4	20.9	21.3	21.4	21.7	22.2
8H	20.5	20.8	21.0	21.3	21.7	21.2	21.5	21.6	21.9	22.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.4					+ 0.3 / - 0.4				
1.5H	+ 1.1 / - 0.4					+ 0.6 / - 0.4				
2.0H	+ 0.3 / - 0.2					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 12406 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.7)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-03-10

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:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

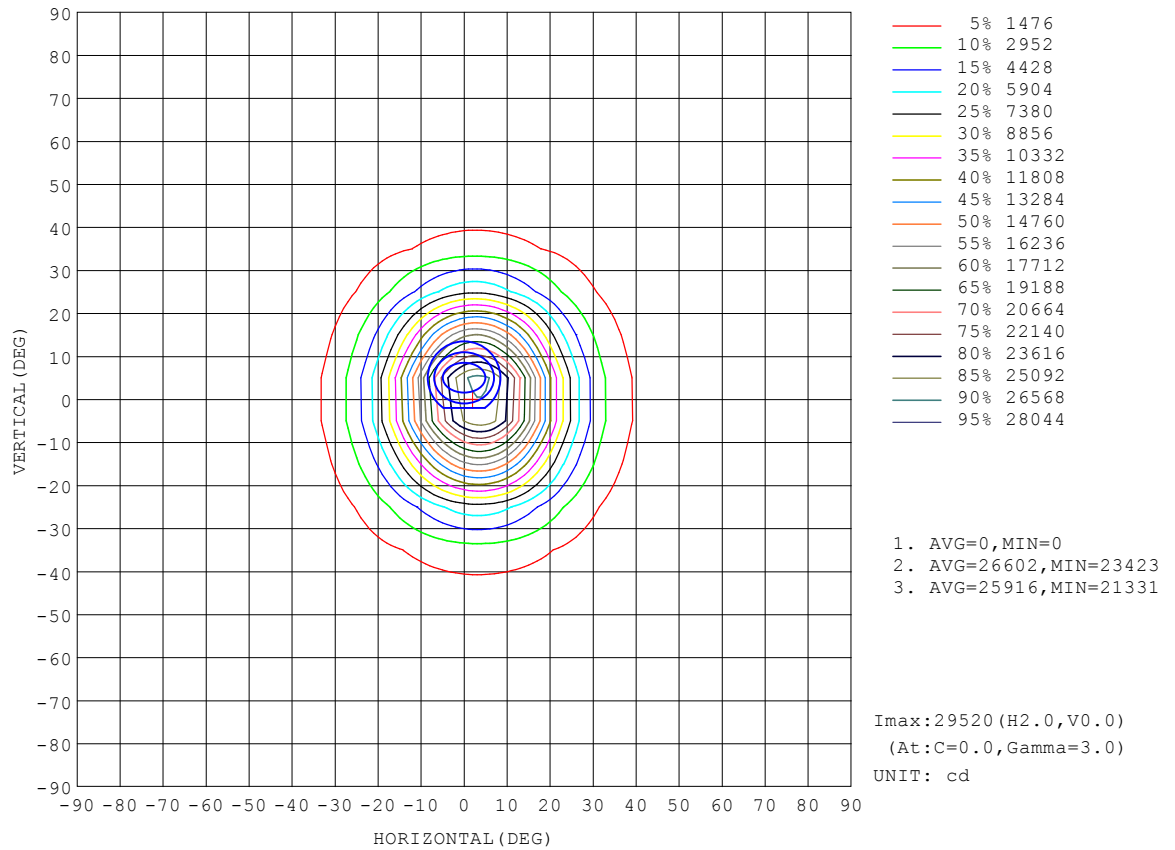
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	78	73	84	77	73	83	77	73	69
0.80	92	85	81	91	85	81	90	85	81	77
1.00	97	90	86	96	90	86	94	90	86	81
1.25	101	95	91	100	94	91	98	93	90	85
1.50	104	98	95	102	98	94	100	96	93	88
2.00	107	102	98	105	101	98	103	99	96	91
2.50	109	104	101	107	103	100	104	101	98	92
3.00	111	107	104	109	105	103	105	103	100	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	112	110	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:2017-03-10

$\gamma$  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:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



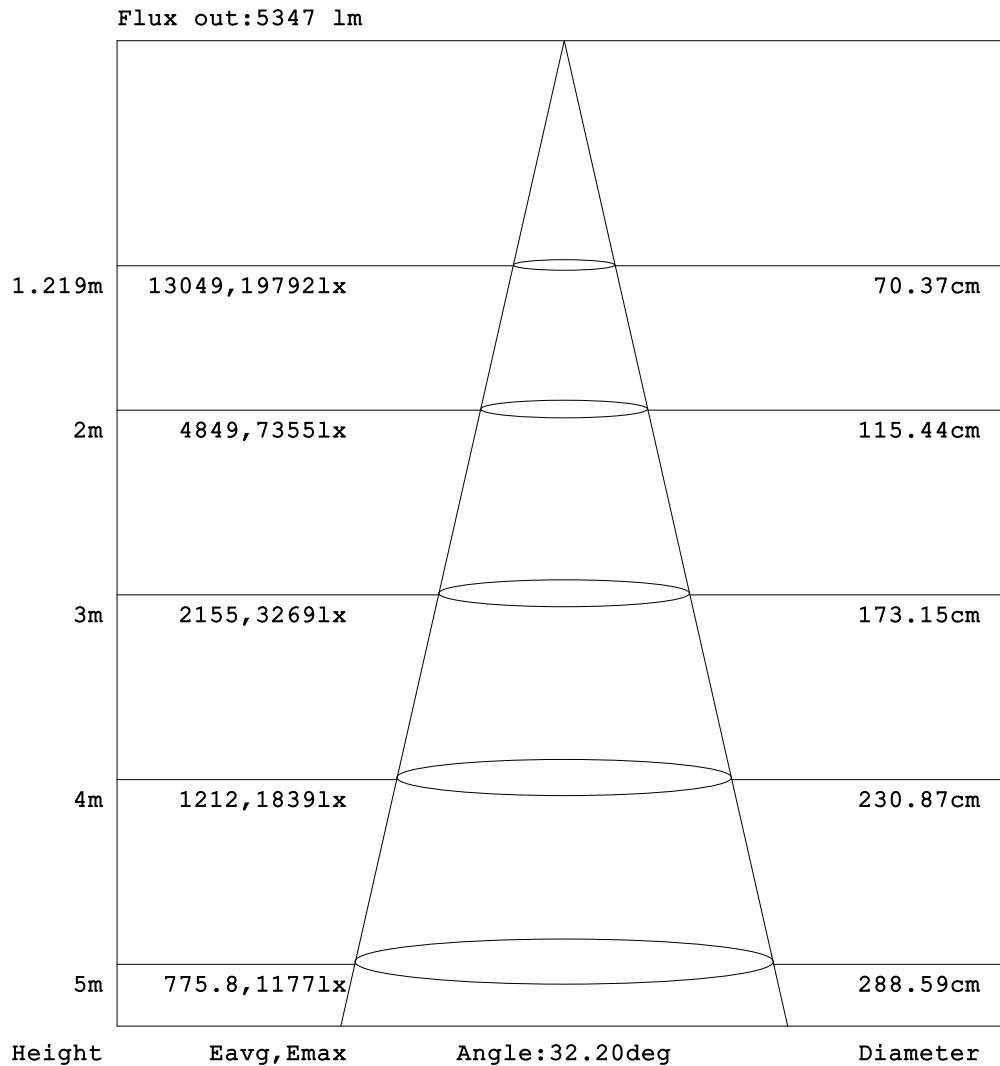
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-03-10

$\gamma$  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:



### AAI Figure

Test:U:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



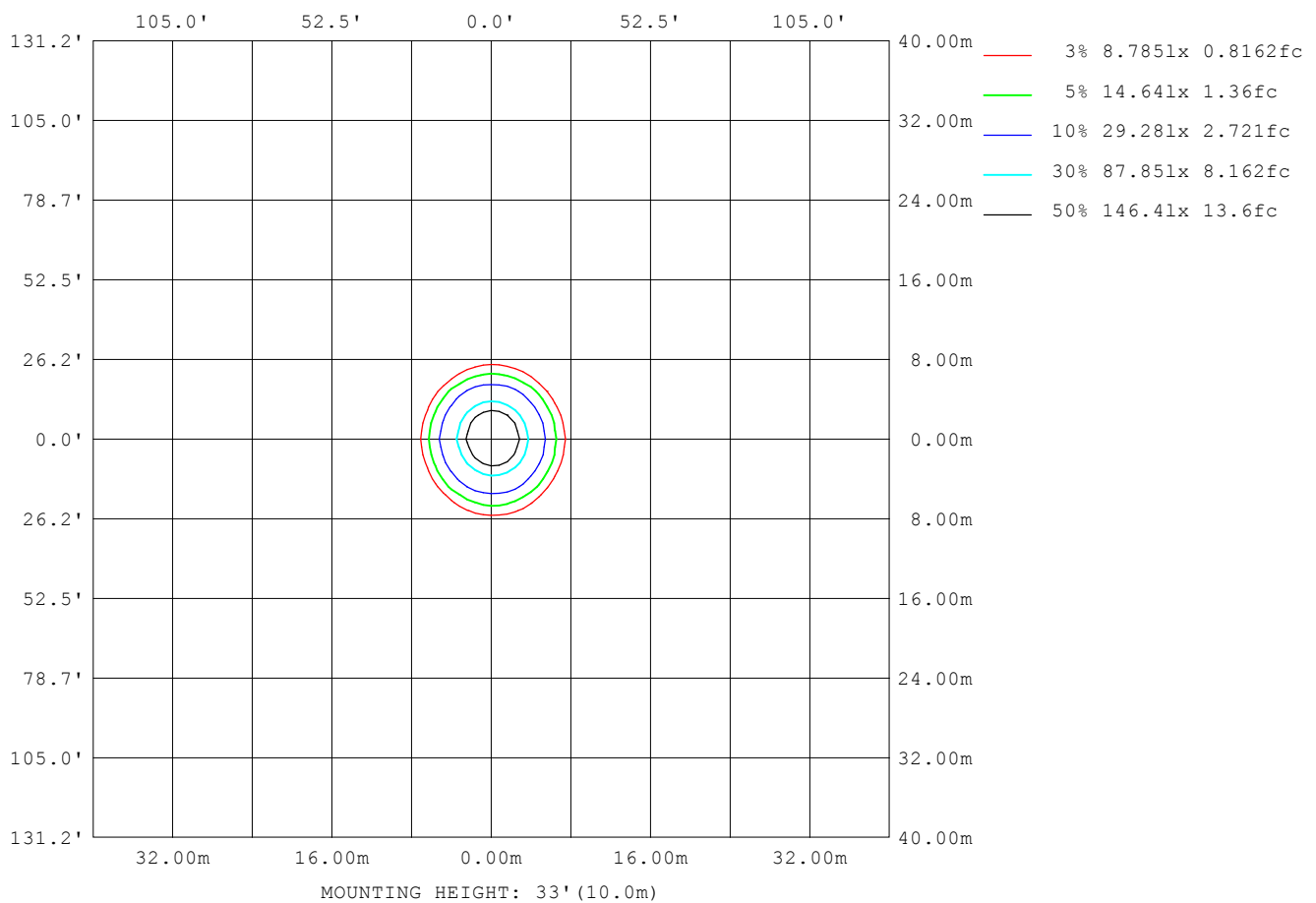
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2017-03-10

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:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 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:2017-03-10

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:220.1V I:0.4501A P:97.78W PF:0.9869 Lamp Flux:12406.2x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

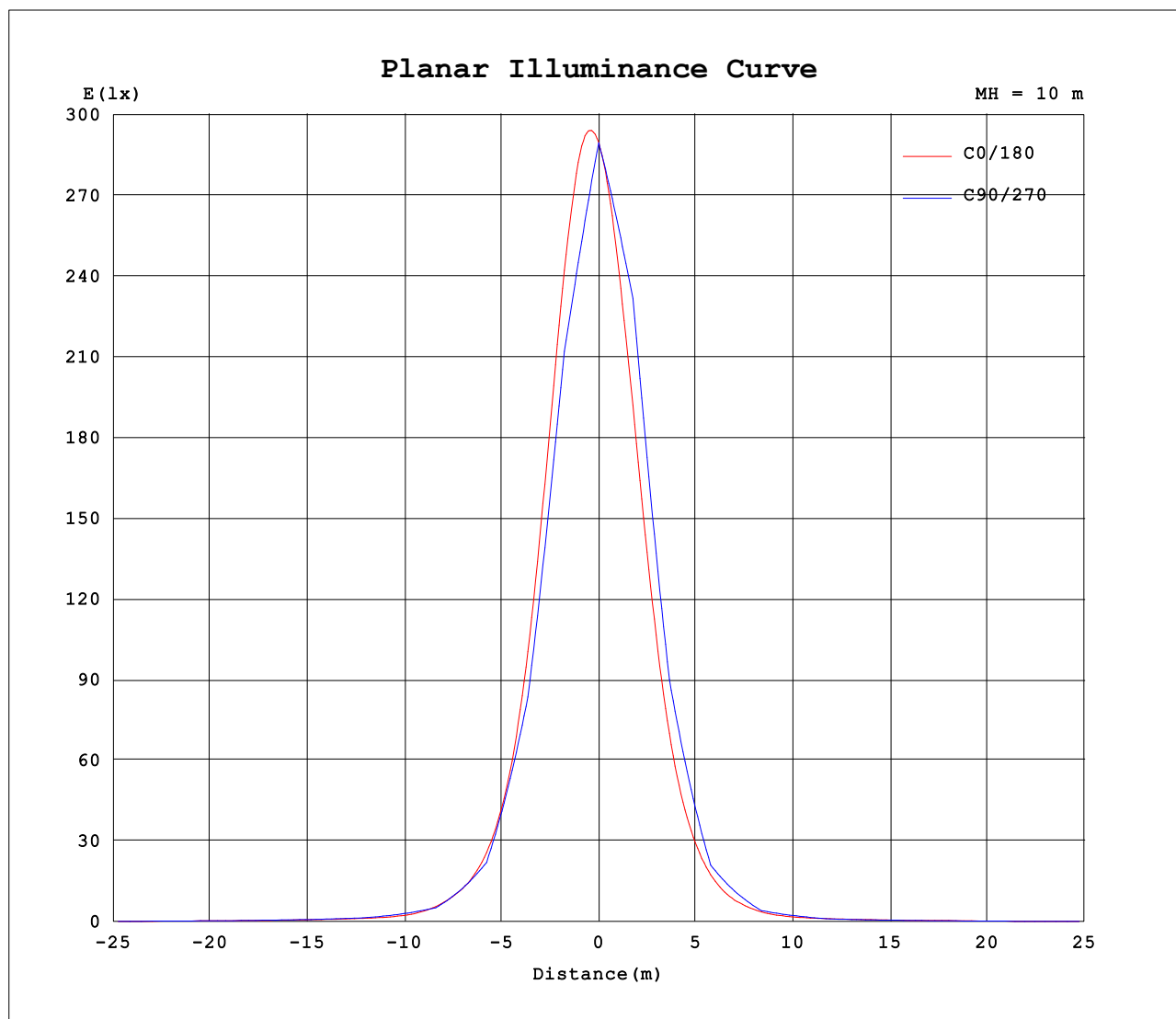
AvgL	cd/m2
L_0~180 (65) av	7909
L_0~180 (75) av	6863
L_0~180 (85) av	4643
L_90~270 (65) av	7734
L_90~270 (75) av	7432
L_90~270 (85) av	0
L_45 (65) av	7290
L_45 (75) av	7218
L_45 (85) av	3879

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-03-10

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: 2017-03-10

$\gamma$  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:

```