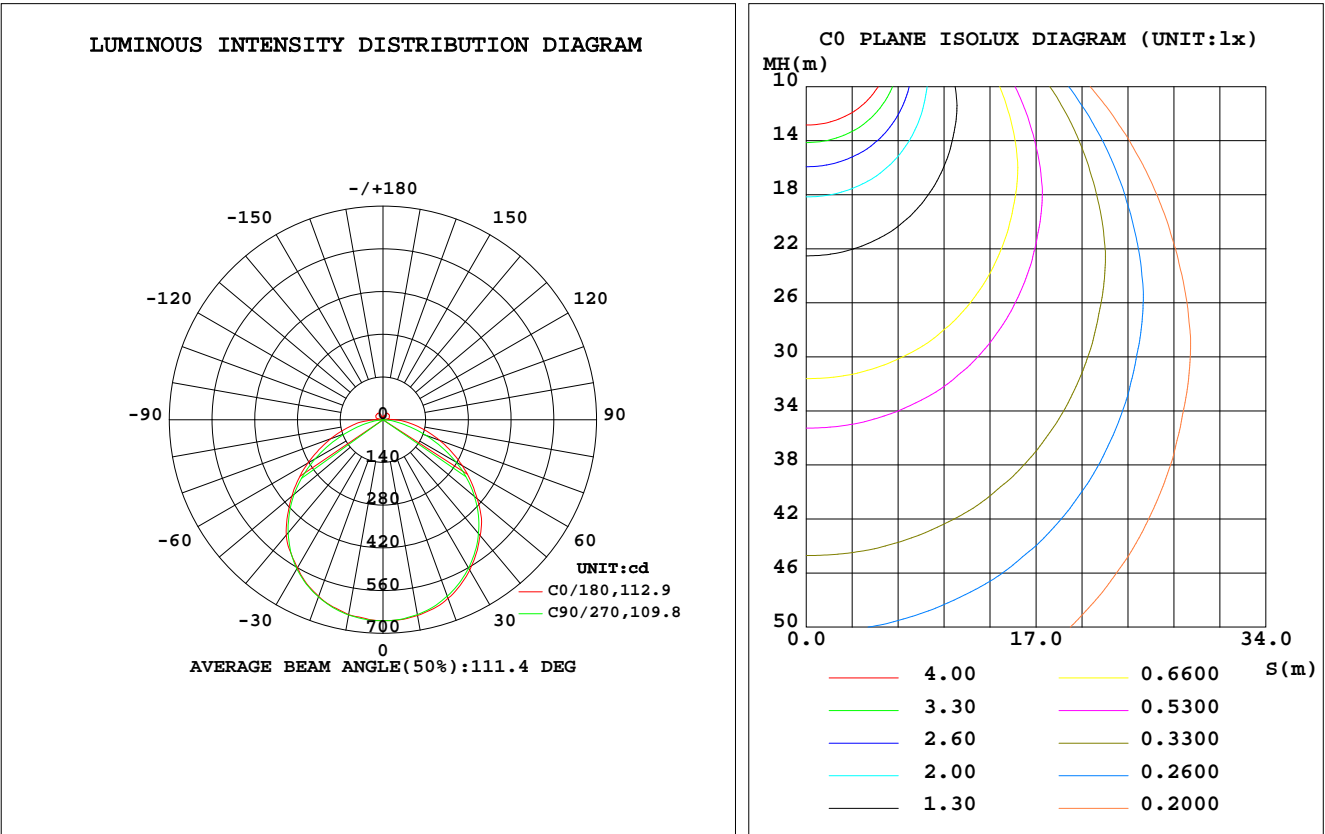


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA      Eff: 107.72 lm/W			
WATTAGE(W)	17.5	Imax(cd)	659.5	S/MH(C0/180)	1.27
NOMINAL POWER(W)	17.5	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1988.2	η UP,DN(C0-180)	2.1,48.6
NOMINAL FLUX(lm)	1988.25	CIE CLASS	DIRECT	η UP,DN(C180-360)	2.1,47.1
LAMPS INSIDE	1	η up(%)	4.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	95.8	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:60%  
Test Distance:26.000m [K=1.5110]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	651.3	654.7	648.7	650.1	648.5	646.2	649.6	648.3	0- 10	62.47	62.47	3.14,3.14
20	622.5	628.9	615.4	620.3	616.1	612.2	617.8	620.9	10- 20	180.0	242.5	12.2,12.2
30	568.9	581.7	561.9	565.2	560.8	557.0	564.4	571.8	20- 30	274.9	517.4	26,26
40	495.5	505.3	486.9	489.4	493.4	479.6	483.4	491.1	30- 40	332.9	850.3	42.8,42.8
50	403.2	408.5	391.3	389.0	389.9	381.1	379.9	389.4	40- 50	343.2	1194	60,60
60	299.8	294.6	275.5	278.2	285.1	270.6	257.8	277.8	50- 60	301.9	1495	75.2,75.2
70	197.3	186.4	149.5	169.6	183.0	162.7	131.6	172.7	60- 70	222.6	1718	86.4,86.4
80	108.5	95.03	48.59	83.06	99.29	76.94	36.57	87.81	70- 80	130.4	1848	93,93
90	41.83	35.63	3.372	30.16	29.97	25.85	1.930	31.75	80- 90	55.47	1904	95.8,95.8
100	6.323	14.49	0.0886	13.71	4.550	8.650	0.7978	15.11	90-100	10.54	1914	96.3,96.3
110	22.00	17.51	0.0886	18.03	24.74	19.10	1.597	18.73	100-110	13.94	1928	97,97
120	24.24	19.69	0.1428	19.36	27.49	20.32	2.129	19.98	110-120	16.17	1945	97.8,97.8
130	26.09	20.00	0.3673	19.92	27.58	20.24	2.667	20.07	120-130	15.35	1960	98.6,98.6
140	26.00	20.32	0.9717	19.78	27.55	19.71	2.699	19.58	130-140	12.44	1972	99.2,99.2
150	25.26	11.10	1.363	1.558	24.81	17.31	2.731	1.122	140-150	9.773	1982	99.7,99.7
160	13.13	13.24	1.626	5.883	5.167	10.42	2.550	7.506	150-160	4.200	1986	99.9,99.9
170	8.994	6.059	3.186	1.690	1.284	3.164	2.510	3.020	160-170	1.632	1988	100,100
180	1.712	1.765	3.368	1.639	1.370	1.664	2.482	1.639	170-180	0.2857	1988	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1024 lm

%lum = 51.5%

%lamp = 51.5%

Conical surface Flux(120deg): 1495.4 lm

%lum = 75.2%

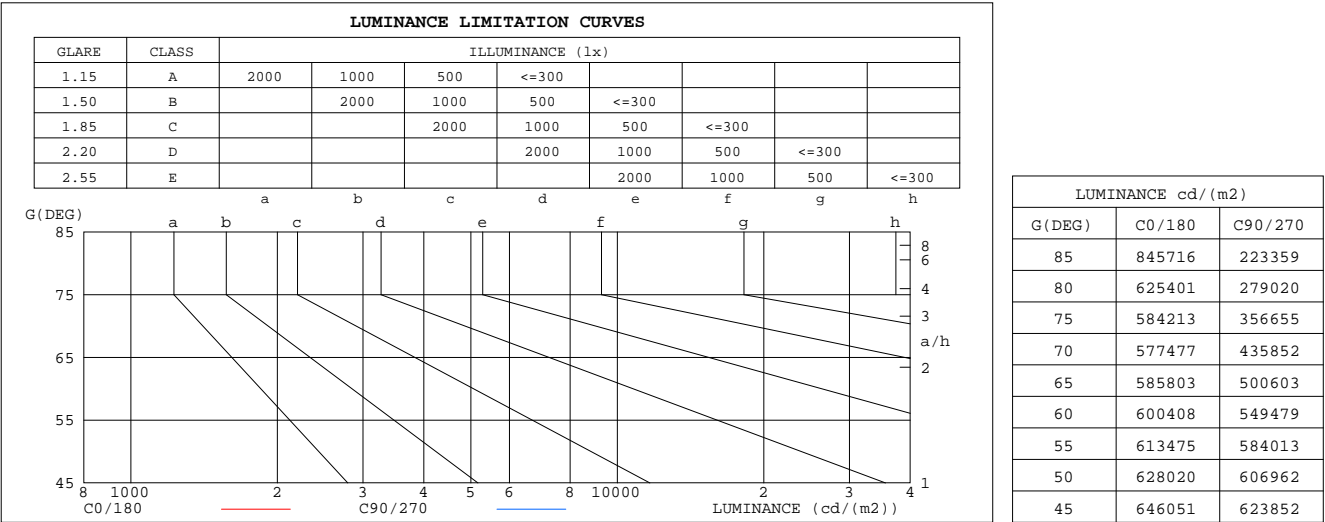
%lamp = 75.2%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:60%  
Test Distance:26.000m [K=1.5110]  
Remarks:

## WEC AND CCEC

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm									
NAME:				TYPE:LED				WEIGHT:N/A	
SPEC.:N/A				DIM.:				SERIAL No.:N/A	
MFR.:				SUR.:				Shielding Angle:N/A	

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	.315	.179	.057	.307	.175	.056	.291	.167	.053	.277	.160	.051	.264	.153	.049	
2.0	.292	.160	.049	.285	.157	.048	.271	.151	.047	.258	.145	.045	.246	.139	.044	
3.0	.269	.143	.043	.263	.141	.042	.250	.136	.041	.239	.131	.040	.228	.126	.039	
4.0	.248	.129	.038	.242	.127	.037	.231	.122	.037	.221	.118	.036	.211	.115	.035	
5.0	.229	.117	.034	.224	.115	.033	.214	.111	.033	.205	.108	.032	.196	.105	.031	
6.0	.212	.106	.030	.208	.105	.030	.199	.102	.030	.190	.099	.029	.182	.096	.029	
7.0	.198	.098	.028	.193	.096	.027	.185	.094	.027	.178	.091	.027	.171	.089	.026	
8.0	.184	.090	.025	.181	.089	.025	.173	.087	.025	.167	.084	.024	.160	.082	.024	
9.0	.173	.084	.023	.169	.083	.023	.163	.080	.023	.157	.078	.022	.151	.077	.022	
10.0	.163	.078	.022	.159	.077	.021	.153	.075	.021	.148	.073	.021	.142	.072	.021	

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	.223	.223	.223	.190	.190	.190	.130	.130	.130	.075	.075	.075	.024	.024	.024	
1.0	.213	.189	.167	.182	.162	.143	.125	.111	.099	.072	.064	.058	.023	.021	.019	
2.0	.205	.165	.131	.176	.142	.113	.120	.098	.079	.069	.057	.046	.022	.018	.015	
3.0	.197	.147	.107	.169	.127	.093	.116	.088	.065	.067	.052	.038	.022	.017	.013	
4.0	.190	.134	.092	.163	.116	.080	.112	.081	.056	.065	.047	.033	.021	.015	.011	
5.0	.182	.124	.081	.157	.107	.070	.108	.075	.050	.062	.044	.029	.020	.014	.010	
6.0	.175	.115	.073	.151	.100	.063	.104	.070	.045	.060	.041	.027	.019	.013	.009	
7.0	.168	.109	.067	.145	.094	.058	.100	.066	.041	.058	.039	.025	.019	.013	.008	
8.0	.162	.103	.062	.139	.089	.054	.096	.063	.039	.056	.037	.023	.018	.012	.008	
9.0	.156	.098	.059	.134	.085	.051	.093	.060	.036	.054	.035	.022	.018	.012	.007	
10.0	.150	.094	.056	.130	.081	.049	.090	.057	.035	.052	.034	.021	.017	.011	.007	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm										
NAME:					TYPE:LED			WEIGHT:N/A		
SPEC.:N/A					DIM.:			SERIAL No.:N/A		
MFR.:					SUR.:			Shielding Angle:N/A		
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	35.1	36.5	35.4	36.8	37.1	34.9	36.3	35.2	36.6	36.9
3H	36.7	38.0	37.0	38.3	38.7	36.1	37.4	36.5	37.7	38.1
4H	37.4	38.7	37.8	39.0	39.4	36.5	37.8	36.9	38.1	38.4
6H	38.1	39.3	38.5	39.7	40.0	36.7	37.9	37.1	38.3	38.6
8H	38.4	39.6	38.8	39.9	40.3	36.8	37.9	37.2	38.3	38.7
12H	38.8	39.9	39.2	40.2	40.6	36.8	37.9	37.2	38.3	38.7
4H 2H	35.6	36.9	36.0	37.2	37.6	35.5	36.7	35.8	37.1	37.4
3H	37.5	38.6	37.9	38.9	39.3	36.9	38.0	37.3	38.4	38.8
4H	38.4	39.4	38.8	39.8	40.2	37.5	38.5	37.9	38.9	39.3
6H	39.2	40.1	39.7	40.5	41.0	37.8	38.8	38.3	39.2	39.6
8H	39.6	40.5	40.1	40.9	41.4	38.0	38.8	38.4	39.2	39.7
12H	40.0	40.8	40.5	41.3	41.8	38.0	38.8	38.5	39.3	39.8
8H 4H	38.6	39.5	39.1	39.9	40.4	37.8	38.7	38.3	39.1	39.6
6H	39.7	40.4	40.2	40.9	41.4	38.4	39.1	38.9	39.6	40.1
8H	40.2	40.9	40.8	41.4	41.9	38.6	39.3	39.2	39.8	40.3
12H	40.9	41.4	41.4	41.9	42.5	38.8	39.4	39.4	39.9	40.4
12H 4H	38.6	39.4	39.1	39.9	40.4	37.9	38.7	38.4	39.1	39.6
6H	39.7	40.4	40.3	40.9	41.4	38.6	39.2	39.1	39.7	40.2
8H	40.4	40.9	40.9	41.4	42.0	38.9	39.4	39.4	39.9	40.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117, 1988 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = 2.4$ )

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks:

## UTILIZATION FACTORS TABLE

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

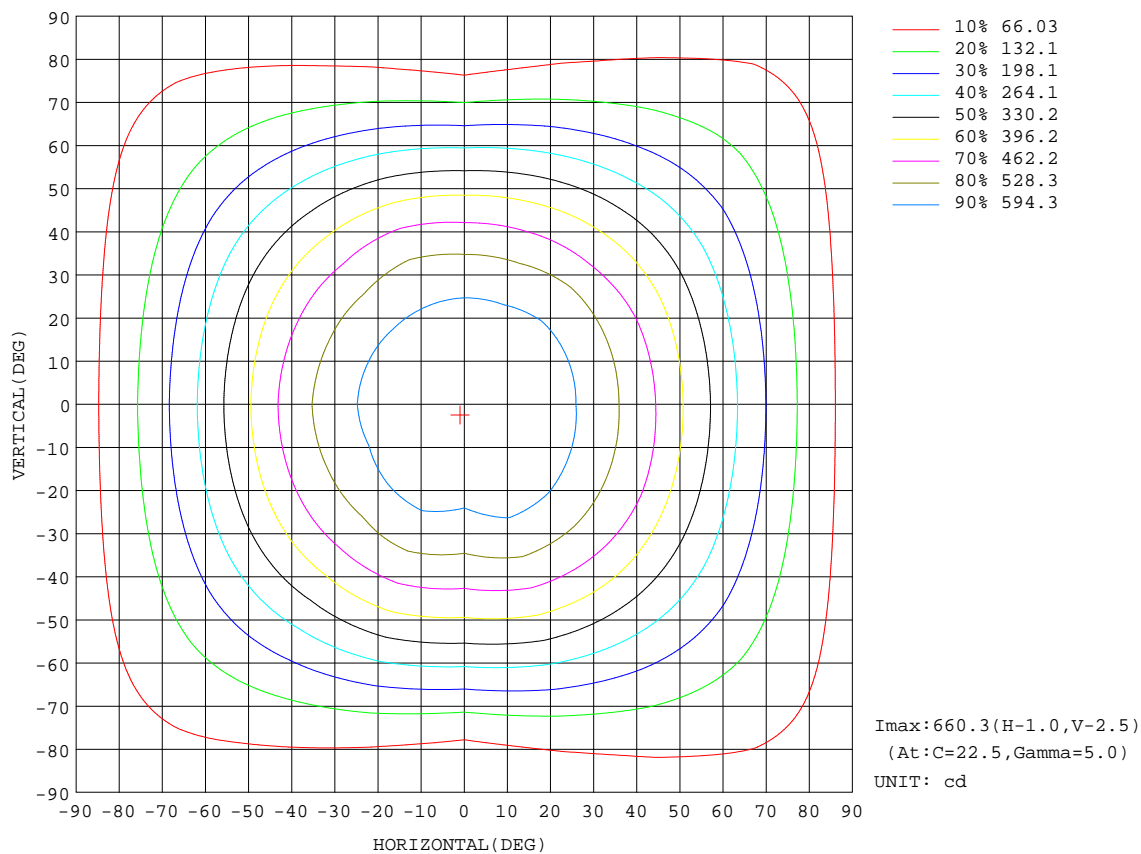
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	56	45	38	55	44	38	54	44	37	31
0.80	66	55	47	65	54	47	63	53	46	39
1.00	75	63	56	73	63	56	71	64	55	47
1.25	82	71	64	80	70	63	77	68	62	54
1.50	87	77	69	85	75	69	81	73	67	59
2.00	93	85	78	91	83	77	87	81	75	66
2.50	97	89	83	95	88	82	91	84	80	70
3.00	101	94	88	98	92	87	93	88	84	74
4.00	105	99	94	102	97	92	97	93	89	79
5.00	107	102	98	104	100	96	99	95	92	82
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks:

### ISOCANDELA DIAGRAM

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

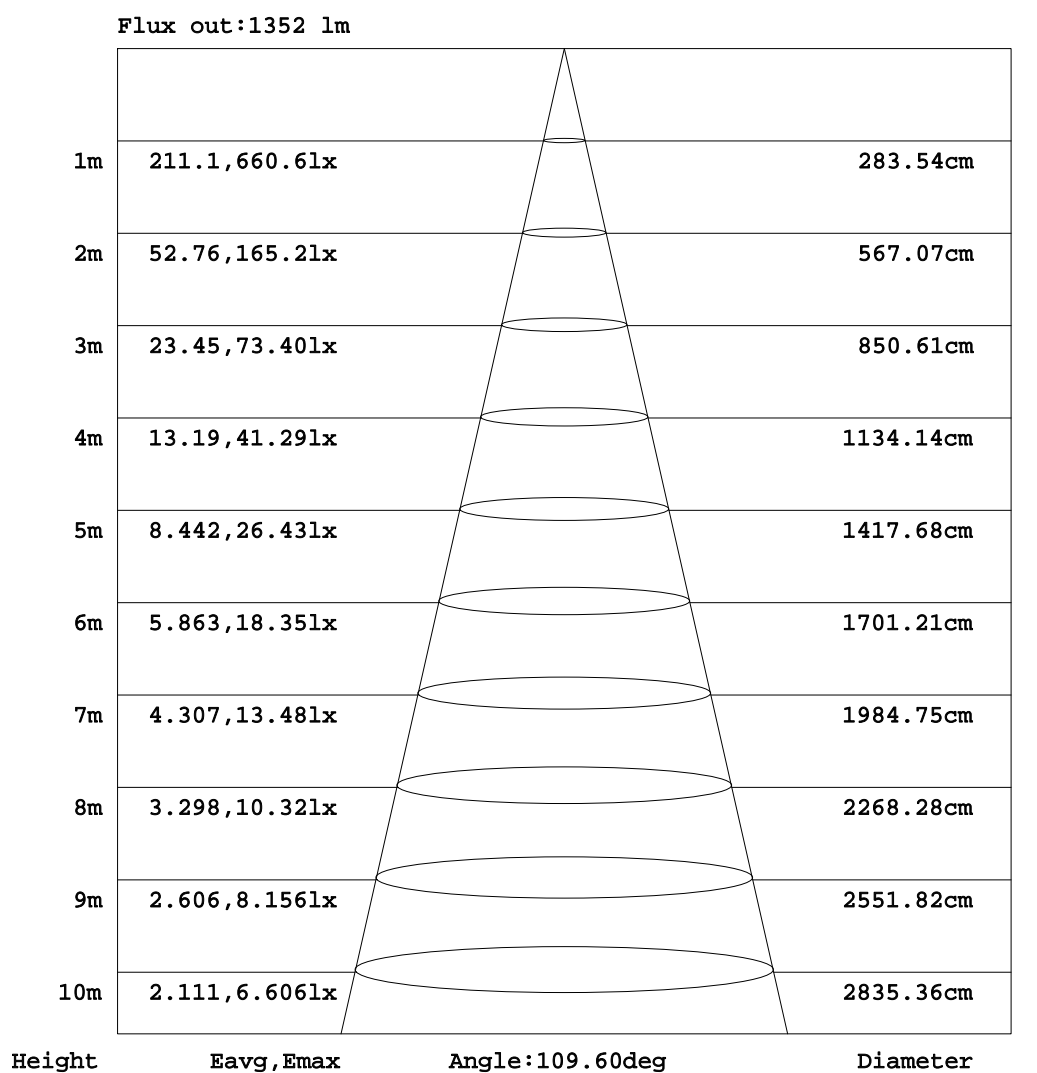


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:60%  
Test Distance:26.000m [K=1.5110]  
Remarks:

### AAI Figure

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

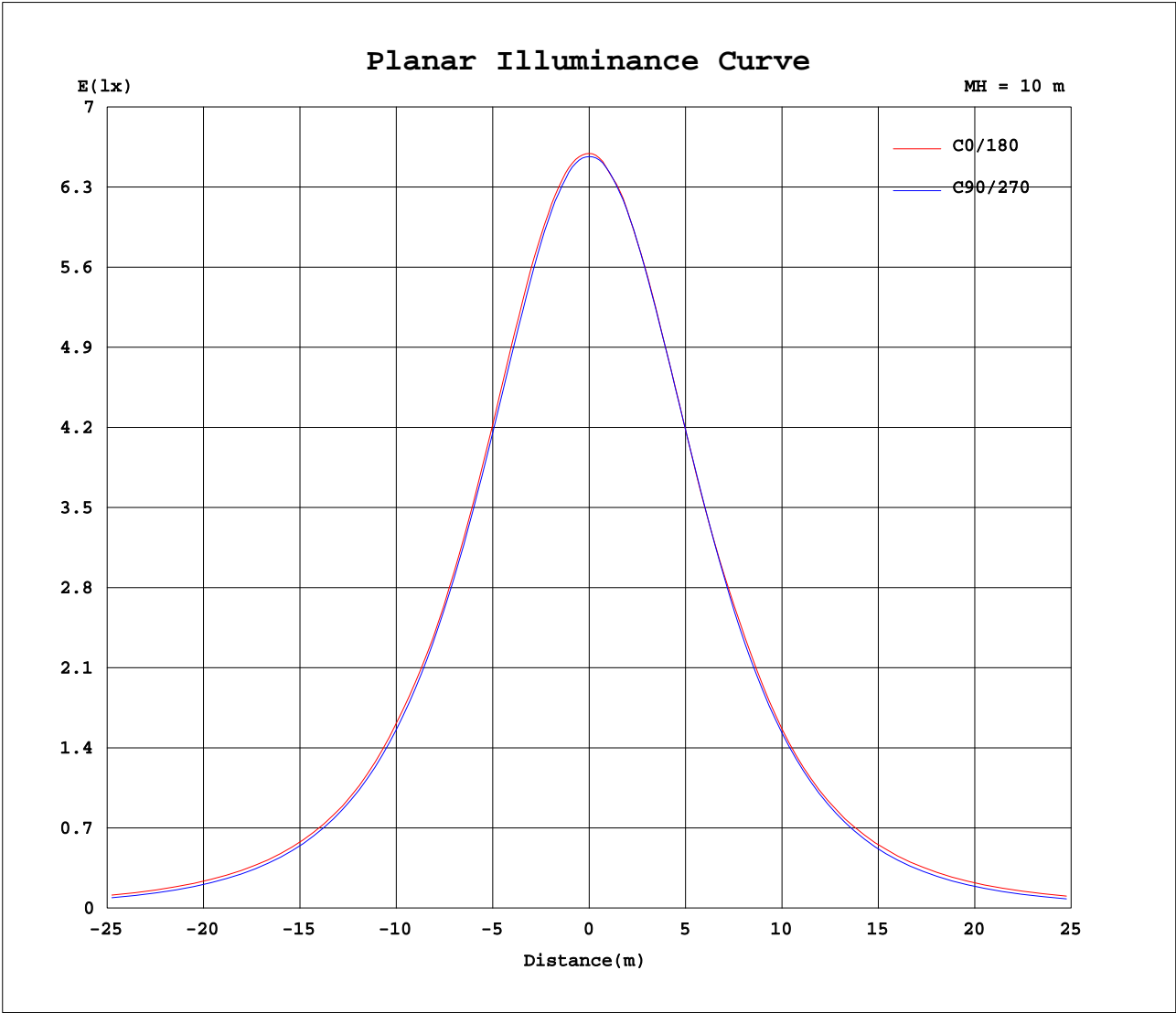


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:60%  
Test Distance:26.000m [K=1.5110]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.007V I:0.7688A P:18.457W PF:1.0000 Freq:0Hz Lamp Flux:1988.25x1 lm																	
NAME:									TYPE:LED						WEIGHT:N/A		
SPEC.:N/A									DIM.:						SERIAL No.:N/A		
MFR.:									SUR.:						Shielding Angle:N/A		

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	659	659	659	659	659	659	659	659	659	659	659	659	659	659	659	659			
5	657	659	658	659	657	657	657	656	654	656	656	655	657	654	656	657			
10	651	654	655	654	649	650	650	649	649	648	646	646	650	647	648	652			
15	641	640	645	645	635	641	638	636	635	635	633	632	637	633	637	641			
20	623	625	629	631	615	623	620	616	616	615	612	615	618	616	621	624			
25	599	604	609	611	591	600	596	590	593	590	587	592	594	591	600	602			
30	569	575	582	584	562	572	565	558	561	555	557	565	564	562	572	571			
35	534	539	547	549	526	537	525	527	529	523	520	533	528	525	537	536			
40	495	502	505	508	487	495	489	491	493	484	480	493	483	481	491	496			
45	456	464	462	461	442	449	442	444	442	435	433	440	434	434	441	451			
50	403	409	408	409	391	398	389	391	390	385	381	384	380	382	389	400			
55	351	353	350	352	336	342	333	337	338	334	326	327	320	326	334	347			
60	300	300	295	292	276	283	278	283	285	279	271	266	258	267	278	294			
65	247	247	239	231	212	221	221	230	232	225	215	206	193	210	224	242			
70	197	198	186	172	149	163	170	180	183	175	163	149	132	155	173	193			
75	151	150	138	119	92.6	112	123	134	137	128	116	99.7	77.7	104	127	146			
80	108	108	95.0	74.8	48.6	68.0	83.1	97.0	99.3	91.5	76.9	60.0	36.6	64.7	87.8	106			
85	73.6	73.8	61.1	43.2	19.5	37.8	50.0	59.4	63.7	58.6	45.4	31.6	11.5	36.0	54.7	70.6			
90	41.8	41.7	35.6	24.7	3.37	21.7	30.2	31.7	30.0	28.7	25.9	16.3	1.93	20.0	31.8	40.3			
95	13.4	12.4	4.67	0.37	0.18	0.31	0.52	9.00	11.4	9.32	0.35	0.82	0.62	0.91	0.43	11.9			
100	6.32	7.48	14.5	4.52	0.09	4.26	13.7	7.86	4.55	5.95	8.65	6.67	0.80	7.30	15.1	8.72			
105	21.3	19.8	16.8	8.70	0.09	7.38	16.4	20.8	23.3	21.5	16.9	8.09	1.15	9.29	17.2	20.8			
110	22.0	20.8	17.5	9.06	0.09	8.51	18.0	22.7	24.7	23.7	19.1	8.14	1.60	9.99	18.7	22.2			
115	23.3	22.1	18.7	9.81	0.10	8.51	18.7	24.1	26.3	25.3	20.1	8.18	1.86	10.5	19.9	23.8			
120	24.2	23.3	19.7	10.0	0.14	8.50	19.4	25.5	27.5	26.2	20.3	8.22	2.13	10.5	20.0	24.6			
125	25.8	24.6	19.8	10.3	0.21	8.46	19.6	25.7	27.5	25.9	20.3	8.15	2.36	10.5	20.0	24.9			
130	26.1	24.8	20.0	10.4	0.37	8.34	19.9	25.8	27.6	26.0	20.2	7.71	2.67	10.5	20.1	24.9			
135	26.0	24.9	20.3	2.63	0.52	2.00	19.8	26.0	27.6	26.0	20.1	3.25	2.68	2.32	19.9	24.8			
140	26.0	25.0	20.3	2.83	0.97	4.68	19.8	26.2	27.5	26.0	19.7	5.60	2.70	7.83	19.6	24.7			
145	26.0	24.9	18.0	9.41	1.23	4.27	18.2	25.7	26.7	25.6	18.6	5.15	2.72	7.54	18.4	23.5			
150	25.3	24.1	11.1	9.33	1.36	2.52	1.56	23.2	24.8	23.8	17.3	4.71	2.73	6.25	1.12	22.0			
155	23.5	17.5	2.77	8.44	1.49	1.81	8.70	15.4	21.3	20.5	1.31	4.25	2.57	4.25	11.0	1.29			
160	13.1	3.69	13.2	7.30	1.63	1.77	5.88	1.88	5.17	1.38	10.4	2.31	2.55	3.75	7.51	13.8			
165	14.0	12.3	9.29	5.95	1.95	1.74	1.81	5.69	7.44	7.57	4.97	1.87	2.53	3.47	4.73	8.86			
170	8.99	7.77	6.06	4.55	3.19	1.70	1.69	1.77	1.28	2.94	3.16	1.95	2.51	3.36	3.02	4.30			
175	4.63	3.98	3.77	3.73	3.40	1.66	1.65	1.68	1.62	2.01	2.09	1.95	2.49	3.32	2.50	2.58			
180	1.71	1.72	1.77	2.40	3.37	1.65	1.64	1.64	1.37	1.81	1.66	1.95	2.48	3.30	1.64	1.64			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-18

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:60%  
 Test Distance:26.000m [K=1.5110]  
 Remarks: