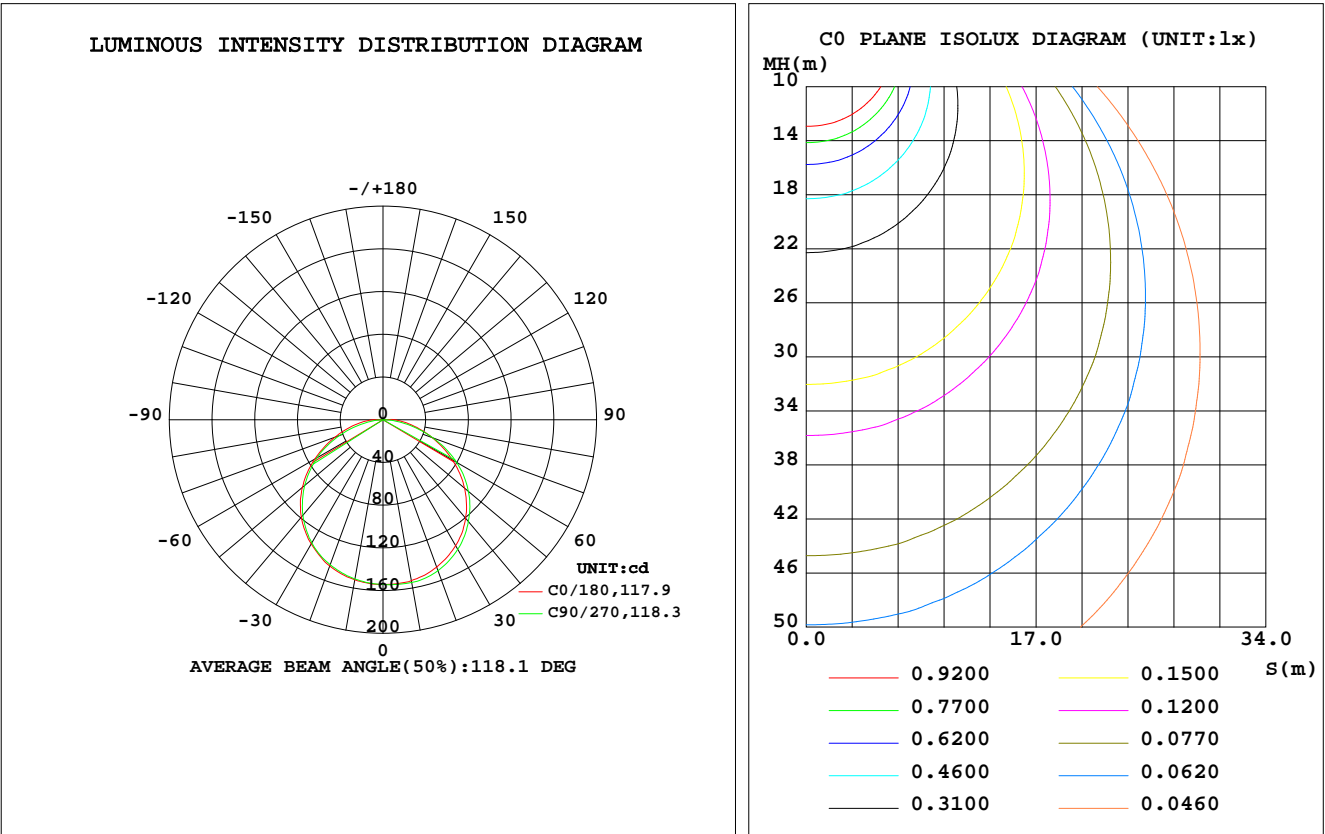


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.007V I:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 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: 128.02 lm/W			
BON OB 865 MODEL	ONOFF 1M IP20 21015109	Imax(cd)	154.8	S/MH(C0/180)	1.30
NOMINAL POWER(W)	3.5	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	479.61	η UP,DN(C0-180)	0.2,50.7
NOMINAL FLUX(lm)	479.61	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.1,49.0
LAMPS INSIDE	1	η up(%)	0.3	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	99.7	CIBSE SHR MAX	1.50



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	153.0	153.8	154.7	153.1	152.1	151.3	151.4	151.9	0- 10	14.64	14.64	3.05,3.05
20	146.8	147.8	150.4	146.3	145.9	144.3	144.5	146.0	10- 20	42.38	57.02	11.9,11.9
30	136.1	137.6	139.9	135.1	134.3	133.0	133.2	135.4	20- 30	65.30	122.3	25.5,25.5
40	120.3	121.8	124.4	120.1	119.0	117.7	116.7	118.3	30- 40	80.30	202.6	42.2,42.2
50	99.75	101.6	104.4	99.58	98.68	97.74	95.69	98.02	40- 50	85.04	287.7	60,60
60	75.04	76.15	79.48	74.80	73.73	72.59	71.42	73.59	50- 60	78.34	366.0	76.3,76.3
70	49.25	48.89	50.05	47.60	47.96	44.73	43.57	46.99	60- 70	60.69	426.7	89,89
80	26.41	23.56	20.90	24.31	26.03	19.78	16.55	23.33	70- 80	36.53	463.2	96.6,96.6
90	11.13	6.810	1.872	8.160	9.426	4.135	0.0875	7.739	80- 90	14.82	478.0	99.7,99.7
100	0	0.1745	0	0.3408	1.462	0	0	0	90-100	1.412	479.5	100,100
110	0	0	0	0.0019	0	0	0	0	100-110	0.1472	479.6	100,100
120	0	0	0	0	0	0	0	0	110-120	0.0006	479.6	100,100
130	0	0	0	0	0	0	0	0	120-130	0	479.6	100,100
140	0	0	0	0	0	0	0	0	130-140	0	479.6	100,100
150	0	0	0	0	0	0	0	0	140-150	0.0007	479.6	100,100
160	0	0	0	0	0	0	0	0	150-160	0.0028	479.6	100,100
170	0	0	0.0887	0	0	0	0	0	160-170	0.0027	479.6	100,100
180	0	0	0.1775	0	0	0	0	0	170-180	0.0015	479.6	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 245.25 lm

%lum = 51.1%

%lamp = 51.1%

Conical surface Flux(120deg): 366.01 lm

%lum = 76.3%

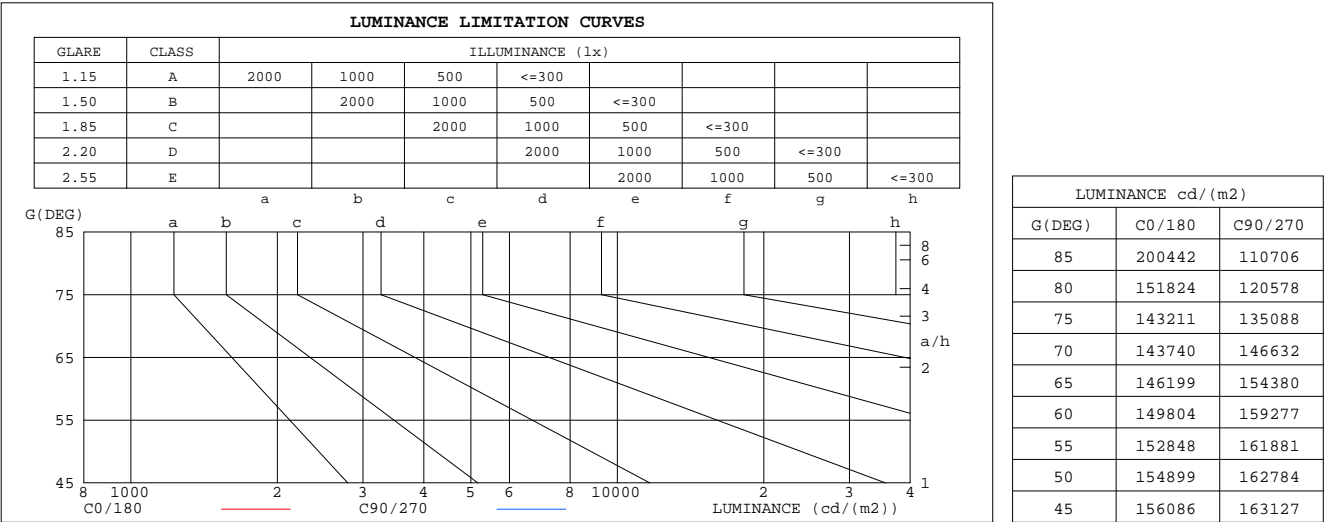
%lamp = 76.3%

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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 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	.327	.186	.059	.320	.183	.058	.307	.176	.056	.294	.170	.054	.283	.164	.053	
2.0	.303	.166	.051	.296	.163	.050	.284	.158	.049	.273	.153	.048	.263	.149	.047	
3.0	.278	.148	.044	.272	.146	.044	.262	.142	.043	.252	.138	.042	.243	.134	.042	
4.0	.255	.133	.039	.250	.131	.039	.241	.128	.038	.232	.125	.038	.224	.122	.037	
5.0	.235	.120	.035	.231	.118	.034	.222	.116	.034	.215	.113	.034	.207	.111	.033	
6.0	.217	.109	.031	.214	.108	.031	.206	.106	.031	.199	.103	.030	.193	.101	.030	
7.0	.202	.100	.028	.198	.099	.028	.192	.097	.028	.186	.095	.028	.180	.093	.027	
8.0	.188	.092	.026	.185	.091	.026	.179	.090	.026	.174	.088	.025	.168	.086	.025	
9.0	.176	.085	.024	.173	.085	.024	.168	.083	.024	.163	.082	.023	.158	.080	.023	
10.0	.166	.079	.022	.163	.079	.022	.158	.078	.022	.154	.076	.022	.149	.075	.022	

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	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.184	.158	.135	.157	.136	.117	.108	.094	.081	.062	.054	.047	.020	.017	.015	
2.0	.176	.134	.099	.151	.116	.086	.103	.080	.060	.060	.047	.035	.019	.015	.011	
3.0	.169	.117	.076	.145	.101	.066	.099	.070	.046	.057	.041	.027	.018	.013	.009	
4.0	.161	.104	.060	.138	.090	.052	.095	.062	.037	.055	.037	.022	.018	.012	.007	
5.0	.153	.093	.049	.132	.081	.043	.091	.056	.030	.053	.033	.018	.017	.011	.006	
6.0	.146	.085	.041	.126	.074	.036	.087	.052	.025	.050	.030	.015	.016	.010	.005	
7.0	.139	.078	.035	.120	.068	.031	.083	.047	.022	.048	.028	.013	.016	.009	.004	
8.0	.133	.072	.031	.114	.063	.027	.079	.044	.019	.046	.026	.011	.015	.009	.004	
9.0	.126	.067	.028	.109	.058	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003	
10.0	.121	.063	.025	.104	.055	.022	.072	.039	.015	.042	.023	.009	.014	.007	.003	

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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 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		30.4	32.0	30.7	32.2	32.4	30.7	32.2	30.9	32.4	32.6
	3H	32.0	33.5	32.3	33.7	34.0	32.3	33.7	32.6	33.9	34.2
	4H	32.8	34.1	33.1	34.4	34.7	32.9	34.3	33.2	34.5	34.8
	6H	33.4	34.7	33.7	35.0	35.3	33.3	34.6	33.7	34.9	35.2
	8H	33.7	35.0	34.1	35.2	35.5	33.5	34.7	33.8	35.0	35.3
	12H	34.0	35.2	34.4	35.5	35.8	33.6	34.8	33.9	35.1	35.4
4H	2H	31.1	32.4	31.4	32.7	33.0	31.3	32.6	31.6	32.9	33.1
	3H	32.9	34.1	33.2	34.4	34.7	33.1	34.3	33.4	34.6	34.9
	4H	33.7	34.8	34.1	35.2	35.5	33.8	34.9	34.2	35.2	35.6
	6H	34.5	35.5	34.9	35.9	36.3	34.4	35.4	34.8	35.7	36.1
	8H	34.9	35.8	35.3	36.2	36.6	34.6	35.5	35.0	35.9	36.3
	12H	35.3	36.1	35.7	36.5	37.0	34.7	35.6	35.2	36.0	36.4
8H	4H	34.1	35.0	34.5	35.3	35.7	34.1	35.0	34.5	35.4	35.8
	6H	35.0	35.8	35.5	36.2	36.6	34.9	35.6	35.3	36.0	36.5
	8H	35.5	36.2	36.0	36.7	37.1	35.2	35.8	35.6	36.3	36.7
	12H	36.1	36.7	36.6	37.1	37.6	35.4	36.0	35.9	36.5	36.9
12H	4H	34.1	34.9	34.5	35.3	35.7	34.1	35.0	34.6	35.4	35.8
	6H	35.1	35.8	35.6	36.2	36.7	35.0	35.6	35.4	36.1	36.5
	8H	35.7	36.3	36.2	36.7	37.2	35.3	35.9	35.8	36.4	36.8
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 479.6 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = -2.6$ )

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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

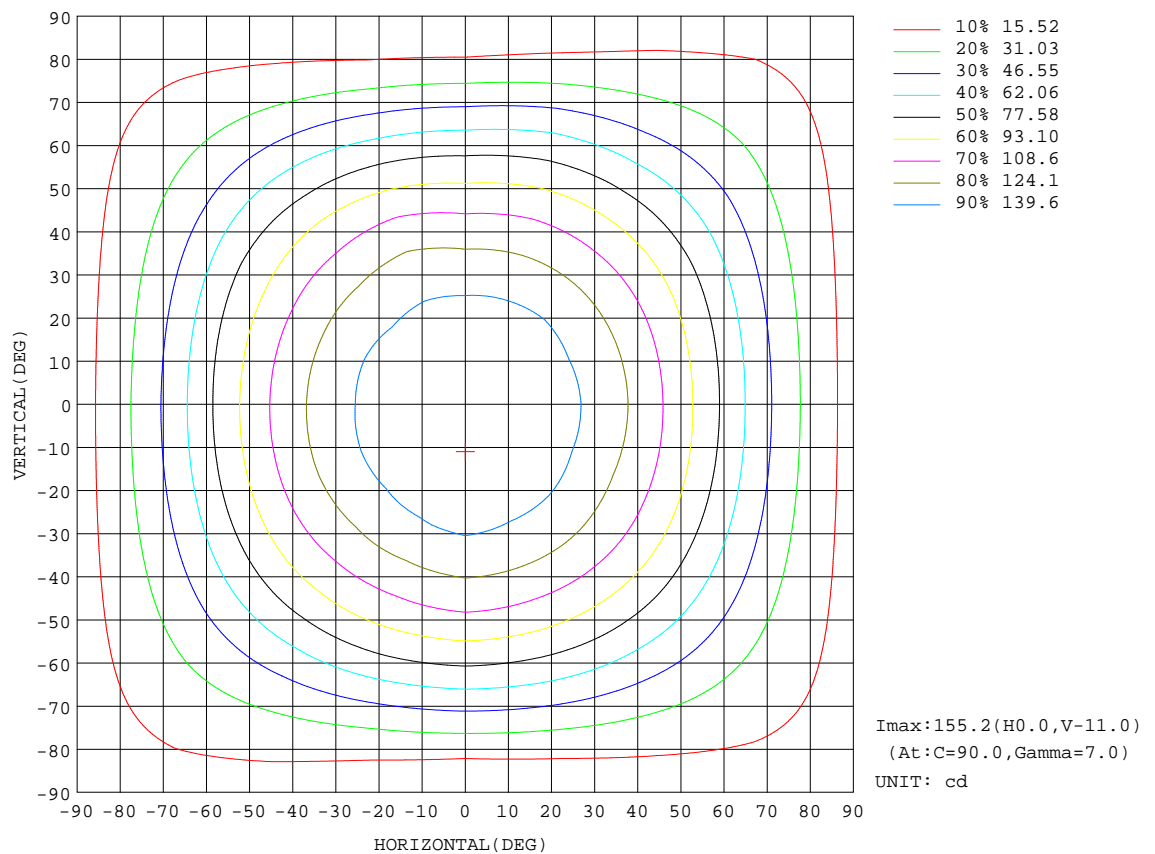
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	44	37	30
0.80	66	54	47	65	54	46	63	53	46	39
1.00	75	63	56	73	63	55	71	64	55	47
1.25	82	71	63	80	70	63	77	69	62	55
1.50	87	76	69	85	76	69	82	74	68	60
2.00	94	85	78	92	84	77	88	81	76	68
2.50	98	90	83	96	88	82	92	85	80	72
3.00	101	94	88	99	92	87	95	89	85	76
4.00	105	99	94	103	97	93	99	94	90	81
5.00	108	103	98	105	101	97	101	97	94	84
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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

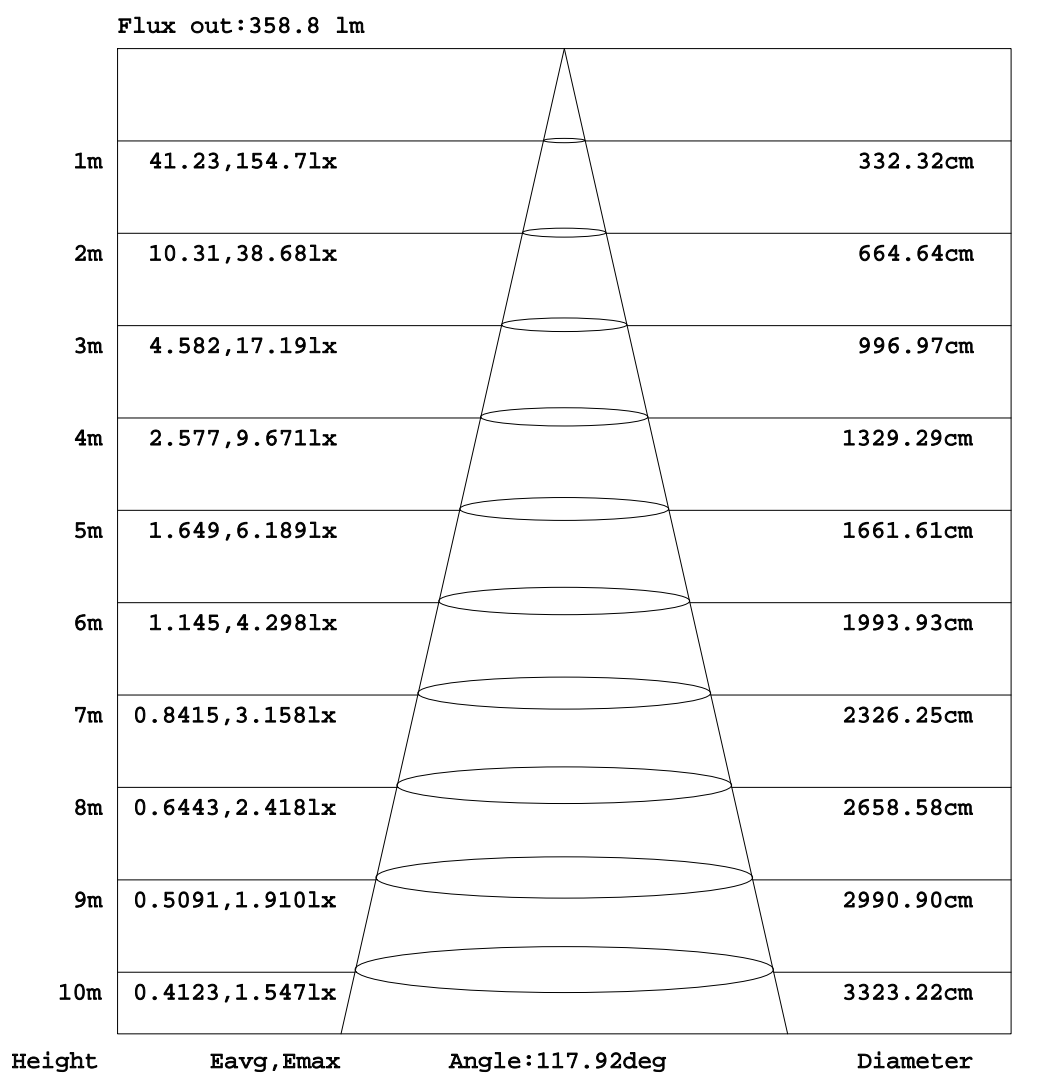


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

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:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A



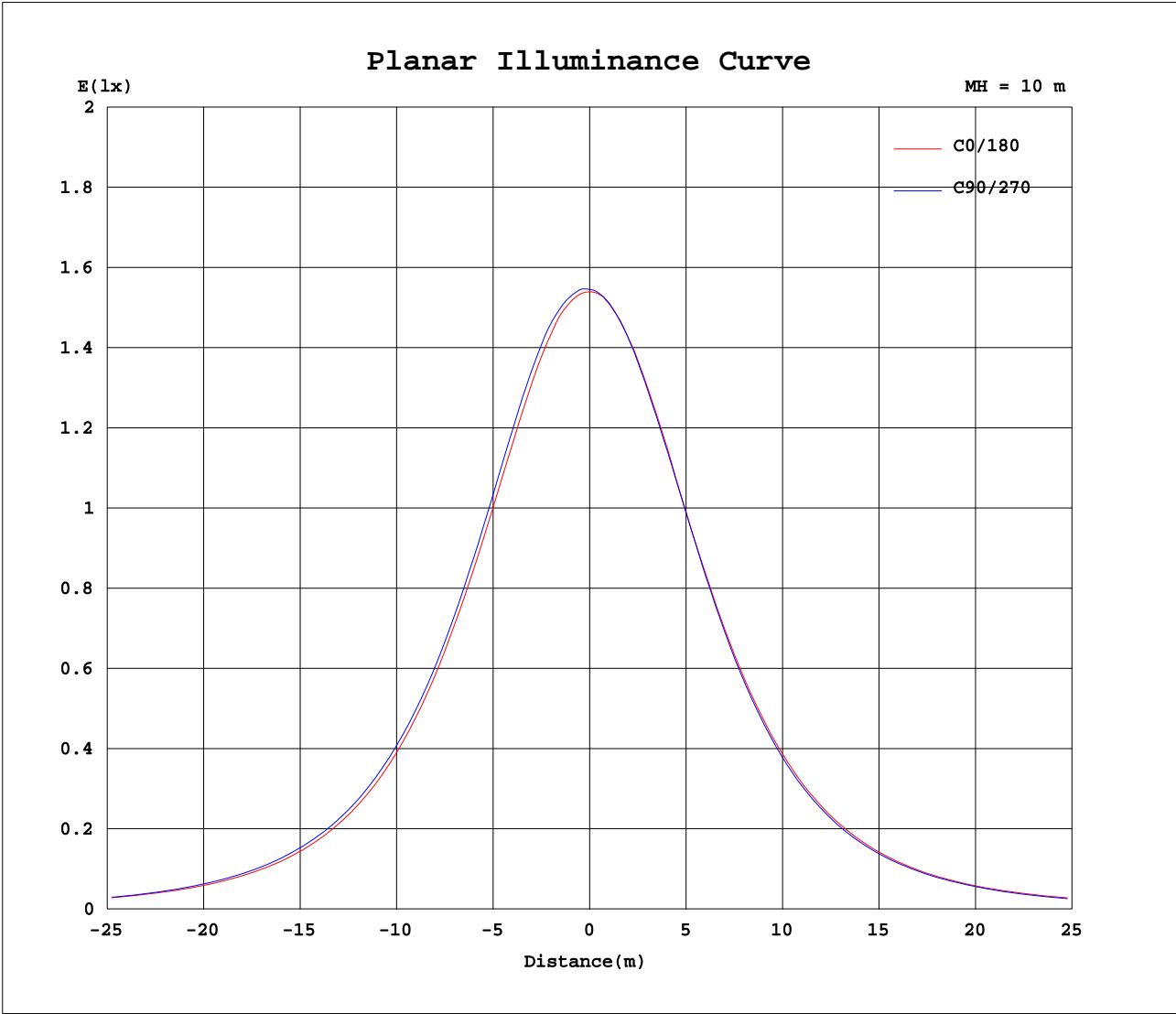
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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	γ Range: 0 - 180DEG
C Interval: 22.5DEG	γ Interval: 1.0DEG
Test Speed: HIGH	Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Temperature:24.9DEG	Humidity:60%
Operators:Zero huang	Test Distance:26.000m [K=1.5110]
Test Date:2023-12-18	Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.007V I:0.1561A P:3.7464W PF:1.0000 Freq:0Hz Lamp Flux:479.61x1 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(DEC) γ (DEC)	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	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154			
5	154	154	154	154	155	154	154	154	154	153	153	153	153	154	153	154			
10	153	153	154	154	155	153	153	153	152	152	151	151	151	152	152	152			
15	151	150	151	152	153	151	150	150	150	149	148	149	148	150	149	149			
20	147	147	148	149	150	148	146	146	146	145	144	145	145	146	146	146			
25	142	142	143	145	146	144	141	141	140	140	139	141	140	141	141	141			
30	136	136	138	139	140	137	135	135	134	133	133	136	133	135	135	135			
35	129	128	130	132	133	130	127	128	127	126	126	129	126	127	128	128			
40	120	120	122	124	124	121	120	119	119	118	118	121	117	118	118	119			
45	111	111	112	114	115	112	110	110	109	108	108	110	107	109	109	110			
50	99.7	101	102	103	104	102	99.6	99.0	98.7	97.0	97.7	98.4	95.7	98.6	98.0	99.4			
55	87.8	88.4	89.1	91.8	92.7	90.6	88.0	87.1	86.6	85.6	85.7	85.6	83.7	86.6	86.2	87.9			
60	75.0	75.1	76.1	78.5	79.5	77.9	74.8	74.2	73.7	74.7	72.6	72.2	71.4	74.3	73.6	75.3			
65	61.9	62.1	62.7	64.7	65.1	63.6	61.2	61.0	60.8	59.9	58.7	58.1	57.9	61.4	60.2	62.3			
70	49.2	49.1	48.9	50.1	50.0	48.8	47.6	48.1	48.0	45.9	44.7	43.6	43.6	47.0	47.0	49.1			
75	37.1	36.5	35.6	35.2	34.9	34.5	35.1	36.6	36.5	33.9	31.4	29.6	29.3	32.4	34.3	37.0			
80	26.4	25.3	23.6	21.9	20.9	22.1	24.3	26.3	26.0	23.3	19.8	16.9	16.6	19.9	23.3	26.2			
85	17.5	16.2	13.7	11.0	9.63	12.1	15.4	17.4	16.8	14.0	10.6	7.30	6.44	10.4	14.4	17.2			
90	11.1	9.57	6.81	3.90	1.87	5.13	8.16	9.76	9.43	7.11	4.13	1.67	0.09	4.04	7.74	10.6			
95	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
100	0.00	0.67	0.17	0.00	0.00	0.00	0.34	2.07	1.46	0.25	0.00	0.00	0.00	0.00	0.00	0.26			
105	0.34	0.34	0.00	0.00	0.00	0.00	0.17	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00			
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00			
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00			
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00			
170	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00			
175	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00			
180	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00			

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: