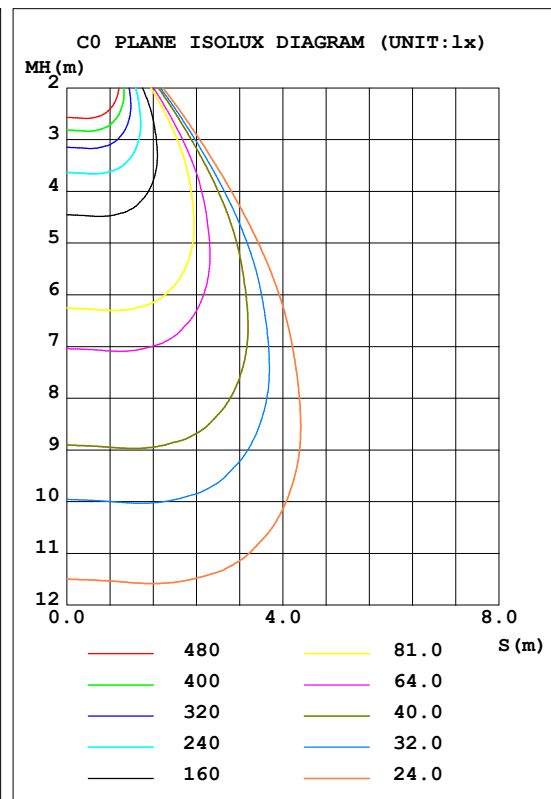
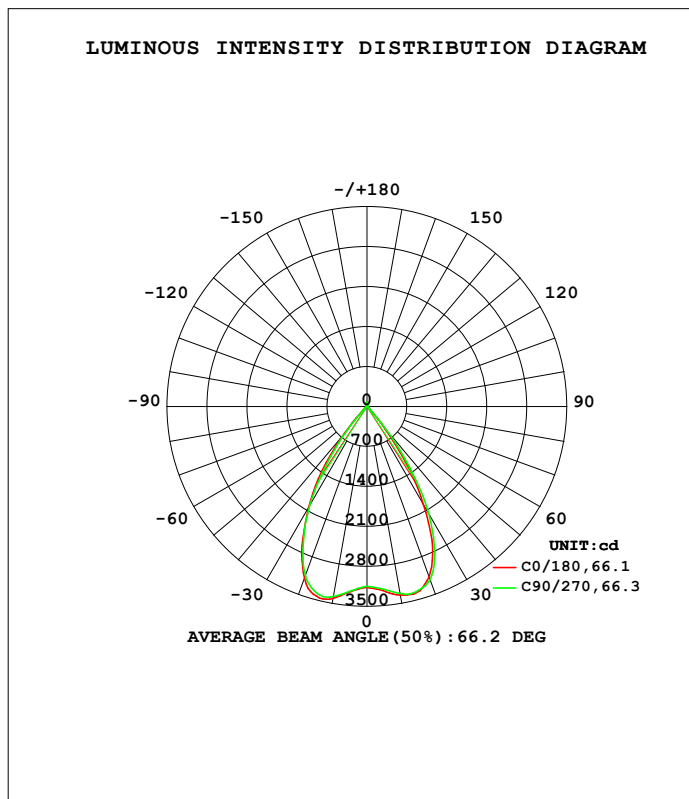


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:110.5V I:0.3677A P:39.95W PF:0.9828 Freq:49.99Hz Lamp Flux:3565.48x1 lm		
NAME: ML-PL60-60°	TYPE:	WEIGHT:
SPEC.:	DIM.: 1100*50mm	SERIAL No.:
MFR.: COLORS	SUR.:1100*50mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 89.26 lm/W			
MODEL		I _{max} (cd)	3455	S/MH (C0/180)	0.95
NOMINAL POWER (W)	40	LOR (%)	100.0	S/MH (C90/270)	0.96
RATED VOLTAGE (V)	110	TOTAL FLUX (lm)	3565.5	η UP, DN (C0-180)	1.8, 48.5
NOMINAL FLUX (lm)	3565.48	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.5, 48.2
LAMPS INSIDE	1	η up (%)	3.3	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	110	η down (%)	96.7	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

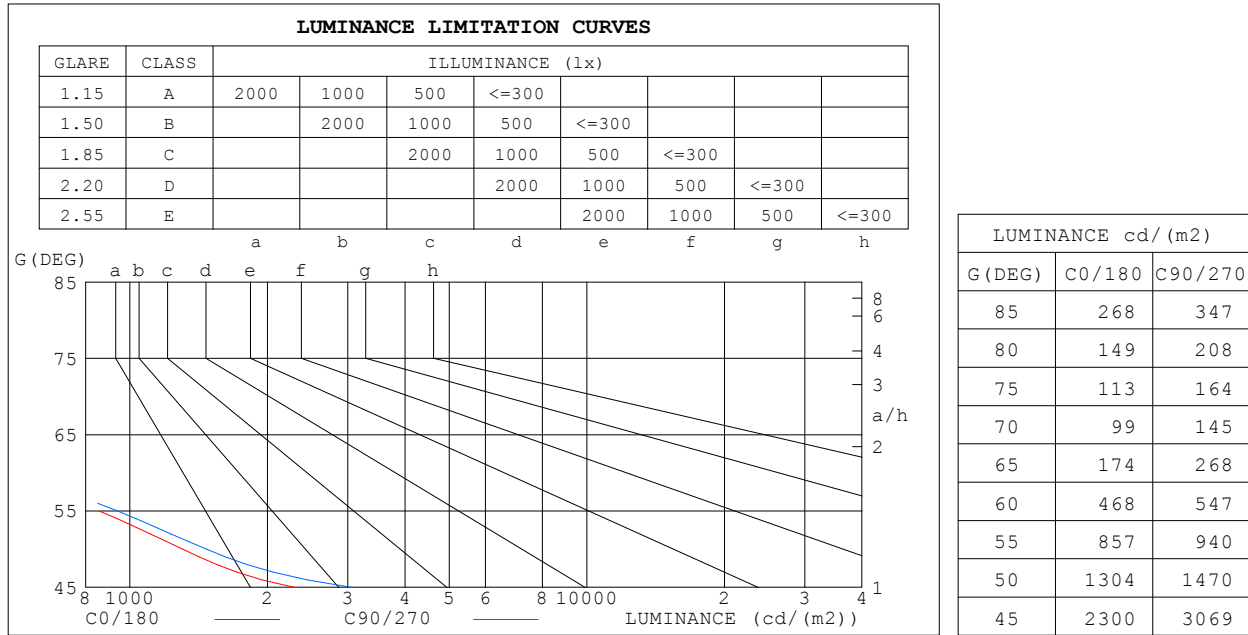
ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ zone	Φ total	%lum,lamp
10	3353	3335	3324	3312	3410	3386	3377	3371	0- 10	312.7	312.7	8.77,8.77
20	3177	3233	3227	3220	3200	3175	3158	3146	10- 20	945.6	1258	35.3,35.3
30	1981	2172	2171	2171	2042	2023	2007	1996	20- 30	1230	2488	69.8,69.8
40	392.3	514.2	519.2	523.0	614.0	536.4	527.8	518.1	30- 40	785.1	3273	91.8,91.8
50	46.10	51.83	51.96	51.88	55.08	52.96	52.46	51.92	40- 50	135.8	3409	95.6,95.6
60	12.87	15.02	15.05	15.04	16.44	15.21	15.04	14.86	50- 60	27.30	3436	96.4,96.4
70	1.866	2.691	2.737	2.661	2.080	2.906	2.835	2.889	60- 70	6.770	3443	96.6,96.6
80	1.427	1.960	1.985	1.972	1.547	2.165	2.086	2.160	70- 80	2.346	3445	96.6,96.6
90	1.271	1.325	1.350	1.319	1.289	1.464	1.414	1.458	80- 90	1.772	3447	96.7,96.7
100	1.642	1.710	1.630	1.680	1.451	1.439	1.494	1.433	90-100	1.535	3449	96.7,96.7
110	3.799	3.824	3.739	3.742	2.299	2.631	2.660	2.626	100-110	2.267	3451	96.8,96.8
120	10.56	10.31	10.16	10.11	6.329	7.235	7.229	7.249	110-120	5.420	3456	96.9,96.9
130	22.33	21.58	21.32	21.25	15.87	17.26	17.26	17.27	120-130	12.06	3469	97.3,97.3
140	36.87	35.36	35.01	34.92	30.60	31.81	31.74	31.75	130-140	20.17	3489	97.8,97.8
150	50.46	49.10	48.65	48.57	44.78	45.98	45.90	45.81	140-150	25.32	3514	98.6,98.6
160	64.78	63.77	63.22	63.13	57.60	58.43	58.32	58.15	150-160	24.83	3539	99.3,99.3
170	79.41	77.87	77.26	77.22	73.07	72.09	72.01	71.80	160-170	19.09	3558	99.8,99.8
180	84.89	83.06	82.61	82.56	85.11	82.81	82.75	82.38	170-180	7.516	3565	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.375m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

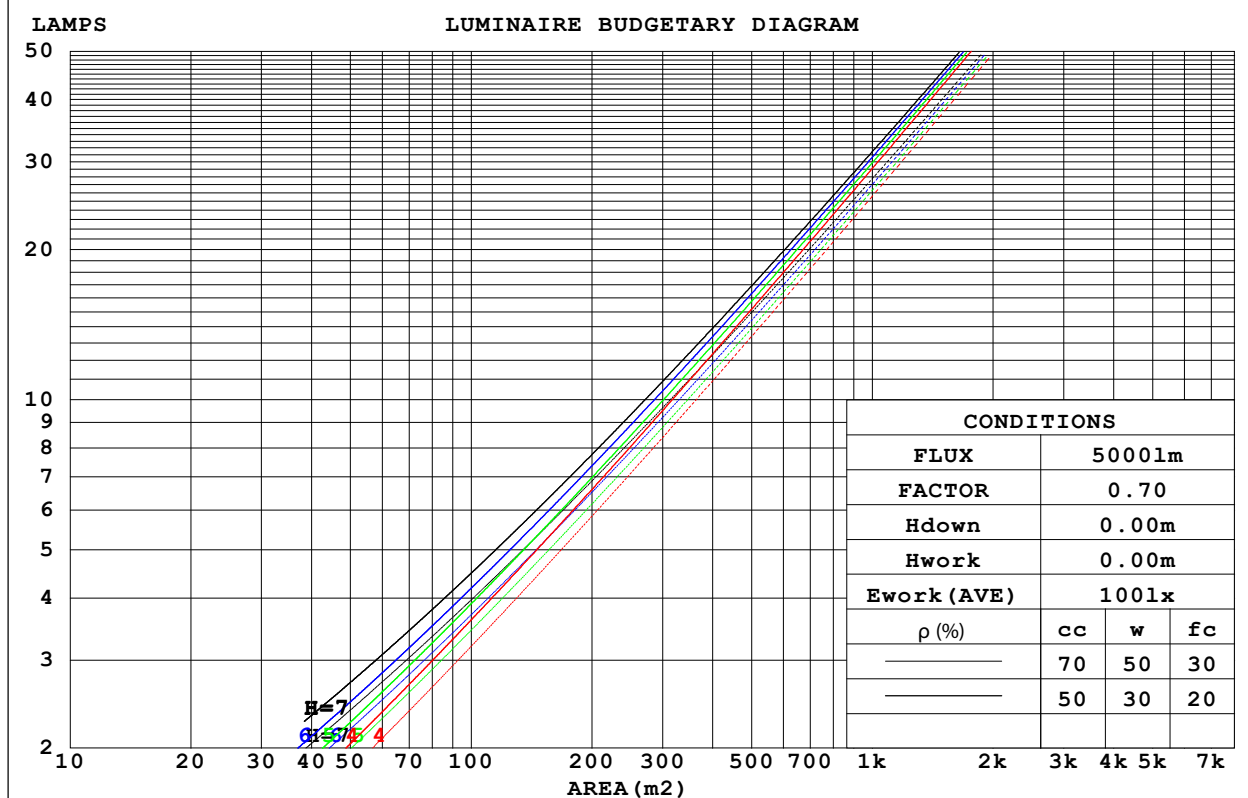


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.10	1.07	1.05	1.07	1.05	1.03	1.03	1.01	.99	.98	.97	.96	.94	.93	.92	.90
2.0	1.02	.98	.95	1.00	.96	.93	.96	.93	.91	.93	.90	.88	.90	.88	.86	.84
3.0	.95	.90	.86	.93	.89	.85	.90	.87	.83	.87	.84	.82	.85	.82	.80	.78
4.0	.89	.83	.79	.87	.82	.78	.85	.80	.77	.82	.79	.76	.80	.77	.75	.73
5.0	.83	.77	.73	.82	.76	.72	.80	.75	.71	.78	.74	.70	.76	.72	.69	.68
6.0	.78	.72	.67	.77	.71	.67	.75	.70	.66	.73	.69	.66	.72	.68	.65	.63
7.0	.73	.67	.63	.72	.66	.62	.71	.65	.62	.69	.65	.61	.68	.64	.61	.59
8.0	.69	.63	.58	.68	.62	.58	.66	.61	.58	.65	.61	.57	.64	.60	.57	.55
9.0	.65	.59	.55	.64	.58	.54	.63	.58	.54	.62	.57	.54	.61	.56	.53	.52
10.0	.61	.55	.51	.60	.55	.51	.59	.54	.51	.58	.54	.50	.57	.53	.50	.49



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

WEC AND CCEC

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.180	.102	.032	.172	.098	.031	.158	.091	.029	.145	.083	.027	.132	.077	.025	
2.0	.172	.094	.029	.166	.091	.028	.153	.085	.026	.142	.080	.025	.131	.074	.023	
3.0	.164	.087	.026	.159	.085	.026	.148	.080	.024	.138	.076	.023	.129	.071	.022	
4.0	.156	.081	.024	.152	.079	.023	.142	.075	.023	.134	.072	.022	.125	.068	.021	
5.0	.149	.076	.022	.145	.074	.022	.137	.071	.021	.129	.068	.020	.122	.065	.020	
6.0	.143	.072	.020	.139	.070	.020	.131	.067	.020	.125	.065	.019	.118	.062	.018	
7.0	.136	.067	.019	.133	.066	.019	.126	.064	.018	.120	.062	.018	.114	.059	.017	
8.0	.131	.064	.018	.128	.063	.018	.122	.061	.017	.116	.059	.017	.111	.057	.017	
9.0	.125	.061	.017	.123	.060	.017	.117	.058	.016	.112	.056	.016	.107	.054	.016	
10.0	.120	.058	.016	.118	.057	.016	.113	.055	.016	.108	.054	.015	.104	.052	.015	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.216	.216	.216	.184	.184	.184	.126	.126	.126	.072	.072	.072	.023	.023	.023	
1.0	.197	.183	.170	.168	.157	.146	.115	.108	.101	.066	.062	.059	.021	.020	.019	
2.0	.182	.158	.138	.156	.136	.119	.107	.094	.083	.062	.055	.049	.020	.018	.016	
3.0	.170	.139	.115	.146	.120	.100	.100	.084	.070	.058	.049	.041	.019	.016	.014	
4.0	.160	.125	.098	.137	.108	.085	.094	.075	.060	.055	.044	.035	.018	.014	.012	
5.0	.151	.113	.085	.130	.098	.074	.090	.069	.052	.052	.040	.031	.017	.013	.010	
6.0	.144	.104	.075	.124	.090	.066	.086	.063	.046	.050	.037	.028	.016	.012	.009	
7.0	.138	.097	.068	.119	.084	.059	.082	.059	.042	.048	.035	.025	.015	.011	.008	
8.0	.132	.091	.062	.114	.079	.054	.079	.055	.038	.046	.033	.023	.015	.011	.008	
9.0	.128	.086	.057	.110	.074	.050	.076	.052	.035	.044	.031	.021	.014	.010	.007	
10.0	.123	.081	.053	.106	.071	.047	.074	.050	.033	.043	.029	.020	.014	.010	.007	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.375m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

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	10.2	11.1	10.4	11.3	11.5	10.7	11.6	10.9	11.8	12.1
3H	10.0	10.8	10.3	11.1	11.3	10.5	11.3	10.8	11.6	11.9
4H	9.9	10.7	10.2	11.0	11.3	10.4	11.2	10.7	11.5	11.8
6H	9.8	10.5	10.1	10.8	11.1	10.3	11.1	10.6	11.4	11.7
8H	9.7	10.5	10.1	10.8	11.1	10.3	11.0	10.6	11.3	11.6
12H	9.7	10.4	10.1	10.7	11.0	10.2	10.9	10.6	11.2	11.6
4H 2H	9.9	10.7	10.2	11.0	11.3	10.4	11.2	10.7	11.5	11.8
3H	9.7	10.4	10.1	10.7	11.1	10.2	10.9	10.6	11.2	11.6
4H	9.6	10.2	10.0	10.6	10.9	10.1	10.7	10.5	11.1	11.5
6H	9.5	10.0	9.9	10.4	10.8	10.0	10.5	10.4	10.9	11.4
8H	9.4	9.9	9.9	10.4	10.8	9.9	10.5	10.4	10.9	11.3
12H	9.4	9.8	9.8	10.3	10.7	9.9	10.4	10.4	10.8	11.2
8H 4H	9.4	9.9	9.9	10.3	10.8	9.9	10.5	10.4	10.9	11.3
6H	9.3	9.7	9.8	10.2	10.7	9.8	10.3	10.3	10.7	11.2
8H	9.3	9.6	9.8	10.1	10.6	9.8	10.2	10.3	10.6	11.1
12H	9.2	9.5	9.7	10.0	10.6	9.7	10.0	10.3	10.5	11.1
12H 4H	9.4	9.8	9.8	10.3	10.7	9.9	10.4	10.4	10.8	11.2
6H	9.3	9.6	9.8	10.1	10.6	9.8	10.1	10.3	10.6	11.1
8H	9.2	9.5	9.7	10.0	10.6	9.7	10.0	10.2	10.5	11.1
Variations with the observer position at spacings:										
S = 1.0H	+ 3.8 / -13.2					+ 4.0 / -13.4				
1.5H	+ 6.4 / -10.2					+ 6.6 / -10.9				
2.0H	+ 4.5 / - 5.6					+ 5.6 / - 5.6				

CIE Pub.117, 3565 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 4.4)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.375m [K=1.0000]
 Remarks:

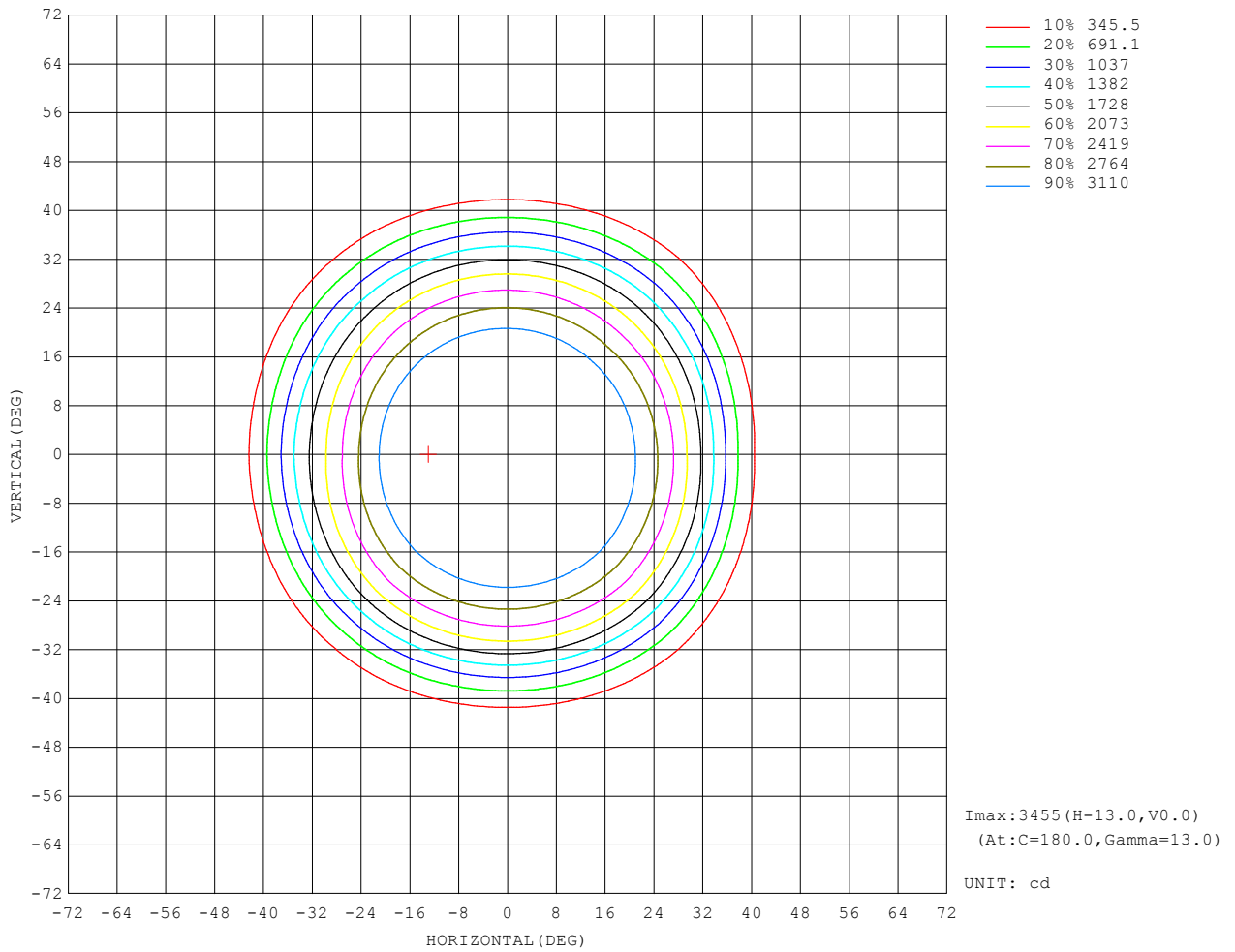
UTILIZATION FACTORS TABLE

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	86	80	76	86	80	76	85	79	76	72
0.80	94	88	84	93	88	84	92	87	84	80
1.00	98	93	89	97	92	89	95	92	88	84
1.25	102	97	94	101	96	93	99	95	92	87
1.50	105	100	97	103	99	96	101	97	95	90
2.00	108	103	100	106	102	99	103	100	97	91
2.50	109	105	102	107	104	101	104	101	99	92
3.00	111	107	105	109	106	103	105	103	101	93
4.00	113	110	108	111	108	106	106	105	103	95
5.00	114	112	110	112	110	108	107	106	105	96
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004	Suspended						SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

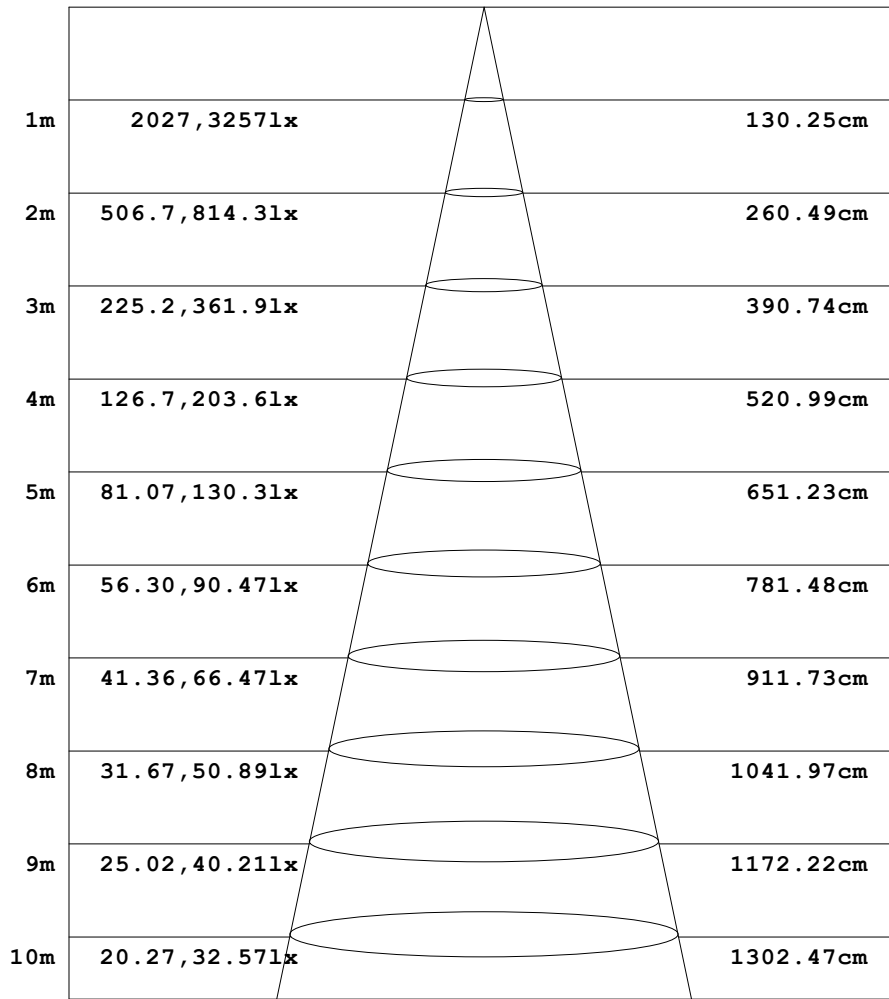


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

AAI Figure

Flux out:2897 lm



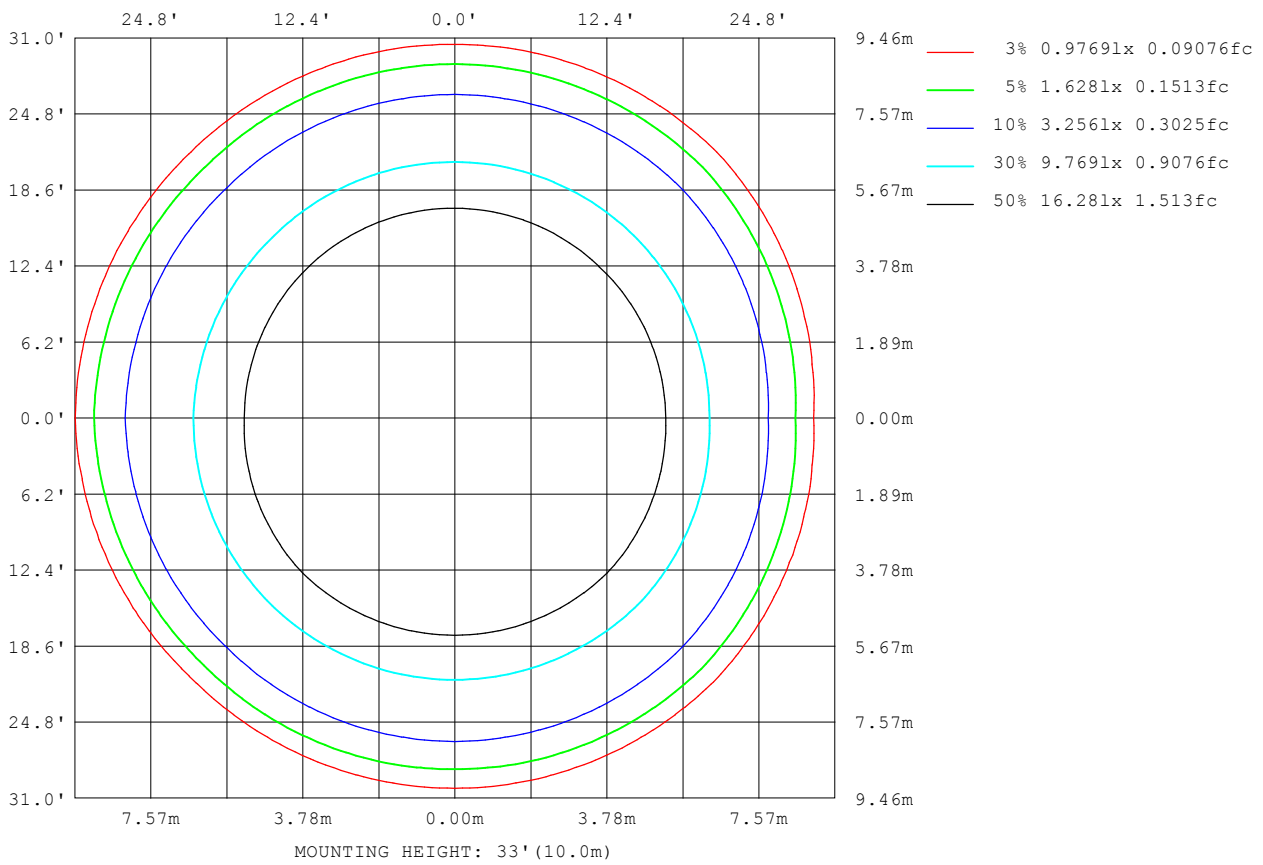
Height Eavg, Emax Angle: 66.15deg Diameter

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

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2025-01-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: GO-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.375m [K=1.0000]
Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:110.5V I:0.3677A P:39.95W PF:0.9828 Freq:49.99Hz Lamp Flux:3565.48x1 lm		
NAME: ML-PL60-60°	TYPE:	WEIGHT:
SPEC.:	DIM.: 1100*50mm	SERIAL No.:
MFR.: Mercury Lighting	SUR.:1100*50mm	Shielding Angle:

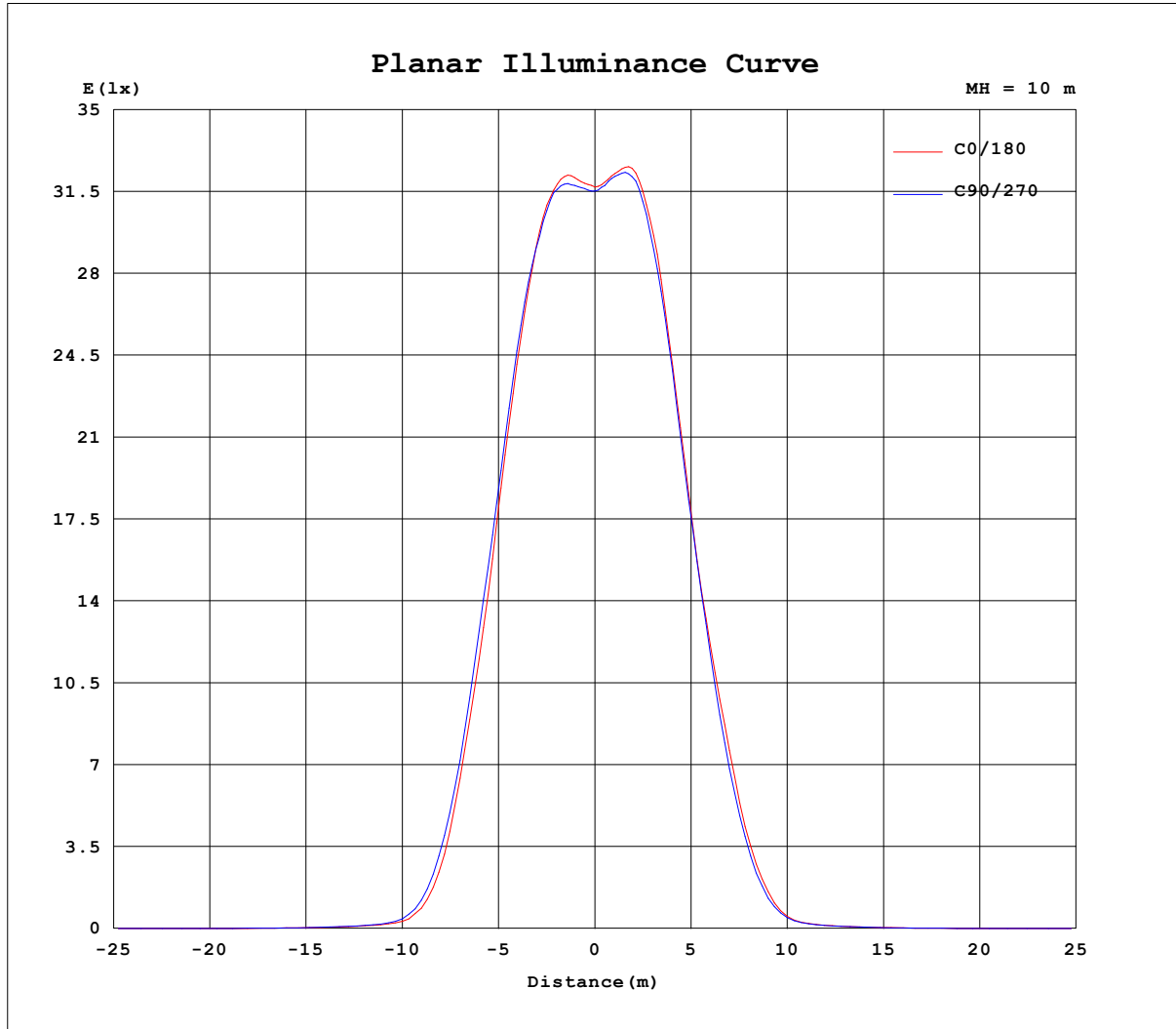
AvgL	cd/m2
L_0~180 (65) av	214
L_0~180 (75) av	121
L_0~180 (85) av	275
L_90~270 (65) av	270
L_90~270 (75) av	167
L_90~270 (85) av	362
L_45 (65) av	270
L_45 (75) av	167
L_45 (85) av	360

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.375m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	45	90	135	180	225	270	315										
0	3169	3159	3152	3140	3169	3159	3152	3140										
5	3238	3218	3207	3201	3253	3248	3243	3234										
10	3353	3335	3324	3312	3410	3386	3377	3371										
15	3372	3358	3352	3342	3433	3398	3388	3375										
20	3177	3233	3227	3220	3200	3175	3158	3146										
25	2721	2813	2811	2811	2693	2660	2645	2634										
30	1981	2172	2171	2171	2042	2023	2007	1996										
35	1168	1302	1309	1314	1386	1257	1245	1229										
40	392	514	519	523	614	536	528	518										
45	89.5	118	119	120	147	137	134	132										
50	46.1	51.8	52.0	51.9	55.1	53.0	52.5	51.9										
55	27.0	29.6	29.7	29.6	32.1	29.9	29.6	29.3										
60	12.9	15.0	15.1	15.0	16.4	15.2	15.0	14.9										
65	4.05	6.18	6.24	6.18	5.91	6.46	6.33	6.29										
70	1.87	2.69	2.74	2.66	2.08	2.91	2.83	2.89										
75	1.61	2.29	2.34	2.27	1.82	2.48	2.42	2.49										
80	1.43	1.96	1.99	1.97	1.55	2.17	2.09	2.16										
85	1.28	1.62	1.66	1.61	1.36	1.84	1.81	1.83										
90	1.27	1.33	1.35	1.32	1.29	1.46	1.41	1.46										
95	1.44	1.44	1.40	1.42	1.34	1.36	1.37	1.35										
100	1.64	1.71	1.63	1.68	1.45	1.44	1.49	1.43										
105	2.28	2.38	2.31	2.34	1.66	1.80	1.82	1.77										
110	3.80	3.82	3.74	3.74	2.30	2.63	2.66	2.63										
115	6.50	6.41	6.30	6.27	3.74	4.33	4.36	4.35										
120	10.6	10.3	10.2	10.1	6.33	7.24	7.23	7.25										
125	15.9	15.4	15.2	15.2	10.4	11.5	11.5	11.6										
130	22.3	21.6	21.3	21.3	15.9	17.3	17.3	17.3										
135	29.5	28.4	28.1	28.0	22.8	24.3	24.2	24.2										
140	36.9	35.4	35.0	34.9	30.6	31.8	31.7	31.8										
145	43.8	42.2	41.9	41.8	38.1	39.2	39.2	39.1										
150	50.5	49.1	48.6	48.6	44.8	46.0	45.9	45.8										
155	57.3	56.2	55.7	55.7	50.9	52.1	52.0	52.0										
160	64.8	63.8	63.2	63.1	57.6	58.4	58.3	58.2										
165	72.3	71.3	70.6	70.6	65.2	65.2	65.1	65.0										
170	79.4	77.9	77.3	77.2	73.1	72.1	72.0	71.8										
175	84.1	82.1	81.6	81.5	80.3	78.5	78.4	78.2										
180	84.9	83.1	82.6	82.6	85.1	82.8	82.8	82.4										

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2025-01-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks: