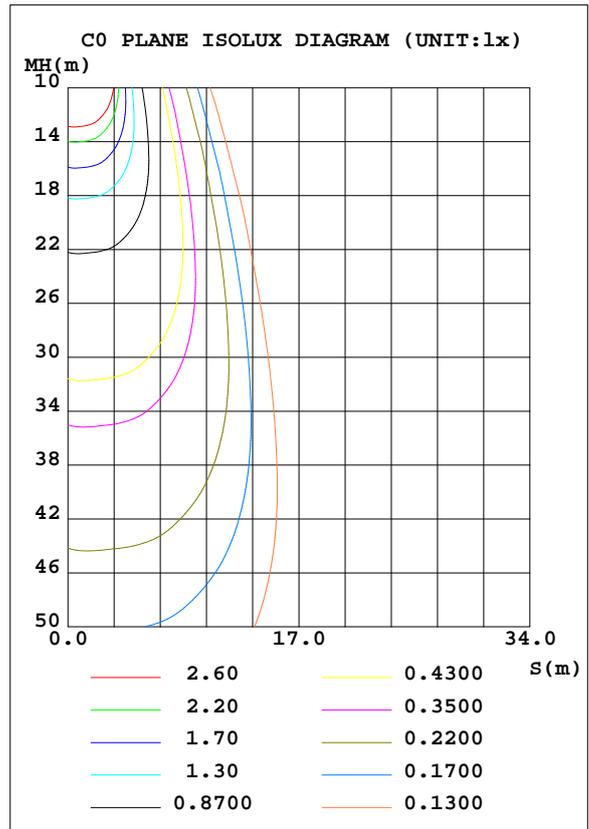
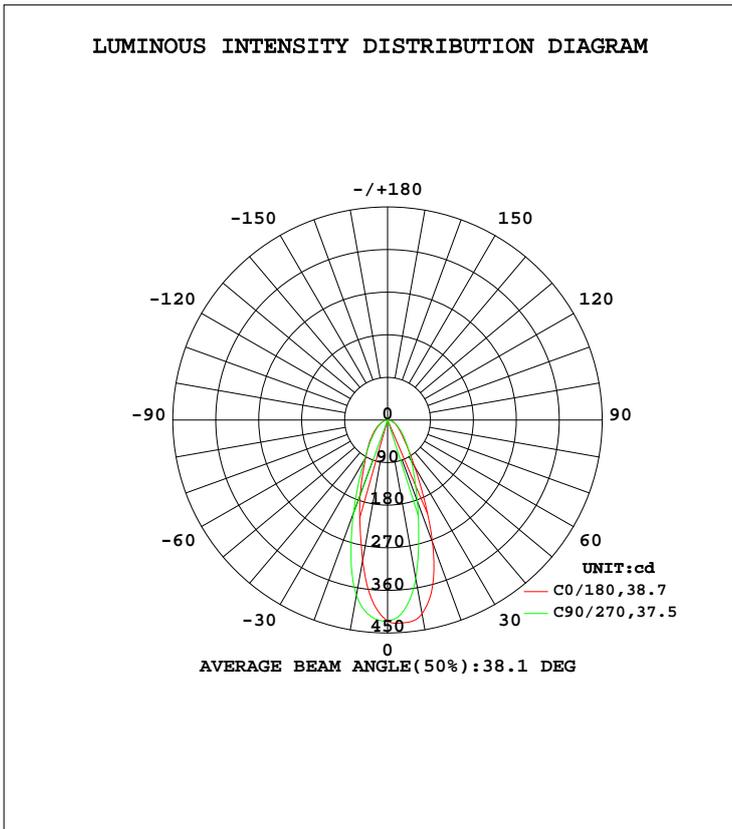


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.02 lm/W			
MODEL	MR11 3W 24V	I _{max} (cd)	429.7	S/MH(C0/180)	0.51
NOMINAL POWER(W)	3	LOR(%)	100.0	S/MH(C90/270)	0.65
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	317.60	η UP, DN(C0-180)	0.5,52.4
NOMINAL FLUX(lm)	317.603	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.4,46.7
LAMPS INSIDE	1	η up(%)	0.9	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	24	η down(%)	99.1	CIBSE SHR MAX	0.65



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270				γ	Φ zone	Φ total	%lum, lamp
10	415.9	340.2	301.3	376.1				0- 10	37.34	37.34	11.8,11.8
20	275.4	182.4	167.9	209.7				10- 20	78.30	115.6	36.4,36.4
30	112.9	100.3	92.03	97.54				20- 30	66.88	182.5	57.5,57.5
40	54.28	59.10	57.25	53.34				30- 40	46.83	229.4	72.2,72.2
50	32.71	36.48	35.36	31.67				40- 50	33.80	263.1	82.9,82.9
60	21.25	21.96	21.02	19.78				50- 60	24.10	287.2	90.4,90.4
70	13.61	11.64	10.71	11.30				60- 70	16.04	303.3	95.5,95.5
80	7.074	4.428	3.507	4.321				70- 80	8.599	311.9	98.2,98.2
90	2.061	0.1006	0.4774	0.3121				80- 90	2.720	314.6	99.1,99.1
100	0.1062	0.1006	0.1138	0.0852				90-100	0.3068	314.9	99.2,99.2
110	0.1062	0.1781	0.1671	0.1006				100-110	0.1254	315.0	99.2,99.2
120	0.2124	0.3020	0.2808	0.2322				110-120	0.1920	315.2	99.3,99.3
130	0.3718	0.5035	0.5010	0.3558				120-130	0.2970	315.5	99.3,99.3
140	0.6444	0.8129	0.8044	0.6192				130-140	0.4419	316.0	99.5,99.5
150	0.9708	1.154	1.116	0.9444				140-150	0.5534	316.5	99.7,99.7
160	1.282	1.394	1.358	1.223				150-160	0.5473	317.1	99.8,99.8
170	1.442	1.486	1.457	1.362				160-170	0.3926	317.5	100,100
180	1.449	1.494	1.495	1.479				170-180	0.1379	317.6	100,100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm		

Conical surface Flux(90deg): 247.59 lm

%lum = 78.0%
 %lamp = 78.0%

Conical surface Flux(120deg): 287.25 lm

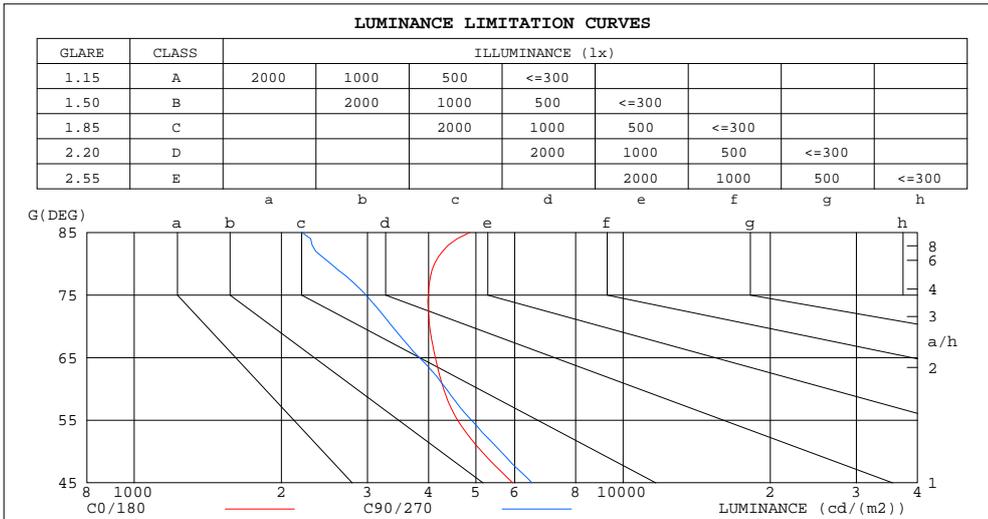
%lum = 90.4%
 %lamp = 90.4%

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4863	2203
80	4114	2524
75	3994	2980
70	4019	3368
65	4131	3830
60	4293	4348
55	4587	4894
50	5139	5619
45	5945	6515

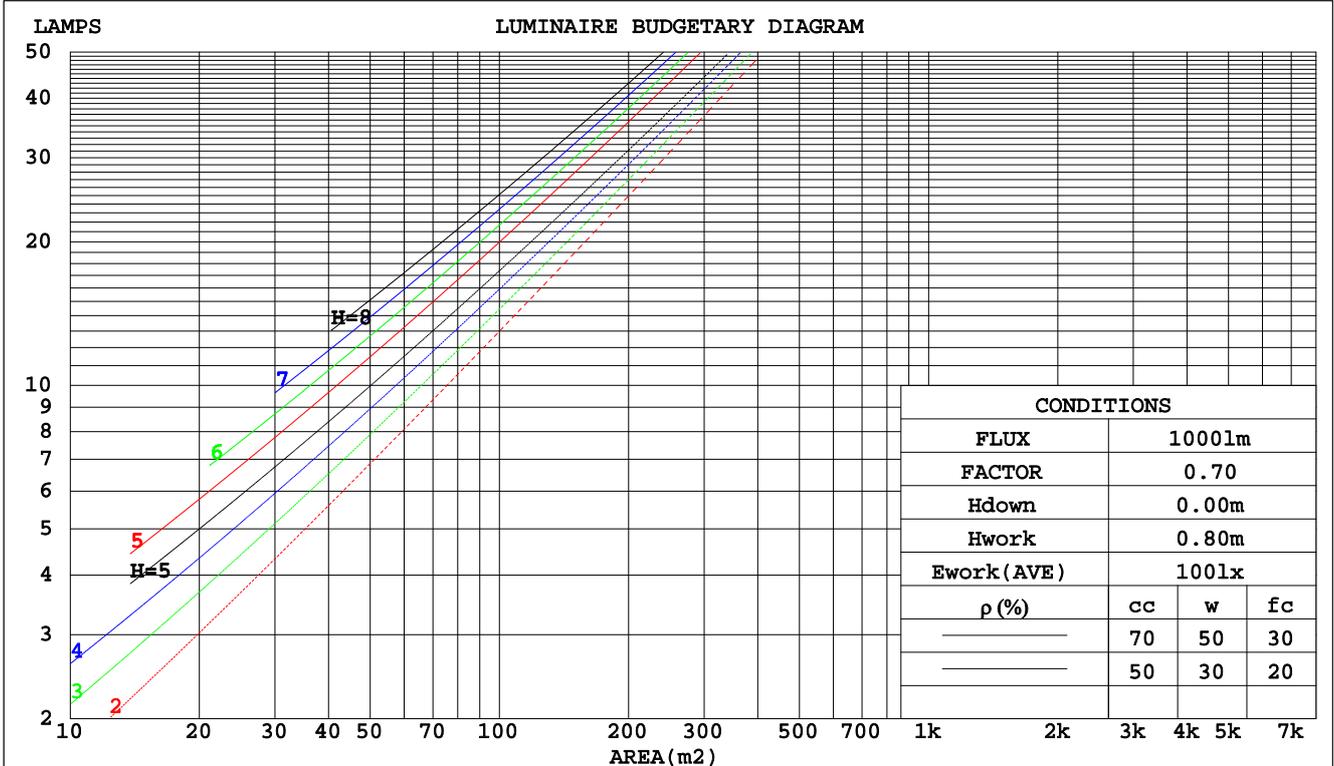
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators:
 Test Date: 2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity: 47.5%
 Test Distance: 10.680m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.92	.91	.89
2.0	.98	.93	.89	.97	.92	.88	.93	.89	.86	.90	.87	.84	.87	.84	.82	.80
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.83	.79	.76	.81	.77	.75	.73
4.0	.83	.77	.72	.82	.76	.71	.80	.74	.70	.77	.73	.69	.75	.71	.68	.66
5.0	.77	.70	.65	.76	.70	.65	.74	.69	.64	.72	.67	.64	.70	.66	.63	.61
6.0	.72	.65	.60	.71	.65	.60	.69	.64	.59	.68	.63	.59	.66	.62	.58	.57
7.0	.67	.60	.56	.67	.60	.55	.65	.59	.55	.64	.59	.55	.62	.58	.54	.53
8.0	.63	.56	.52	.63	.56	.52	.61	.56	.51	.60	.55	.51	.59	.54	.51	.49
9.0	.60	.53	.49	.59	.53	.49	.58	.52	.48	.57	.52	.48	.56	.51	.48	.46
10.0	.56	.50	.46	.56	.50	.46	.55	.49	.46	.54	.49	.45	.53	.49	.45	.44



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding 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	.225	.128	.040	.218	.124	.039	.204	.117	.037	.192	.111	.036	.181	.105	.034	
2.0	.212	.116	.036	.206	.114	.035	.195	.108	.034	.184	.103	.032	.174	.099	.031	
3.0	.199	.106	.032	.193	.104	.031	.183	.099	.030	.174	.095	.029	.166	.092	.028	
4.0	.186	.096	.028	.181	.095	.028	.172	.091	.027	.164	.088	.027	.157	.085	.026	
5.0	.174	.089	.026	.170	.087	.025	.162	.084	.025	.155	.082	.024	.148	.079	.024	
6.0	.163	.082	.023	.160	.081	.023	.153	.078	.023	.147	.076	.022	.141	.074	.022	
7.0	.154	.076	.022	.151	.075	.021	.145	.073	.021	.139	.071	.021	.134	.069	.020	
8.0	.145	.071	.020	.142	.070	.020	.137	.068	.020	.132	.067	.019	.127	.065	.019	
9.0	.137	.066	.019	.135	.066	.018	.130	.064	.018	.126	.063	.018	.121	.062	.018	
10.0	.130	.063	.017	.128	.062	.017	.124	.061	.017	.120	.059	.017	.116	.058	.017	

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	.198	.198	.198	.169	.169	.169	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.182	.164	.148	.155	.141	.128	.106	.097	.088	.061	.056	.051	.020	.018	.017	
2.0	.169	.140	.115	.145	.120	.099	.099	.083	.069	.057	.048	.041	.018	.016	.013	
3.0	.158	.121	.092	.136	.105	.080	.093	.073	.056	.054	.042	.033	.017	.014	.011	
4.0	.149	.107	.075	.127	.092	.065	.088	.064	.046	.051	.038	.027	.016	.012	.009	
5.0	.140	.096	.063	.120	.083	.055	.083	.058	.039	.048	.034	.023	.015	.011	.008	
6.0	.133	.087	.054	.114	.075	.047	.079	.053	.033	.046	.031	.020	.015	.010	.007	
7.0	.126	.079	.047	.108	.069	.041	.075	.048	.029	.043	.028	.017	.014	.009	.006	
8.0	.120	.073	.041	.103	.064	.036	.071	.045	.026	.041	.026	.015	.013	.009	.005	
9.0	.114	.068	.037	.098	.059	.032	.068	.042	.023	.040	.025	.014	.013	.008	.005	
10.0	.109	.064	.033	.094	.055	.029	.065	.039	.021	.038	.023	.012	.012	.008	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm										
NAME: MR11 3W 24V					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:			Shielding 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	20.2	21.3	20.4	21.5	21.7	20.3	21.4	20.6	21.6	21.8
3H	21.4	22.4	21.7	22.6	22.9	21.2	22.3	21.5	22.5	22.7
4H	22.0	22.9	22.3	23.2	23.4	21.6	22.6	21.9	22.8	23.1
6H	22.5	23.4	22.8	23.7	23.9	21.9	22.8	22.2	23.1	23.3
8H	22.7	23.6	23.0	23.9	24.2	21.9	22.8	22.3	23.1	23.4
12H	22.9	23.8	23.3	24.1	24.4	22.0	22.8	22.3	23.1	23.4
4H 2H	20.6	21.6	20.9	21.8	22.1	20.7	21.7	21.0	21.9	22.2
3H	22.0	22.9	22.4	23.2	23.5	21.9	22.7	22.2	23.0	23.3
4H	22.7	23.5	23.1	23.8	24.2	22.4	23.1	22.7	23.5	23.8
6H	23.4	24.1	23.8	24.4	24.8	22.7	23.4	23.1	23.8	24.1
8H	23.7	24.3	24.1	24.7	25.1	22.8	23.5	23.3	23.9	24.3
12H	24.0	24.6	24.4	25.0	25.4	22.9	23.5	23.4	23.9	24.3
8H 4H	22.9	23.6	23.3	23.9	24.3	22.6	23.2	23.0	23.6	24.0
6H	23.7	24.3	24.2	24.7	25.1	23.1	23.6	23.6	24.0	24.5
8H	24.2	24.6	24.6	25.1	25.5	23.3	23.8	23.8	24.2	24.7
12H	24.6	25.0	25.0	25.4	25.9	23.5	23.9	23.9	24.3	24.8
12H 4H	22.9	23.5	23.4	23.9	24.3	22.6	23.2	23.0	23.6	24.0
6H	23.8	24.3	24.3	24.7	25.2	23.2	23.6	23.6	24.1	24.5
8H	24.2	24.6	24.7	25.1	25.6	23.4	23.8	23.9	24.3	24.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.4				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
2.0H	+ 0.3 / - 0.3					+ 0.5 / - 0.4				

CIE Pub.117, 317.6 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -4.0)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

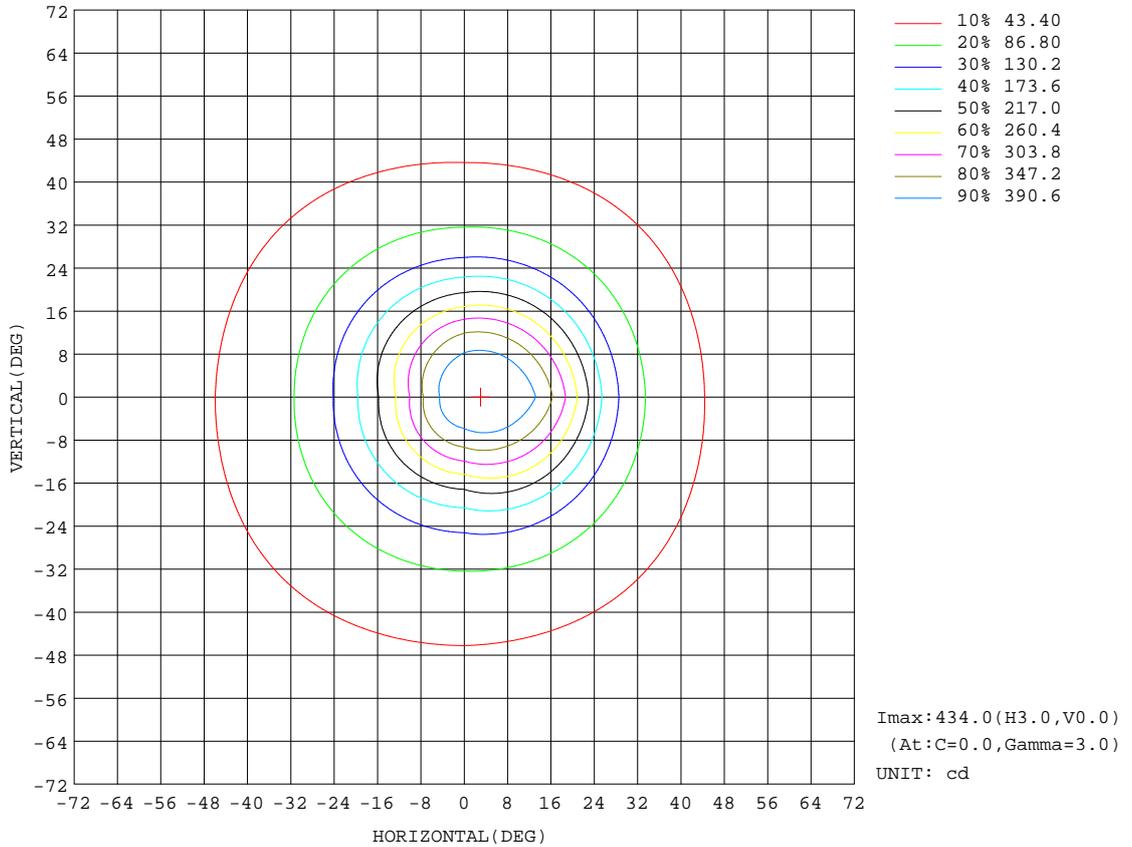
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	74	66	61	74	66	60	73	65	60	55
0.80	83	75	69	82	74	69	81	74	69	64
1.00	89	81	76	88	81	76	86	81	75	70
1.25	95	87	82	93	86	82	91	85	81	75
1.50	98	91	86	97	90	86	94	89	85	79
2.00	103	97	92	101	96	91	98	93	90	83
2.50	105	100	96	103	98	95	100	96	93	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	105	103	101	93
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

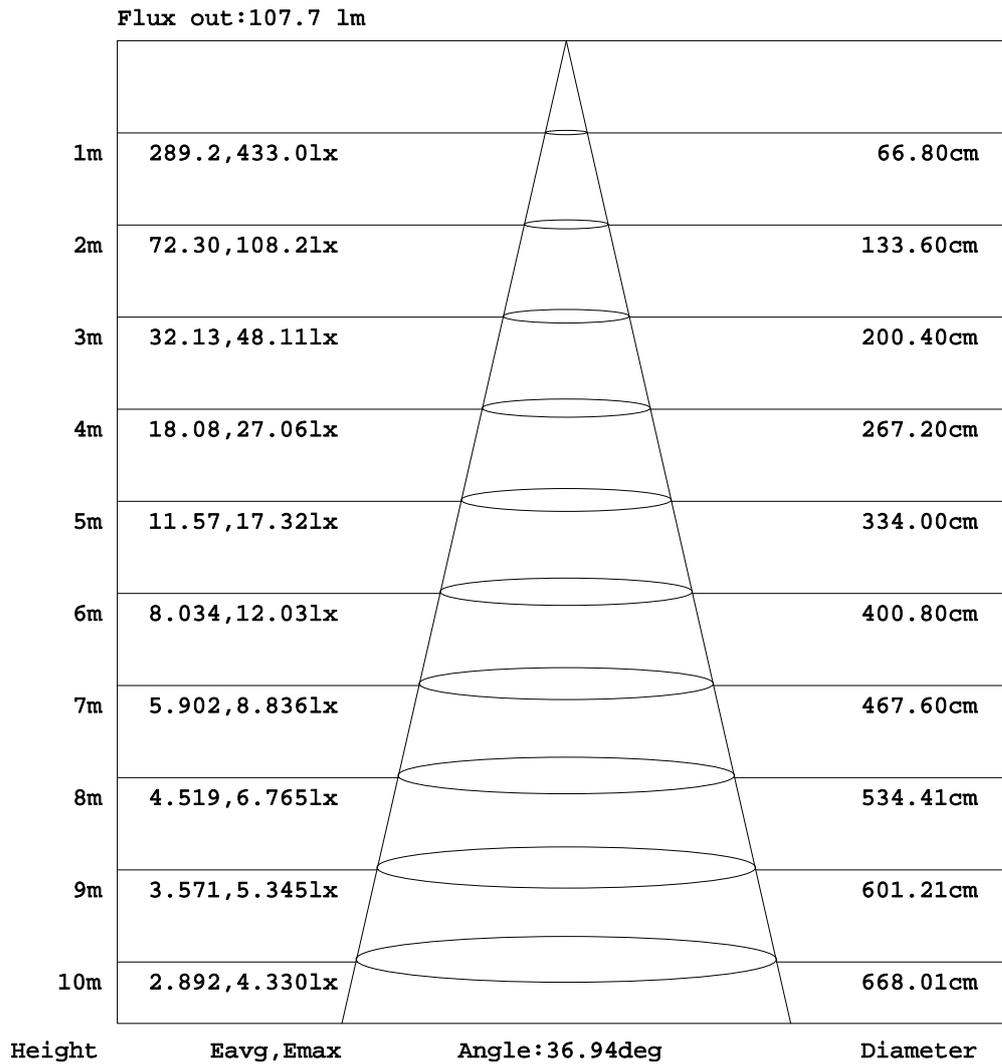


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators:
 Test Date: 2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity: 47.5%
 Test Distance: 10.680m [K=1.0000]
 Remarks:

AAI Figure

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



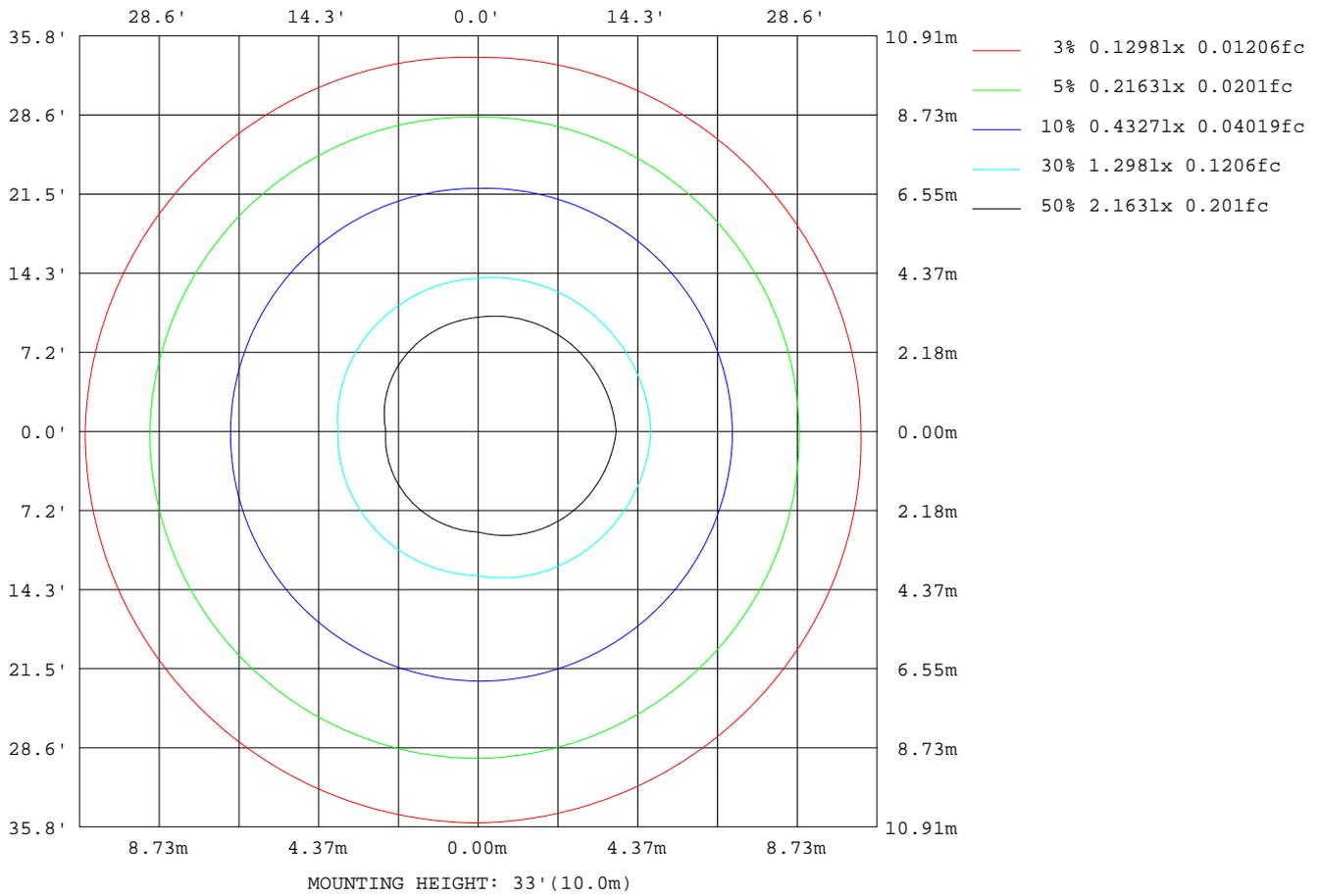
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

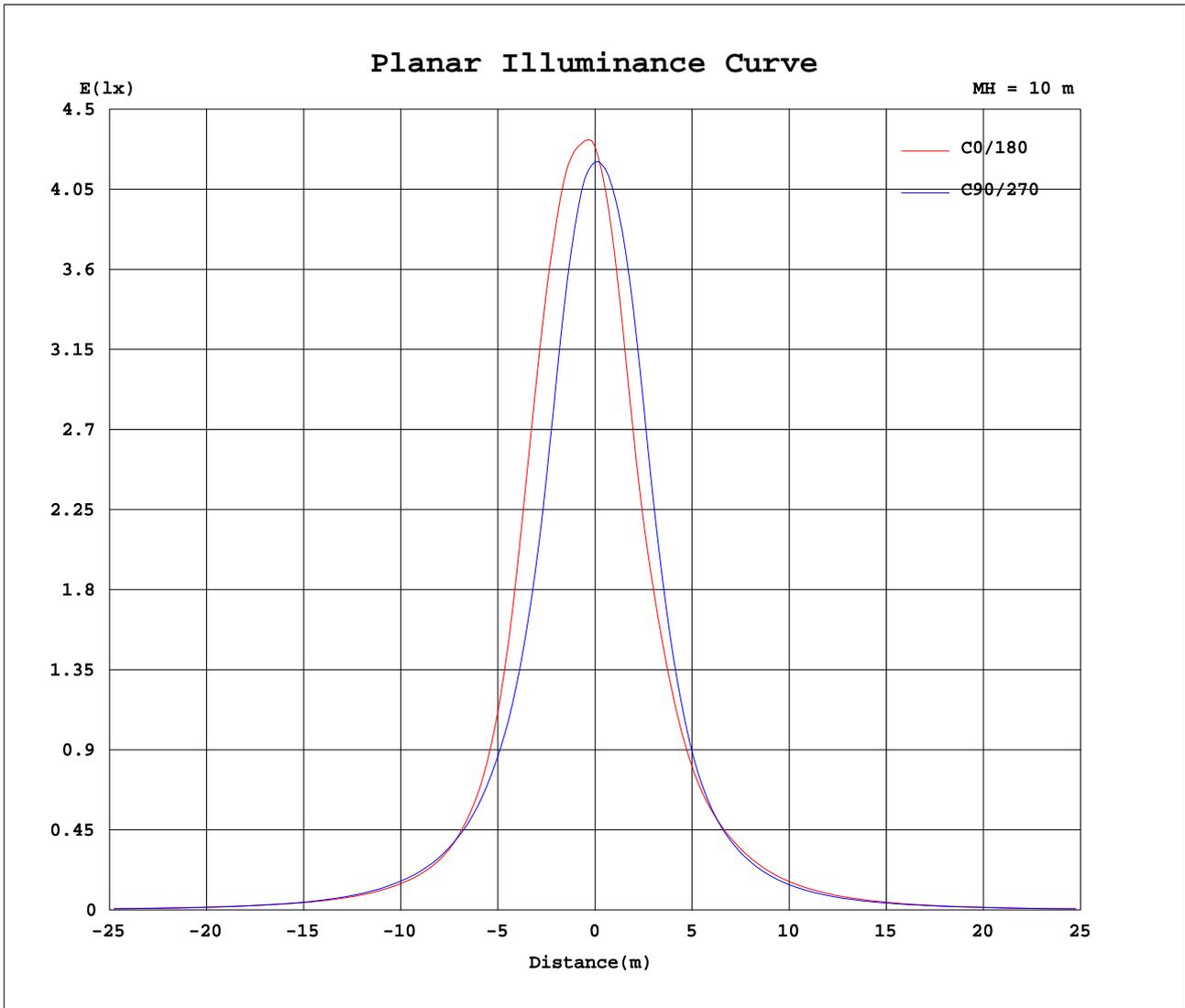
AvgL	cd/m2
L_0~180(65)av	3878
L_0~180(75)av	3268
L_0~180(85)av	3166
L_90~270(65)av	3752
L_90~270(75)av	2969
L_90~270(85)av	2272
L_45(65)av	3787
L_45(75)av	3040
L_45(85)av	2510

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators:
 Test Date: 2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity: 47.5%
 Test Distance: 10.680m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.04V I:0.1139A P:2.737W PF:0.9996 Freq:0Hz Lamp Flux:317.603x1 lm		
NAME: MR11 3W 24V	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	90	180	270															
0	425	425	425	425															
5	430	403	381	415															
10	416	340	301	376															
15	364	252	224	297															
20	275	182	168	210															
25	178	133	122	142															
30	113	100	92.0	97.5															
35	76.3	76.5	72.6	71.0															
40	54.3	59.1	57.2	53.3															
45	41.6	46.5	45.0	40.8															
50	32.7	36.5	35.4	31.7															
55	26.1	28.4	27.5	24.9															
60	21.3	22.0	21.0	19.8															
65	17.3	16.4	15.5	15.4															
70	13.6	11.6	10.7	11.3															
75	10.2	7.79	6.68	7.58															
80	7.07	4.43	3.51	4.32															
85	4.20	1.94	1.32	2.02															
90	2.06	0.10	0.48	0.31															
95	0.49	0.09	0.15	0.09															
100	0.11	0.10	0.11	0.09															
105	0.11	0.15	0.13	0.10															
110	0.11	0.18	0.17	0.10															
115	0.17	0.22	0.22	0.13															
120	0.21	0.30	0.28	0.23															
125	0.29	0.38	0.37	0.27															
130	0.37	0.50	0.50	0.36															
135	0.49	0.65	0.64	0.47															
140	0.64	0.81	0.80	0.62															
145	0.82	0.99	0.96	0.78															
150	0.97	1.15	1.12	0.94															
155	1.13	1.30	1.25	1.11															
160	1.28	1.39	1.36	1.22															
165	1.38	1.46	1.41	1.35															
170	1.44	1.49	1.46	1.36															
175	1.44	1.49	1.49	1.39															
180	1.45	1.49	1.49	1.48															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:
 Test Date:2022-11-01

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.361
 Humidity:47.5%
 Test Distance:10.680m [K=1.0000]
 Remarks: