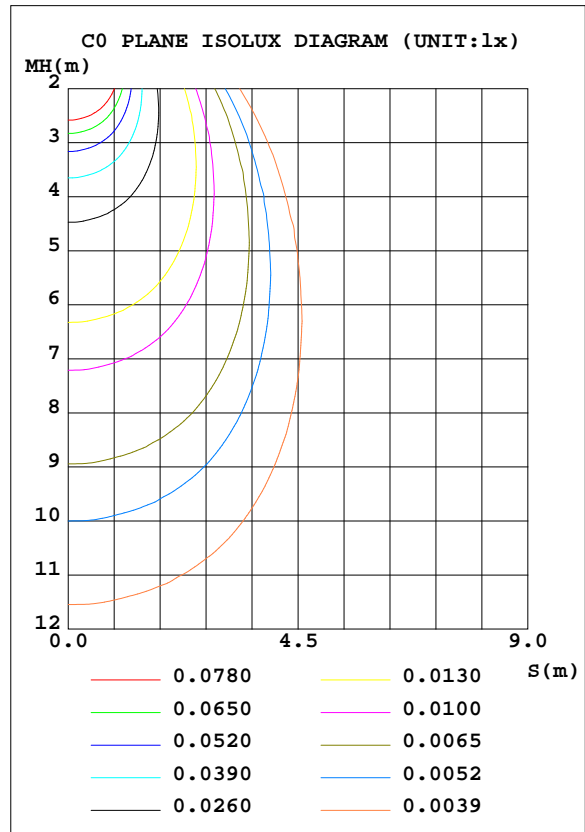
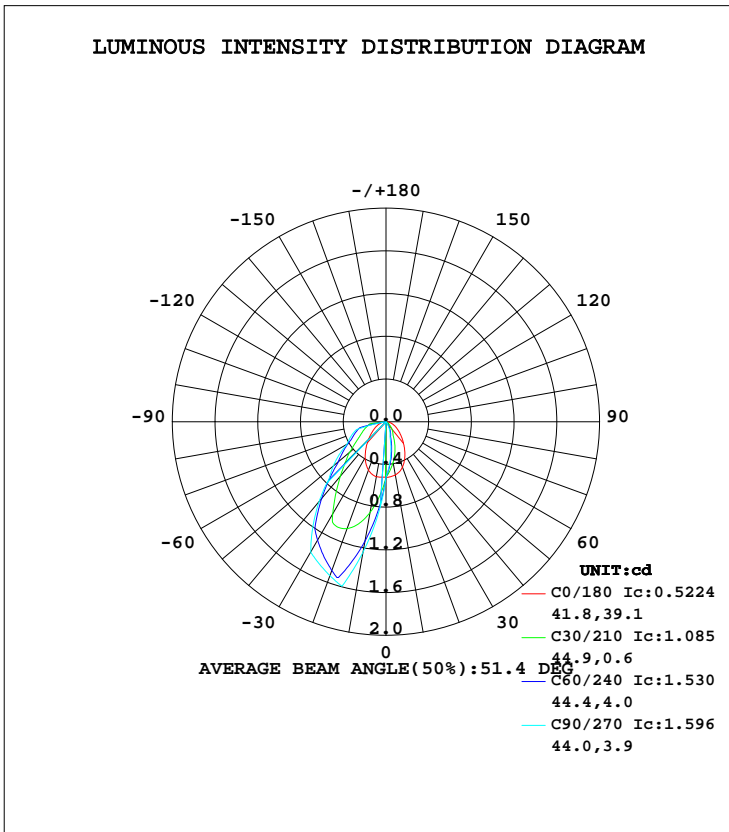


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 20.80 lm/W			
MODEL	489881-2700K	I <sub>max</sub> (cd)	1.596	S/MH(C0/180)	1.14
NOMINAL POWER(W)	0.8	LOR(%)	7.8	S/MH(C90/270)	1.86
RATED VOLTAGE(V)	12	TOTAL FLUX(lm)	1.5698	η UP, DN(C0-180)	0.0,0.9
NOMINAL FLUX(lm)	20	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,7.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	12	η down(%)	7.8	CIBSE SHR MAX	0.75



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:

**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
5	0.5162	0.4307	0.3952	0.4322	0.5210	0.7727	0.8785	0.7681	0- 5	0.0136	0.0136	0.87,0.07
10	0.5068	0.3390	0.2706	0.3440	0.5218	1.012	1.237	0.9934	5- 10	0.0451	0.0587	3.74,0.29
15	0.4858	0.2477	0.1460	0.2525	0.5087	1.219	1.596	1.184	10- 15	0.0818	0.1405	8.95,0.70
20	0.4519	0.1576	0.1109	0.1588	0.4817	1.383	1.534	1.326	15- 20	0.1174	0.2579	16.4,1.29
25	0.4067	0.1217	0.0759	0.1224	0.4408	1.284	1.472	1.214	20- 25	0.1418	0.3997	25.5,2
30	0.3550	0.0936	0.0408	0.0950	0.3903	1.139	1.411	1.062	25- 30	0.1559	0.5556	35.4,2.78
35	0.3019	0.0658	0.0272	0.0663	0.3347	0.9957	1.192	0.9176	30- 35	0.1589	0.7145	45.5,3.57
40	0.2528	0.0400	0.0136	0.0393	0.2798	0.8522	0.9729	0.7817	35- 40	0.1497	0.8643	55.1,4.32
45	0.2084	0.0279	0	0.0270	0.2302	0.6748	0.7540	0.6231	40- 45	0.1334	0.9977	63.6,4.99
50	0.1719	0.0140	0	0.0141	0.1872	0.5349	0.6432	0.4994	45- 50	0.1155	1.113	70.9,5.57
55	0.1398	0	0	0.0027	0.1518	0.4278	0.5324	0.4097	50- 55	0.1012	1.214	77.4,6.07
60	0.1130	0	0	0.0031	0.1218	0.3636	0.4216	0.3456	55- 60	0.0883	1.303	83,6.51
65	0.0913	0.0004	0	0.0016	0.0965	0.3121	0.3768	0.2925	60- 65	0.0772	1.380	87.9,6.9
70	0.0679	0	0	0	0.0741	0.2727	0.3320	0.2542	65- 70	0.0691	1.449	92.3,7.25
75	0.0484	0	0	0	0.0535	0.2423	0.2872	0.2276	70- 75	0.0617	1.511	96.2,7.55
80	0.0296	0	0	0	0.0333	0.1748	0	0.1646	75- 80	0.0445	1.555	99.1,7.78
85	0.0122	0	0	0	0.0141	0	0	0	80- 85	0.0132	1.568	99.9,7.84
90	0	0	0	0	0	0	0	0	85- 90	0.0014	1.570	100,7.85
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

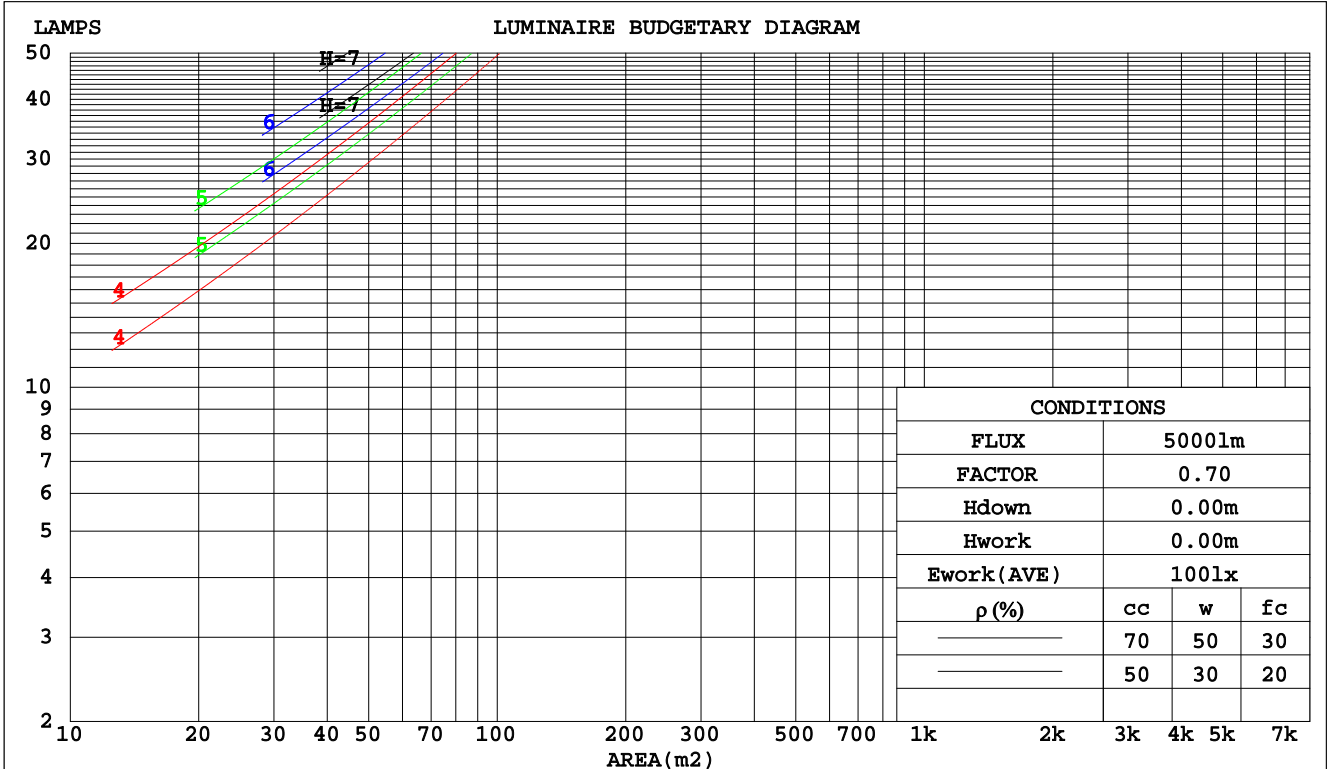
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

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															
	Coefficients of Utilization(CU)															
0.0	.09	.09	.09	.09	.09	.09	.09	.09	.09	.08	.08	.08	.08	.08	.08	.08
1.0	.08	.08	.08	.08	.08	.08	.08	.08	.07	.07	.07	.07	.07	.07	.07	.07
2.0	.07	.07	.06	.07	.07	.06	.07	.06	.06	.07	.06	.06	.06	.06	.06	.06
3.0	.06	.06	.05	.06	.06	.05	.06	.06	.05	.06	.06	.05	.06	.05	.05	.05
4.0	.06	.05	.05	.06	.05	.05	.06	.05	.05	.05	.05	.05	.05	.05	.04	.04
5.0	.05	.05	.04	.05	.05	.04	.05	.04	.04	.05	.04	.04	.05	.04	.04	.04
6.0	.05	.04	.04	.05	.04	.04	.05	.04	.04	.04	.04	.04	.04	.04	.04	.03
7.0	.04	.04	.03	.04	.04	.03	.04	.04	.03	.04	.04	.03	.04	.04	.03	.03
8.0	.04	.03	.03	.04	.03	.03	.04	.03	.03	.04	.03	.03	.04	.03	.03	.03
9.0	.04	.03	.03	.04	.03	.03	.04	.03	.03	.03	.03	.03	.03	.03	.03	.02
10.0	.03	.03	.02	.03	.03	.02	.03	.03	.02	.03	.03	.02	.03	.03	.02	.02



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:20DEG  
 Operators:Y  
 Test Date:2023-11-30

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
 Humidity:65.0%  
 Test Distance:8.750m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

ρcc	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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.022	.013	.004	.022	.012	.004	.021	.012	.004	.020	.011	.004	.019	.011	.004	
2.0	.021	.012	.004	.021	.011	.003	.020	.011	.003	.019	.011	.003	.018	.010	.003	
3.0	.020	.010	.003	.019	.010	.003	.018	.010	.003	.018	.010	.003	.017	.009	.003	
4.0	.018	.009	.003	.018	.009	.003	.017	.009	.003	.016	.009	.003	.016	.009	.003	
5.0	.017	.009	.002	.017	.008	.002	.016	.008	.002	.015	.008	.002	.015	.008	.002	
6.0	.016	.008	.002	.015	.008	.002	.015	.008	.002	.014	.007	.002	.014	.007	.002	
7.0	.015	.007	.002	.014	.007	.002	.014	.007	.002	.013	.007	.002	.013	.007	.002	
8.0	.014	.007	.002	.014	.007	.002	.013	.007	.002	.013	.006	.002	.012	.006	.002	
9.0	.013	.006	.002	.013	.006	.002	.012	.006	.002	.012	.006	.002	.012	.006	.002	
10.0	.012	.006	.002	.012	.006	.002	.012	.006	.002	.011	.006	.002	.011	.006	.002	

ρcc	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	.015	.015	.015	.013	.013	.013	.009	.009	.009	.005	.005	.005	.002	.002	.002	
1.0	.014	.012	.011	.012	.011	.009	.008	.007	.006	.005	.004	.004	.002	.001	.001	
2.0	.013	.010	.008	.011	.009	.007	.008	.006	.005	.004	.004	.003	.001	.001	.001	
3.0	.013	.009	.006	.011	.008	.005	.007	.005	.004	.004	.003	.002	.001	.001	.001	
4.0	.012	.008	.005	.010	.007	.004	.007	.005	.003	.004	.003	.002	.001	.001	.001	
5.0	.011	.007	.004	.010	.006	.003	.007	.004	.002	.004	.003	.001	.001	.001	.000	
6.0	.011	.006	.003	.009	.006	.003	.006	.004	.002	.004	.002	.001	.001	.001	.000	
7.0	.010	.006	.003	.009	.005	.002	.006	.004	.002	.004	.002	.001	.001	.001	.000	
8.0	.010	.005	.002	.008	.005	.002	.006	.003	.001	.003	.002	.001	.001	.001	.000	
9.0	.009	.005	.002	.008	.004	.002	.006	.003	.001	.003	.002	.001	.001	.001	.000	
10.0	.009	.005	.002	.008	.004	.002	.005	.003	.001	.003	.002	.001	.001	.001	.000	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:20DEG  
 Operators:Y  
 Test Date:2023-11-30

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
 Humidity:65.0%  
 Test Distance:8.750m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm										
NAME: 489881-2700K					TYPE:489881-2700K			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:			PROTECTION ANGLE:		
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	-16.8	-15.4	-16.5	-15.2	-15.0	-33.8	-32.3	-33.5	-32.1	-32.0
3H	-15.1	-13.8	-14.8	-13.6	-13.4	-34.0	-32.7	-33.7	-32.4	-32.2
4H	-14.4	-13.1	-14.1	-12.9	-12.6	-34.1	-32.8	-33.8	-32.6	-32.3
6H	-13.7	-12.5	-13.4	-12.3	-12.0	-34.2	-33.0	-33.9	-32.7	-32.5
8H	-13.5	-12.4	-13.2	-12.1	-11.8	-34.2	-33.1	-33.9	-32.8	-32.5
12H	-13.3	-12.2	-13.0	-11.9	-11.6	-34.3	-33.2	-33.9	-32.9	-32.6
4H 2H	-17.1	-15.9	-16.8	-15.6	-15.4	-31.9	-30.6	-31.6	-30.4	-30.1
3H	-15.4	-14.3	-15.1	-14.0	-13.7	-32.1	-31.0	-31.7	-30.7	-30.4
4H	-14.6	-13.6	-14.2	-13.3	-13.0	-32.2	-31.2	-31.8	-30.9	-30.6
6H	-13.9	-13.0	-13.5	-12.7	-12.3	-32.3	-31.4	-31.9	-31.1	-30.7
8H	-13.6	-12.8	-13.2	-12.4	-12.0	-32.3	-31.5	-31.9	-31.1	-30.8
12H	-13.4	-12.6	-13.0	-12.2	-11.8	-32.4	-31.6	-31.9	-31.2	-30.8
8H 4H	-14.8	-13.9	-14.3	-13.6	-13.2	-31.6	-30.7	-31.1	-30.4	-30.0
6H	-14.0	-13.3	-13.6	-12.9	-12.5	-31.6	-31.0	-31.2	-30.6	-30.1
8H	-13.7	-13.1	-13.3	-12.7	-12.3	-31.7	-31.1	-31.2	-30.7	-30.2
12H	-13.5	-13.0	-13.0	-12.5	-12.1	-31.7	-31.2	-31.3	-30.8	-30.3
12H 4H	-14.8	-14.0	-14.4	-13.7	-13.3	-31.4	-30.7	-31.0	-30.3	-29.9
6H	-14.1	-13.5	-13.6	-13.0	-12.6	-31.5	-30.9	-31.1	-30.5	-30.1
8H	-13.8	-13.2	-13.3	-12.8	-12.3	-31.6	-31.1	-31.1	-30.6	-30.1
Variations with the observer position at spacings:										
S = 1.0H	+ 1.3 / - 1.0					+ 2.3 / - 6.8				
1.5H	+ 2.4 / - 2.5					+ 3.3 / - 4.2				
2.0H	+ 3.4 / - 4.1					+ 2.8 / - 4.7				

CIE Pub.117 Corrected 20.00 lm Total Lamp Luminous Flux. (8log(F/F0) = -13.6)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

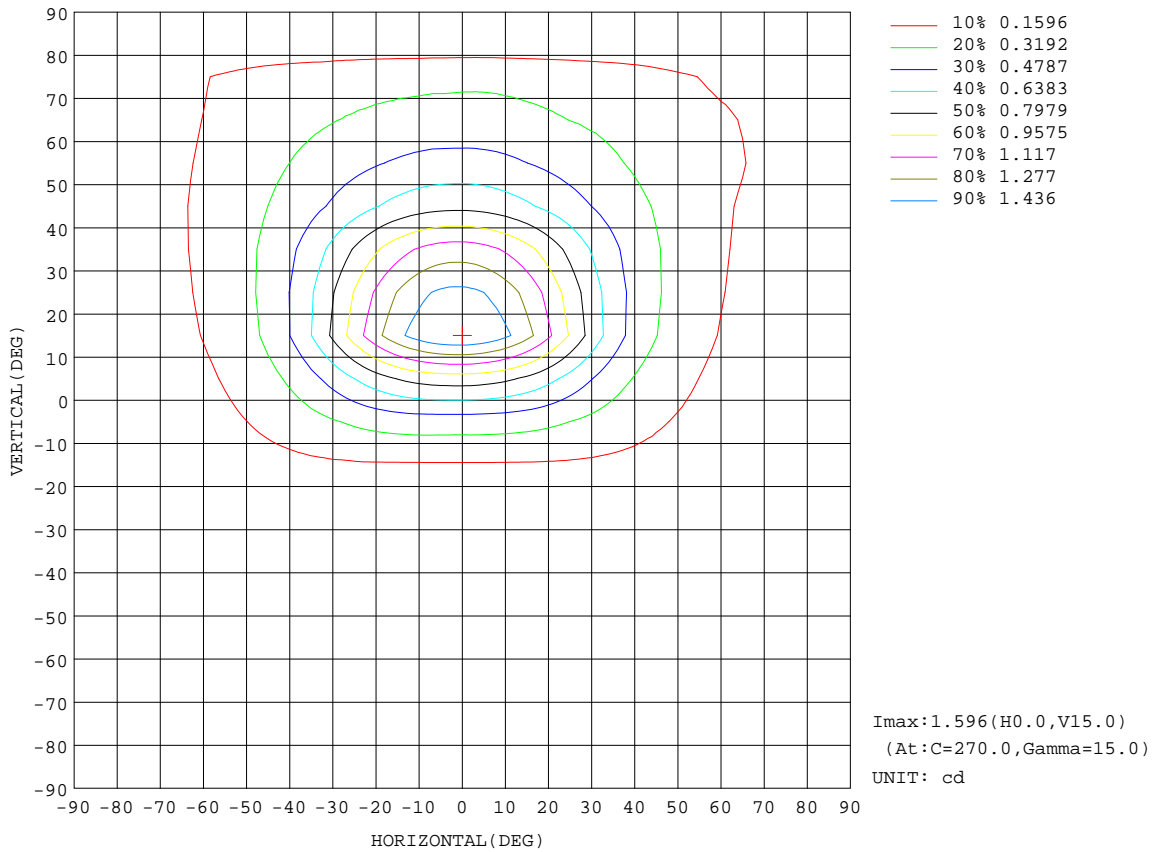
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	5	4	4	5	4	4	5	4	4	3
0.80	6	5	4	6	5	4	6	5	4	4
1.00	6	6	5	6	6	5	6	6	5	4
1.25	7	6	6	7	6	6	7	6	6	5
1.50	7	7	6	7	6	6	7	6	6	5
2.00	8	7	7	8	7	7	7	7	6	6
2.50	8	7	7	8	7	7	8	7	7	6
3.00	8	8	7	8	8	7	8	7	7	6
4.00	8	8	8	8	8	8	8	8	7	7
5.00	9	8	8	8	8	8	8	8	8	7
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:20DEG  
 Operators:Y  
 Test Date:2023-11-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
 Humidity:65.0%  
 Test Distance:8.750m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

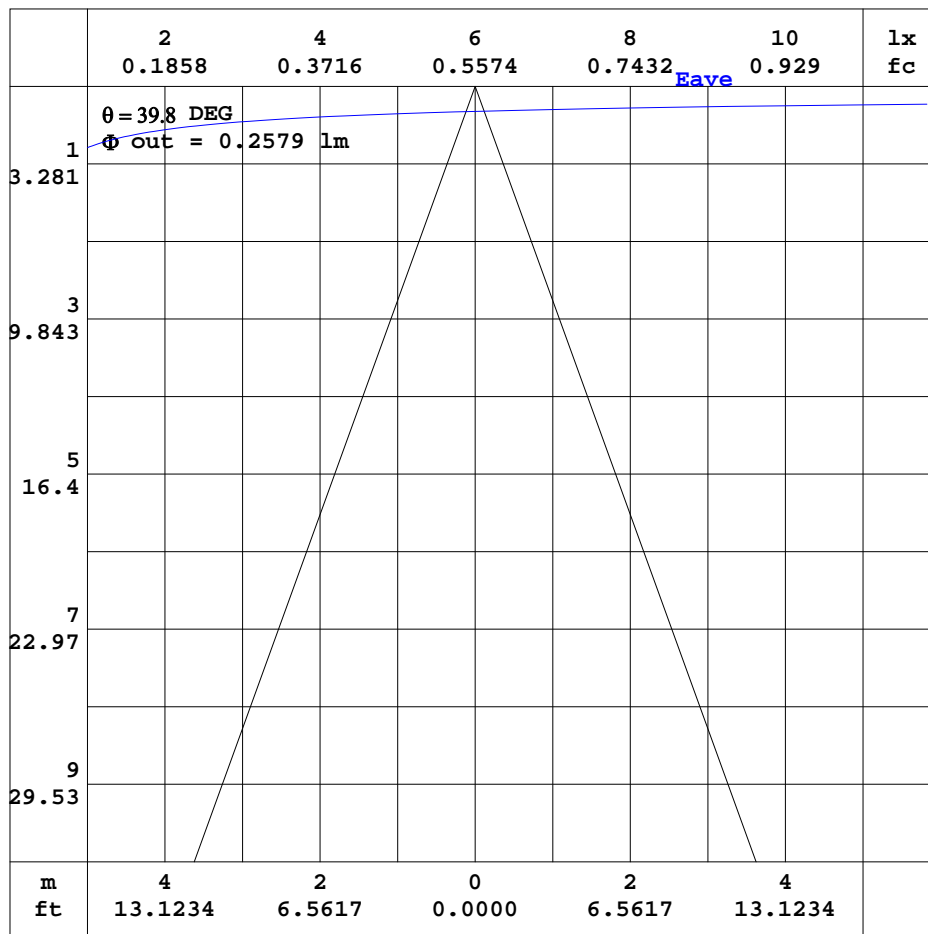


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:

**AAI CURVES**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



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

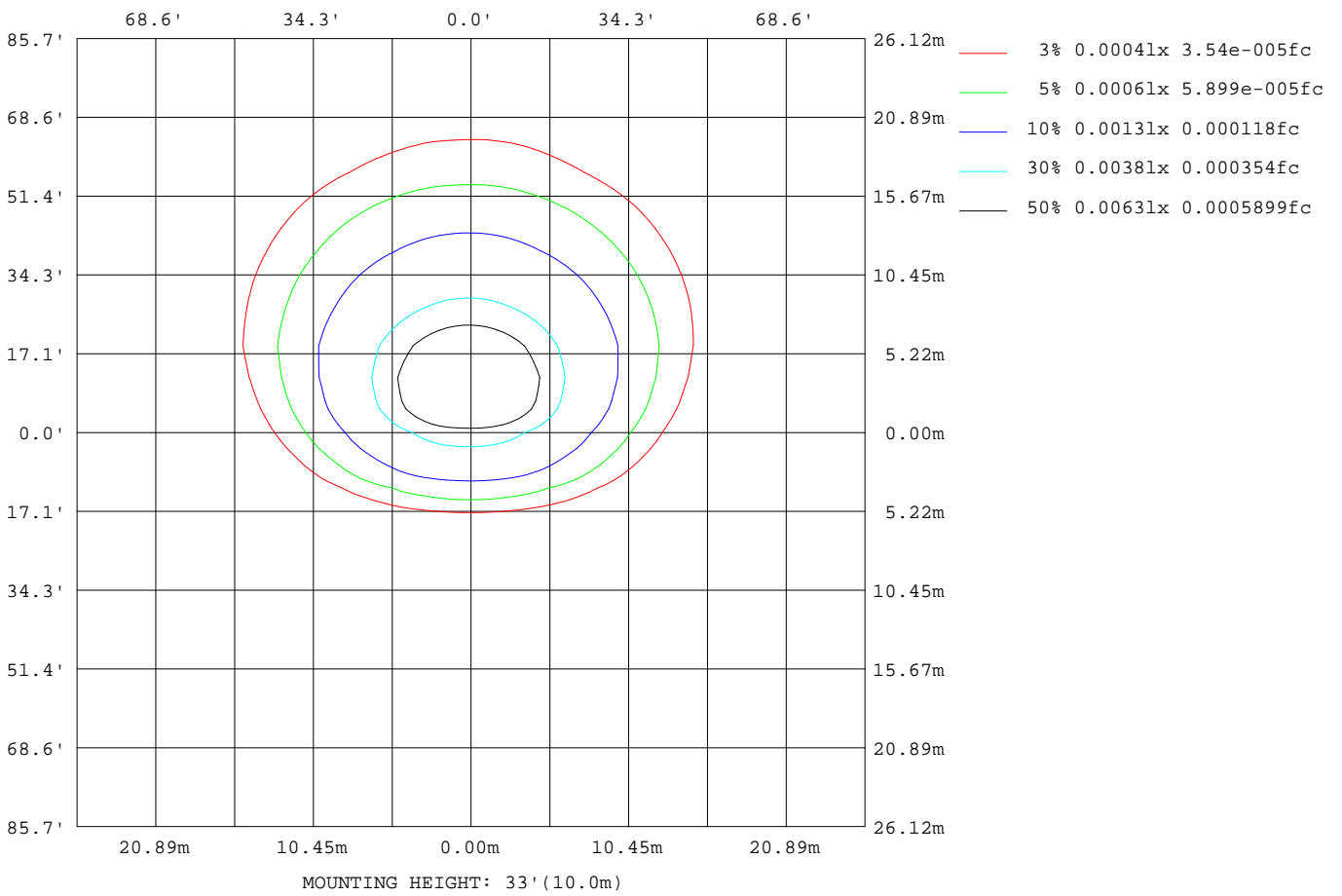
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:



**ISOLUX DIAGRAM**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:20DEG  
 Operators:Y  
 Test Date:2023-11-30

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
 Humidity:65.0%  
 Test Distance:8.750m [K=1.0000]  
 Remarks:

**LED Avg.L Report**

Test:U:11.96V I:0.1329A P:0.8868W PF:0.5575 Lamp Flux:235x1 lm		
NAME: 489881-2700K	TYPE:489881-2700K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

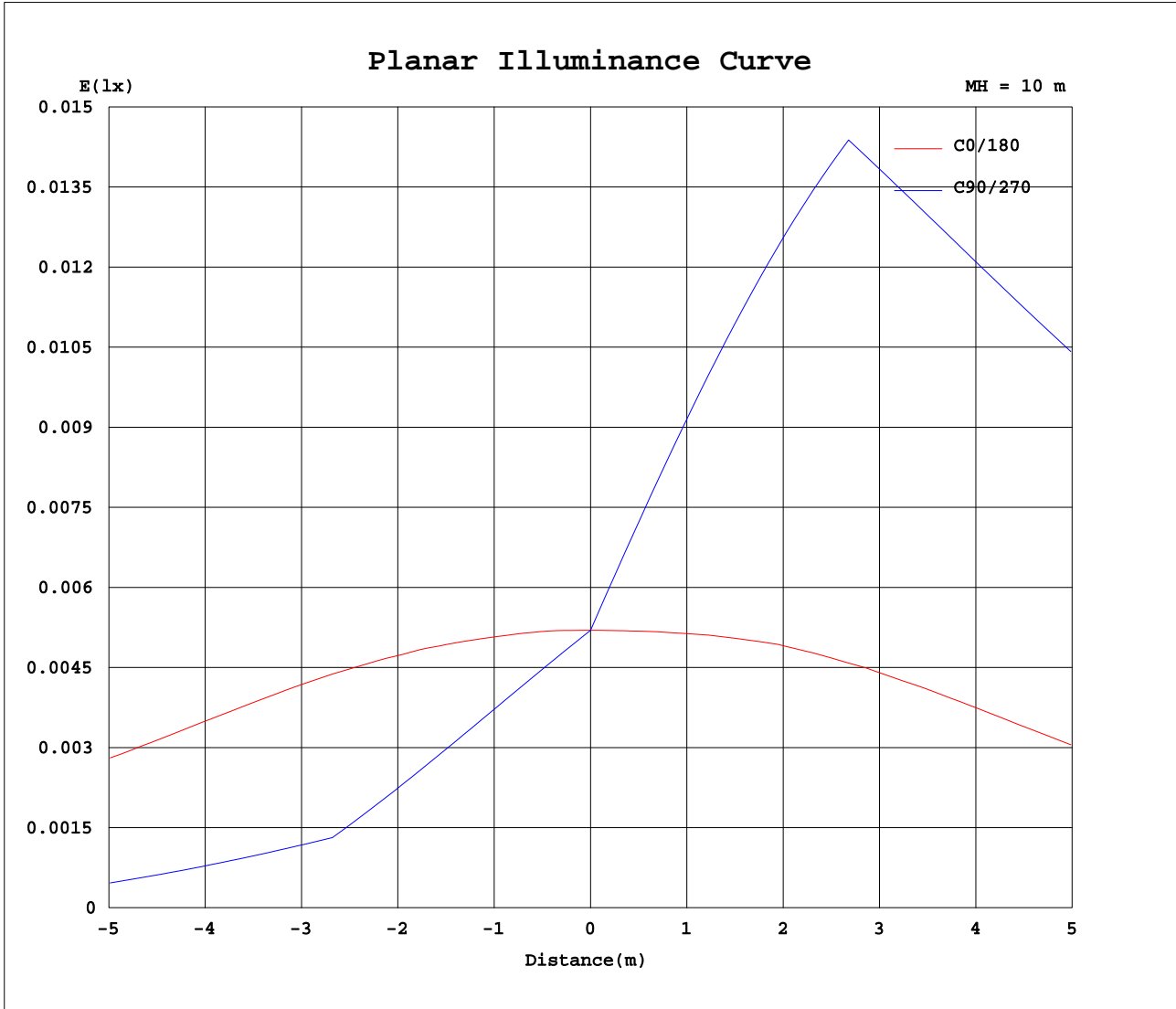
AvgL	cd/m2
L_0~180(65)av	1
L_0~180(75)av	1
L_0~180(85)av	1
L_90~270(65)av	2
L_90~270(75)av	3
L_90~270(85)av	0
L_45(65)av	2
L_45(75)av	2
L_45(85)av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:20DEG  
Operators:Y  
Test Date:2023-11-30

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
Humidity:65.0%  
Test Distance:8.750m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 20DEG  
 Operators: Y  
 Test Date: 2023-11-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.291  
 Humidity: 65.0%  
 Test Distance: 8.750m [K=1.0000]  
 Remarks:







