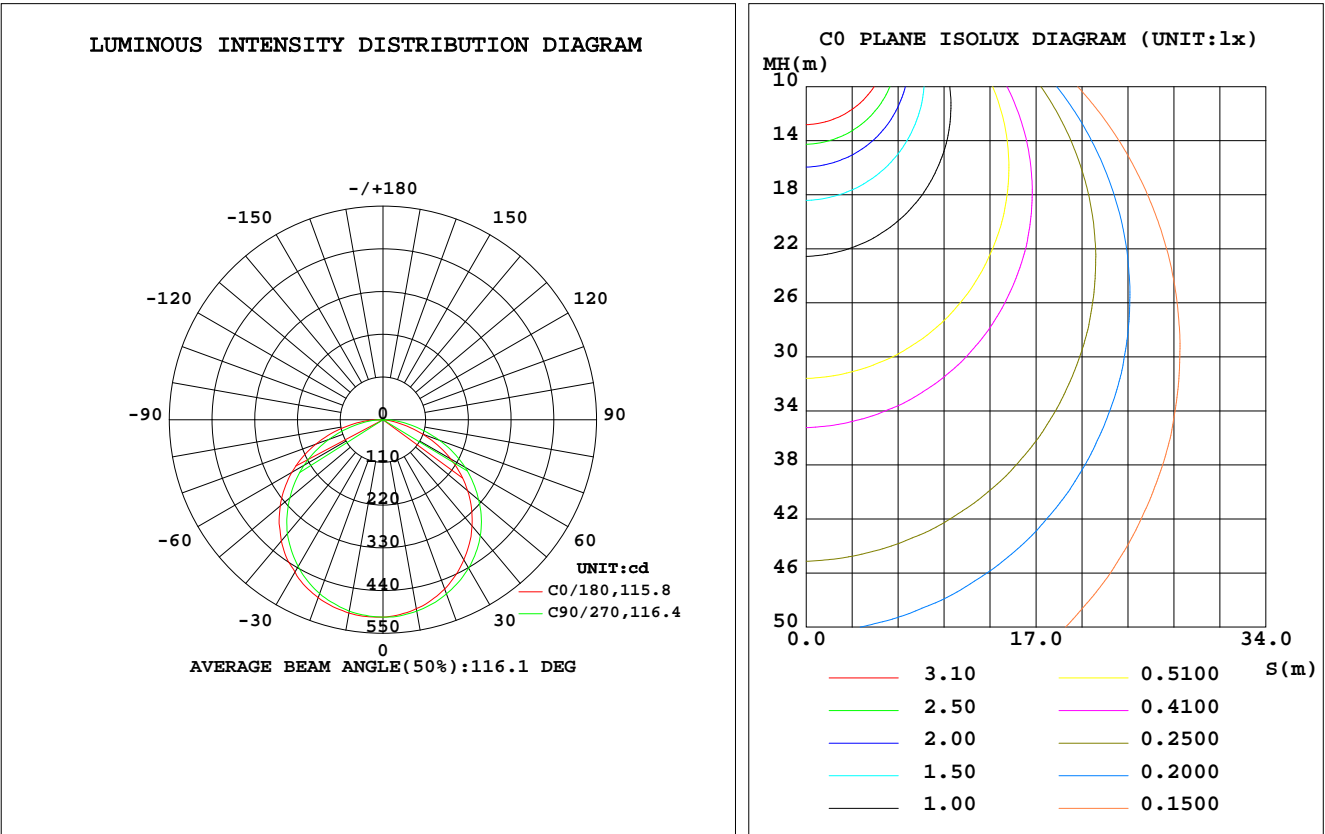


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.006V I:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 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: 115.61 lm/W			
MODEL	OFF 1M IP20 21015111	I _{max} (cd)	509.6	S/MH(C0/180)	1.33
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1519.4	η UP,DN(C0-180)	0.1,49.5
NOMINAL FLUX(lm)	1519.44	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.1,50.2
LAMPS INSIDE	1	η up(%)	0.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	99.8	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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	493.9	496.7	500.4	504.3	505.8	503.7	500.4	497.5	0- 10	48.15	48.15	3.17,3.17
20	463.9	468.9	477.4	485.3	487.7	483.1	476.4	469.2	10- 20	138.6	186.7	12.3,12.3
30	416.5	428.9	441.3	447.0	453.2	448.5	436.6	424.3	20- 30	212.1	398.8	26.2,26.2
40	356.8	370.8	390.2	401.4	407.4	398.9	382.9	360.6	30- 40	258.7	657.5	43.3,43.3
50	285.0	299.7	322.0	338.9	345.5	336.2	312.9	290.0	40- 50	271.8	929.3	61.2,61.2
60	201.3	215.3	243.7	259.7	271.2	261.4	234.7	206.5	50- 60	248.9	1178	77.5,77.5
70	109.3	124.1	154.6	173.9	184.1	173.1	148.5	117.0	60- 70	191.6	1370	90.2,90.2
80	27.27	41.60	67.26	85.08	92.81	84.98	63.21	38.71	70- 80	109.9	1480	97.4,97.4
90	1.385	4.961	13.88	19.45	18.63	18.90	9.635	3.165	80- 90	36.01	1516	99.8,99.8
100	0	0	0.0050	0	0	0.3447	0.4574	0.0857	90-100	2.626	1518	99.9,99.9
110	0	0	0	0	0	0.1736	1.366	0.0863	100-110	0.1154	1518	99.9,99.9
120	0	0	0	0	0	0.1736	1.639	0.1713	110-120	0.1662	1519	99.9,99.9
130	0	0	0.1821	0	0.0855	0.1736	1.639	0.2570	120-130	0.1774	1519	100,100
140	0	0	0.1821	0	0.1710	0.1736	1.639	0.3426	130-140	0.1792	1519	100,100
150	0	0.0868	0.2731	0	0.1710	0.1736	1.639	0.4283	140-150	0.1716	1519	100,100
160	0	0.0868	0.3642	0.0857	0.1710	0.1736	1.275	0.4283	150-160	0.1389	1519	100,100
170	0	0.2593	2.275	0.0857	0.1710	0.1736	1.275	0.4283	160-170	0.1190	1519	100,100
180	0.1710	0.3472	2.367	0.0857	0.1710	0.1736	1.275	0.4283	170-180	0.0529	1519	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 793.99 lm

%lum = 52.3%

%lamp = 52.3%

Conical surface Flux(120deg): 1178.2 lm

%lum = 77.5%

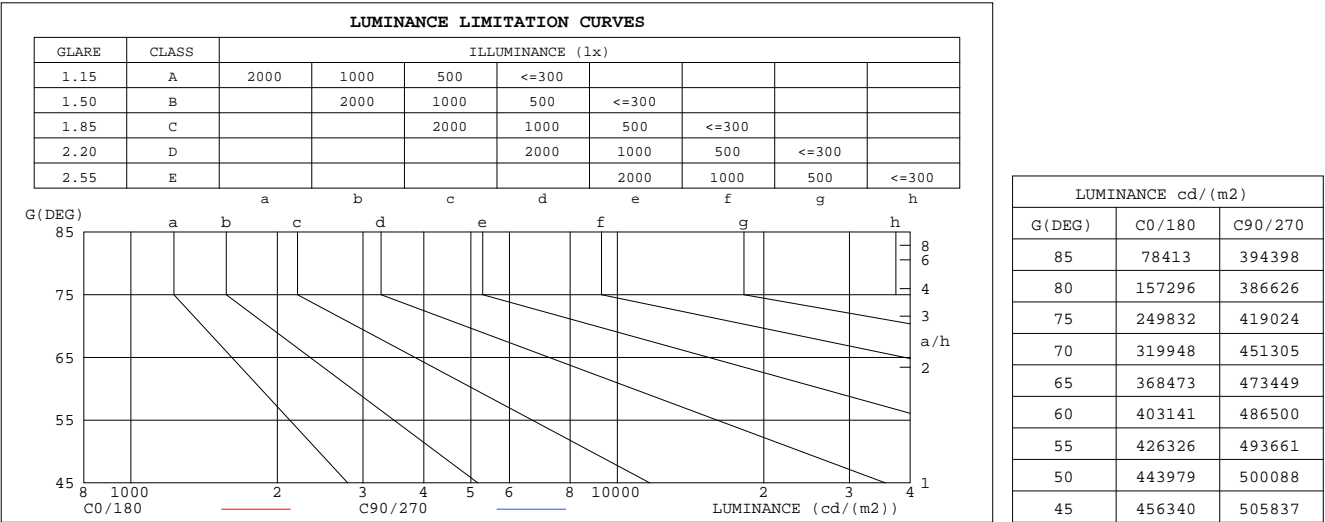
%lamp = 77.5%

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
 γ 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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 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	.318	.181	.057	.310	.177	.056	.297	.170	.054	.285	.164	.053	.273	.158	.051	
2.0	.297	.163	.050	.291	.160	.049	.279	.155	.048	.268	.150	.047	.258	.146	.046	
3.0	.274	.146	.044	.268	.144	.043	.258	.140	.042	.248	.136	.042	.239	.132	.041	
4.0	.252	.131	.039	.247	.129	.038	.238	.126	.038	.229	.123	.037	.221	.120	.037	
5.0	.233	.119	.034	.228	.117	.034	.220	.115	.034	.212	.112	.033	.205	.110	.033	
6.0	.216	.108	.031	.212	.107	.031	.204	.105	.030	.197	.103	.030	.191	.101	.030	
7.0	.201	.099	.028	.197	.098	.028	.190	.096	.028	.184	.094	.027	.178	.093	.027	
8.0	.187	.091	.026	.184	.091	.026	.178	.089	.025	.173	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.172	.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
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	.192	.192	.192	.164	.164	.164	.112	.112	.112	.064	.064	.064	.021	.021	.021	
1.0	.183	.158	.136	.156	.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	.167	.116	.076	.143	.100	.066	.098	.070	.046	.057	.041	.027	.018	.013	.009	
4.0	.160	.103	.060	.137	.089	.052	.094	.062	.037	.054	.036	.022	.018	.012	.007	
5.0	.152	.093	.049	.131	.080	.042	.090	.056	.030	.052	.033	.018	.017	.011	.006	
6.0	.145	.084	.041	.125	.073	.036	.086	.051	.025	.050	.030	.015	.016	.010	.005	
7.0	.138	.077	.035	.119	.067	.030	.082	.047	.022	.048	.028	.013	.015	.009	.004	
8.0	.131	.072	.030	.113	.062	.027	.078	.044	.019	.046	.026	.011	.015	.008	.004	
9.0	.125	.067	.027	.108	.058	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003	
10.0	.120	.062	.024	.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:2023-12-18

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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 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	33.6	35.1	33.9	35.3	35.5	34.3	35.8	34.6	36.0	36.2
3H	34.8	36.2	35.1	36.4	36.7	35.9	37.3	36.2	37.5	37.8
4H	35.1	36.5	35.5	36.7	37.0	36.5	37.8	36.8	38.1	38.4
6H	35.3	36.5	35.6	36.8	37.1	36.9	38.2	37.3	38.5	38.8
8H	35.3	36.5	35.6	36.8	37.1	37.1	38.3	37.4	38.6	38.9
12H	35.2	36.4	35.6	36.7	37.0	37.2	38.4	37.6	38.7	39.0
4H 2H	34.2	35.6	34.5	35.8	36.1	34.8	36.1	35.1	36.4	36.6
3H	35.6	36.7	35.9	37.0	37.4	36.5	37.7	36.9	38.0	38.3
4H	36.0	37.1	36.4	37.4	37.8	37.2	38.3	37.6	38.6	39.0
6H	36.2	37.2	36.6	37.5	37.9	37.8	38.8	38.2	39.1	39.5
8H	36.2	37.1	36.6	37.5	37.9	38.0	38.9	38.4	39.3	39.7
12H	36.2	37.0	36.6	37.4	37.8	38.2	39.0	38.6	39.4	39.8
8H 4H	36.2	37.1	36.7	37.5	37.9	37.3	38.2	37.8	38.6	39.0
6H	36.5	37.3	37.0	37.7	38.1	38.0	38.8	38.5	39.2	39.6
8H	36.6	37.2	37.0	37.7	38.1	38.3	39.0	38.8	39.4	39.9
12H	36.6	37.2	37.1	37.6	38.1	38.6	39.2	39.1	39.6	40.1
12H 4H	36.2	37.1	36.7	37.5	37.9	37.3	38.2	37.8	38.5	39.0
6H	36.6	37.2	37.0	37.7	38.1	38.0	38.7	38.5	39.1	39.6
8H	36.7	37.2	37.1	37.7	38.2	38.4	38.9	38.8	39.4	39.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.4					+ 0.1 / - 0.3				
2.0H	+ 0.3 / - 0.4					+ 0.2 / - 0.4				

CIE Pub.117, 1519 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.5$)

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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

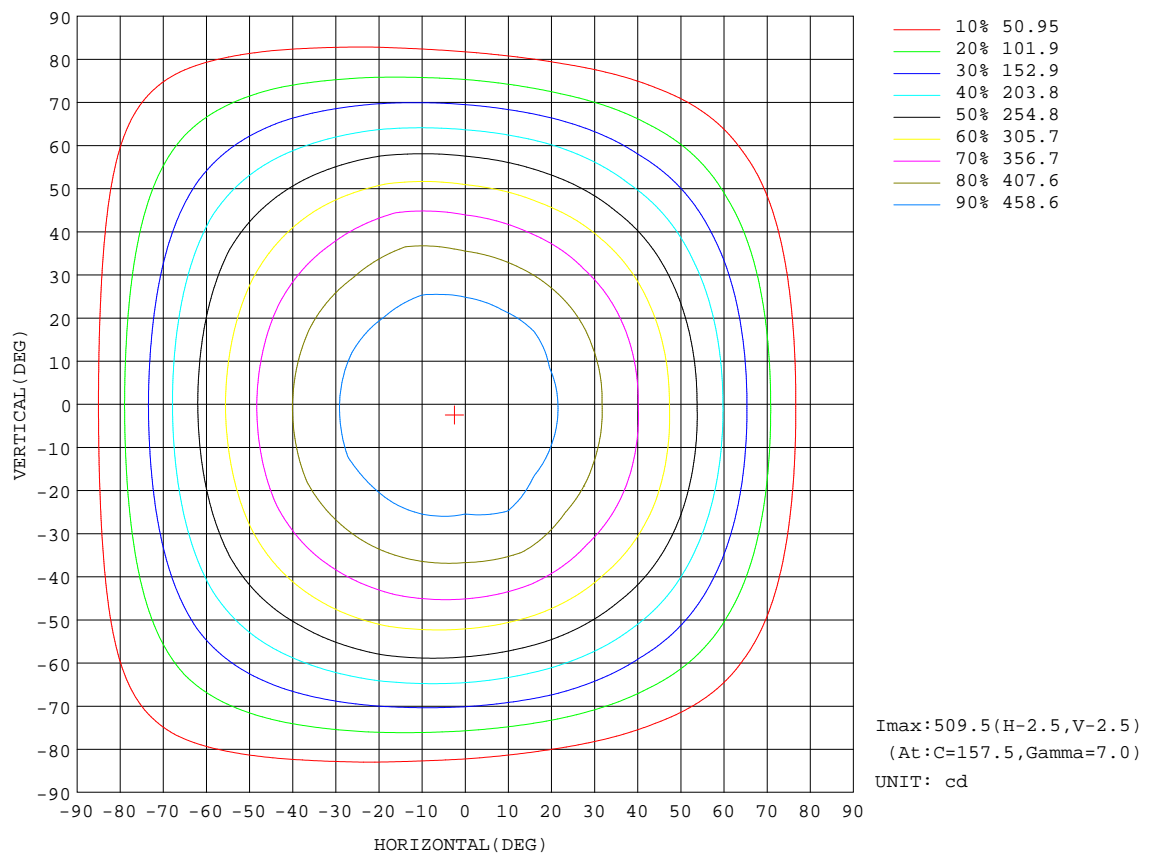
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	44	38	31
0.80	67	55	47	66	55	47	64	54	47	40
1.00	75	64	56	74	63	56	72	65	56	48
1.25	82	72	64	81	71	64	78	69	63	56
1.50	87	77	70	86	76	70	83	75	69	61
2.00	94	86	79	92	84	78	89	82	77	69
2.50	98	90	84	96	89	83	92	86	81	73
3.00	102	95	89	100	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	97	101	98	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:2023-12-18

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:

ISOCANDELA DIAGRAM

Test:U:24.006V I:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

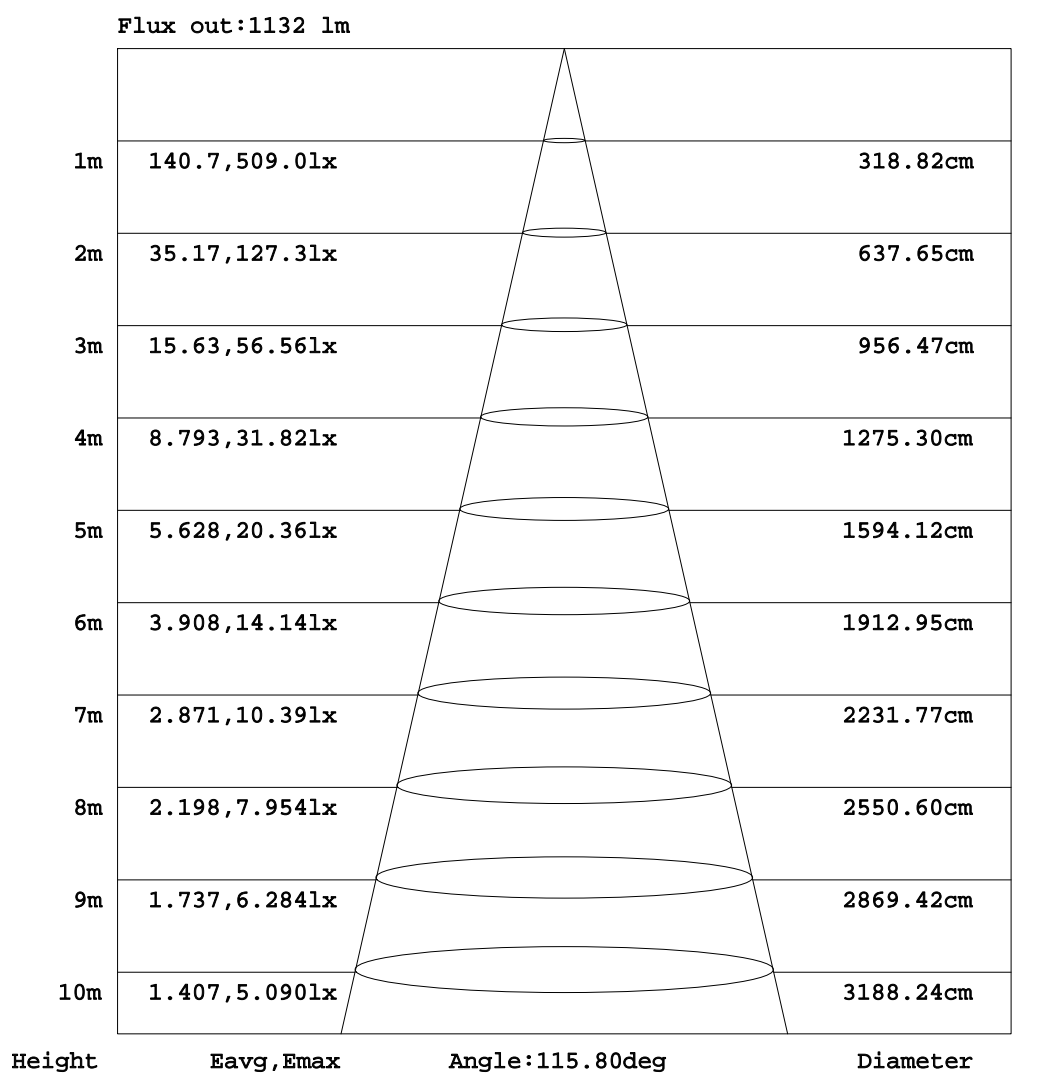


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.9DEG
Operators:Zero huang
Test Date:2023-12-18

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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

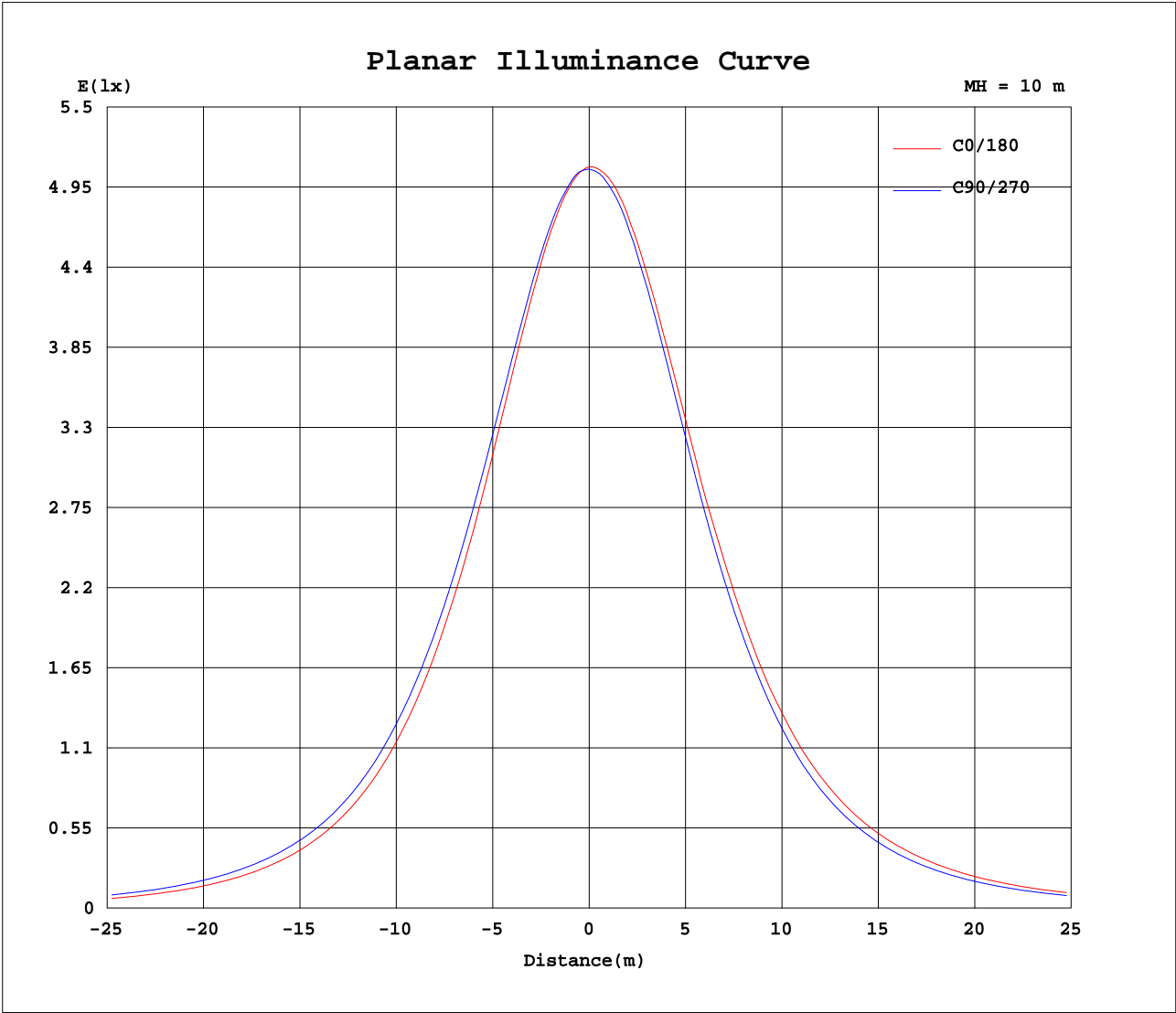


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.5475A P:13.143W PF:1.0000 Freq:0Hz Lamp Flux:1519.44x1 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	508	508	508	508	508	508	508	508	508	508	508	508	508	508	508	508			
5	503	504	505	508	507	508	509	509	508	509	507	507	506	505	505	502			
10	494	496	497	502	500	505	504	507	506	505	504	502	500	497	498	493			
15	481	481	485	492	491	497	497	501	498	499	496	493	490	486	485	480			
20	464	466	469	480	477	486	485	490	488	488	483	480	476	471	469	463			
25	442	445	451	464	461	468	471	475	473	472	468	466	459	452	450	443			
30	417	421	429	443	441	448	447	458	453	454	448	446	437	429	424	420			
35	388	394	401	416	417	422	428	435	433	432	425	426	411	401	394	391			
40	357	364	371	384	390	396	401	410	407	405	399	400	383	370	361	359			
45	322	331	336	349	358	366	371	380	379	376	369	369	350	337	321	325			
50	285	294	300	311	322	332	339	346	346	343	336	331	313	300	290	286			
55	244	252	259	272	284	296	302	309	310	308	301	292	275	261	249	245			
60	201	206	215	230	244	256	260	270	271	270	261	252	235	222	206	201			
65	155	161	169	186	200	211	218	228	229	232	218	207	192	179	162	156			
70	109	114	124	141	155	165	174	184	184	183	173	162	148	133	117	109			
75	64.6	70.3	79.6	94.7	109	120	129	137	138	135	128	117	105	88.3	74.8	66.2			
80	27.3	32.2	41.6	54.1	67.3	76.7	85.1	92.0	92.8	90.6	85.0	75.7	63.2	49.9	38.7	30.3			
85	6.82	9.65	17.0	26.4	34.4	41.9	46.3	50.0	51.2	49.4	46.1	40.8	30.9	21.9	14.3	8.70			
90	1.38	2.26	4.96	9.96	13.9	18.5	19.5	19.4	18.6	18.6	18.9	16.6	9.63	6.25	3.17	1.27			
95	0.00	0.00	0.44	1.95	3.75	3.87	0.50	0.00	0.00	0.00	0.09	0.00	0.36	0.00	0.00	0.00			
100	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.09	0.34	0.18	0.46	0.09	0.09	0.00			
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.18	0.91	0.17	0.09	0.09			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.35	1.37	0.18	0.09	0.26			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.35	1.37	0.26	0.17	0.17			
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.35	1.64	0.26	0.17	0.17			
125	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.09	0.09	0.17	0.35	1.64	0.26	0.26	0.17			
130	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.09	0.09	0.17	0.35	1.64	0.44	0.26	0.17			
135	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.17	0.17	0.17	0.35	1.64	0.52	0.34	0.17			
140	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.17	0.26	0.17	0.35	1.64	0.61	0.34	0.17			
145	0.00	0.09	0.09	0.00	0.27	0.00	0.00	0.00	0.17	0.26	0.17	0.35	1.64	0.79	0.35	0.17			
150	0.00	0.09	0.09	0.00	0.27	0.09	0.00	0.00	0.17	0.26	0.17	0.35	1.64	1.13	0.43	0.17			
155	0.00	0.09	0.09	0.00	0.36	0.09	0.08	0.00	0.17	0.26	0.17	0.35	1.46	1.05	0.43	0.09			
160	0.00	0.09	0.09	0.09	0.36	0.09	0.09	0.09	0.17	0.17	0.17	0.35	1.27	1.83	0.43	0.09			
165	0.00	0.09	0.09	0.35	1.27	0.09	0.09	0.09	0.17	0.17	0.17	0.35	1.27	2.27	0.43	0.09			
170	0.00	0.09	0.26	0.53	2.27	0.17	0.09	0.09	0.17	0.17	0.17	0.35	1.27	2.27	0.43	0.09			
175	0.09	0.17	0.26	0.79	2.37	0.26	0.09	0.09	0.17	0.17	0.17	0.35	1.27	2.27	0.43	0.09			
180	0.17	0.17	0.35	1.23	2.37	0.27	0.09	0.09	0.17	0.17	0.17	0.35	1.27	2.27	0.43	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: