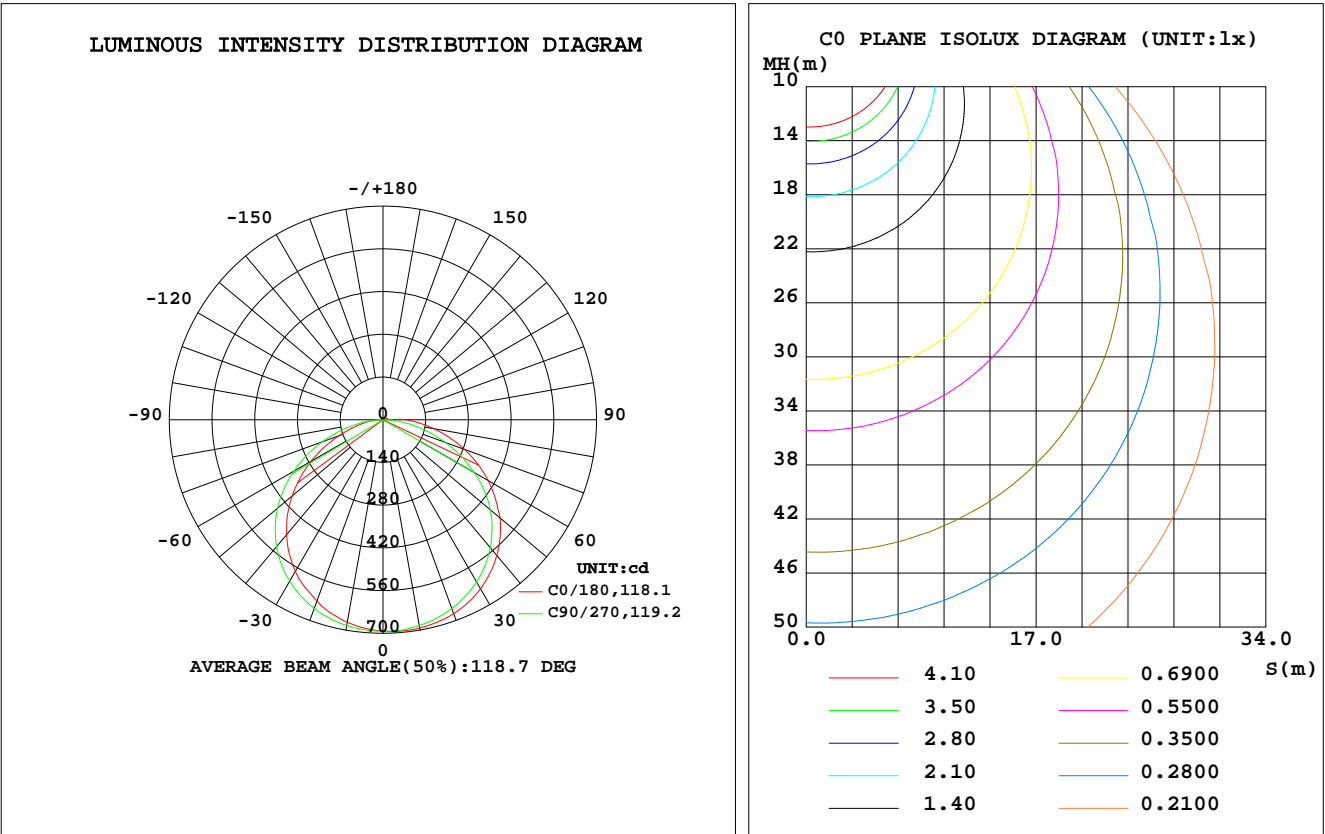


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.007V I:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 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: 115.12 lm/W			
MODEL	1M IP20 21015122	Imax(cd)	695.4	S/MH(C0/180)	1.24
NOMINAL POWER(W)	17.5	LOR(%)	100.0	S/MH(C90/270)	1.31
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	2169.9	η UP,DN(C0-180)	0.3,50.8
NOMINAL FLUX(lm)	2169.88	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.3,48.5
LAMPS INSIDE	1	η up(%)	0.6	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	99.4	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	693.1	692.2	684.5	677.9	674.2	674.8	685.1	689.3	0- 10	65.72	65.72	3.03,3.03
20	676.7	673.1	658.3	643.0	632.5	636.9	657.7	669.3	10- 20	190.0	255.7	11.8,11.8
30	639.4	633.9	613.5	583.4	574.6	579.8	610.9	630.2	20- 30	292.7	548.4	25.3,25.3
40	580.1	573.8	547.1	507.4	491.3	504.6	542.8	566.0	30- 40	360.4	908.9	41.9,41.9
50	500.8	492.7	459.0	409.0	388.8	407.2	450.8	477.7	40- 50	382.0	1291	59.5,59.5
60	397.9	386.4	346.1	292.1	271.6	289.6	337.8	375.1	50- 60	352.2	1643	75.7,75.7
70	284.2	266.3	217.7	172.0	153.5	165.3	212.9	258.7	60- 70	274.5	1918	88.4,88.4
80	169.0	140.0	96.21	73.49	64.94	62.91	91.50	144.5	70- 80	167.6	2085	96.1,96.1
90	72.77	48.04	12.37	21.01	19.17	9.473	6.519	55.89	80- 90	70.89	2156	99.4,99.4
100	17.09	0.4351	0.2659	0.4301	1.109	0.6091	0.5390	9.297	90-100	8.069	2164	99.7,99.7
110	4.546	1.308	0.2659	0.3426	0.5138	0.6091	1.773	1.104	100-110	2.597	2167	99.9,99.9
120	0.4334	0.3480	0.2659	0.3426	0.5138	0.6091	2.127	0.5139	110-120	0.7437	2168	99.9,99.9
130	0.3425	0.3480	0.2659	0.3426	0.5138	0.6098	2.127	0.5139	120-130	0.4918	2168	99.9,99.9
140	0.3425	0.3480	0.7032	0.3426	0.6851	0.6987	2.127	0.7681	130-140	0.4886	2168	99.9,99.9
150	0.3425	0.3480	1.418	0.3426	0.9420	0.9571	2.127	1.028	140-150	0.5030	2169	100,100
160	0.3425	0.4350	1.507	0.4282	1.113	0.9571	1.596	1.370	150-160	0.4360	2169	100,100
170	0.5111	0.6961	3.010	0.9408	1.113	0.9571	1.596	1.370	160-170	0.3186	2170	100,100
180	0.8563	1.566	3.280	1.113	1.541	0.9571	1.596	1.370	170-180	0.1340	2170	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1100.4 lm

