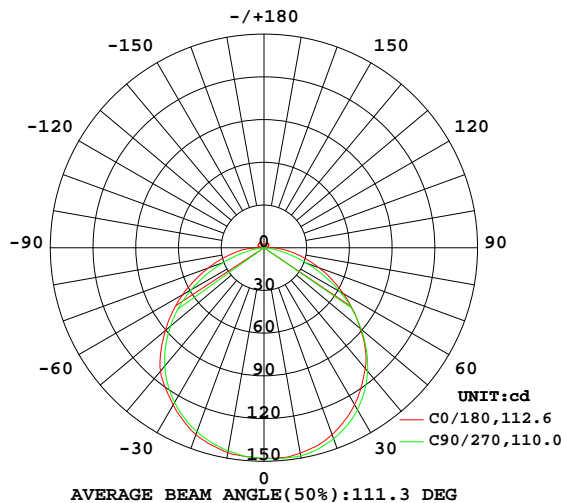


## LUMINAIRE PHOTOMETRIC TEST REPORT

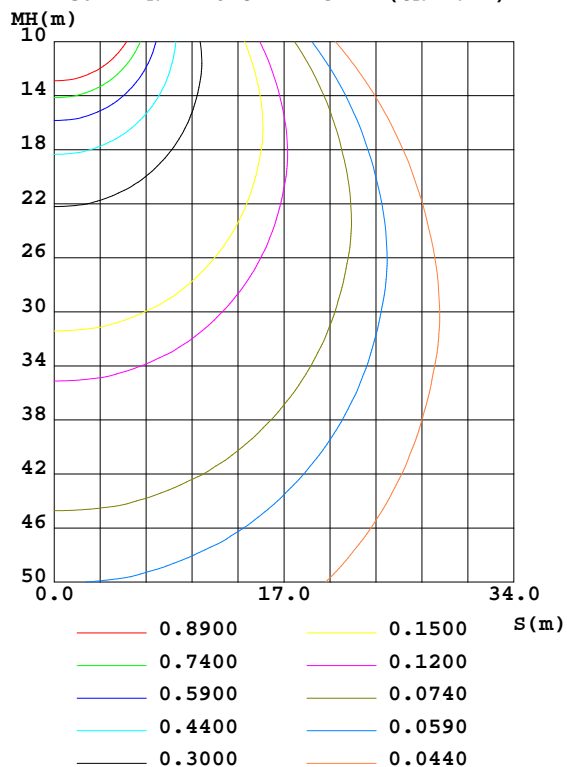
Test:U:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.83 lm/W			
CR 865 3.5W COB OFF F1 1M IP67 21015136		Imax(cd)	148.5	S/MH(C0/180)	1.28
NOMINAL POWER(W)	3.5	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	437.65	$\eta$ UP,DN(C0-180)	1.4,48.9
NOMINAL FLUX(lm)	437.65	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	1.5,48.3
LAMPS INSIDE	1	$\eta$ up(%)	2.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	$\eta$ down(%)	97.1	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



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:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	146.5	147.0	148.4	146.5	146.1	145.6	144.8	146.0	0- 10	14.05	14.05	3.21,3.21
20	139.7	140.2	142.8	140.3	139.6	138.8	137.4	139.8	10- 20	40.55	54.60	12.5,12.5
30	127.2	128.8	131.4	127.0	127.5	127.0	125.6	128.1	20- 30	61.95	116.6	26.6,26.6
40	110.6	111.1	113.4	111.6	113.0	110.5	108.4	108.3	30- 40	75.10	191.7	43.8,43.8
50	88.34	88.68	89.18	89.57	90.48	89.07	85.79	86.79	40- 50	77.58	269.2	61.5,61.5
60	64.33	62.35	61.46	63.69	65.74	63.73	59.11	61.18	50- 60	68.08	337.3	77.1,77.1
70	41.12	37.49	31.94	38.02	41.69	37.80	30.47	36.91	60- 70	49.53	386.8	88.4,88.4
80	21.20	17.14	9.246	17.77	21.32	16.65	8.291	16.99	70- 80	27.72	414.6	94.7,94.7
90	6.774	5.597	0.4445	5.654	5.207	4.513	0.0857	4.703	80- 90	10.51	425.1	97.1,97.1
100	0	1.130	0	1.533	0.6879	1.403	0	2.741	90-100	1.561	426.6	97.5,97.5
110	3.253	2.787	0	2.655	4.708	3.140	0.0885	2.826	100-110	2.024	428.7	97.9,97.9
120	4.109	2.965	0	2.655	4.625	3.140	0.1770	2.826	110-120	2.430	431.1	98.5,98.5
130	4.111	3.053	0	2.996	4.625	3.140	0.1770	2.826	120-130	2.303	433.4	99,99
140	4.111	3.053	0	3.169	4.625	3.140	0.1770	2.655	130-140	1.885	435.3	99.5,99.5
150	4.197	1.844	0	0.2103	4.624	2.259	0.1770	0.0025	140-150	1.503	436.8	99.8,99.8
160	0.0868	1.573	0	1.542	0.0886	1.917	0.1770	0.0856	150-160	0.5992	437.4	99.9,99.9
170	1.028	0.6138	0	0.5204	0.9420	0.2600	0.1770	0.0856	160-170	0.2359	437.6	100,100
180	0.0856	0.1744	0.0885	0.0856	0.0856	0.0872	0.1770	0.0856	170-180	0.0219	437.7	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 230.91 lm

%lum = 52.8%

%lamp = 52.8%

Conical surface Flux(120deg): 337.32 lm

%lum = 77.1%

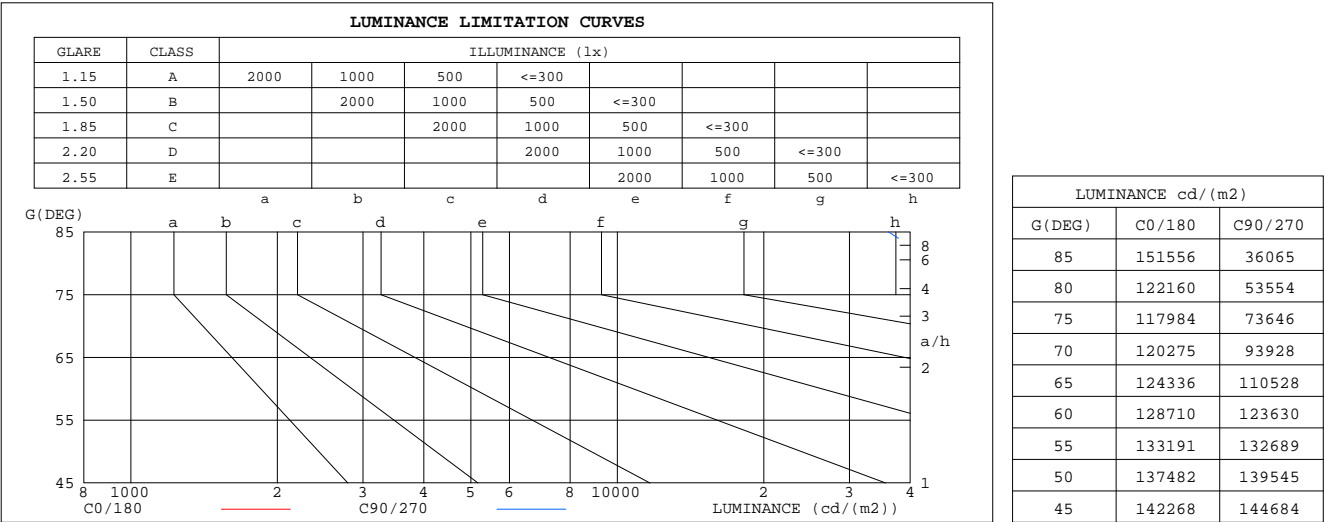
%lamp = 77.1%

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  
 $\gamma$  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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 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
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	.310	.176	.056	.302	.172	.055	.287	.165	.053	.274	.158	.051	.261	.151	.049	
2.0	.290	.159	.049	.283	.156	.048	.269	.150	.047	.257	.144	.045	.246	.139	.044	
3.0	.268	.142	.043	.261	.140	.042	.250	.135	.041	.239	.131	.040	.229	.127	.039	
4.0	.247	.128	.038	.241	.126	.037	.231	.122	.037	.221	.119	.036	.212	.115	.035	
5.0	.228	.116	.034	.223	.115	.033	.214	.111	.033	.205	.108	.032	.197	.105	.032	
6.0	.212	.106	.030	.207	.105	.030	.199	.102	.030	.191	.099	.029	.184	.097	.029	
7.0	.197	.098	.028	.193	.096	.027	.186	.094	.027	.179	.092	.027	.172	.089	.026	
8.0	.184	.090	.025	.181	.089	.025	.174	.087	.025	.168	.085	.024	.162	.083	.024	
9.0	.173	.084	.023	.170	.083	.023	.163	.081	.023	.158	.079	.023	.152	.077	.022	
10.0	.163	.078	.022	.160	.077	.022	.154	.075	.021	.149	.074	.021	.144	.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	.212	.212	.212	.181	.181	.181	.124	.124	.124	.071	.071	.071	.023	.023	.023	
1.0	.202	.178	.156	.173	.153	.135	.118	.105	.093	.068	.061	.054	.022	.020	.018	
2.0	.194	.154	.120	.166	.133	.104	.114	.092	.073	.066	.053	.043	.021	.017	.014	
3.0	.186	.137	.097	.160	.118	.084	.110	.082	.059	.063	.048	.035	.020	.016	.011	
4.0	.179	.123	.081	.153	.107	.070	.105	.074	.050	.061	.044	.029	.020	.014	.010	
5.0	.171	.113	.070	.147	.098	.061	.101	.068	.043	.059	.040	.025	.019	.013	.008	
6.0	.164	.105	.062	.141	.091	.054	.097	.063	.038	.056	.037	.023	.018	.012	.007	
7.0	.157	.098	.056	.135	.085	.049	.094	.059	.035	.054	.035	.021	.018	.011	.007	
8.0	.151	.092	.052	.130	.080	.045	.090	.056	.032	.052	.033	.019	.017	.011	.006	
9.0	.145	.087	.048	.125	.076	.042	.087	.053	.030	.050	.031	.018	.016	.010	.006	
10.0	.139	.083	.045	.120	.072	.040	.083	.051	.028	.049	.030	.017	.016	.010	.006	

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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 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		29.7	31.1	30.0	31.4	31.7	29.6	31.1	29.9	31.3	31.6
	3H	31.2	32.5	31.5	32.8	33.1	30.8	32.1	31.1	32.4	32.7
	4H	31.9	33.1	32.2	33.4	33.8	31.1	32.4	31.5	32.7	33.0
	6H	32.4	33.7	32.8	34.0	34.3	31.3	32.5	31.7	32.8	33.2
	8H	32.7	33.9	33.1	34.2	34.6	31.3	32.5	31.7	32.8	33.2
	12H	33.0	34.1	33.4	34.4	34.8	31.3	32.4	31.7	32.8	33.1
4H	2H	30.2	31.5	30.5	31.8	32.1	30.1	31.4	30.5	31.7	32.0
	3H	31.9	33.0	32.3	33.4	33.7	31.5	32.6	31.9	33.0	33.3
	4H	32.7	33.7	33.1	34.1	34.5	32.0	33.0	32.4	33.4	33.8
	6H	33.5	34.4	33.9	34.8	35.2	32.3	33.2	32.7	33.6	34.0
	8H	33.8	34.7	34.3	35.1	35.5	32.3	33.2	32.8	33.6	34.1
	12H	34.1	34.9	34.6	35.4	35.8	32.4	33.2	32.8	33.6	34.1
8H	4H	32.9	33.8	33.4	34.2	34.6	32.3	33.1	32.7	33.5	34.0
	6H	33.9	34.6	34.3	35.0	35.5	32.7	33.4	33.2	33.9	34.4
	8H	34.3	35.0	34.8	35.4	36.0	32.9	33.5	33.4	34.0	34.5
	12H	34.8	35.4	35.3	35.9	36.4	33.0	33.5	33.5	34.0	34.6
12H	4H	32.9	33.7	33.4	34.1	34.6	32.3	33.1	32.8	33.5	34.0
	6H	33.9	34.5	34.4	35.0	35.5	32.8	33.5	33.3	33.9	34.5
	8H	34.4	35.0	35.0	35.5	36.0	33.1	33.6	33.6	34.1	34.6
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.3					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4					
2.0H	+ 0.2 / - 0.2					+ 0.3 / - 0.3					

CIE Pub.117, 437.7 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = -2.9$ )

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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

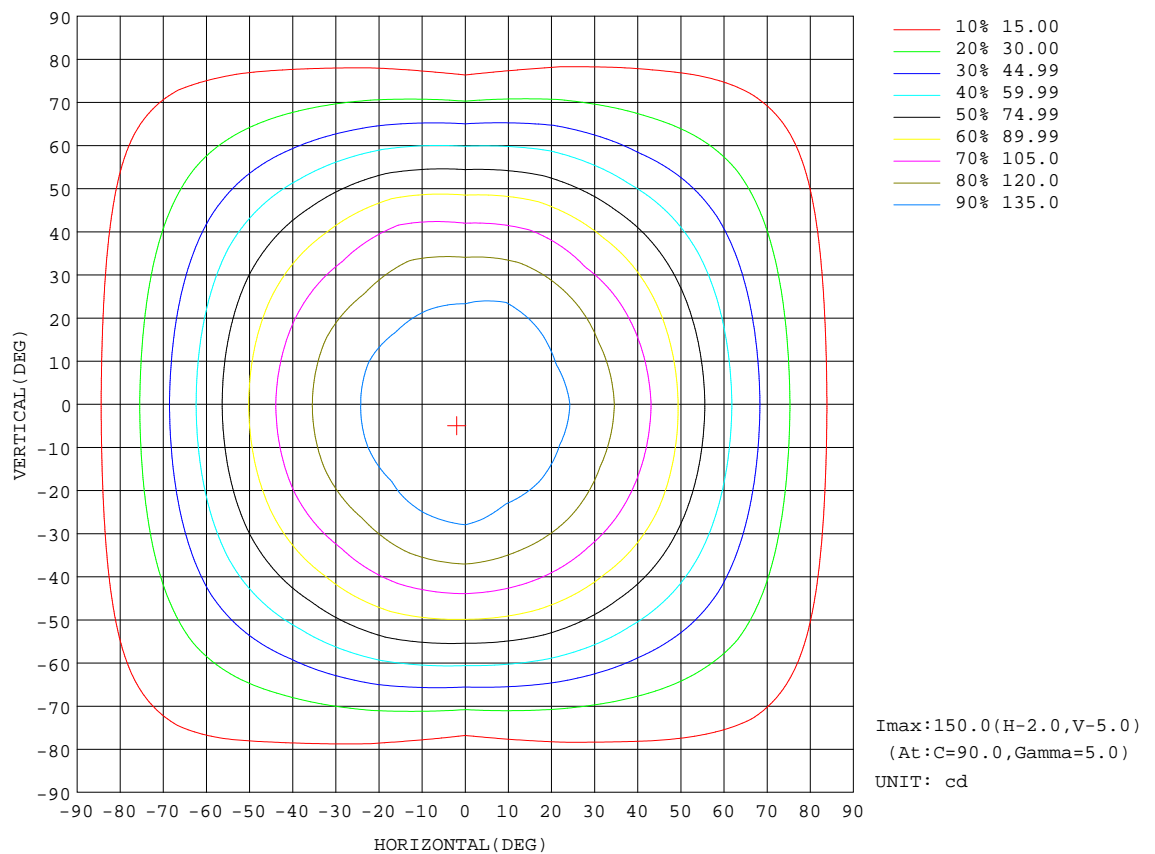
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	44	38	32
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	64	57	72	65	56	49
1.25	82	72	65	81	71	64	78	69	63	56
1.50	87	77	70	86	76	70	82	74	69	61
2.00	94	86	79	92	84	78	88	82	76	68
2.50	98	90	84	96	89	83	92	86	81	72
3.00	101	94	89	99	93	88	95	89	85	76
4.00	105	100	95	103	98	93	98	94	90	80
5.00	108	103	99	105	101	97	100	97	93	83
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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

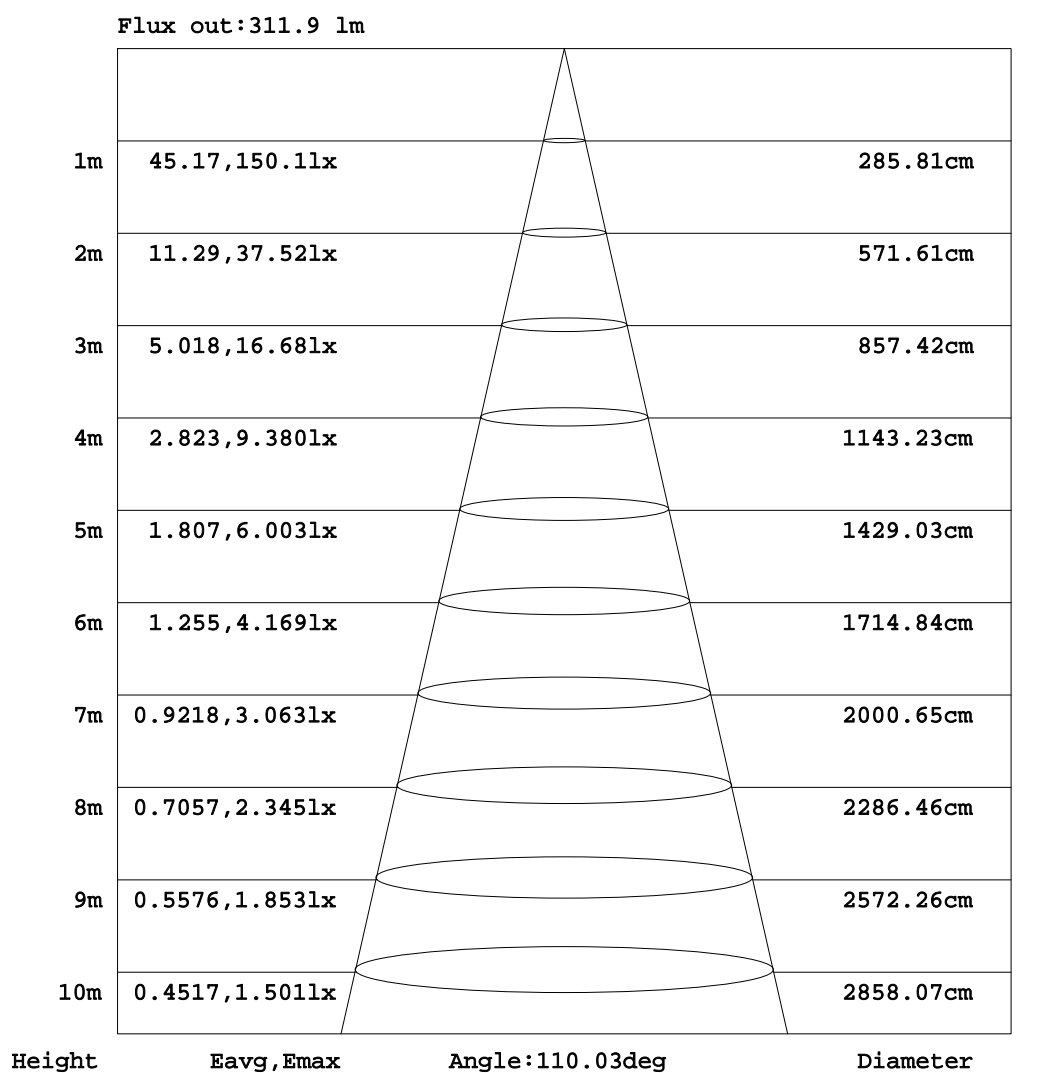


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

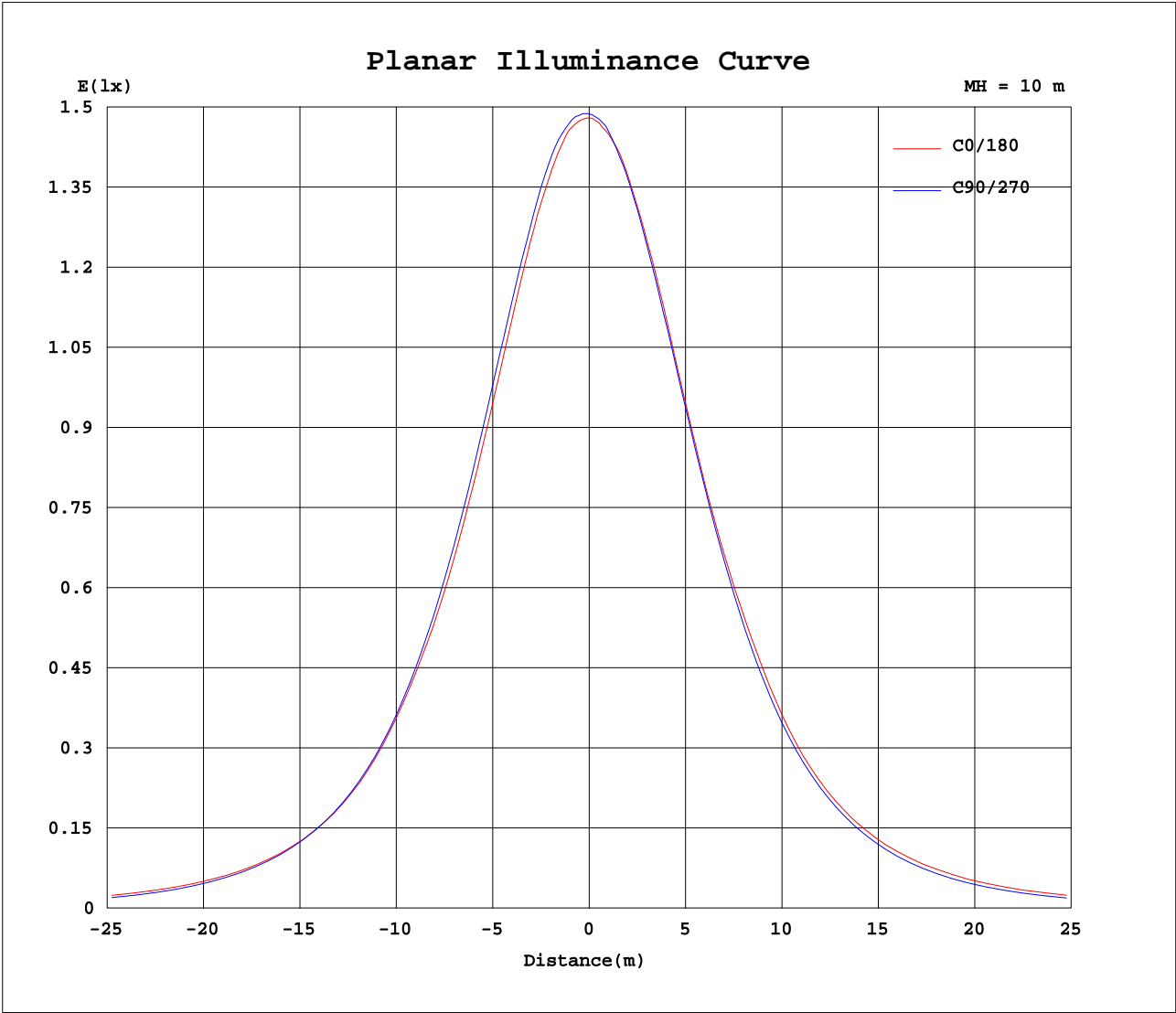


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:24.006V I:0.1560A P:3.7460W PF:1.0000 Freq:0Hz Lamp Flux:437.65x1 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	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148			
5	148	147	148	148	149	148	148	148	147	147	147	147	147	147	147	147			
10	146	146	147	147	148	147	146	147	146	146	146	146	145	146	146	146			
15	144	143	144	144	146	144	144	144	143	143	143	143	142	143	144	143			
20	140	138	140	141	143	141	140	140	140	139	139	139	137	139	140	139			
25	134	133	135	136	138	135	135	135	134	134	133	134	132	133	135	133			
30	127	127	129	130	131	129	127	128	127	127	127	128	126	127	128	127			
35	119	118	121	122	123	121	121	121	121	120	119	122	118	118	119	119			
40	111	110	111	113	113	112	112	113	113	112	110	113	108	109	108	110			
45	101	100	100	102	102	101	101	103	102	101	101	103	97.6	98.2	98.7	99.8			
50	88.3	89.0	88.7	90.2	89.2	89.7	89.6	90.6	90.5	89.9	89.1	90.4	85.8	86.8	86.8	87.3			
55	76.4	75.6	75.4	77.1	75.7	76.9	76.8	78.3	78.4	77.8	76.6	77.1	73.0	74.1	74.0	75.3			
60	64.3	63.4	62.4	63.1	61.5	63.1	63.7	65.7	65.7	65.6	63.7	63.4	59.1	61.0	61.2	63.3			
65	52.5	51.6	49.4	48.9	46.4	48.9	50.3	53.1	53.5	53.0	50.5	48.9	44.8	48.0	48.5	51.3			
70	41.1	39.9	37.5	35.5	31.9	35.4	38.0	41.3	41.7	40.3	37.8	35.1	30.5	34.8	36.9	40.0			
75	30.5	29.6	26.7	23.2	19.0	23.7	27.2	30.3	31.0	29.2	26.6	23.1	17.9	22.7	26.0	29.2			
80	21.2	20.3	17.1	13.8	9.25	14.1	17.8	21.3	21.3	19.7	16.7	13.1	8.29	13.3	17.0	19.8			
85	13.2	12.4	10.1	7.05	3.13	7.52	10.4	13.2	13.8	12.6	9.33	6.21	2.28	6.70	9.59	12.1			
90	6.77	6.53	5.60	3.56	0.44	3.98	5.65	6.36	5.21	5.20	4.51	2.57	0.09	2.91	4.70	5.80			
95	2.49	2.34	0.49	0.03	0.00	0.01	0.00	1.66	1.26	0.75	0.00	0.01	0.00	0.17	0.00	1.00			
100	0.00	0.00	1.13	0.00	0.00	0.00	1.53	0.17	0.69	1.20	1.40	0.98	0.00	1.29	2.74	1.37			
105	3.08	2.65	1.92	0.35	0.00	0.60	2.48	3.08	4.28	4.02	3.23	0.98	0.00	1.29	2.83	3.77			
110	3.25	3.08	2.79	0.53	0.00	0.69	2.66	3.50	4.71	4.28	3.14	0.98	0.09	1.29	2.83	4.11			
115	3.60	3.25	2.97	0.62	0.00	0.78	2.66	3.93	4.62	4.28	3.14	0.98	0.18	1.29	2.83	4.11			
120	4.11	3.51	2.97	0.71	0.00	1.12	2.66	4.02	4.62	4.28	3.14	0.98	0.18	1.29	2.83	4.11			
125	4.11	3.77	3.05	0.71	0.00	1.29	2.83	4.02	4.62	4.28	3.14	0.89	0.18	1.29	2.83	4.02			
130	4.11	3.85	3.05	0.71	0.00	1.47	3.00	4.11	4.62	4.28	3.14	0.44	0.18	1.20	2.83	4.02			
135	4.11	3.85	3.05	0.54	0.00	0.34	3.08	4.27	4.62	4.28	3.14	0.10	0.18	0.00	2.74	3.93			
140	4.11	3.94	3.05	0.00	0.00	0.68	3.17	4.28	4.62	4.28	3.14	0.89	0.18	0.43	2.66	3.85			
145	4.11	4.02	3.05	0.36	0.00	0.69	3.17	4.28	4.62	4.36	3.14	1.07	0.18	0.26	2.48	3.59			
150	4.20	4.02	1.84	0.36	0.00	0.69	0.21	4.28	4.62	4.19	2.26	0.71	0.18	0.17	0.00	3.17			
155	4.11	2.83	0.17	0.36	0.00	0.69	0.59	3.26	4.11	3.85	0.09	0.71	0.18	0.17	0.76	0.00			
160	0.09	0.00	1.57	0.36	0.00	0.61	1.54	0.08	0.09	0.09	1.92	0.53	0.18	0.17	0.09	1.37			
165	1.88	1.46	1.23	0.36	0.00	0.26	1.63	2.22	1.88	1.96	1.39	0.18	0.18	0.17	0.09	0.09			
170	1.03	1.03	0.61	0.18	0.00	0.09	0.52	1.37	0.94	0.85	0.26	0.09	0.18	0.17	0.09	0.09			
175	0.26	0.26	0.17	0.18	0.09	0.09	0.09	0.09	0.09	0.00	0.09	0.18	0.18	0.09	0.09	0.09			
180	0.09	0.09	0.17	0.18	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.18	0.18	0.09	0.09	0.09			

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: