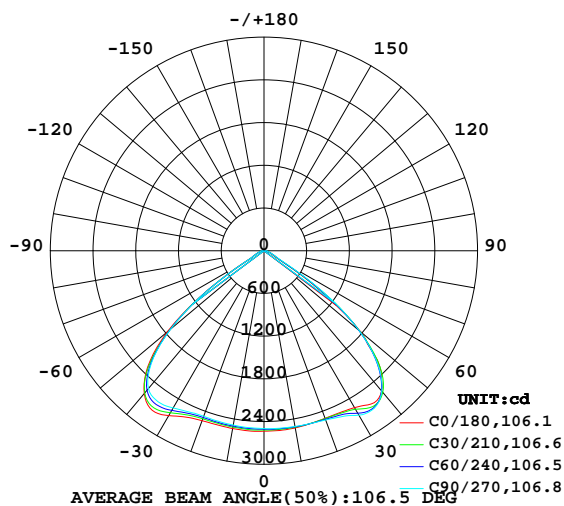


## LUMINAIRE PHOTOMETRIC TEST REPORT

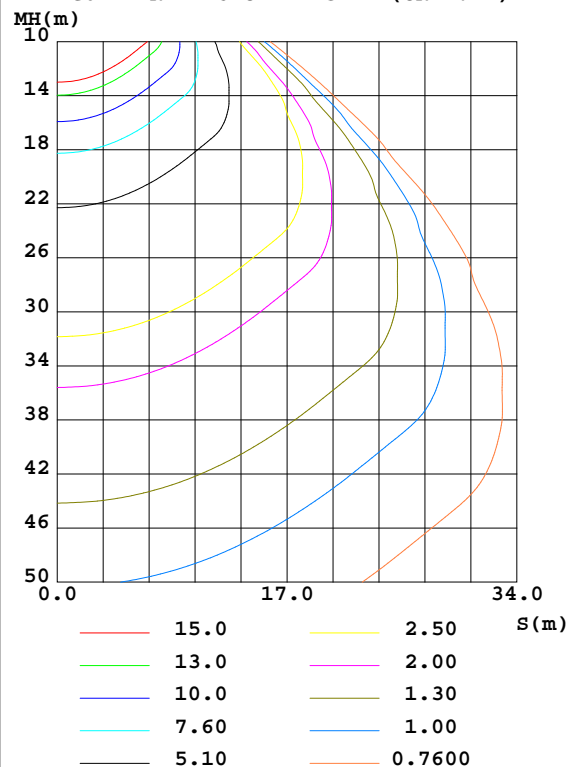
NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 165.06 lm/W			
MODEL	40H4 110	Imax(cd)	2737	S/MH(C0/180)	1.55
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	1.54
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	6602.6	$\eta$ UP,DN(C0-180)	0.0,50.5
NOMINAL FLUX(lm)	6600	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,49.5
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	220.1	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.480m [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
10	2526	2513	2507	2499	2536	2508	2486	2476	0- 10	238.9	238.9	3.62,3.62
20	2505	2514	2530	2515	2540	2501	2475	2453	10- 20	708.2	947.1	14.3,14.3
30	2544	2603	2666	2650	2674	2609	2550	2498	20- 30	1173	2120	32.1,32.1
40	2572	2585	2575	2588	2617	2584	2526	2522	30- 40	1651	3771	57.1,57.1
50	1770	1744	1746	1740	1772	1714	1709	1726	40- 50	1716	5487	83.1,83.1
60	215.5	263.2	292.1	294.6	249.2	227.9	225.9	237.7	50- 60	860.3	6348	96.1,96.2
70	83.27	105.7	97.31	102.9	94.71	96.44	87.62	98.79	60- 70	152.6	6500	98.5,98.5
80	37.79	47.68	50.21	48.98	38.20	48.07	48.22	46.66	70- 80	70.17	6571	99.5,99.6
90	5.362	15.15	19.30	17.83	5.945	17.93	19.62	17.64	80- 90	32.03	6603	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 4671.9 lm

%lum = 70.8%

%lamp = 70.8%

Conical surface Flux(120deg): 6347.8 lm

%lum = 96.1%

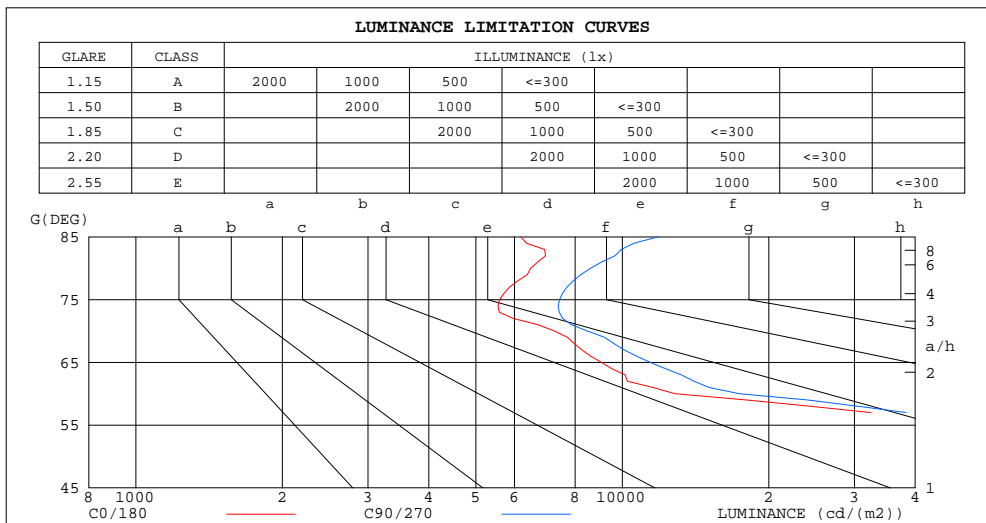
%lamp = 96.2%

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.480m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	6188	11854
80	6476	8605
75	5595	7429
70	7246	8467
65	9050	11404
60	12825	17387
55	47996	53280
50	81966	80833
45	96764	95210

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.480m [K=1.0000]  
Remarks:

## WEC AND CCEC

NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.240	.136	.043	.233	.133	.042	.220	.126	.040	.208	.120	.039	.197	.114	.037		
2.0	.234	.128	.039	.228	.126	.039	.217	.121	.038	.207	.116	.036	.197	.112	.035		
3.0	.224	.119	.036	.219	.117	.035	.209	.114	.035	.200	.110	.034	.192	.106	.033		
4.0	.213	.111	.033	.209	.109	.032	.200	.106	.032	.192	.103	.031	.185	.100	.031		
5.0	.202	.103	.030	.198	.102	.030	.190	.099	.029	.183	.097	.029	.177	.094	.028		
6.0	.191	.096	.027	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026		
7.0	.181	.090	.025	.178	.089	.025	.172	.087	.025	.166	.085	.025	.161	.083	.025		
8.0	.172	.084	.024	.169	.083	.023	.163	.081	.023	.158	.080	.023	.153	.079	.023		
9.0	.163	.079	.022	.160	.078	.022	.155	.077	.022	.150	.075	.022	.146	.074	.021		
10.0	.154	.074	.021	.152	.073	.020	.147	.072	.020	.143	.071	.020	.139	.070	.020		

ρcc	80%			70%			50%			30%			10%			0	
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)										
0.0	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.176	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016		
2.0	.165	.132	.105	.141	.114	.091	.097	.079	.063	.056	.046	.037	.018	.015	.012		
3.0	.156	.114	.081	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009		
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.051	.035	.023	.016	.012	.008		
5.0	.141	.089	.051	.121	.077	.045	.084	.054	.032	.048	.032	.019	.016	.010	.006		
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.046	.029	.016	.015	.009	.005		
7.0	.129	.074	.036	.111	.064	.031	.077	.045	.022	.044	.026	.013	.014	.009	.004		
8.0	.123	.068	.031	.106	.059	.027	.073	.042	.019	.043	.025	.011	.014	.008	.004		
9.0	.118	.063	.027	.102	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003		
10.0	.113	.059	.023	.097	.051	.020	.067	.036	.015	.039	.021	.009	.013	.007	.003		

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017.7.13

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.480m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

NAME: LED LIGHT					TYPE:					WEIGHT:				
SPEC.:					DIM.:					SERIAL No.:				
MFR.:					SUR.:21cm*16cm					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	19.9	21.2	20.1	21.4	21.6	19.9	21.3	20.2	21.5	21.6				
3H	19.7	21.0	20.0	21.2	21.4	19.8	21.0	20.1	21.2	21.5				
4H	19.7	20.8	20.0	21.1	21.3	19.7	20.9	20.0	21.1	21.4				
6H	19.6	20.7	19.9	20.9	21.2	19.7	20.7	20.0	21.0	21.3				
8H	19.6	20.6	19.9	20.9	21.1	19.6	20.7	20.0	21.0	21.2				
12H	19.5	20.5	19.9	20.8	21.1	19.6	20.6	20.0	20.9	21.2				
4H 2H	19.7	20.9	20.0	21.1	21.4	19.8	20.9	20.1	21.2	21.4				
3H	19.6	20.6	20.0	20.9	21.2	19.7	20.7	20.0	21.0	21.2				
4H	19.6	20.5	19.9	20.8	21.1	19.6	20.5	20.0	20.8	21.2				
6H	19.5	20.3	19.9	20.7	21.0	19.6	20.4	20.0	20.7	21.1				
8H	19.5	20.2	19.9	20.6	21.0	19.6	20.3	20.0	20.7	21.1				
12H	19.5	20.1	19.9	20.5	20.9	19.6	20.3	20.0	20.6	21.0				
8H 4H	19.5	20.2	19.9	20.6	20.9	19.5	20.3	19.9	20.6	21.0				
6H	19.5	20.1	19.9	20.5	20.9	19.5	20.1	20.0	20.5	20.9				
8H	19.5	20.0	19.9	20.4	20.9	19.5	20.1	20.0	20.5	20.9				
12H	19.5	19.9	19.9	20.4	20.8	19.6	20.0	20.1	20.5	20.9				
12H 4H	19.4	20.1	19.9	20.5	20.9	19.5	20.2	19.9	20.5	20.9				
6H	19.4	20.0	19.9	20.4	20.8	19.5	20.0	20.0	20.4	20.9				
8H	19.5	19.9	19.9	20.3	20.8	19.5	20.0	20.0	20.4	20.9				
Variations with the observer position at spacings:														
S = 1.0H	+ 1.8 / - 2.9					+ 1.6 / - 2.3								
1.5H	+ 0.9 / - 1.6					+ 0.8 / - 1.5								
2.0H	+ 3.6 / - 7.1					+ 3.4 / - 6.7								

CIE Pub.117, 6600 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 6.6$ )

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.480m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:

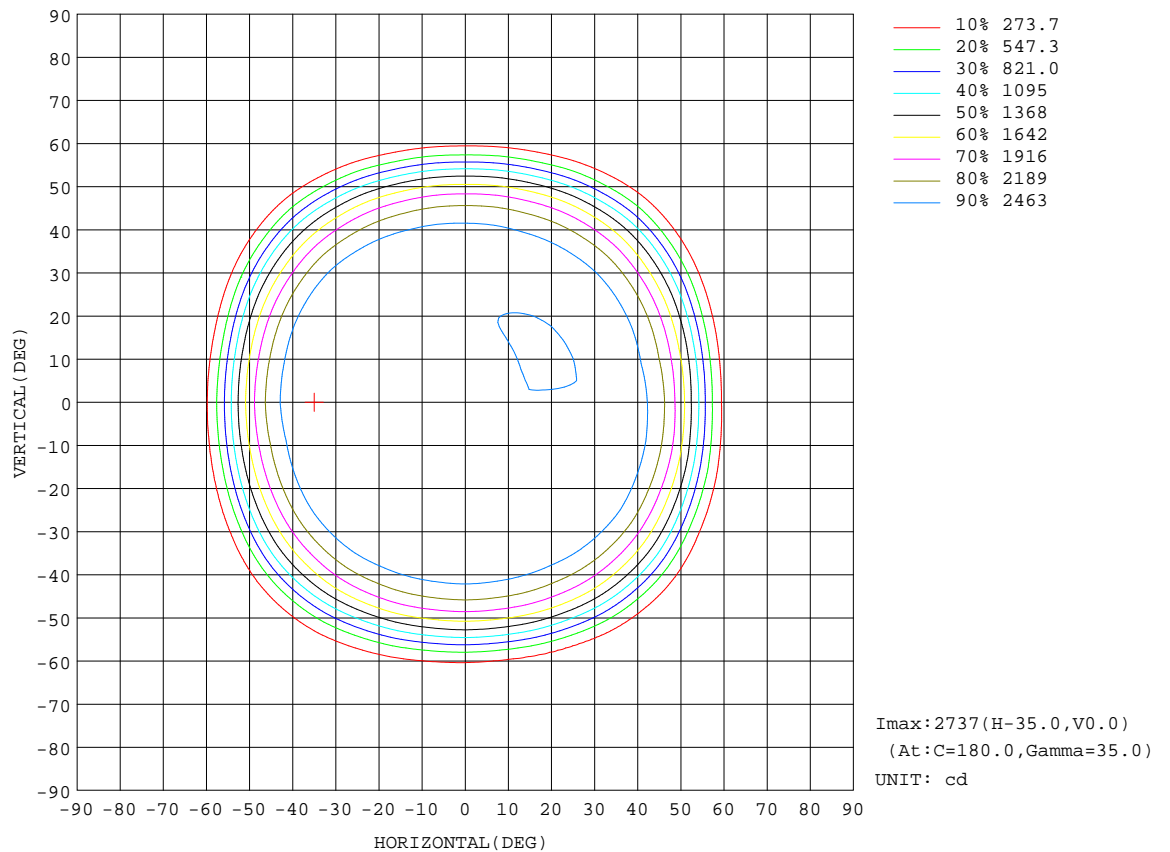
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT)    k(RI) x RCR = 5									
k = 0.60	64	53	47	63	53	47	62	52	47	41
0.80	75	65	58	74	64	58	72	64	58	52
1.00	84	75	69	83	74	68	81	75	68	62
1.25	91	83	77	90	82	76	87	81	76	70
1.50	96	88	82	94	87	82	91	85	81	74
2.00	101	95	90	100	94	89	97	92	88	81
2.50	104	98	93	102	97	93	99	94	91	83
3.00	107	101	97	105	100	96	101	97	94	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	105	102	104	102	99	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNM = 1.25										

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.480m [K=1.0000]  
Remarks:

ISOCANDELA DIAGRAM

NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:



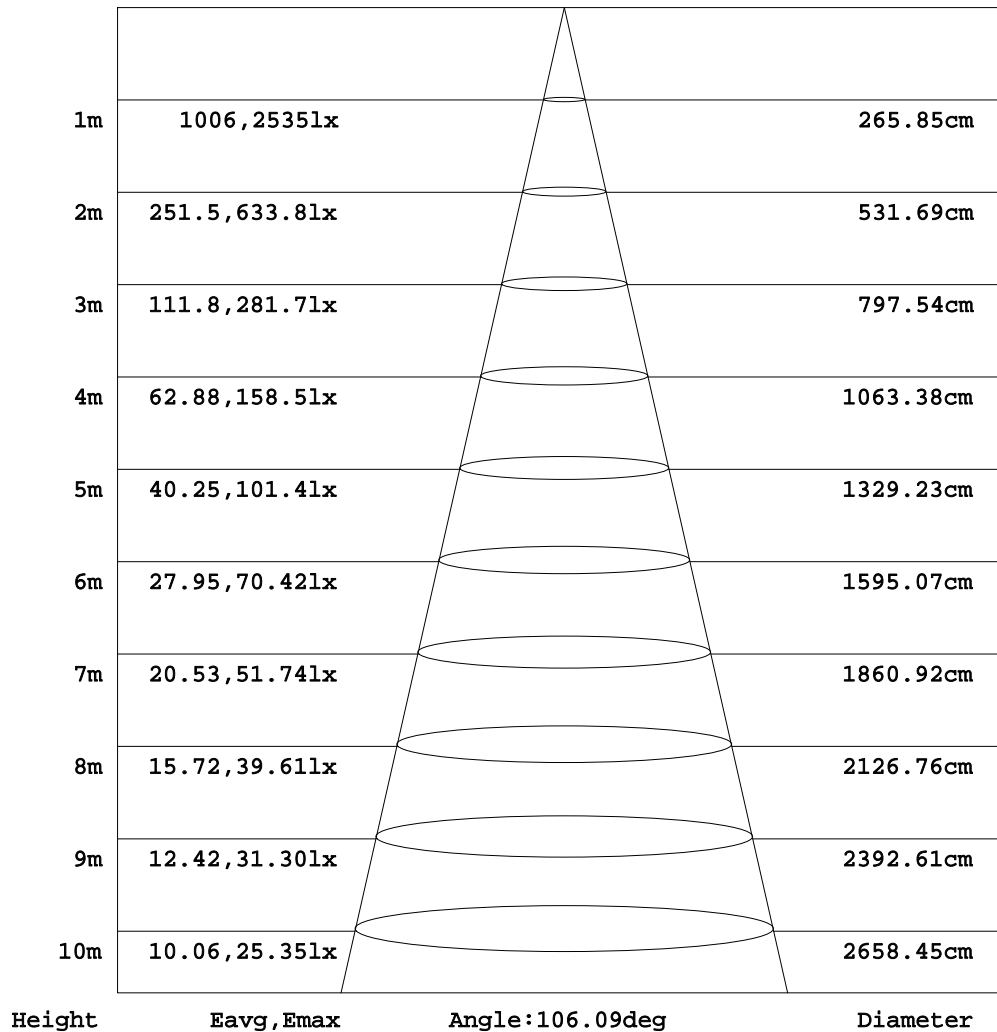
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2017.7.13

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 10.480m [K=1.0000]  
 Remarks:

AAI Figure

NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:

Flux out:5988 lm



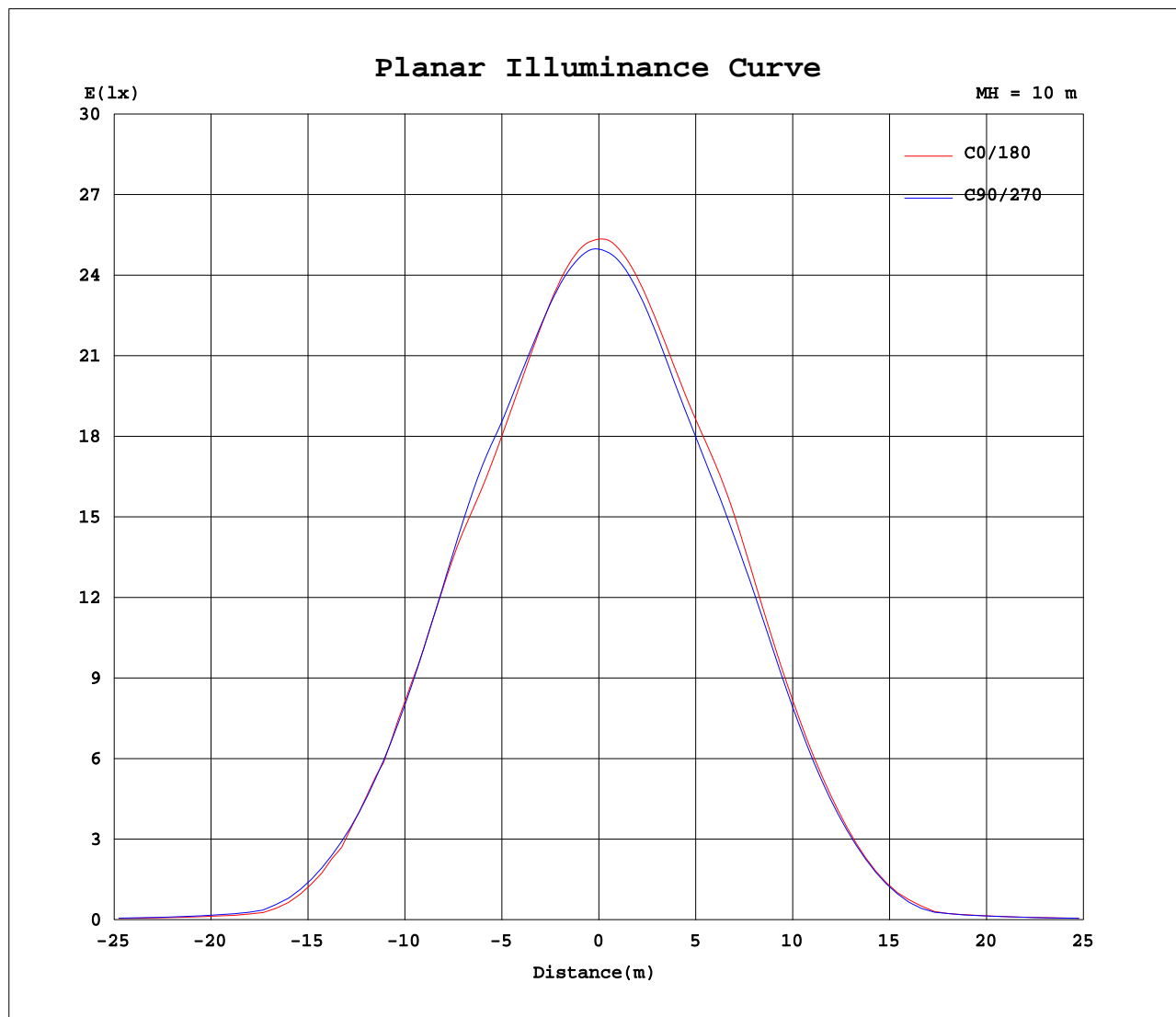
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2017.7.13

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.480m [K=1.0000]  
Remarks:



## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2017.7.13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.480m [K=1.0000]  
Remarks:



