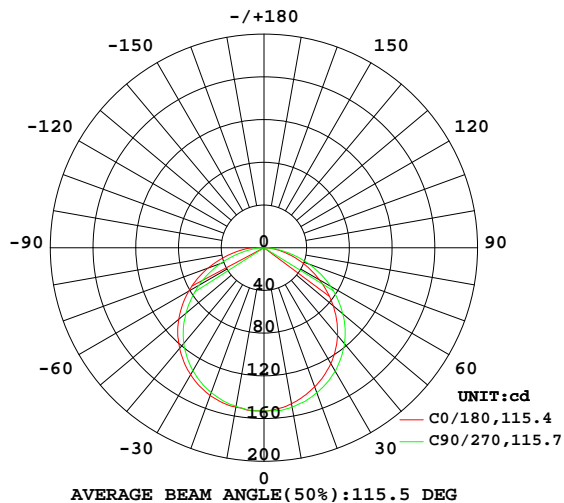


## LUMINAIRE PHOTOMETRIC TEST REPORT

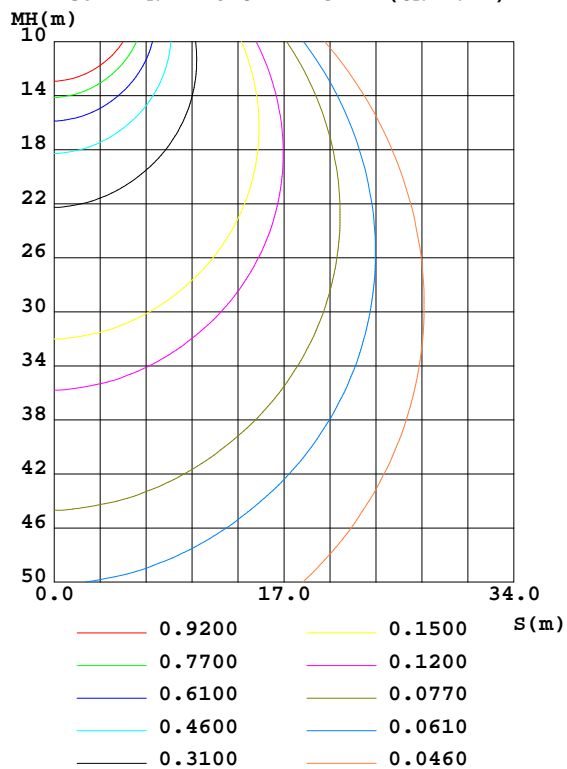
Test:U:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.97 lm/W			
BON OB 827 MODEL	NOFF 1M IP20 21015106	Imax(cd)	153.2	S/MH(C0/180)	1.33
NOMINAL POWER(W)	3.5	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	459.04	$\eta$ UP,DN(C0-180)	0.1,49.5
NOMINAL FLUX(lm)	459.039	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.2,50.2
LAMPS INSIDE	1	$\eta$ up(%)	0.3	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	$\eta$ down(%)	99.7	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:2023-12-19

$\gamma$  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	148.4	149.8	151.5	152.9	151.5	151.7	150.7	149.1	0- 10	14.50	14.50	3.16,3.16
20	138.6	141.0	144.5	147.0	147.2	145.8	144.3	140.6	10- 20	41.77	56.27	12.3,12.3
30	125.1	128.6	133.3	136.1	137.3	135.0	133.1	127.8	20- 30	63.92	120.2	26.2,26.2
40	107.1	111.2	117.3	120.7	123.0	120.6	116.9	109.4	30- 40	77.93	198.1	43.2,43.2
50	84.72	89.34	96.39	101.6	104.2	102.0	95.45	86.65	40- 50	81.70	279.8	61,61
60	59.82	63.95	72.08	78.62	81.50	77.93	70.49	62.05	50- 60	74.55	354.4	77.2,77.2
70	35.66	37.53	45.04	52.02	55.87	51.62	43.27	36.00	60- 70	57.33	411.7	89.7,89.7
80	14.46	14.71	18.55	26.85	29.96	25.25	16.79	14.16	70- 80	33.73	445.4	97,97
90	2.565	1.754	1.446	8.640	11.77	7.129	0.2658	2.041	80- 90	12.30	457.7	99.7,99.7
100	0	0	0	0	0.0219	0	0	0	90-100	1.118	458.8	100,100
110	0	0	0	0	0	0	0	0	100-110	0.1812	459.0	100,100
120	0	0	0	0	0	0	0	0	110-120	0.0014	459.0	100,100
130	0	0	0	0	0	0	0	0	120-130	0	459.0	100,100
140	0	0	0	0	0	0	0	0	130-140	0	459.0	100,100
150	0	0	0	0	0	0	0	0	140-150	0.0006	459.0	100,100
160	0	0	0	0	0	0	0	0	150-160	0.0035	459.0	100,100
170	0	0	0.0029	0	0	0	0	0	160-170	0.0032	459.0	100,100
180	0	0	0.1787	0	0	0	0	0	170-180	0.0014	459.0	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 239.18 lm

%lum = 52.1%

%lamp = 52.1%

Conical surface Flux(120deg): 354.37 lm

%lum = 77.2%

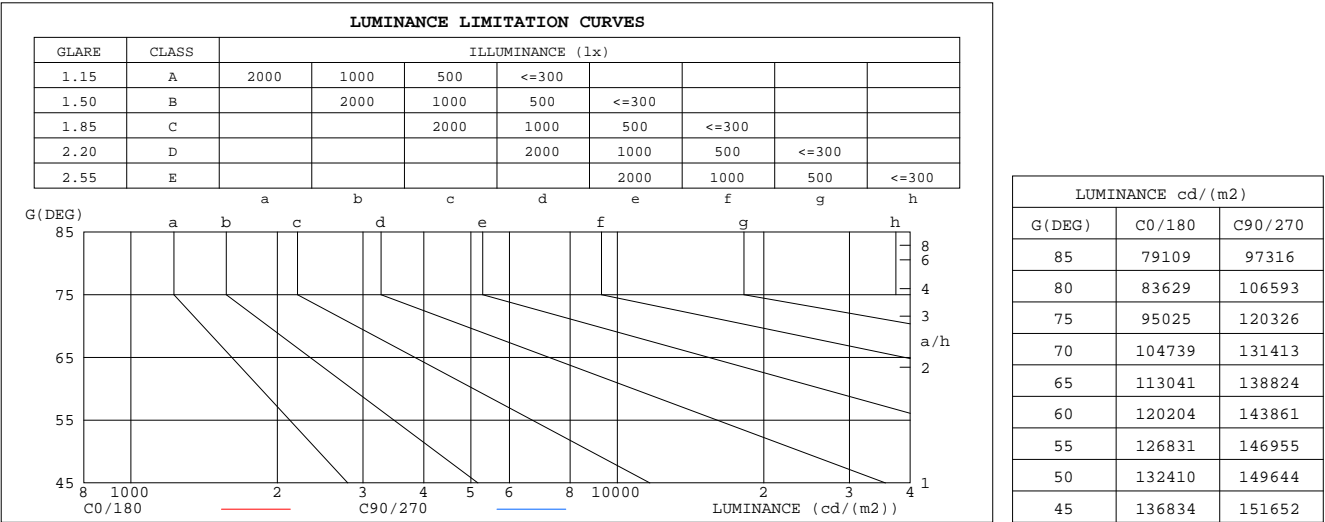
%lamp = 77.2%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-19

$\gamma$  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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 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:2023-12-19

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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 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	.321	.183	.058	.314	.179	.057	.300	.172	.055	.288	.166	.053	.276	.160	.052	
2.0	.299	.164	.050	.292	.161	.050	.280	.156	.048	.269	.151	.047	.259	.147	.046	
3.0	.275	.146	.044	.269	.144	.043	.259	.140	.043	.249	.136	.042	.240	.133	.041	
4.0	.253	.131	.039	.248	.130	.038	.239	.126	.038	.230	.123	.037	.222	.120	.037	
5.0	.233	.119	.034	.229	.117	.034	.221	.115	.034	.213	.112	.033	.206	.110	.033	
6.0	.216	.108	.031	.212	.107	.031	.205	.105	.031	.198	.103	.030	.191	.101	.030	
7.0	.201	.099	.028	.197	.098	.028	.191	.096	.028	.184	.095	.028	.179	.093	.027	
8.0	.187	.092	.026	.184	.091	.026	.178	.089	.025	.173	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.173	.084	.024	.167	.083	.023	.162	.081	.023	.157	.080	.023	
10.0	.165	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.149	.075	.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	.193	.193	.193	.165	.165	.165	.112	.112	.112	.065	.065	.065	.021	.021	.021	
1.0	.183	.158	.136	.157	.136	.117	.107	.093	.081	.062	.054	.047	.020	.017	.015	
2.0	.175	.134	.099	.150	.115	.086	.103	.080	.060	.059	.046	.035	.019	.015	.011	
3.0	.168	.117	.076	.144	.101	.066	.099	.070	.046	.057	.041	.027	.018	.013	.009	
4.0	.160	.103	.060	.137	.089	.052	.094	.062	.037	.055	.036	.022	.018	.012	.007	
5.0	.152	.093	.049	.131	.080	.043	.090	.056	.030	.052	.033	.018	.017	.011	.006	
6.0	.145	.085	.041	.125	.073	.036	.086	.051	.025	.050	.030	.015	.016	.010	.005	
7.0	.138	.078	.035	.119	.067	.031	.082	.047	.022	.048	.028	.013	.015	.009	.004	
8.0	.132	.072	.031	.114	.062	.027	.079	.044	.019	.046	.026	.011	.015	.008	.004	
9.0	.126	.067	.027	.108	.058	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003	
10.0	.120	.063	.025	.103	.054	.021	.072	.038	.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:2023-12-19

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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 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	29.3	30.9	29.6	31.1	31.3	30.0	31.5	30.3	31.8	32.0
3H	30.6	32.1	30.9	32.3	32.6	31.5	33.0	31.8	33.2	33.4
4H	31.2	32.5	31.5	32.8	33.0	32.1	33.5	32.5	33.7	34.0
6H	31.5	32.8	31.8	33.1	33.4	32.5	33.8	32.9	34.1	34.4
8H	31.6	32.9	32.0	33.1	33.4	32.7	33.9	33.0	34.2	34.5
12H	31.7	32.9	32.1	33.2	33.5	32.8	34.0	33.1	34.3	34.6
4H 2H	29.9	31.3	30.3	31.6	31.8	30.5	31.8	30.8	32.1	32.4
3H	31.4	32.6	31.8	32.9	33.2	32.2	33.4	32.5	33.7	34.0
4H	32.1	33.1	32.4	33.5	33.8	32.9	34.0	33.3	34.3	34.6
6H	32.5	33.5	32.9	33.8	34.2	33.4	34.4	33.8	34.7	35.1
8H	32.7	33.6	33.1	34.0	34.3	33.6	34.5	34.0	34.9	35.3
12H	32.8	33.6	33.2	34.0	34.4	33.7	34.6	34.2	35.0	35.4
8H 4H	32.3	33.2	32.7	33.6	34.0	33.0	33.9	33.5	34.3	34.7
6H	32.9	33.7	33.4	34.1	34.5	33.7	34.5	34.1	34.9	35.3
8H	33.1	33.8	33.6	34.2	34.7	34.0	34.6	34.4	35.1	35.5
12H	33.3	33.9	33.8	34.4	34.8	34.2	34.7	34.6	35.2	35.7
12H 4H	32.3	33.1	32.7	33.5	34.0	33.0	33.9	33.5	34.3	34.7
6H	33.0	33.6	33.4	34.1	34.5	33.7	34.4	34.2	34.8	35.3
8H	33.2	33.8	33.7	34.3	34.7	34.0	34.6	34.5	35.0	35.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.4				

CIE Pub.117, 459.0 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = -2.7$ )

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-19

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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

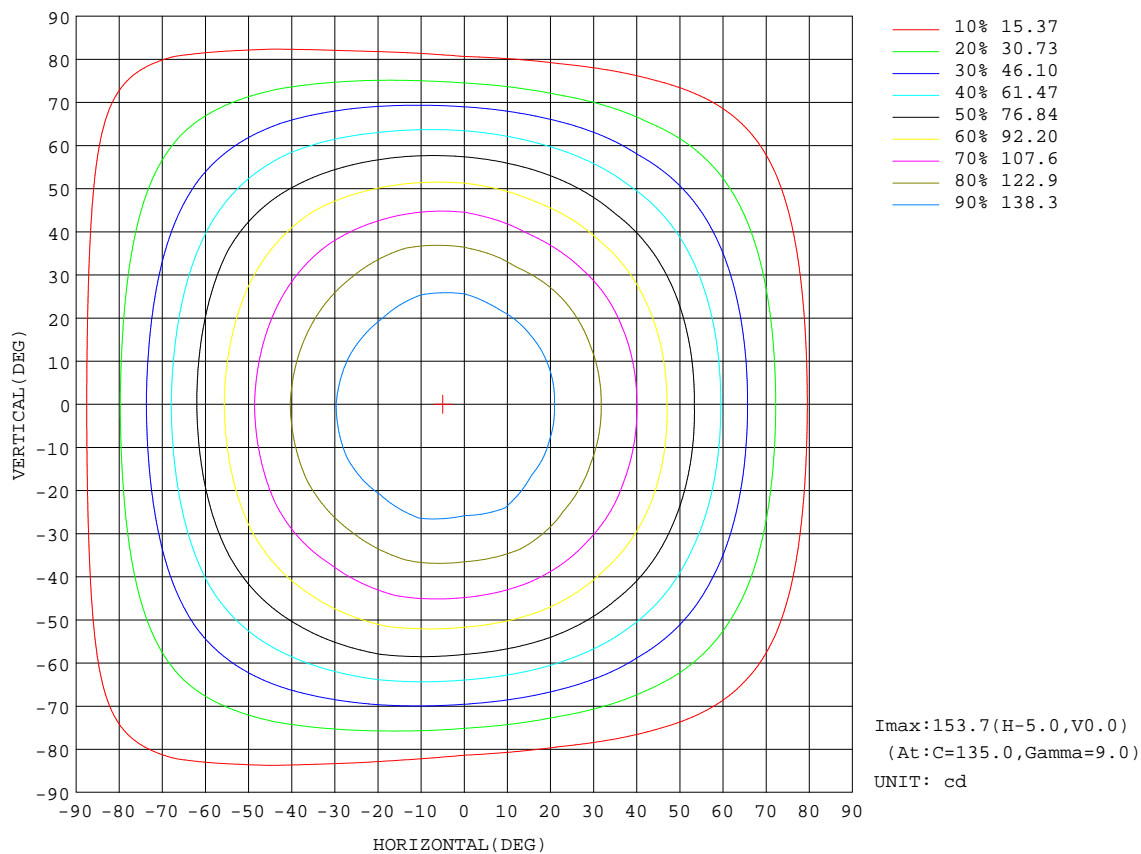
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	44	38	31
0.80	67	55	47	66	54	47	64	54	47	40
1.00	75	64	56	74	63	56	72	65	55	48
1.25	82	71	64	81	71	64	78	69	63	55
1.50	87	77	70	86	76	69	82	74	68	61
2.00	94	85	79	92	84	78	89	82	76	68
2.50	98	90	84	96	89	83	92	86	81	73
3.00	102	94	89	99	93	88	95	90	85	77
4.00	106	100	95	103	98	93	99	94	91	82
5.00	108	103	99	106	101	97	101	97	94	85
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:2023-12-19

$\gamma$  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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

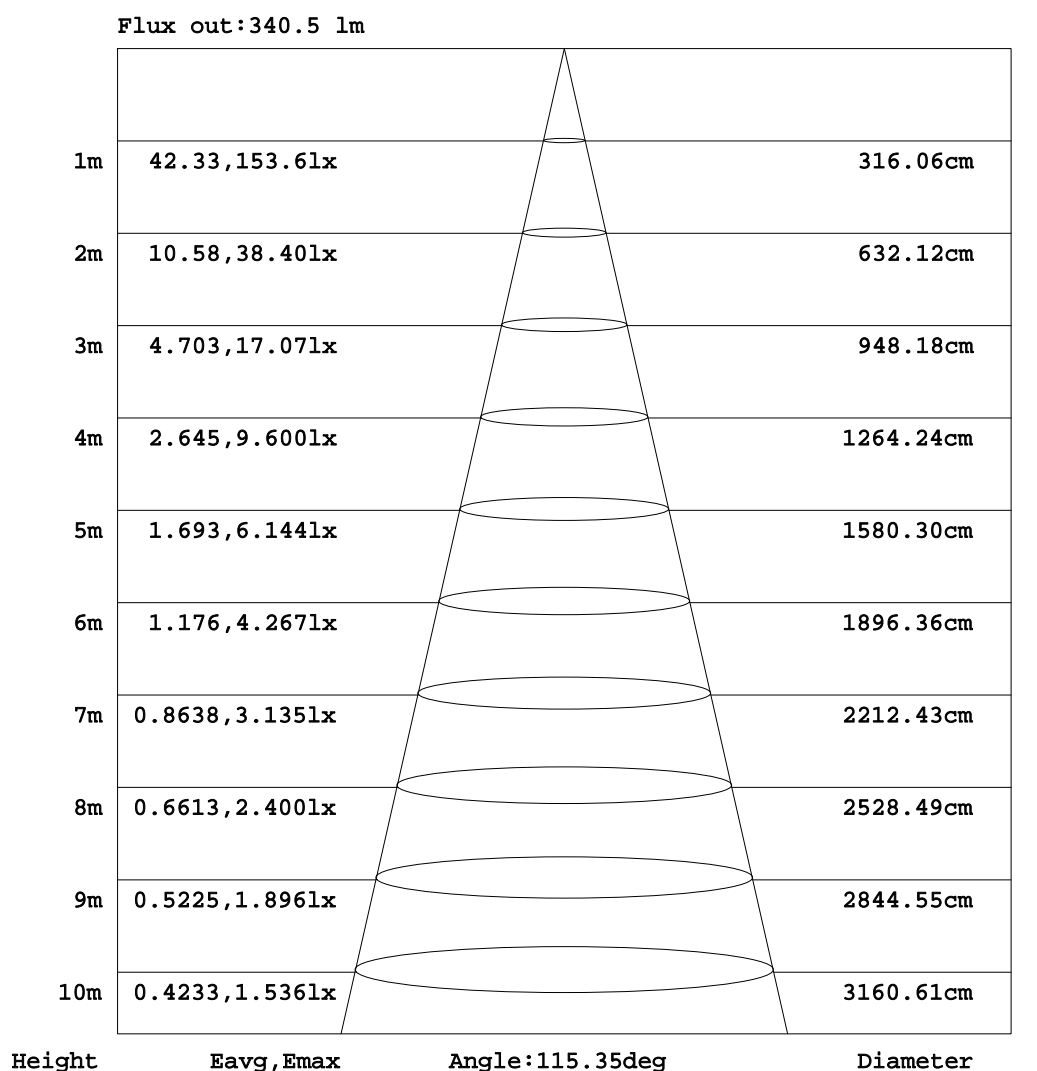


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-19

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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A



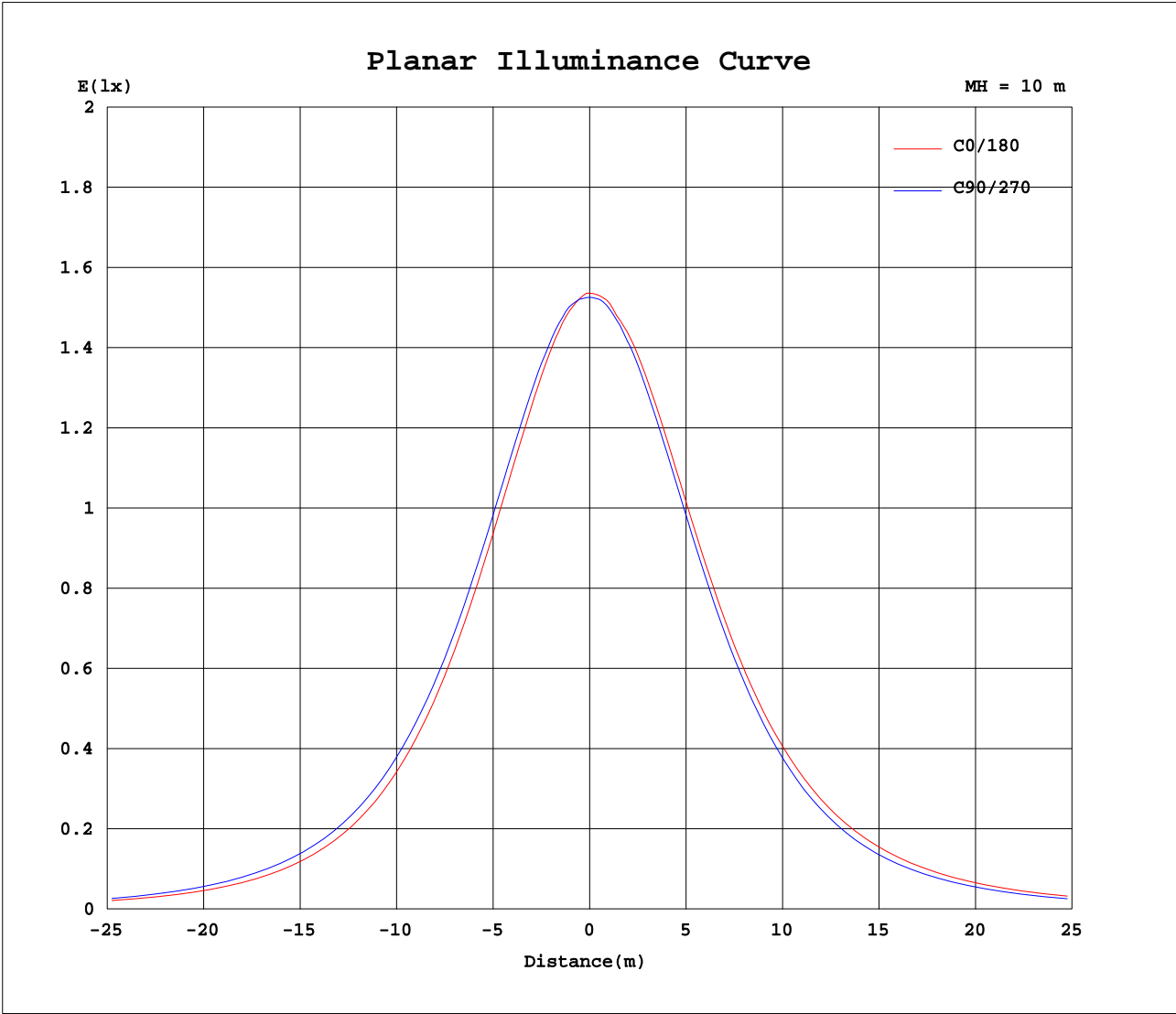
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-19

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:2023-12-19

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:24.008V I:0.1568A P:3.7634W PF:1.0000 Freq:0Hz Lamp Flux:459.039x1 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	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153			
5	151	152	152	153	153	153	153	153	153	153	153	152	153	152	152	151			
10	148	149	150	151	152	153	153	153	152	152	152	151	151	149	149	149			
15	144	145	146	148	149	151	151	151	150	150	150	149	148	146	146	145			
20	139	140	141	145	144	147	147	148	147	146	146	145	144	142	141	140			
25	133	134	135	139	139	142	142	143	143	142	141	141	139	136	135	133			
30	125	126	129	133	133	136	136	137	137	137	135	136	133	129	128	126			
35	117	118	120	125	126	128	127	131	131	130	128	129	126	121	119	117			
40	107	108	111	115	117	120	121	123	123	122	121	120	117	111	109	108			
45	96.3	98.5	101	105	107	111	111	114	114	113	112	110	107	101	98.3	97.0			
50	84.7	87.4	89.3	93.5	96.4	100	102	104	104	103	102	98.5	95.5	90.2	86.6	85.6			
55	72.4	74.2	76.7	81.3	84.5	89.4	90.6	92.9	93.2	92.6	90.8	87.0	83.0	78.5	74.5	73.3			
60	59.8	60.9	64.0	68.4	72.1	76.9	78.6	80.7	81.5	82.3	77.9	74.0	70.5	66.2	62.1	60.8			
65	47.6	48.2	50.5	55.0	58.8	63.1	65.5	68.1	68.9	68.2	65.3	61.0	57.4	53.2	48.9	48.2			
70	35.7	35.9	37.5	41.0	45.0	49.1	52.0	54.6	55.9	54.1	51.6	47.5	43.3	39.4	36.0	35.8			
75	24.5	24.6	25.4	27.8	31.2	35.4	39.0	41.3	42.4	40.8	38.1	33.8	29.4	26.1	24.3	24.5			
80	14.5	14.4	14.7	15.8	18.5	23.0	26.9	29.2	30.0	28.2	25.2	21.0	16.8	14.9	14.2	14.4			
85	6.86	6.48	6.47	6.82	8.50	12.7	16.5	18.8	19.6	17.7	14.5	10.3	6.85	6.72	6.68	6.69			
90	2.56	2.17	1.75	1.77	1.45	5.26	8.64	10.9	11.8	10.1	7.13	3.40	0.27	1.82	2.04	2.15			
95	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			
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	1.28	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	0.27	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	0.00	0.18	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	0.00	0.18	0.00			
170	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	0.18	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	0.00	0.18	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	0.00	0.18	0.00			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.9DEG  
 Operators:Zero huang  
 Test Date:2023-12-19

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: