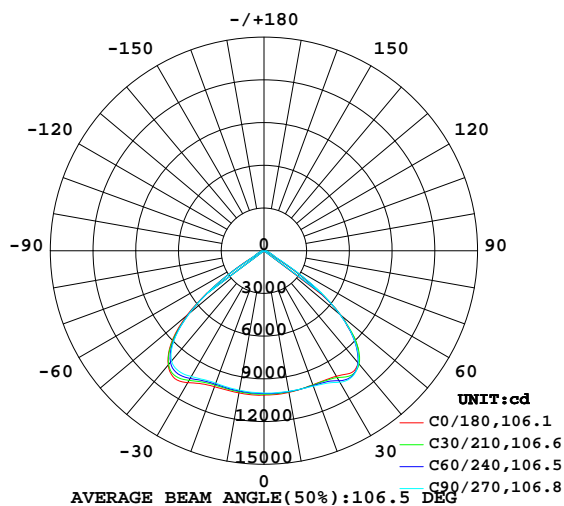


LUMINAIRE PHOTOMETRIC TEST REPORT

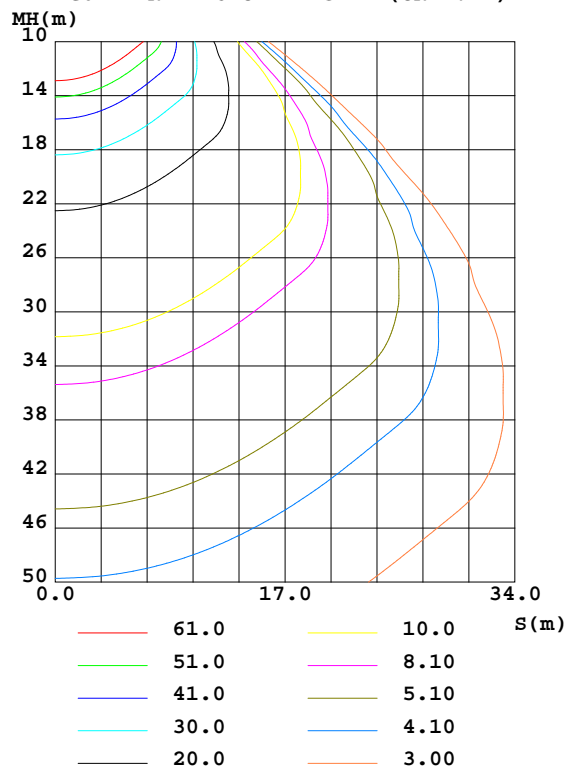
NAME: LED LIGHT	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:21cm*16cm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 165.06 lm/W
MODEL	160H4 110	Imax(cd)	10947	S/MH(C0/180)	1.55	
NOMINAL POWER(W)	160	LOR(%)	100.0	S/MH(C90/270)	1.54	
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	26410	η UP,DN(C0-180)	0.0,50.5	
NOMINAL FLUX(lm)	26400	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.5	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50	
TEST VOLTAGE(V)	220.1	η 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

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1010	1005	1003	999.5	1014	1003	994.5	990.4	0- 10	955.5	955.5	3.62,3.62
20	1002	1005	1012	1006	1016	1001	990.0	981.3	10- 20	2833	3788	14.3,14.3
30	1018	1041	1066	1060	1070	1044	1020	999.3	20- 30	4693	8482	32.1,32.1
40	1029	1034	1030	1035	1047	1034	1010	1009	30- 40	6602	15084	57.1,57.1
50	708.1	697.4	698.3	695.9	708.9	685.7	683.7	690.3	40- 50	6866	21950	83.1,83.1
60	86.18	105.3	116.8	117.8	99.69	91.17	90.35	95.06	50- 60	3441	25391	96.1,96.2
70	33.31	42.28	38.92	41.17	37.88	38.58	35.05	39.52	60- 70	610.5	26001	98.5,98.5
80	15.11	19.07	20.08	19.59	15.28	19.23	19.29	18.66	70- 80	280.7	26282	99.5,99.6
90	2.145	6.062	7.719	7.132	2.378	7.173	7.847	7.055	80- 90	128.1	26410	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 18688 lm

%lum = 70.8%

%lamp = 70.8%

Conical surface Flux(120deg): 25391 lm

%lum = 96.1%

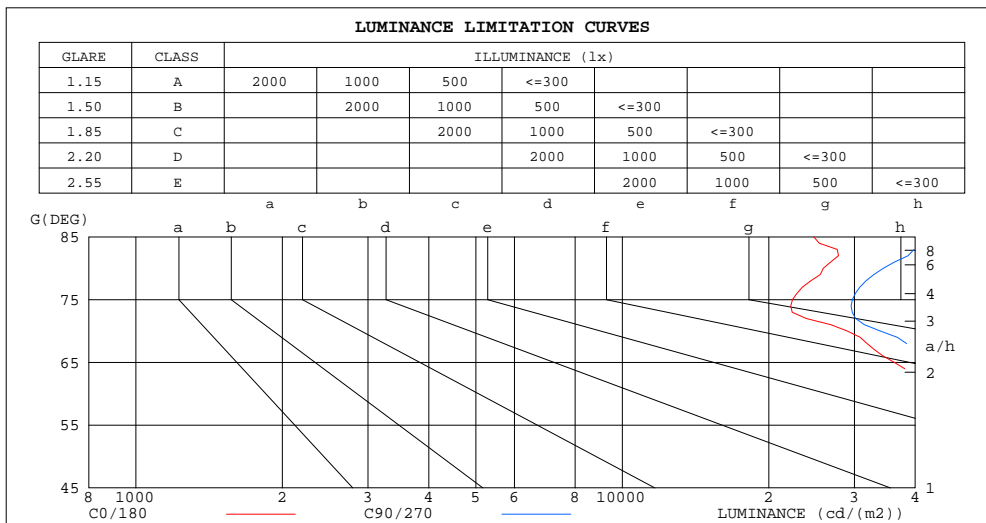
%lamp = 96.2%

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

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:

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	24751	47415
80	25906	34420
75	22378	29715
70	28984	33869
65	36202	45617
60	51300	69547
55	191984	213119
50	327864	323334
45	387055	380839

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:

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		

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						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, 26400 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 11.4)

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:

UTILIZATION FACTORS TABLE

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

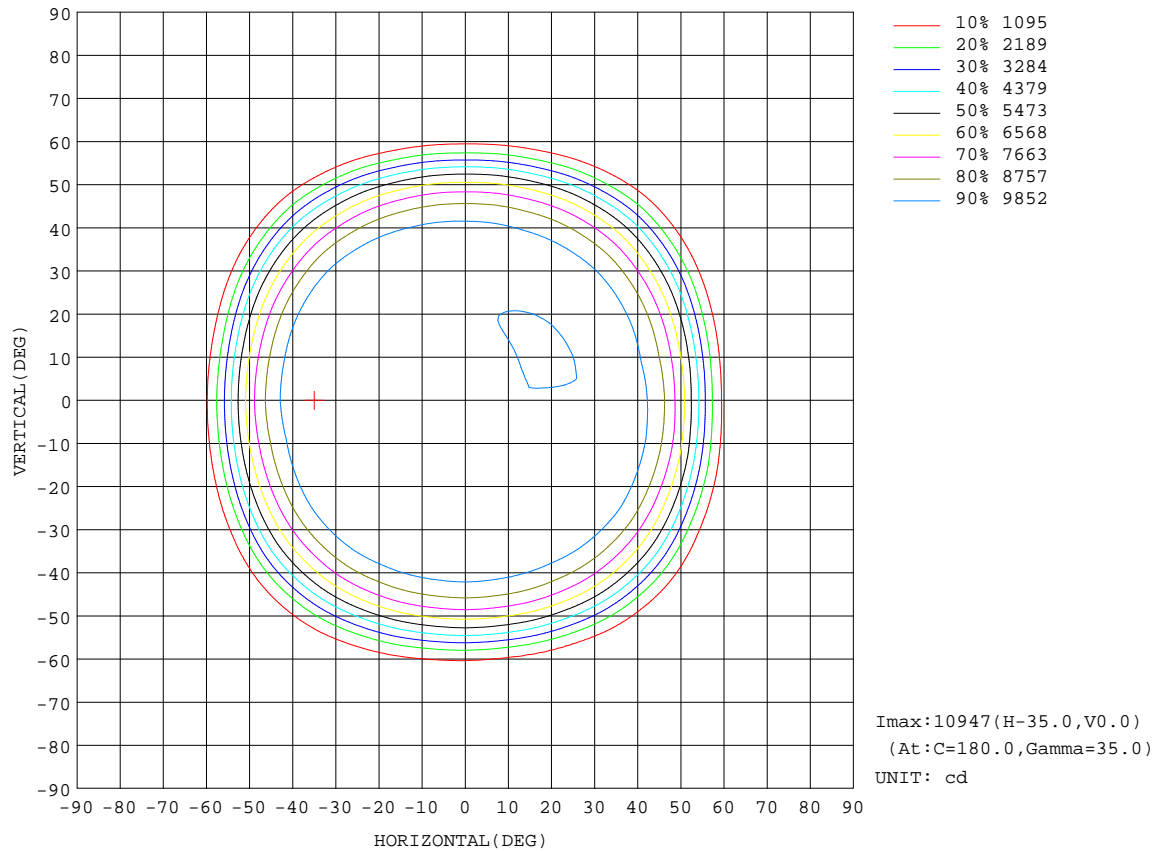
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	64	53	47	63	53	47	62	52	47	41
0.80	75	65	58	74	64	58	72	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										
SHRNOM = 1.25										

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:

ISOCANDELA DIAGRAM

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



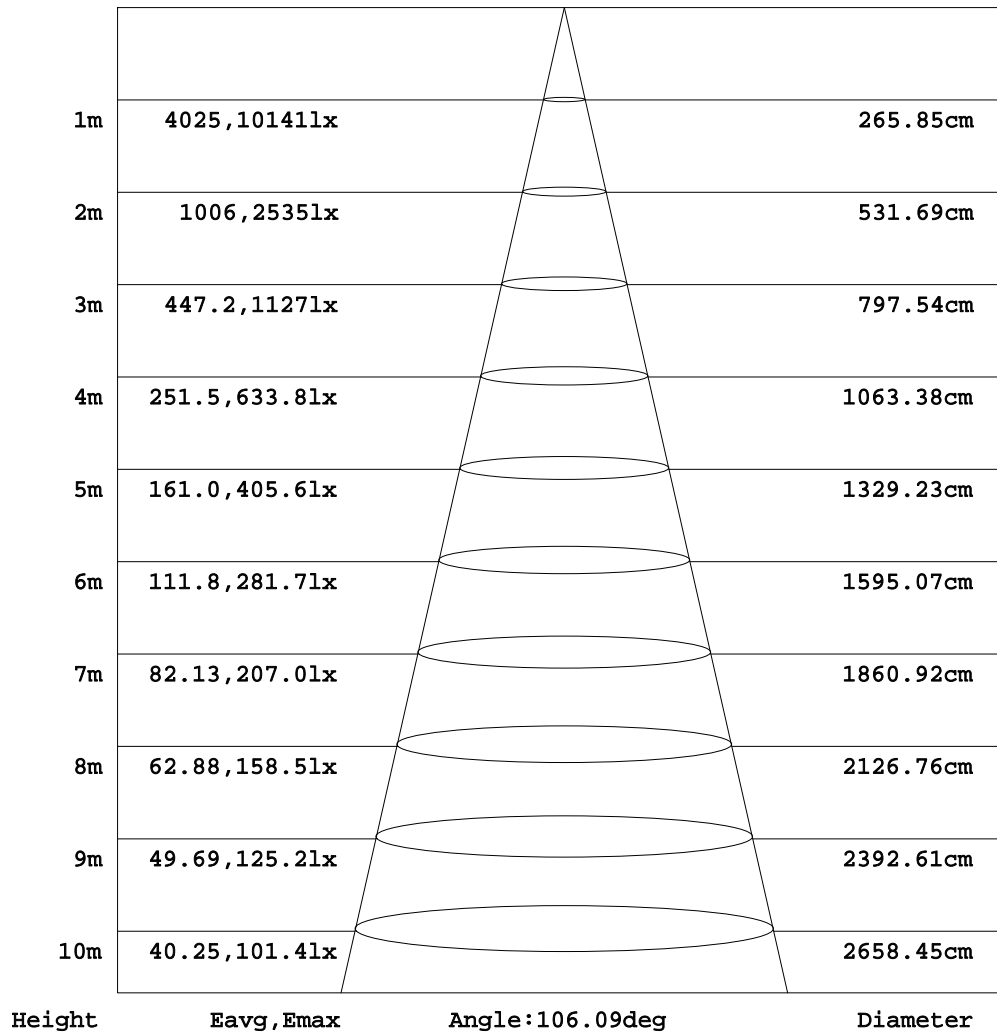
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017.7.13

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:23952 lm

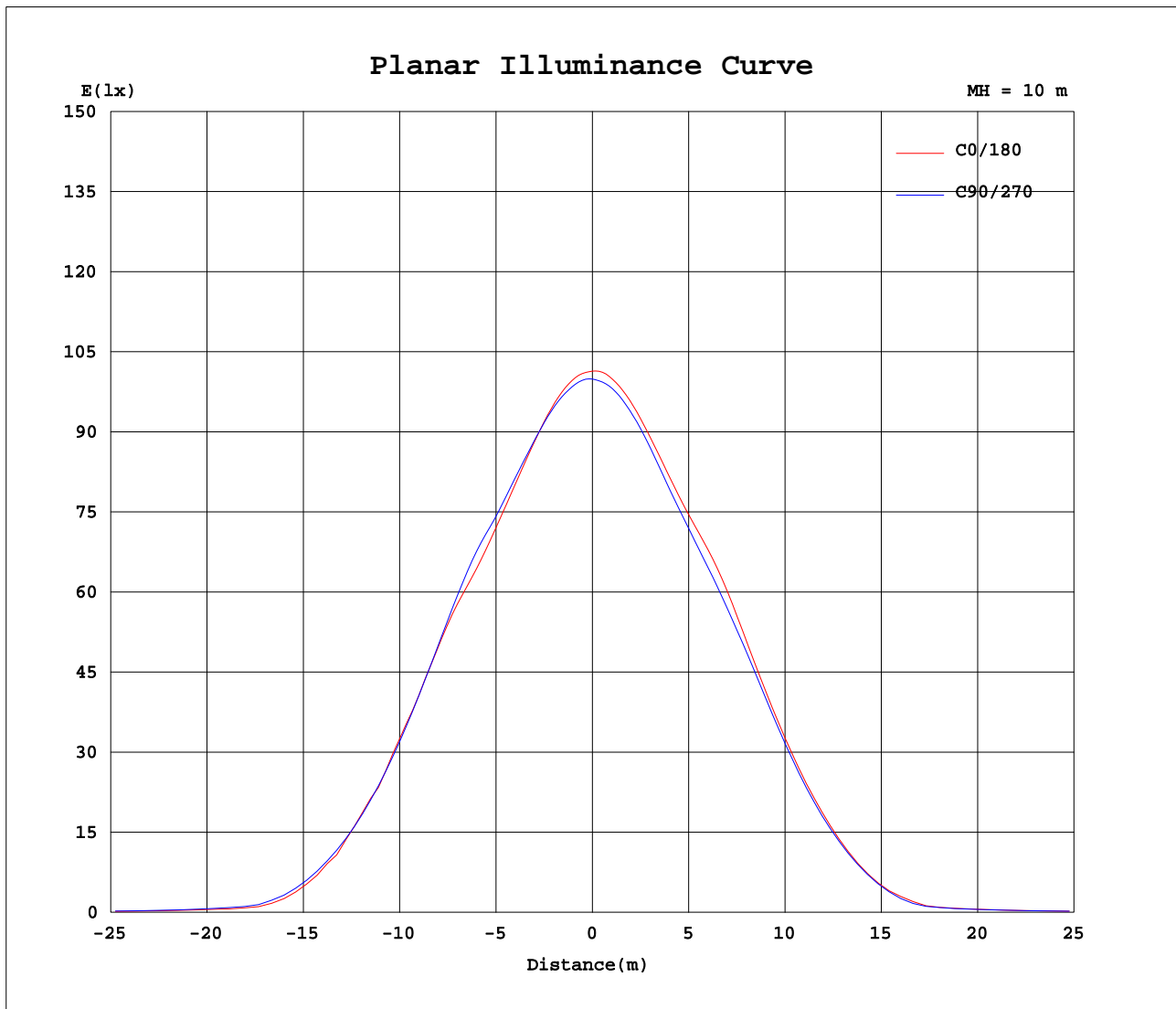


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:

