

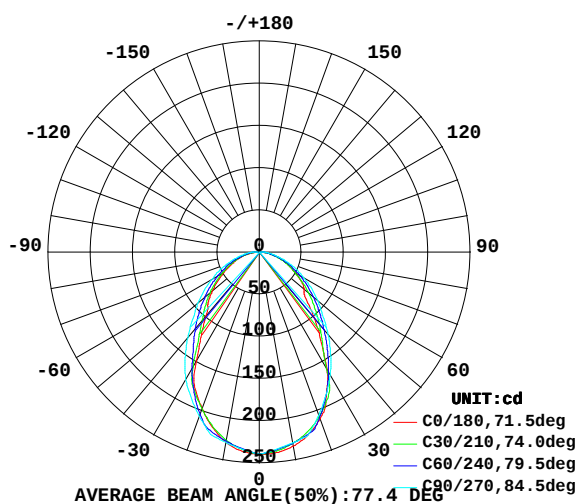
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

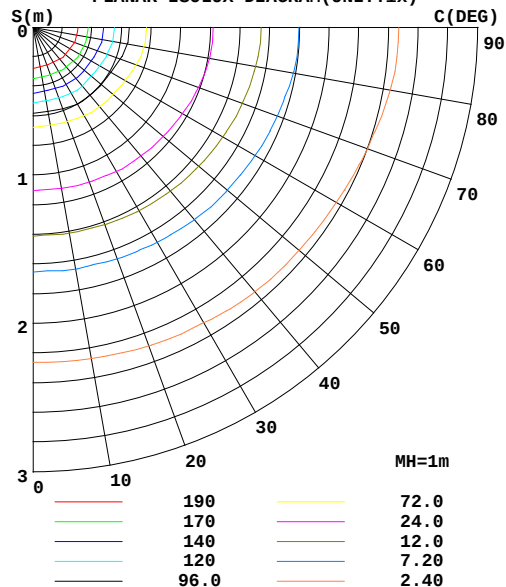
Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 45.68 lm/W			
MODEL	EDS	I _{max} (cd)	239.8	S/MH(C0/180)	1.03
NOMINAL POWER(W)	10	LOR(%)	48.8	S/MH(C90/270)	1.10
RATED VOLTAGE(V)	232	TOTAL FLUX(lm)	461.33	h UP, DN(C0-180)	0.0, 24.9
NOMINAL FLUX(lm)	945	CIE CLASS	DIRECT	h UP, DN(C180-360)	0.0, 24.0
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	231.4	h down(%)	48.8	CIBSE SHR MAX	1.15

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

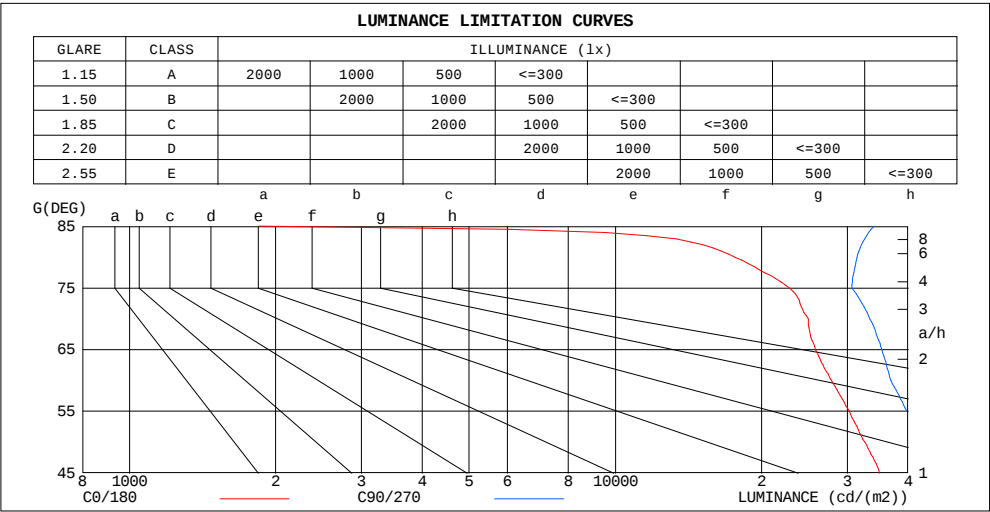
g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
5	236.8	234.3	234.4	235.9	238.7	235.9	234.8	234.5	0- 5	5.668	5.668	1.23,0.60
10	228.8	226.9	229.2	230.6	233.6	230.1	229.8	227.1	5- 10	16.61	22.28	4.83,2.36
15	215.1	216.7	223.9	222.9	224.5	222.1	224.9	217.0	10- 15	26.66	48.93	10.6,5.18
20	197.8	204.5	207.5	211.3	210.9	211.8	206.1	204.5	15- 20	35.10	84.04	18.2,8.89
25	179.6	181.5	191.1	187.2	188.5	189.7	187.4	180.8	20- 25	40.96	125.0	27.1,13.2
30	148.9	157.3	174.7	163.4	160.7	163.6	168.7	155.2	25- 30	43.78	168.8	36.6,17.9
35	119.9	133.4	153.3	140.4	127.7	138.2	147.9	129.2	30- 35	43.30	212.1	46,22.4
40	98.24	111.4	131.8	118.3	101.4	115.0	127.1	107.5	35- 40	41.44	253.5	55,26.8
45	86.59	94.87	110.4	99.64	78.78	97.10	106.3	91.13	40- 45	38.89	292.4	63.4,30.9
50	73.36	80.08	95.11	83.16	69.39	81.03	91.18	76.48	45- 50	35.72	328.1	71.1,34.7
55	60.76	66.85	79.82	68.64	61.44	66.70	76.03	62.99	50- 55	32.17	360.3	78.1,38.1
60	48.73	54.54	64.53	55.94	49.60	53.87	60.88	49.04	55- 60	27.92	388.2	84.2,41.1
65	38.20	43.36	52.28	44.45	39.23	42.12	48.49	36.06	60- 65	23.39	411.6	89.2,43.6
70	29.84	32.91	40.03	33.72	30.55	31.25	36.11	28.02	65- 70	18.96	430.6	93.3,45.6
75	20.68	22.50	27.77	23.31	22.24	20.62	23.72	19.64	70- 75	14.29	444.9	96.4,47.1
80	10.72	13.00	19.09	13.83	13.08	10.89	15.88	10.64	75- 80	9.348	454.2	98.5,48.1
85	0.5632	7.212	10.41	7.702	3.565	5.427	8.027	5.373	80- 85	5.195	459.4	99.6,48.6
90	0.0965	1.541	1.727	1.729	0.4583	0.1153	0.1788	0.1882	85- 90	1.913	461.3	100,48.8
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:30DEG
Operators:HCZ
Test Date:2023-08-16

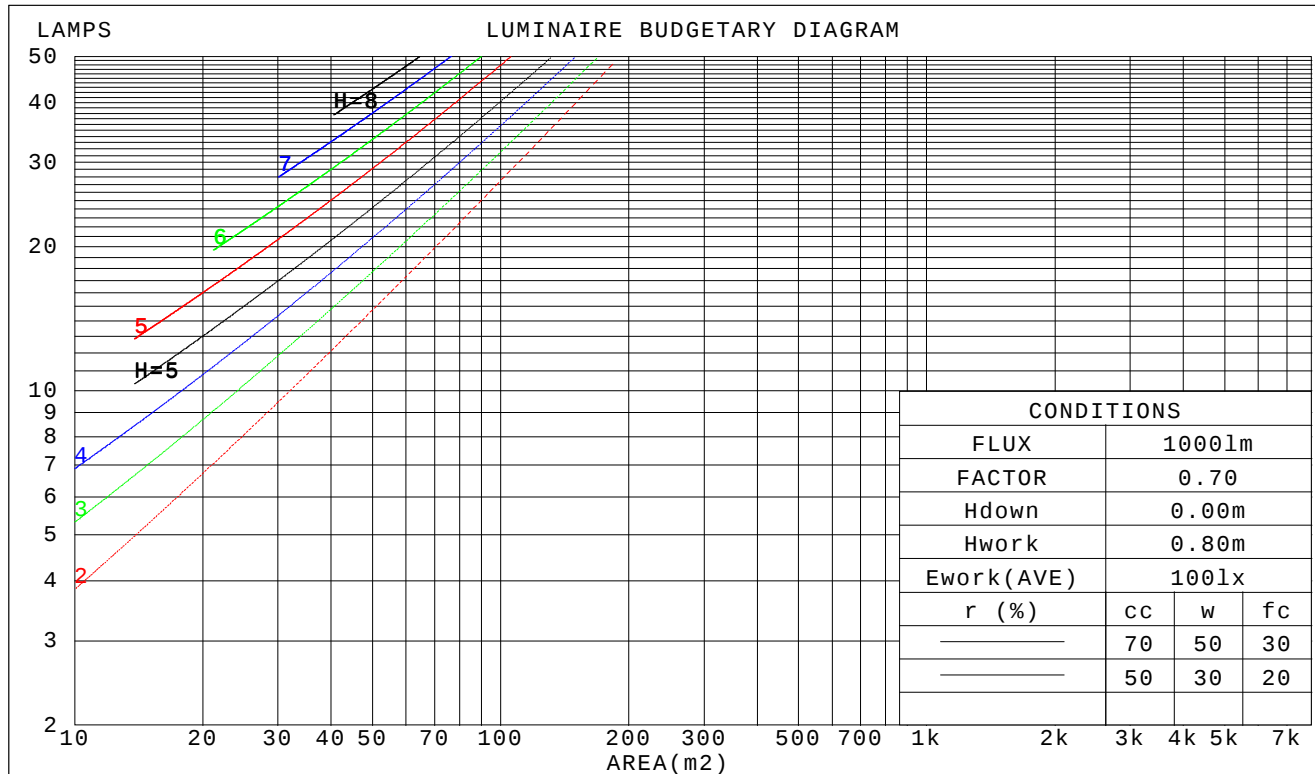
g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	SUR.:	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0														
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0														
rfc	20%			20%			20%			20%			20%			0														
RCR	RCR:Room Cavity Ratio															Coefficients of Utilization(CU)														
0.0	.58	.58	.58	.57	.57	.57	.54	.54	.54	.52	.52	.52	.50	.50	.50	.49														
1.0	.51	.50	.48	.50	.49	.47	.48	.47	.46	.46	.45	.44	.45	.44	.43	.42														
2.0	.46	.43	.40	.45	.42	.40	.43	.41	.39	.41	.39	.38	.40	.38	.37	.36														
3.0	.41	.37	.34	.40	.36	.34	.38	.36	.33	.37	.35	.33	.36	.34	.32	.31														
4.0	.36	.33	.29	.36	.32	.29	.35	.31	.29	.34	.31	.29	.33	.30	.28	.27														
5.0	.33	.29	.26	.32	.29	.26	.31	.28	.25	.30	.28	.25	.30	.27	.25	.24														
6.0	.30	.26	.23	.30	.26	.23	.29	.25	.23	.28	.25	.23	.27	.24	.22	.21														
7.0	.27	.23	.21	.27	.23	.21	.26	.23	.20	.26	.23	.20	.25	.22	.20	.19														
8.0	.25	.21	.19	.25	.21	.19	.24	.21	.19	.24	.21	.18	.23	.20	.18	.17														
9.0	.23	.20	.17	.23	.19	.17	.23	.19	.17	.22	.19	.17	.22	.19	.17	.16														
10.0	.22	.18	.16	.21	.18	.16	.21	.18	.16	.21	.18	.15	.20	.17	.15	.15														



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm											
NAME: 649N01-DIM						TYPE:			WEIGHT:		
DIM.:						SPEC.:			SERIAL No.:230710001		
MFR.: LCZ						SUR.:			PROTECTION ANGLE:		

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.136	.078	.025	.133	.076	.024	.126	.073	.023	.121	.070	.022	.115	.067	.022	
2.0	.129	.071	.022	.126	.069	.021	.120	.067	.021	.115	.065	.020	.110	.062	.020	
3.0	.120	.064	.019	.117	.063	.019	.112	.061	.018	.108	.059	.018	.104	.057	.018	
4.0	.111	.058	.017	.109	.057	.017	.105	.055	.017	.101	.054	.016	.097	.053	.016	
5.0	.103	.053	.015	.101	.052	.015	.098	.051	.015	.094	.050	.015	.091	.048	.015	
6.0	.096	.048	.014	.095	.048	.014	.091	.047	.014	.088	.046	.013	.085	.045	.013	
7.0	.090	.045	.013	.089	.044	.013	.086	.043	.012	.083	.042	.012	.080	.042	.012	
8.0	.085	.041	.012	.083	.041	.012	.081	.040	.011	.078	.039	.011	.076	.039	.011	
9.0	.080	.039	.011	.078	.038	.011	.076	.038	.011	.074	.037	.011	.071	.036	.010	
10.0	.075	.036	.010	.074	.036	.010	.072	.035	.010	.070	.035	.010	.068	.034	.010	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.093	.093	.093	.079	.079	.079	.054	.054	.054	.031	.031	.031	.010	.010	.010	
1.0	.087	.076	.067	.074	.066	.057	.051	.045	.040	.029	.026	.023	.009	.008	.007	
2.0	.082	.064	.050	.070	.055	.043	.048	.038	.030	.028	.022	.017	.009	.007	.006	
3.0	.078	.056	.038	.067	.048	.033	.046	.033	.023	.027	.020	.014	.009	.006	.004	
4.0	.074	.049	.030	.064	.042	.026	.044	.030	.018	.025	.017	.011	.008	.006	.004	
5.0	.070	.044	.024	.060	.038	.021	.042	.027	.015	.024	.016	.009	.008	.005	.003	
6.0	.067	.040	.020	.057	.034	.018	.040	.024	.012	.023	.014	.007	.007	.005	.002	
7.0	.064	.036	.017	.055	.031	.015	.038	.022	.011	.022	.013	.006	.007	.004	.002	
8.0	.060	.033	.015	.052	.029	.013	.036	.020	.009	.021	.012	.005	.007	.004	.002	
9.0	.058	.031	.013	.050	.027	.011	.034	.019	.008	.020	.011	.005	.006	.004	.002	
10.0	.055	.029	.011	.047	.025	.010	.033	.018	.007	.019	.010	.004	.006	.003	.001	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

Uncorrected UGR Table

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm										
NAME: 649N01-DIM					TYPE:			WEIGHT:		
DIM.:					SPEC.:			SERIAL No.:230710001		
MFR.: LCZ					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	23.9	25.3	24.1	25.5	25.7	25.2	26.6	25.4	26.8	27.0
3H	25.2	26.4	25.5	26.7	26.9	26.6	27.9	26.9	28.1	28.3
4H	25.7	26.9	26.0	27.2	27.4	27.2	28.4	27.5	28.6	28.9
6H	26.1	27.2	26.4	27.5	27.7	27.7	28.8	28.0	29.1	29.4
8H	26.1	27.2	26.4	27.5	27.8	27.9	29.0	28.2	29.3	29.6
12H	26.1	27.2	26.4	27.5	27.8	28.1	29.2	28.4	29.5	29.8
4H 2H	24.5	25.7	24.8	26.0	26.2	25.5	26.8	25.8	27.0	27.3
3H	26.0	27.1	26.4	27.4	27.7	27.1	28.2	27.5	28.5	28.8
4H	26.7	27.7	27.1	28.0	28.3	27.8	28.8	28.2	29.1	29.5
6H	27.2	28.0	27.6	28.4	28.7	28.5	29.4	28.9	29.7	30.1
8H	27.3	28.1	27.7	28.4	28.8	28.8	29.6	29.2	30.0	30.4
12H	27.3	28.0	27.7	28.4	28.8	29.1	29.8	29.5	30.2	30.6
8H 4H	27.0	27.8	27.4	28.1	28.5	28.0	28.8	28.4	29.2	29.6
6H	27.6	28.3	28.0	28.7	29.1	28.8	29.5	29.2	29.9	30.3
8H	27.8	28.4	28.3	28.8	29.3	29.2	29.8	29.7	30.2	30.7
12H	27.9	28.4	28.4	28.9	29.4	29.6	30.1	30.1	30.5	31.0
12H 4H	27.0	27.7	27.4	28.1	28.5	28.0	28.7	28.4	29.1	29.5
6H	27.7	28.3	28.1	28.7	29.1	28.8	29.4	29.3	29.9	30.3
8H	27.9	28.4	28.4	28.9	29.3	29.3	29.8	29.8	30.2	30.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.2				
1.5H	+ 0.1 / - 0.3					+ 0.2 / - 0.2				
2.0H	+ 0.2 / - 0.4					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 945.0 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.2)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	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	31	26	23	31	26	23	30	26	23	20
0.80	36	31	28	35	31	27	35	30	27	24
1.00	40	35	32	39	34	31	38	35	31	28
1.25	43	38	35	42	38	35	41	37	35	31
1.50	45	41	38	44	40	37	43	39	37	34
2.00	48	44	41	47	44	41	45	43	40	37
2.50	50	46	44	49	46	43	47	44	42	38
3.00	51	48	46	50	47	45	48	46	44	40
4.00	53	50	48	52	49	48	50	48	46	42
5.00	54	52	50	53	51	49	50	49	48	43
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

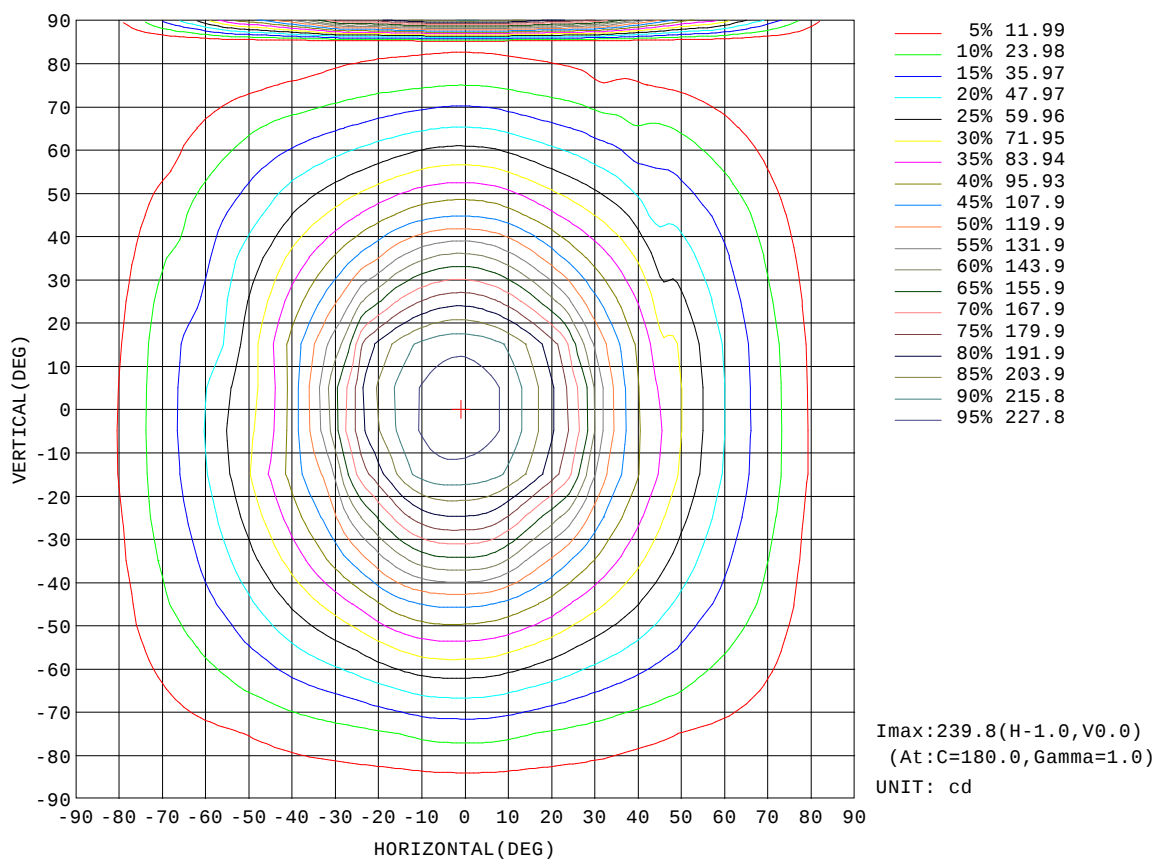
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 Test Speed: HIGH
 Temperature:30DEG
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 Test Date:2023-08-16

g Range: 0 - 90DEG
 g Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
 Humidity:65.0%
 Test Distance:5.835m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	SUR.:	PROTECTION ANGLE:



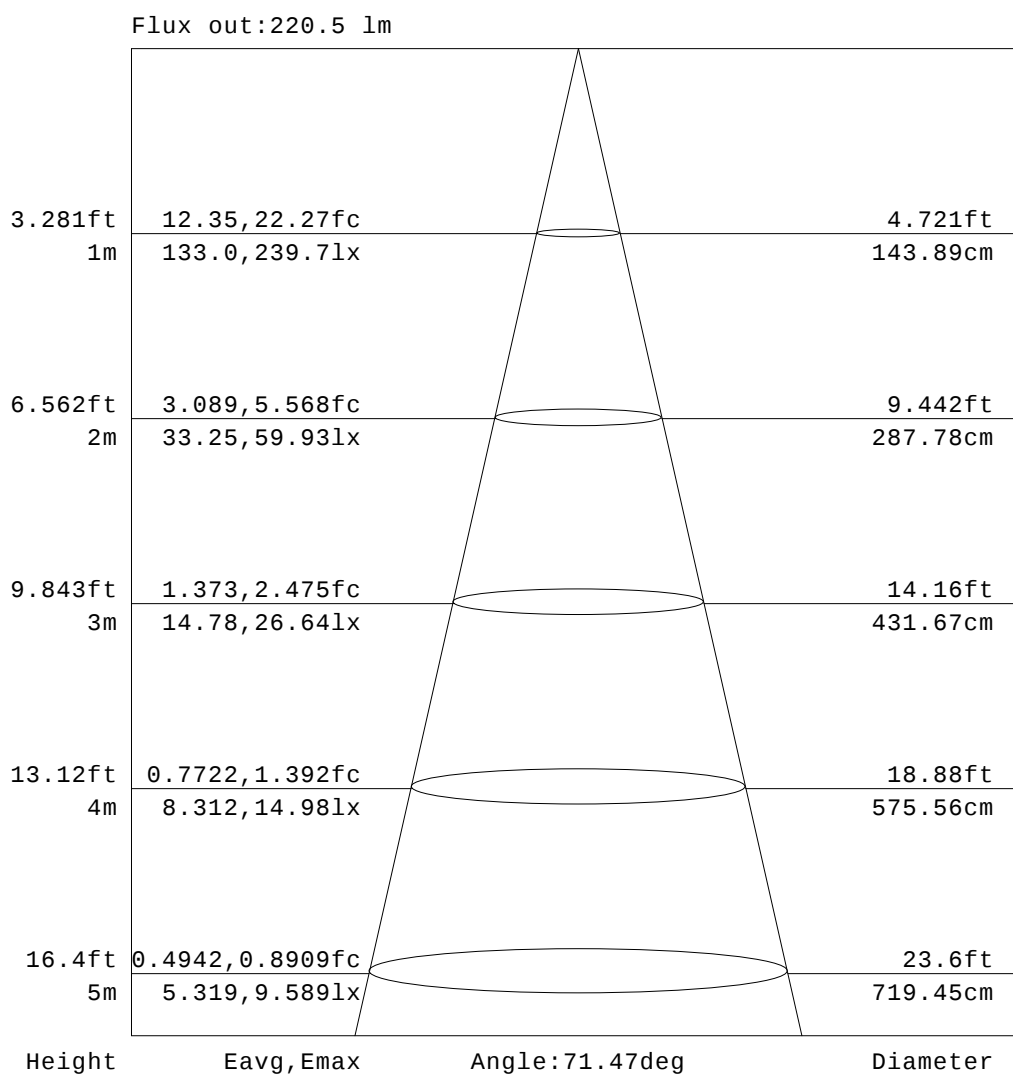
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

AAI Figure

Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	SUR.:	PROTECTION ANGLE:



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

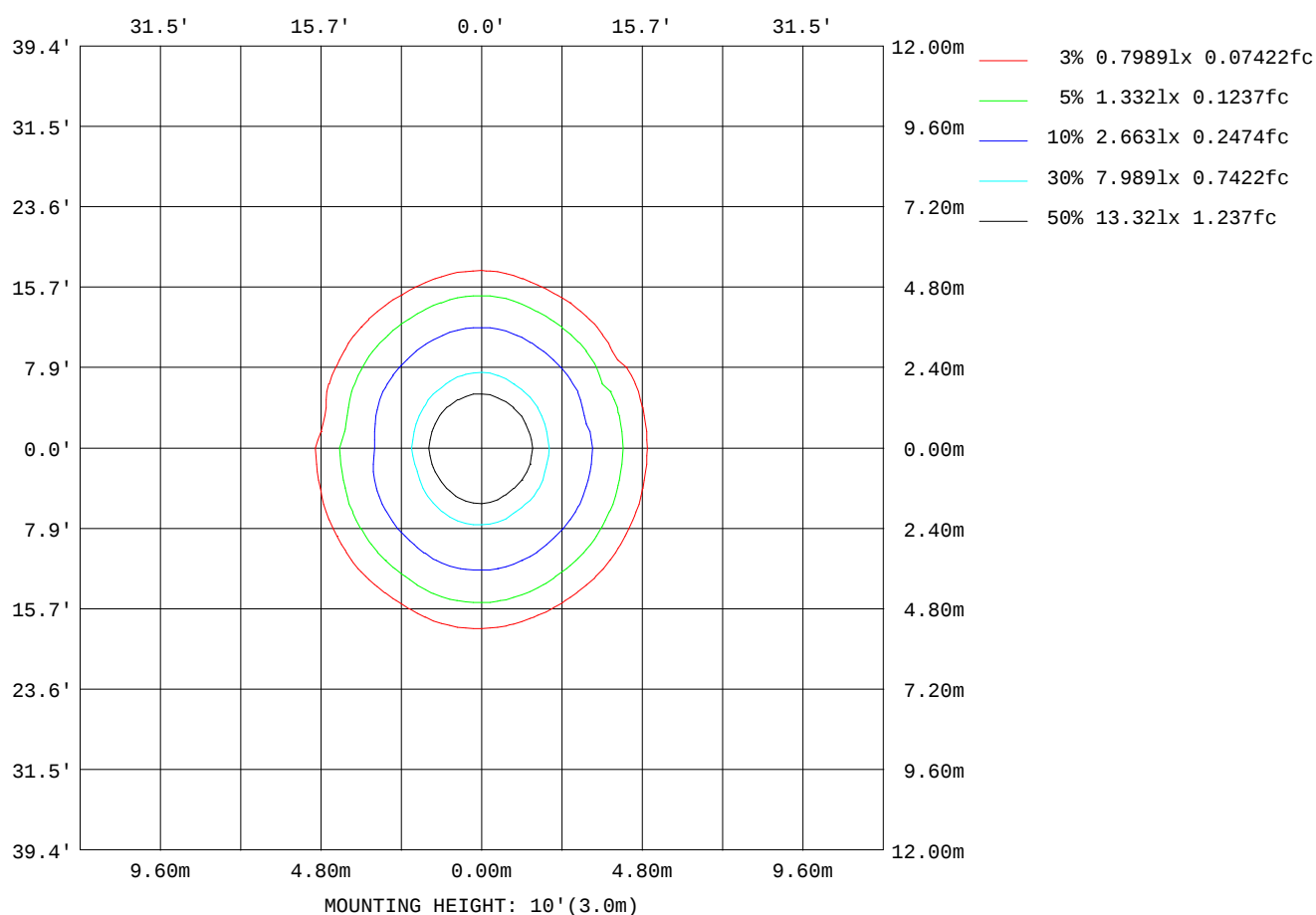
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:HCZ
Test Date:2023-08-16

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Humidity:65.0%
Test Distance:5.835m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

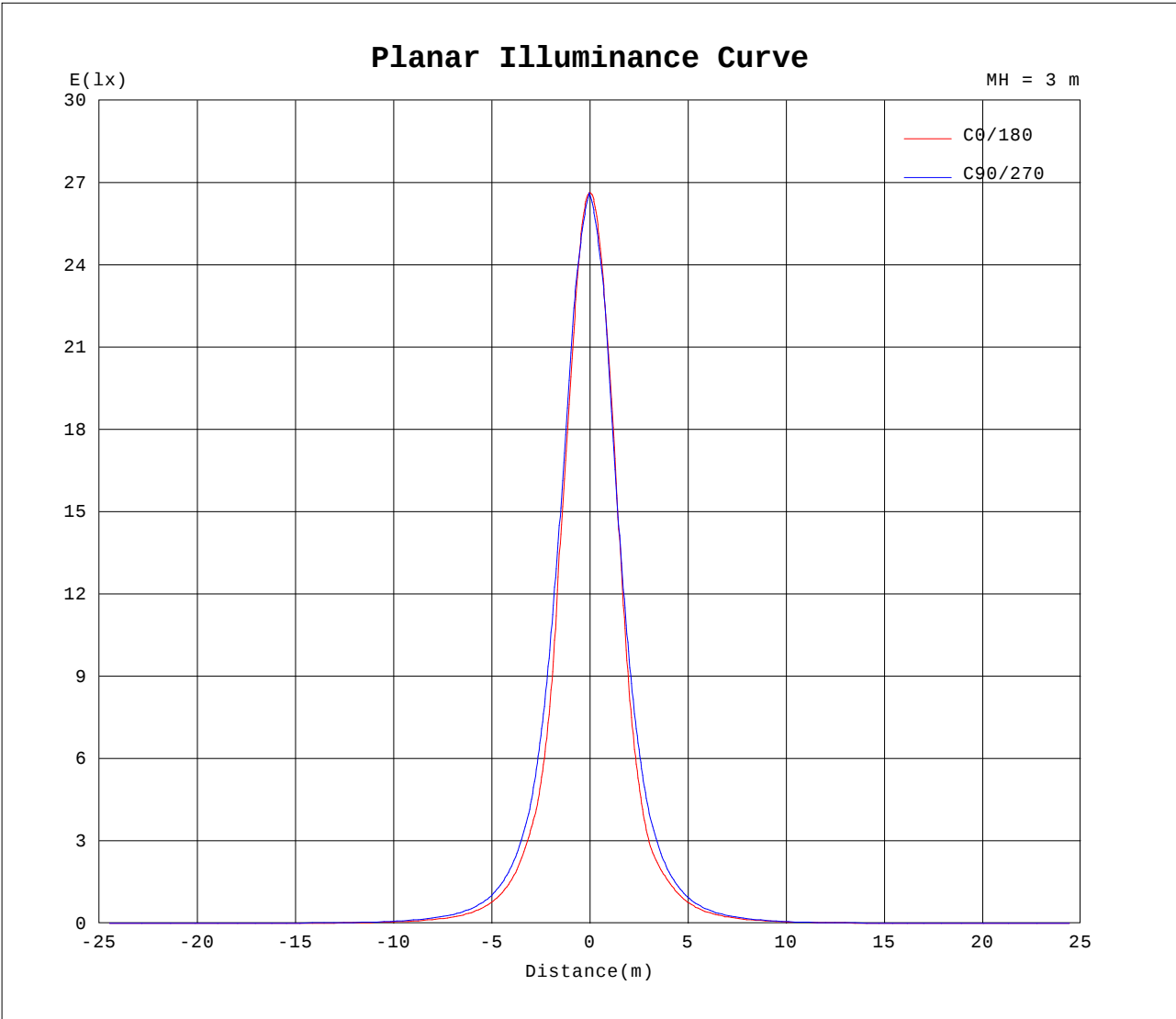
Test:U:231.4V I:0.0480A P:10.10W PF:0.8970 Lamp Flux:945x1 lm		
NAME: 649N01-DIM	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:230710001
MFR.: LCZ	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:30DEG
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g Range: 0 - 90DEG
 g Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
 Humidity:65.0%
 Test Distance:5.835m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG	g Range: 0 - 90DEG
C Interval: 5.0DEG	g Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.275
Temperature:30DEG	Humidity:65.0%
Operators:HCZ	Test Distance:5.835m [K=1.0000]
Test Date:2023-08-16	Remarks: