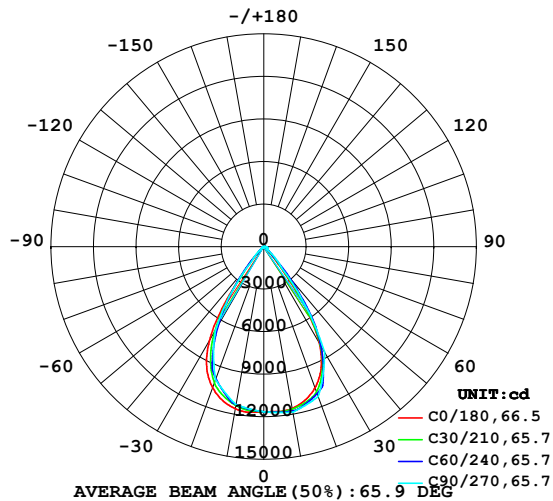


## LUMINAIRE PHOTOMETRIC TEST REPORT

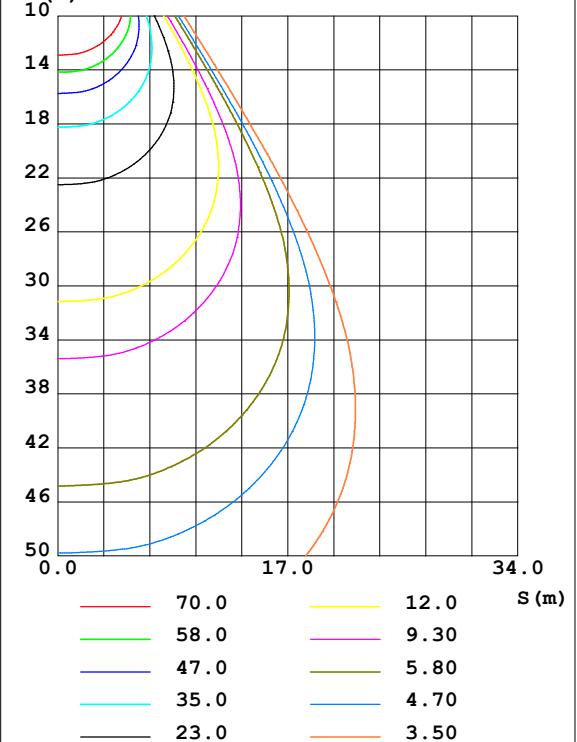
Test:U:220.1V I:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 125.97 lm/W			
MODEL	LHB-100W-6060	Imax(cd)	11849	S/MH(C0/180)	0.96
NOMINAL POWER(W)	100	LOR(%)	99.2	S/MH(C90/270)	0.93
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	12365	$\eta$ UP,DN(C0-180)	0.0,52.8
NOMINAL FLUX(lm)	12467.4	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,46.4
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220	$\eta$ down(%)	99.2	CIBSE SHR MAX	0.95

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:2017-02-16

$\gamma$  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:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	1167	1171	1175	1174	1172	1155	1149	1153	0- 5	278.4	278.4	2.25,2.23
10	1158	1169	1185	1171	1160	1132	1132	1132	5- 10	829.8	1108	8.96,8.89
15	1123	1148	1155	1149	1124	1085	1065	1088	10- 15	1346	2454	19.9,19.7
20	1059	1087	1125	1087	1058	994.8	997.2	999.5	15- 20	1785	4240	34.3,34
25	956.5	996.5	991.5	993.0	951.7	878.3	841.2	884.0	20- 25	2088	6328	51.2,50.8
30	780.9	801.5	857.6	793.7	768.4	673.7	685.2	681.5	25- 30	2140	8467	68.5,67.9
35	464.8	493.9	529.0	483.7	453.6	385.9	406.4	395.4	30- 35	1797	10264	83,82.3
40	157.8	198.5	200.4	190.2	158.2	139.3	127.6	144.9	35- 40	1035	11299	91.4,90.6
45	54.36	84.76	116.3	81.24	48.65	58.56	71.92	61.71	40- 45	425.7	11725	94.8,94
50	21.95	28.20	32.20	27.87	18.96	16.53	16.20	17.27	45- 50	174.2	11899	96.2,95.4
55	18.56	24.98	29.28	24.51	15.16	14.67	14.93	15.39	50- 55	93.72	11993	97,96.2
60	17.27	22.87	26.36	22.54	14.00	13.51	13.65	14.10	55- 60	86.00	12079	97.7,96.9
65	16.29	20.67	22.14	20.56	12.90	12.44	10.95	12.76	60- 65	83.30	12162	98.4,97.6
70	15.05	17.75	17.92	17.70	11.62	10.42	8.255	10.55	65- 70	75.45	12237	99,98.2
75	12.29	13.43	13.27	13.22	9.093	6.717	5.506	6.748	70- 75	61.23	12299	99.5,98.6
80	6.525	8.904	8.619	8.673	3.517	3.438	2.756	3.477	75- 80	41.77	12340	99.8,99
85	4.480	2.680	0	2.593	1.927	0.7769	0	0.8002	80- 85	20.85	12361	100,99.1
90	3.082	0	0	0	2.030	0	0	0	85- 90	3.496	12365	100,99.2
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): 11725 lm

%lum = 94.8%

%lamp = 94.0%

Conical surface Flux(120deg): 12079 lm

%lum = 97.7%

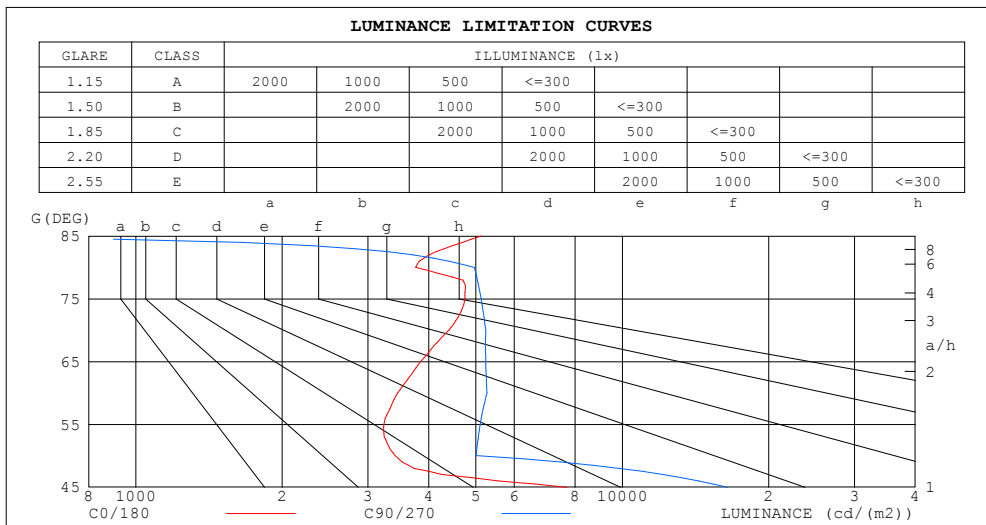
%lamp = 96.9%

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-02-16

$\gamma$  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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 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	5141	0
80	3758	4963
75	4749	5127
70	4400	5240
65	3854	5239
60	3453	5272
55	3236	5105
50	3415	5009
45	7687	16448

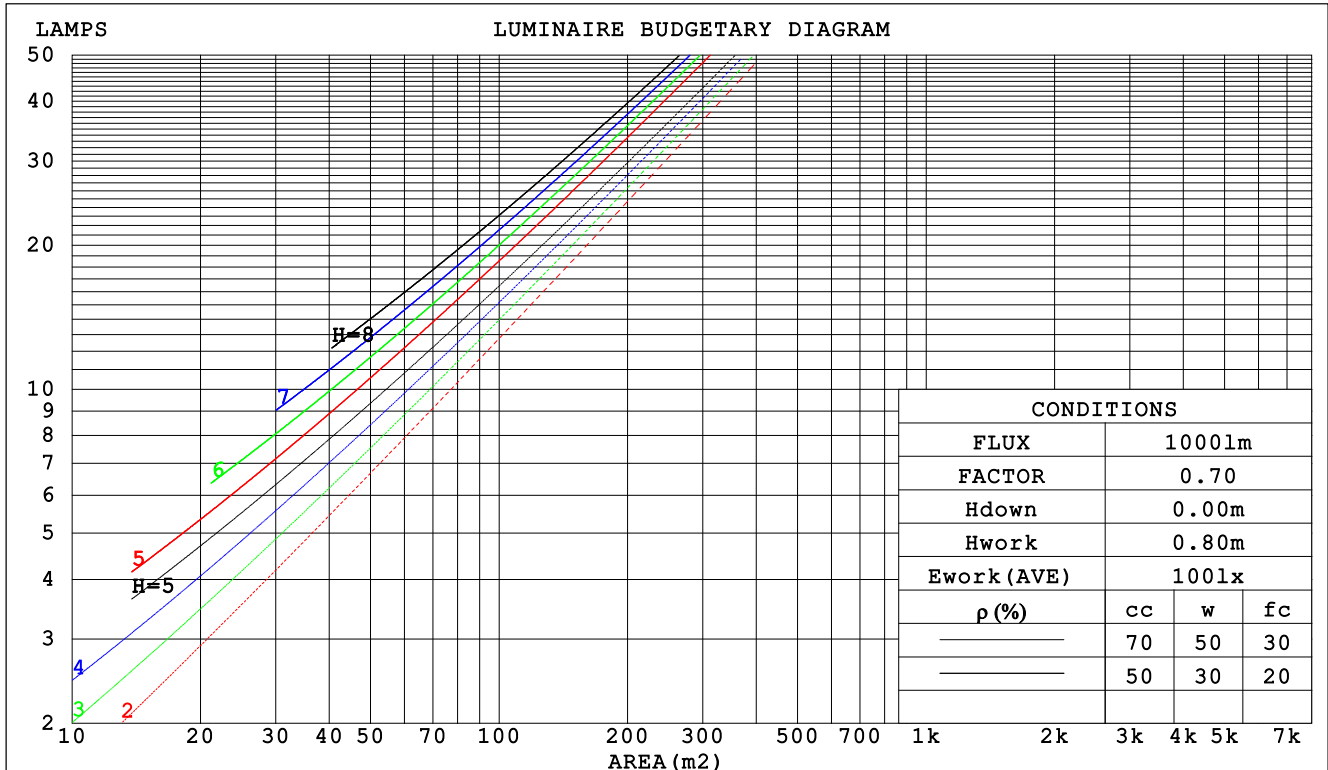
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-16

$\gamma$  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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 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	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.09	1.07	1.04	1.07	1.05	1.03	1.03	1.01	.00	.99	.98	.97	.96	.95	.94	.92
2.0	1.01	.97	.93	.00	.96	.92	.96	.93	.90	.93	.91	.88	.91	.88	.87	.85
3.0	.94	.89	.85	.93	.88	.84	.90	.86	.83	.88	.84	.81	.85	.83	.80	.79
4.0	.88	.82	.77	.86	.81	.77	.84	.80	.76	.82	.78	.75	.80	.77	.74	.73
5.0	.82	.76	.71	.81	.75	.71	.79	.74	.70	.77	.73	.70	.76	.72	.69	.68
6.0	.76	.70	.66	.76	.70	.66	.74	.69	.65	.73	.68	.65	.71	.67	.64	.63
7.0	.72	.66	.61	.71	.65	.61	.70	.65	.61	.69	.64	.60	.67	.63	.60	.59
8.0	.67	.61	.57	.67	.61	.57	.66	.60	.57	.65	.60	.56	.64	.59	.56	.55
9.0	.63	.57	.53	.63	.57	.53	.62	.57	.53	.61	.56	.53	.60	.56	.53	.51
10.0	.60	.54	.50	.59	.54	.50	.59	.53	.50	.58	.53	.50	.57	.53	.49	.48



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-02-16

$\gamma$  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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 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	.187	.106	.034	.180	.103	.033	.168	.096	.031	.156	.090	.029	.146	.084	.027	
2.0	.179	.098	.030	.173	.095	.029	.162	.090	.028	.153	.086	.027	.144	.081	.026	
3.0	.170	.090	.027	.165	.088	.027	.156	.084	.026	.147	.081	.025	.140	.077	.024	
4.0	.161	.084	.025	.157	.082	.024	.149	.079	.024	.142	.076	.023	.135	.073	.022	
5.0	.153	.078	.023	.150	.077	.022	.143	.074	.022	.136	.072	.021	.130	.070	.021	
6.0	.146	.073	.021	.143	.072	.021	.137	.070	.020	.131	.068	.020	.126	.066	.020	
7.0	.139	.069	.020	.136	.068	.019	.131	.066	.019	.126	.065	.019	.121	.063	.019	
8.0	.133	.065	.018	.131	.064	.018	.126	.063	.018	.121	.061	.018	.117	.060	.018	
9.0	.127	.062	.017	.125	.061	.017	.121	.060	.017	.117	.059	.017	.113	.057	.017	
10.0	.122	.059	.016	.120	.058	.016	.116	.057	.016	.113	.056	.016	.109	.055	.016	

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	.189	.189	.189	.161	.161	.161	.110	.110	.110	.063	.063	.063	.020	.020	.020	
1.0	.171	.156	.143	.146	.134	.123	.100	.092	.085	.057	.053	.049	.018	.017	.016	
2.0	.156	.131	.111	.134	.113	.096	.092	.078	.067	.053	.046	.039	.017	.015	.013	
3.0	.144	.113	.088	.124	.097	.076	.085	.068	.053	.049	.039	.031	.016	.013	.010	
4.0	.134	.098	.071	.115	.085	.061	.079	.059	.043	.046	.035	.026	.015	.011	.008	
5.0	.126	.087	.058	.108	.075	.050	.075	.052	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.048	.102	.067	.042	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.070	.041	.097	.061	.036	.067	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.107	.064	.035	.092	.056	.030	.064	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.102	.059	.030	.088	.051	.026	.061	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.097	.055	.027	.084	.048	.023	.058	.034	.016	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-16

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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 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	18.1	19.2	18.4	19.3	19.5	19.2	20.2	19.4	20.3	20.5
3H	18.2	19.1	18.5	19.3	19.6	19.3	20.2	19.6	20.4	20.6
4H	18.3	19.2	18.6	19.4	19.6	19.4	20.3	19.7	20.5	20.7
6H	18.4	19.2	18.7	19.5	19.7	19.5	20.3	19.8	20.6	20.8
8H	18.4	19.2	18.8	19.5	19.7	19.5	20.3	19.8	20.5	20.8
12H	18.5	19.2	18.8	19.5	19.8	19.5	20.2	19.8	20.5	20.8
4H 2H	18.0	18.9	18.3	19.1	19.4	19.0	19.9	19.3	20.1	20.3
3H	18.2	19.0	18.6	19.3	19.5	19.3	20.1	19.6	20.3	20.6
4H	18.4	19.1	18.8	19.4	19.7	19.5	20.2	19.9	20.5	20.8
6H	18.6	19.2	19.0	19.5	19.9	19.7	20.3	20.1	20.7	21.0
8H	18.7	19.2	19.1	19.6	19.9	19.8	20.3	20.2	20.7	21.0
12H	18.7	19.2	19.2	19.6	20.0	19.7	20.2	20.1	20.6	21.0
8H 4H	18.5	19.0	18.9	19.4	19.8	19.5	20.1	19.9	20.4	20.8
6H	18.8	19.2	19.2	19.6	20.0	19.8	20.3	20.3	20.7	21.1
8H	18.9	19.3	19.4	19.7	20.2	19.9	20.3	20.4	20.7	21.2
12H	19.1	19.4	19.5	19.9	20.3	19.9	20.2	20.4	20.7	21.1
12H 4H	18.5	19.0	18.9	19.3	19.7	19.5	20.0	19.9	20.4	20.8
6H	18.8	19.2	19.2	19.6	20.1	19.8	20.2	20.3	20.7	21.1
8H	19.0	19.3	19.4	19.8	20.2	19.9	20.3	20.4	20.7	21.2
Variations with the observer position at spacings:										
S = 1.0H	+ 2.1 / - 2.3					+ 2.0 / - 2.7				
1.5H	+ 4.2 / - 2.3					+ 4.0 / - 2.9				
2.0H	+ 1.0 / - 0.3					+ 2.8 / - 0.7				

CIE Pub.117 Corrected 12467 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.8)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-16

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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

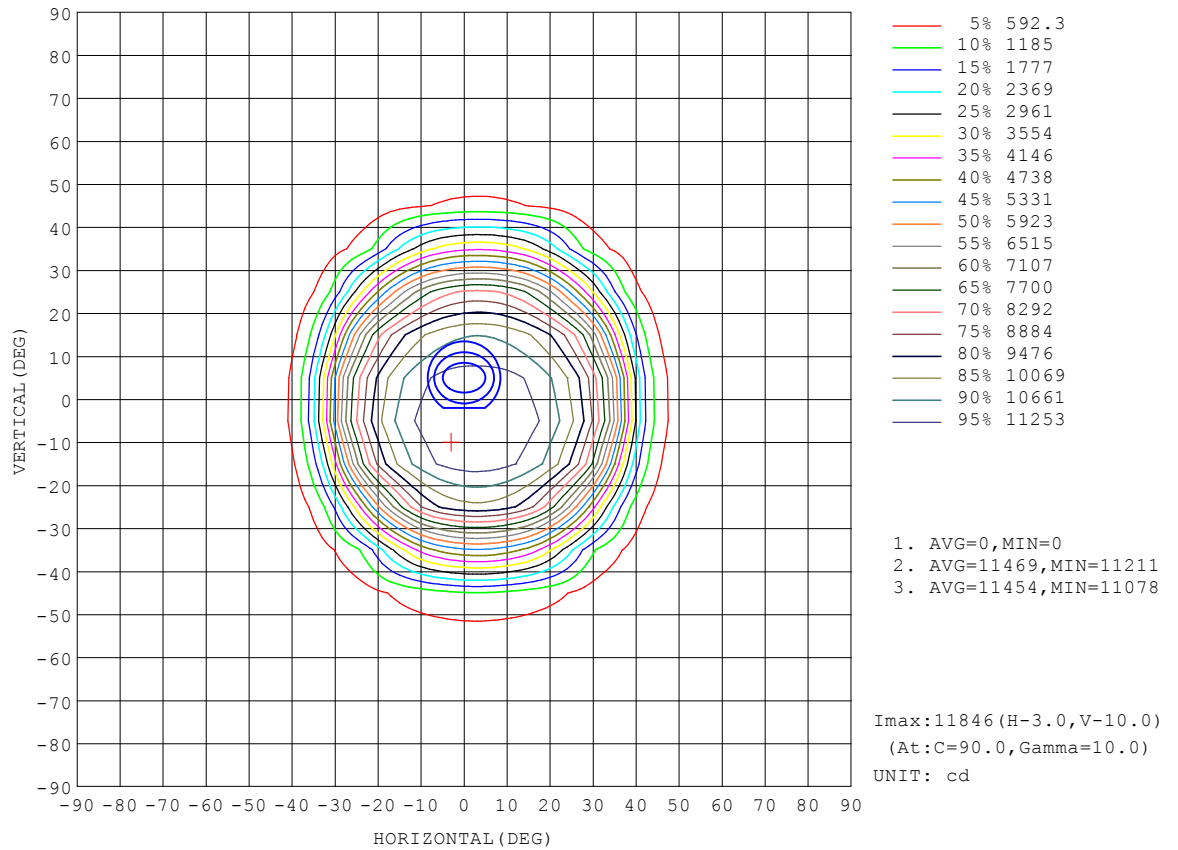
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	79	75	85	79	75	84	79	75	71
0.80	93	87	83	92	87	83	91	86	83	79
1.00	97	92	88	97	91	88	95	91	87	83
1.25	101	96	93	100	96	92	98	94	91	87
1.50	104	99	96	103	99	95	101	97	94	90
2.00	107	103	99	106	102	99	103	100	97	92
2.50	109	105	102	107	104	101	104	101	99	93
3.00	110	107	104	109	105	103	105	103	101	94
4.00	113	110	107	110	108	106	107	105	103	96
5.00	114	111	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:2017-02-16

$\gamma$  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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



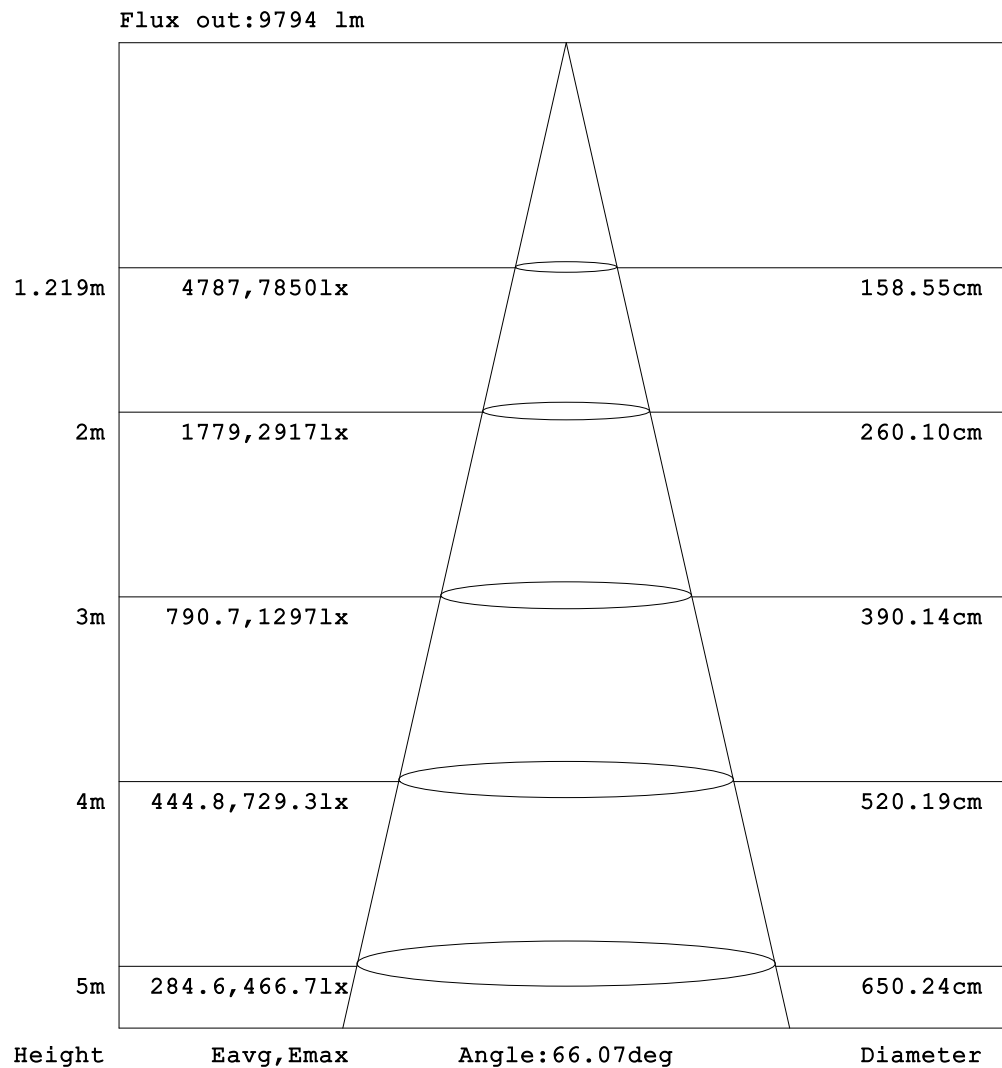
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-16

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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



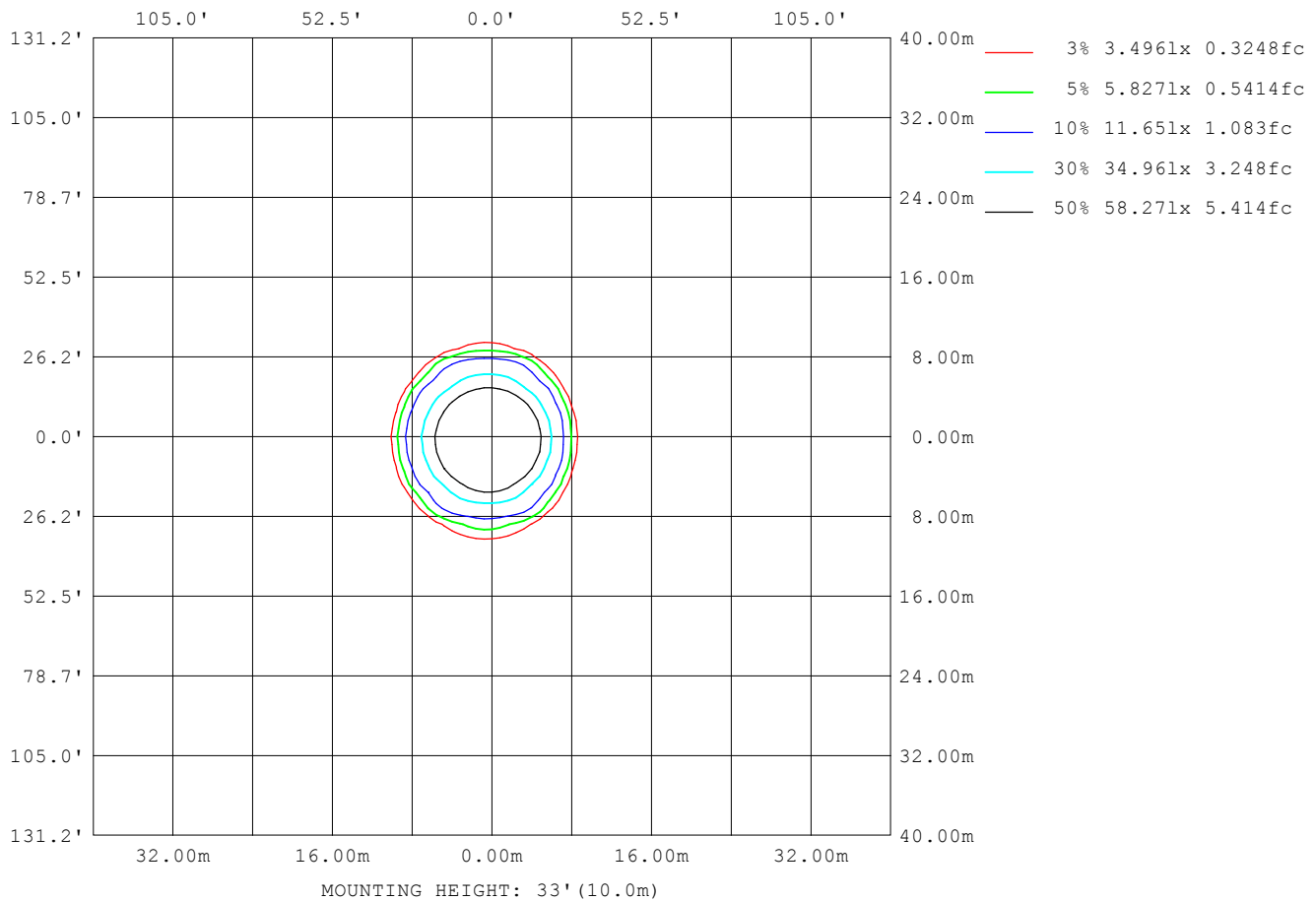
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017-02-16

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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 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:2017-02-16

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:0.4614A P:98.16W PF:0.9667 Lamp Flux:12467.4x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:C470SP-Q2-P-03A 230V50HZ	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

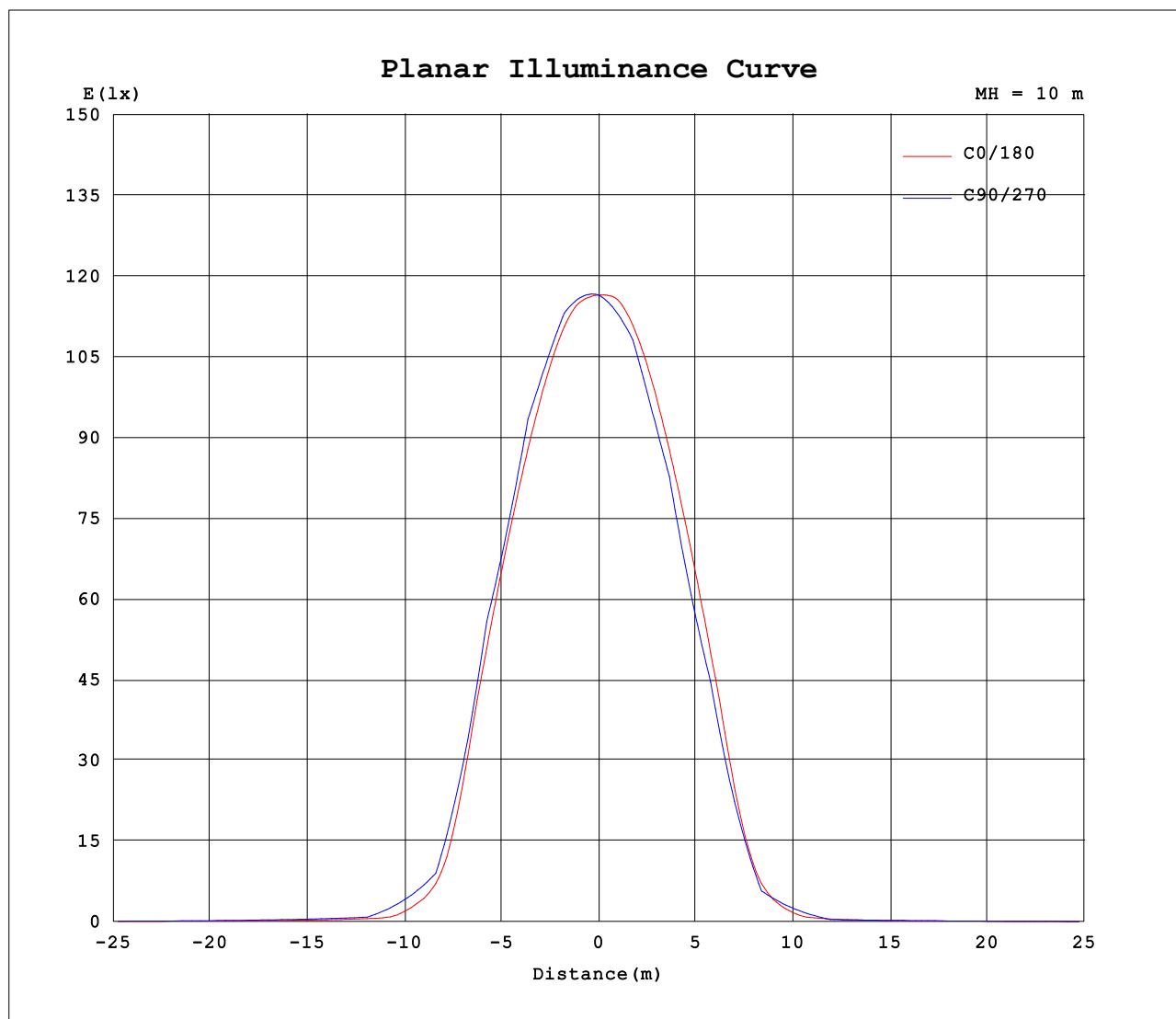
AvgL	cd/m2
L_0~180 (65) av	3453
L_0~180 (75) av	4131
L_0~180 (85) av	3676
L_90~270 (65) av	3915
L_90~270 (75) av	3627
L_90~270 (85) av	0
L_45 (65) av	3930
L_45 (75) av	3875
L_45 (85) av	1965

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017-02-16

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: 2017-02-16

$\gamma$  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:

```

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:7.290m [K=1.0000]
Remarks:

```

```

Range: 0 - 90DEG
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:

```