%lum = 50.7%

%lamp = 50.7%

Conical surface Flux(120deg): 1643.1 lm

%lum = 75.7%

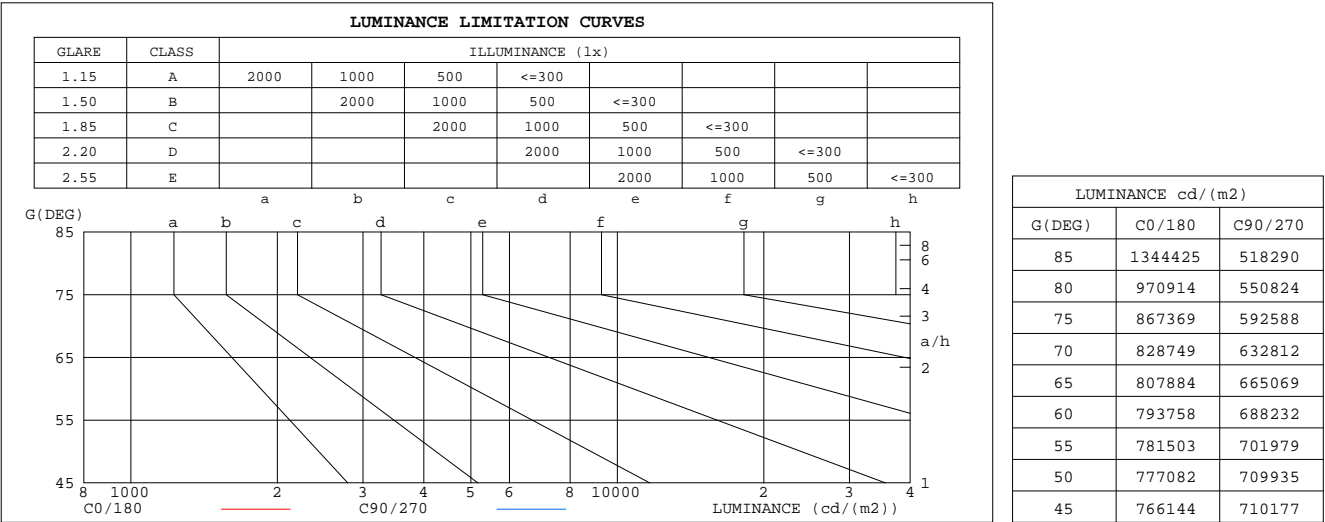
%lamp = 75.7%

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:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 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:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 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	.330	.188	.059	.323	.184	.058	.309	.177	.057	.296	.171	.055	.285	.165	.053		
2.0	.304	.167	.051	.298	.164	.051	.286	.159	.049	.274	.154	.048	.264	.149	.047		
3.0	.279	.148	.044	.273	.146	.044	.262	.142	.043	.252	.138	.042	.243	.135	.042		
4.0	.256	.133	.039	.251	.131	.039	.241	.128	.038	.232	.125	.038	.224	.122	.037		
5.0	.236	.120	.035	.231	.119	.035	.223	.116	.034	.215	.113	.034	.207	.111	.033		
6.0	.218	.109	.031	.214	.108	.031	.206	.106	.031	.199	.103	.030	.193	.101	.030		
7.0	.202	.100	.028	.199	.099	.028	.192	.097	.028	.186	.095	.028	.180	.093	.027		
8.0	.189	.092	.026	.185	.091	.026	.179	.090	.026	.174	.088	.025	.168	.086	.025		
9.0	.176	.085	.024	.174	.085	.024	.168	.083	.024	.163	.082	.023	.158	.080	.023		
10.0	.166	.079	.022	.163	.079	.022	.158	.077	.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	.195	.195	.195	.167	.167	.167	.114	.114	.114	.065	.065	.065	.021	.021	.021		
1.0	.187	.161	.138	.160	.138	.118	.109	.095	.082	.063	.055	.048	.020	.018	.015		
2.0	.179	.137	.101	.153	.118	.088	.105	.081	.061	.061	.047	.036	.019	.015	.012		
3.0	.171	.119	.078	.147	.103	.068	.101	.071	.047	.058	.042	.028	.019	.014	.009		
4.0	.163	.106	.062	.140	.092	.054	.096	.064	.038	.056	.037	.023	.018	.012	.007		
5.0	.156	.096	.051	.134	.083	.045	.092	.058	.032	.053	.034	.019	.017	.011	.006		
6.0	.149	.087	.044	.128	.076	.038	.088	.053	.027	.051	.031	.016	.017	.010	.005		
7.0	.142	.081	.038	.122	.070	.033	.084	.049	.023	.049	.029	.014	.016	.009	.005		
8.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004		
9.0	.129	.070	.030	.111	.061	.026	.077	.043	.019	.045	.025	.011	.015	.008	.004		
10.0	.123	.066	.027	.106	.057	.024	.074	.040	.017	.043	.024	.010	.014	.008	.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:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 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		36.5	38.1	36.8	38.3	38.5	36.0	37.6	36.3	37.8	38.0
	3H	38.4	39.9	38.8	40.1	40.4	37.6	39.1	37.9	39.3	39.6
	4H	39.3	40.7	39.7	41.0	41.2	38.3	39.6	38.6	39.9	40.2
	6H	40.2	41.5	40.5	41.8	42.1	38.7	40.0	39.1	40.3	40.6
	8H	40.6	41.8	40.9	42.1	42.4	38.9	40.1	39.3	40.4	40.7
	12H	41.0	42.2	41.4	42.5	42.8	39.0	40.2	39.4	40.5	40.8
4H	2H	37.2	38.6	37.5	38.8	39.1	36.8	38.2	37.1	38.4	38.7
	3H	39.3	40.5	39.7	40.8	41.1	38.6	39.8	39.0	40.1	40.5
	4H	40.4	41.5	40.7	41.8	42.1	39.4	40.5	39.8	40.9	41.2
	6H	41.4	42.3	41.8	42.7	43.1	40.0	41.0	40.4	41.4	41.8
	8H	41.9	42.8	42.3	43.2	43.6	40.3	41.2	40.7	41.6	42.0
	12H	42.4	43.2	42.8	43.6	44.1	40.4	41.3	40.9	41.7	42.1
8H	4H	40.7	41.6	41.1	42.0	42.4	39.9	40.8	40.3	41.2	41.6
	6H	41.9	42.7	42.4	43.1	43.5	40.7	41.5	41.2	41.9	42.3
	8H	42.6	43.2	43.0	43.7	44.1	41.0	41.7	41.5	42.2	42.6
	12H	43.3	43.9	43.8	44.3	44.8	41.3	41.9	41.8	42.4	42.9
12H	4H	40.7	41.5	41.1	41.9	42.4	40.0	40.8	40.4	41.2	41.6
	6H	42.0	42.7	42.5	43.1	43.6	40.9	41.5	41.3	42.0	42.4
	8H	42.7	43.3	43.2	43.8	44.3	41.3	41.9	41.8	42.3	42.8
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.5					

CIE Pub.117, 2170 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:2023-12-18

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:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

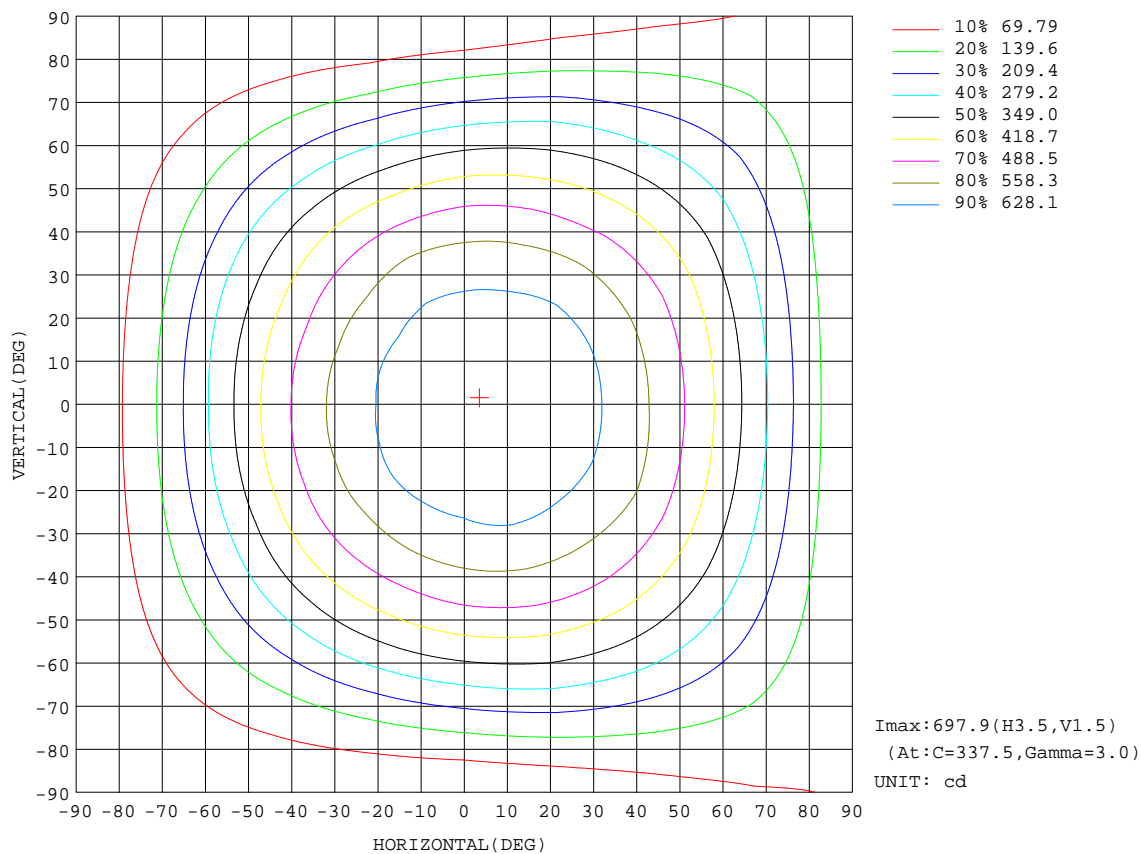
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	43	37	30
0.80	66	54	46	65	54	46	63	53	46	39
1.00	74	63	55	73	62	55	71	64	54	47
1.25	81	71	63	80	70	63	77	68	62	54
1.50	86	76	69	85	75	68	82	73	67	59
2.00	93	84	78	92	83	77	88	81	75	67
2.50	97	89	83	95	88	82	91	85	80	71
3.00	101	94	88	99	92	87	95	89	84	76
4.00	105	99	94	103	97	93	98	94	90	81
5.00	108	102	98	105	100	96	100	97	93	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:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A

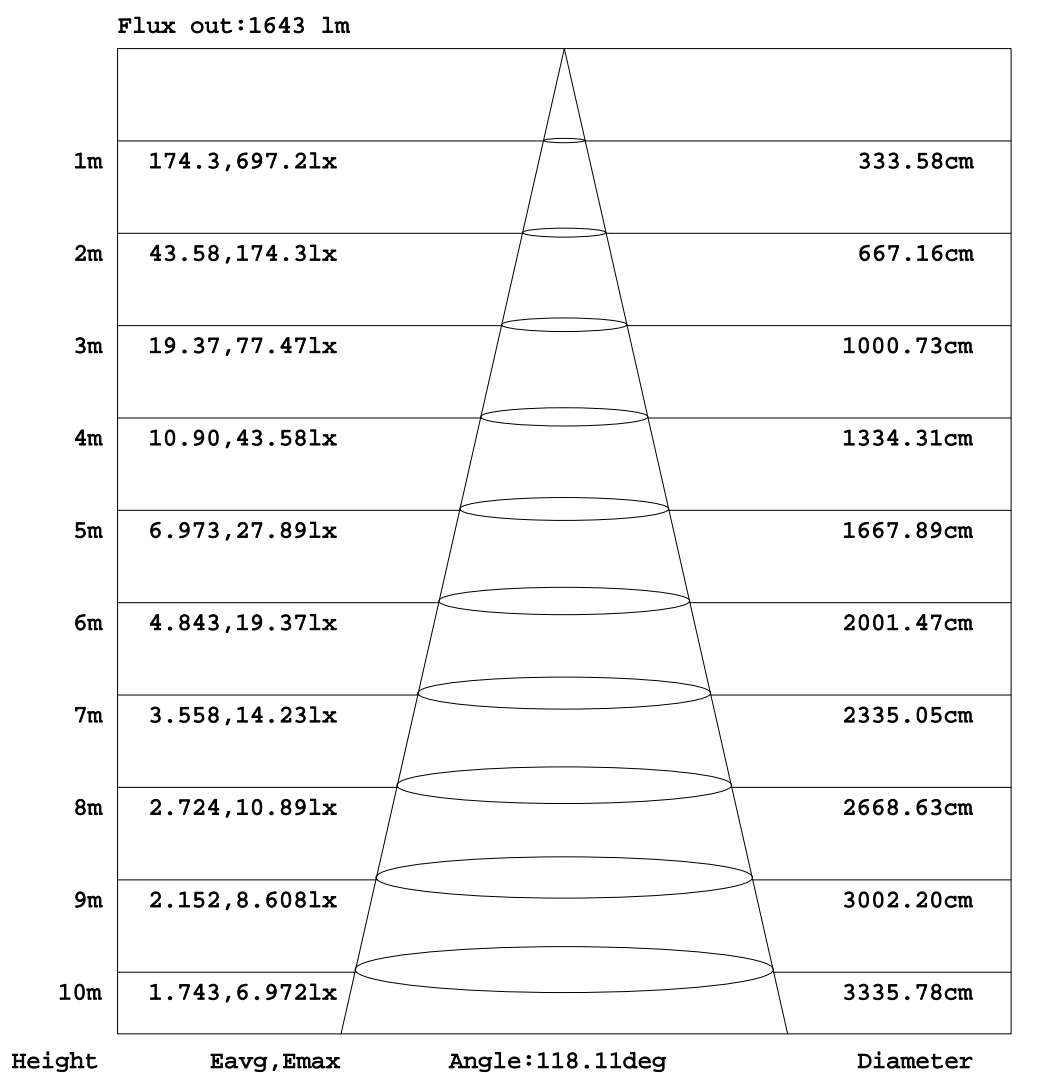


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.9DEG  
Operators:Zero huang  
Test Date:2023-12-18

$\gamma$  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:

### AAI Figure

Test:U:24.007V I:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 lm		
NAME:	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.:	SUR.:	Shielding Angle:N/A



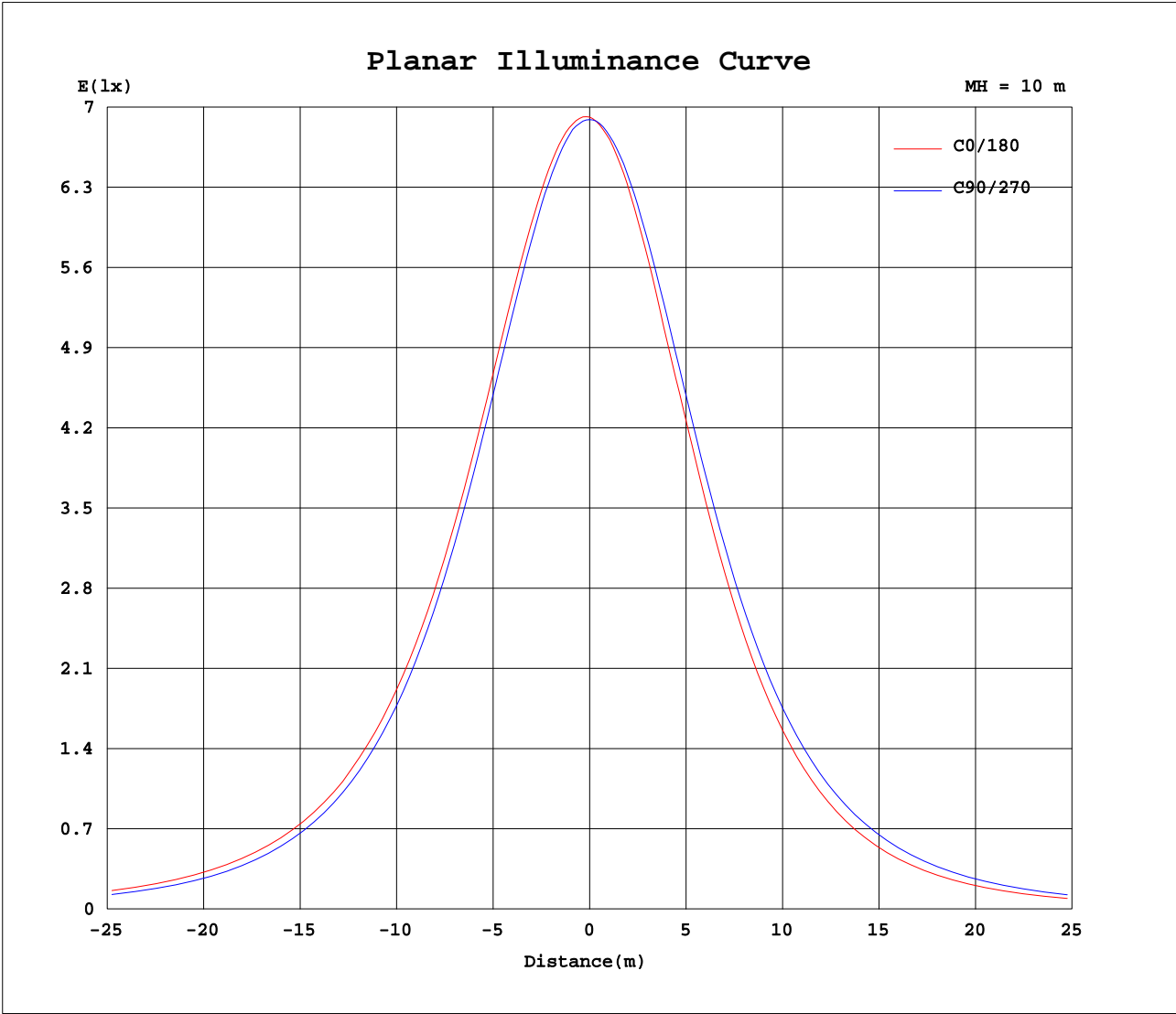
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

$\gamma$  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:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.007V I:0.7852A P:18.849W PF:1.0000 Freq:0Hz Lamp Flux:2169.88x1 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	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693			
5	695	695	695	694	692	689	689	685	686	687	686	687	691	692	693	695			
10	693	695	692	692	685	680	678	672	674	675	675	678	685	686	689	693			
15	687	689	685	685	674	667	662	655	657	657	659	665	674	676	681	687			
20	677	678	673	672	658	649	643	634	632	634	637	646	658	662	669	674			
25	661	661	657	652	639	626	615	606	606	608	611	627	637	643	651	657			
30	639	640	634	627	614	599	583	575	575	573	580	600	611	617	630	635			
35	612	614	607	598	583	563	543	537	536	535	545	566	580	587	602	610			
40	580	586	574	561	547	523	507	495	491	490	505	524	543	550	566	576			
45	543	550	534	521	505	478	460	445	443	444	458	475	499	509	523	539			
50	501	504	493	478	459	430	409	393	389	390	407	423	451	464	478	495			
55	449	452	442	427	405	376	352	335	331	338	349	367	397	414	429	448			
60	398	399	386	370	346	318	292	275	272	280	290	306	338	360	375	397			
65	342	340	325	312	283	254	231	216	211	215	227	244	277	303	319	341			
70	284	279	266	245	218	191	172	159	154	156	165	181	213	242	259	282			
75	225	218	200	181	154	133	117	108	104	103	110	120	150	178	200	223			
80	169	160	140	118	96.2	83.0	73.5	68.3	64.9	62.1	62.9	68.8	91.5	120	144	167			
85	117	110	87.2	64.9	45.4	44.3	42.1	40.0	36.9	33.3	28.4	29.9	42.7	72.9	96.0	116			
90	72.8	65.3	48.0	29.4	12.4	19.2	21.0	21.8	19.2	15.3	9.47	8.05	6.52	36.6	55.9	73.2			
95	0.62	0.63	0.51	2.86	1.84	0.44	0.43	0.34	0.26	0.17	0.27	0.26	0.36	2.97	0.55	0.43			
100	17.1	13.0	0.44	0.26	0.27	0.35	0.43	0.34	1.11	0.52	0.61	0.52	0.54	2.35	9.30	15.8			
105	9.29	7.55	2.78	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	0.70	1.15	0.44	4.01	8.57			
110	4.55	2.76	1.31	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	0.79	1.77	0.53	1.10	3.68			
115	1.55	0.95	0.44	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	0.79	1.95	0.52	0.51	0.85			
120	0.43	0.43	0.35	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	0.79	2.13	0.52	0.51	0.43			
125	0.34	0.35	0.35	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	0.87	2.13	0.52	0.51	0.43			
130	0.34	0.35	0.35	0.26	0.27	0.26	0.34	0.34	0.51	0.52	0.61	1.31	2.13	0.70	0.51	0.43			
135	0.34	0.35	0.35	0.26	0.27	0.26	0.34	0.34	0.51	0.61	0.70	1.40	2.13	0.96	0.60	0.52			
140	0.34	0.35	0.35	0.26	0.70	0.26	0.34	0.34	0.69	0.78	0.70	1.48	2.13	1.05	0.77	0.60			
145	0.34	0.35	0.35	0.44	1.06	0.44	0.34	0.34	0.77	0.78	0.87	1.57	2.13	1.31	0.77	0.77			
150	0.34	0.35	0.35	0.44	1.42	0.61	0.34	0.34	0.94	0.86	0.96	1.57	2.13	1.75	1.03	0.95			
155	0.34	0.35	0.35	0.52	1.51	0.70	0.43	0.34	1.11	0.86	0.96	1.57	1.94	1.83	1.20	1.20			
160	0.34	0.35	0.44	0.52	1.51	0.79	0.43	0.34	1.11	0.86	0.96	1.57	1.60	2.71	1.37	1.12			
165	0.43	0.43	0.52	1.21	1.77	1.14	0.68	0.43	1.11	0.86	0.96	1.66	1.60	3.23	1.37	1.12			
170	0.51	0.60	0.70	1.40	3.01	1.31	0.94	0.60	1.11	0.86	0.96	1.66	1.60	3.23	1.37	1.12			
175	0.77	0.86	1.48	1.57	3.28	1.48	1.11	0.69	1.37	0.86	0.96	1.66	1.60	3.23	1.37	1.12			
180	0.86	0.95	1.57	1.57	3.28	1.40	1.11	0.86	1.54	0.86	0.96	1.57	1.60	3.23	1.37	1.12			

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: