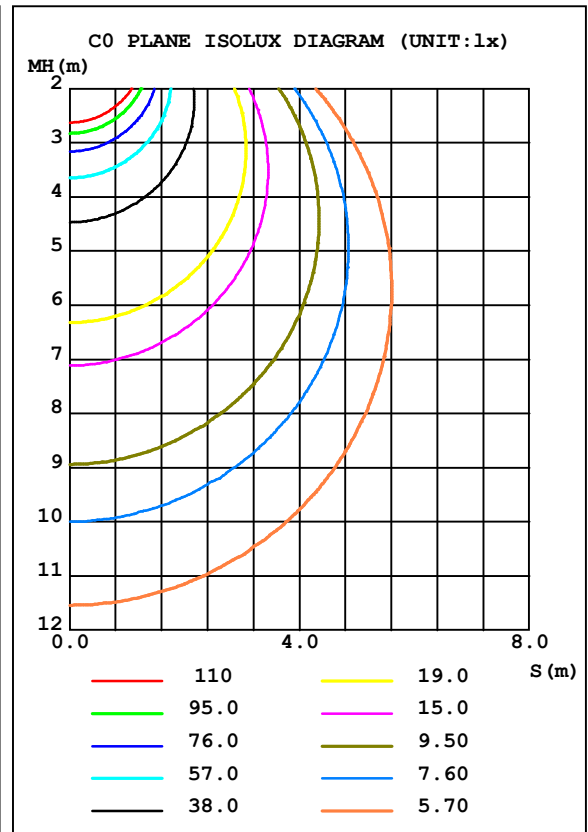
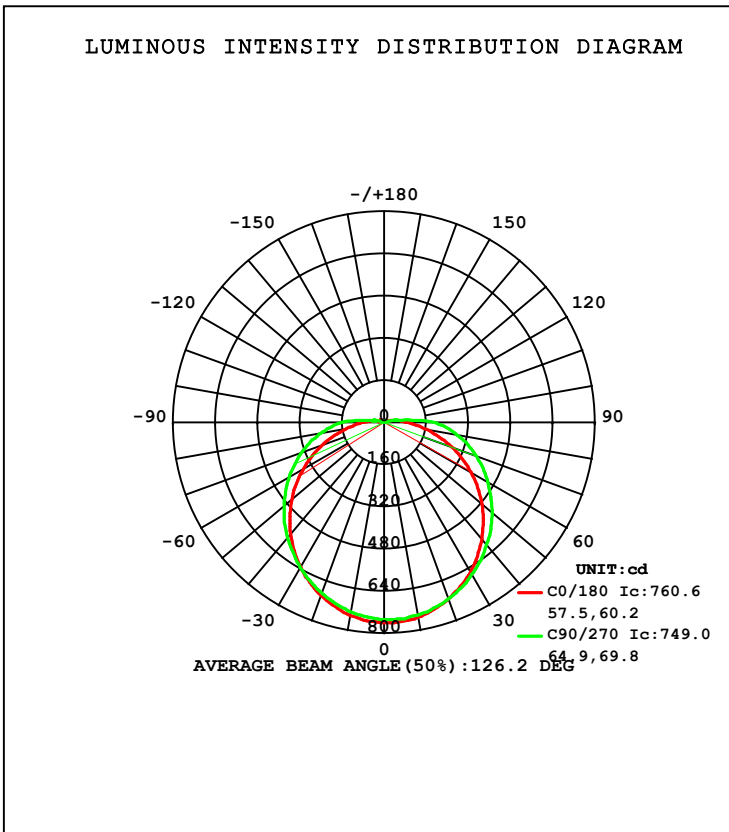


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.26V I:0.1333A P:29.566W PF:0.9635 Freq:49.99Hz Lamp Flux:2749.87x1 lm		
NAME: MPL8 30W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	MPL8	I _{max} (cd)	760.6	S/MH (C0/180)	1.28
NOMINAL POWER (W)	30	LOR (%)	100.0	S/MH (C90/270)	1.33
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	2749.9	η UP, DN (C0-180)	2.6, 45.5
NOMINAL FLUX (lm)	2749.87	CIE CLASS	DIRECT	η UP, DN (C180-360)	3.1, 48.8
LAMPS INSIDE	1	η up (%)	5.6	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	230	η down (%)	94.4	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

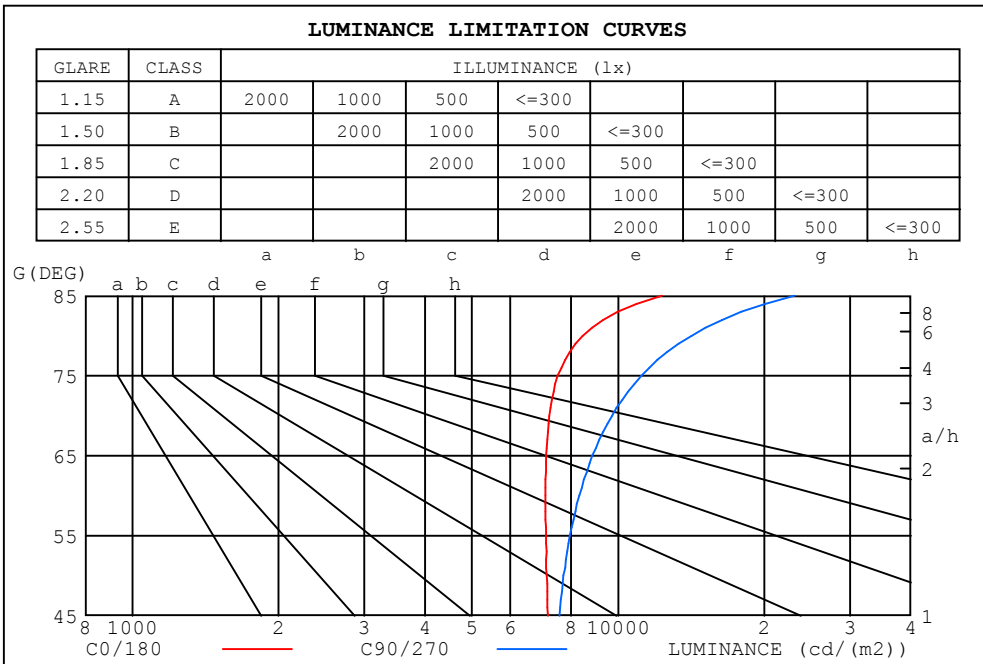
ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	743.5	729.1	750.4	741.7					0- 10	71.36	71.36	2.6,2.6
20	700.3	690.5	713.7	713.3					10- 20	204.8	276.1	10,10
30	634.7	636.2	656.2	666.0					20- 30	312.9	589.1	21.4,21.4
40	552.1	570.5	577.8	606.9					30- 40	384.5	973.6	35.4,35.4
50	458.4	495.9	485.2	535.6					40- 50	414.3	1388	50.5,50.5
60	354.3	415.9	382.6	455.2					50- 60	401.3	1789	65.1,65.1
70	246.6	332.1	272.8	372.9					60- 70	350.9	2140	77.8,77.8
80	146.6	245.3	165.8	283.1					70- 80	272.2	2412	87.7,87.7
90	81.07	160.4	88.24	190.7					80- 90	183.0	2595	94.4,94.4
100	32.34	37.56	51.14	48.33					90-100	92.07	2687	97.7,97.7
110	7.522	5.168	20.79	6.834					100-110	28.80	2716	98.8,98.8
120	17.79	5.833	11.08	4.504					110-120	10.10	2726	99.1,99.1
130	11.36	6.110	12.29	5.035					120-130	8.825	2735	99.5,99.5
140	6.038	6.415	5.774	5.431					130-140	5.496	2741	99.7,99.7
150	6.487	6.553	5.918	5.992					140-150	3.797	2744	99.8,99.8
160	6.903	6.669	6.619	6.079					150-160	2.958	2747	99.9,99.9
170	6.837	6.931	6.834	6.807					160-170	1.902	2749	100,100
180	6.896	6.903	6.996	6.830					170-180	0.6572	2750	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 20.2 %									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:7.630m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES



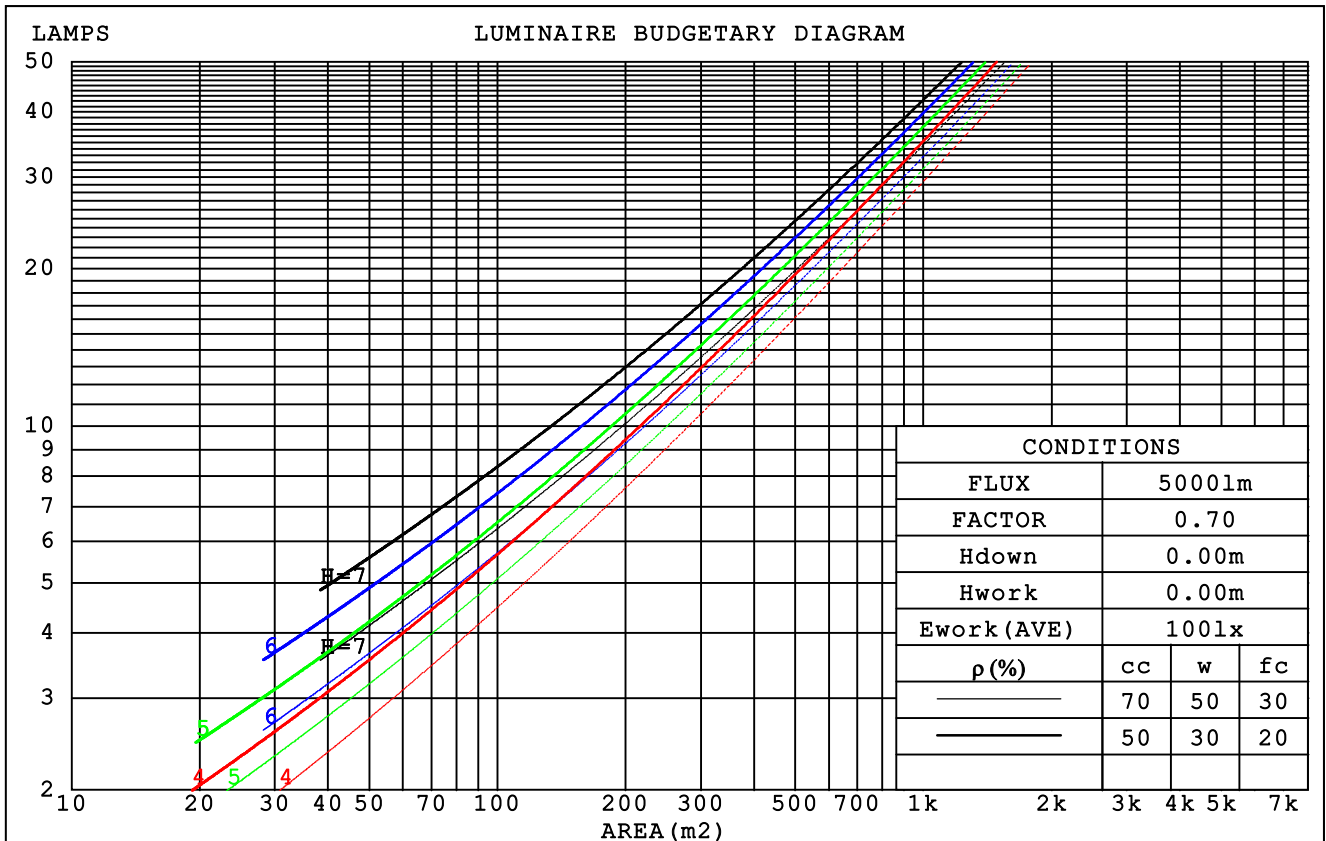
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	12286	23062
80	8440	14128
75	7508	11154
70	7209	9710
65	7105	8851
60	7087	8319
55	7097	7959
50	7132	7714
45	7166	7565

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [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	1.14	1.14	1.14	1.08	1.08	1.08	1.02	1.02	1.02	.97	.97	.97	.94
1.0	.99	.94	.89	.96	.91	.87	.91	.87	.83	.86	.83	.80	.81	.79	.76	.74
2.0	.85	.77	.70	.82	.75	.69	.78	.72	.67	.74	.69	.64	.70	.66	.62	.59
3.0	.74	.65	.58	.72	.63	.57	.68	.61	.55	.64	.58	.53	.61	.56	.52	.49
4.0	.65	.55	.48	.63	.54	.47	.60	.52	.46	.57	.50	.45	.54	.48	.44	.41
5.0	.58	.48	.41	.56	.47	.40	.53	.46	.40	.51	.44	.39	.48	.42	.38	.35
6.0	.52	.42	.36	.50	.42	.35	.48	.40	.34	.46	.39	.34	.44	.38	.33	.31
7.0	.47	.38	.31	.46	.37	.31	.44	.36	.30	.42	.35	.30	.40	.34	.29	.27
8.0	.43	.34	.28	.42	.33	.27	.40	.32	.27	.38	.31	.26	.36	.30	.26	.24
9.0	.39	.30	.25	.38	.30	.25	.37	.29	.24	.35	.28	.24	.34	.28	.23	.21
10.0	.36	.28	.22	.35	.27	.22	.34	.27	.22	.32	.26	.21	.31	.25	.21	.19



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [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	.378	.215	.068	.369	.210	.067	.352	.202	.065	.337	.194	.062	.322	.187	.060	
2.0	.332	.182	.056	.324	.179	.055	.309	.172	.053	.295	.166	.052	.282	.160	.050	
3.0	.297	.158	.047	.290	.155	.047	.276	.150	.046	.264	.145	.044	.253	.140	.043	
4.0	.268	.139	.041	.262	.137	.041	.250	.133	.040	.239	.128	.039	.228	.124	.038	
5.0	.245	.125	.036	.239	.123	.036	.228	.119	.035	.218	.115	.034	.209	.111	.033	
6.0	.224	.112	.032	.219	.111	.032	.210	.107	.031	.201	.104	.031	.192	.101	.030	
7.0	.207	.102	.029	.203	.101	.029	.194	.098	.028	.186	.095	.028	.178	.092	.027	
8.0	.192	.094	.026	.188	.093	.026	.180	.090	.026	.173	.088	.025	.166	.085	.025	
9.0	.179	.087	.024	.176	.086	.024	.168	.083	.024	.162	.081	.023	.155	.079	.023	
10.0	.168	.081	.022	.164	.079	.022	.158	.077	.022	.152	.075	.021	.146	.073	.021	

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	.233	.233	.233	.199	.199	.199	.136	.136	.136	.078	.078	.078	.025	.025	.025	
1.0	.228	.199	.172	.195	.171	.148	.134	.117	.102	.077	.068	.060	.025	.022	.019	
2.0	.221	.175	.137	.189	.151	.118	.130	.104	.082	.075	.061	.048	.024	.020	.016	
3.0	.213	.158	.114	.183	.136	.099	.126	.095	.069	.073	.055	.041	.023	.018	.013	
4.0	.205	.145	.099	.176	.126	.086	.121	.088	.061	.070	.051	.036	.023	.017	.012	
5.0	.198	.135	.089	.170	.117	.078	.117	.082	.055	.068	.048	.032	.022	.016	.011	
6.0	.190	.127	.082	.163	.110	.071	.113	.077	.050	.065	.045	.030	.021	.015	.010	
7.0	.183	.120	.076	.157	.104	.067	.109	.073	.047	.063	.043	.028	.020	.014	.009	
8.0	.176	.115	.072	.152	.099	.063	.105	.070	.045	.061	.041	.027	.020	.013	.009	
9.0	.170	.110	.069	.146	.095	.060	.101	.067	.043	.059	.039	.025	.019	.013	.008	
10.0	.164	.105	.066	.141	.091	.058	.098	.064	.041	.057	.038	.025	.019	.012	.008	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [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	19.1	20.6	19.5	21.0	21.3	19.7	21.2	20.0	21.5	21.8
3H	20.9	22.4	21.3	22.7	23.1	21.9	23.3	22.3	23.7	24.0
4H	21.8	23.2	22.2	23.5	23.9	23.1	24.5	23.5	24.8	25.2
6H	22.6	23.9	23.0	24.3	24.7	24.4	25.6	24.8	26.0	26.4
8H	23.0	24.3	23.4	24.7	25.1	25.0	26.3	25.5	26.7	27.1
12H	23.4	24.6	23.9	25.0	25.5	25.8	27.0	26.2	27.4	27.8
4H 2H	19.9	21.3	20.3	21.6	22.0	20.3	21.7	20.7	22.0	22.4
3H	22.0	23.2	22.4	23.6	24.0	22.8	24.0	23.2	24.4	24.8
4H	23.0	24.1	23.5	24.5	25.0	24.1	25.2	24.6	25.7	26.1
6H	24.0	25.0	24.5	25.5	25.9	25.6	26.6	26.1	27.0	27.5
8H	24.5	25.4	25.0	25.9	26.4	26.4	27.3	26.9	27.8	28.3
12H	25.0	25.9	25.5	26.4	26.9	27.2	28.1	27.7	28.6	29.1
8H 4H	23.6	24.5	24.1	25.0	25.5	24.5	25.4	25.0	25.9	26.4
6H	24.9	25.6	25.4	26.1	26.7	26.2	27.0	26.7	27.5	28.1
8H	25.5	26.2	26.1	26.8	27.3	27.2	27.9	27.7	28.4	29.0
12H	26.2	26.9	26.8	27.4	28.0	28.3	28.9	28.8	29.4	30.0
12H 4H	23.7	24.6	24.2	25.1	25.6	24.6	25.4	25.1	25.9	26.5
6H	25.1	25.8	25.7	26.3	26.9	26.4	27.1	26.9	27.6	28.2
8H	25.9	26.5	26.5	27.1	27.7	27.4	28.0	28.0	28.6	29.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.2				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				

CIE Pub.117, 2750 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 3.5)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

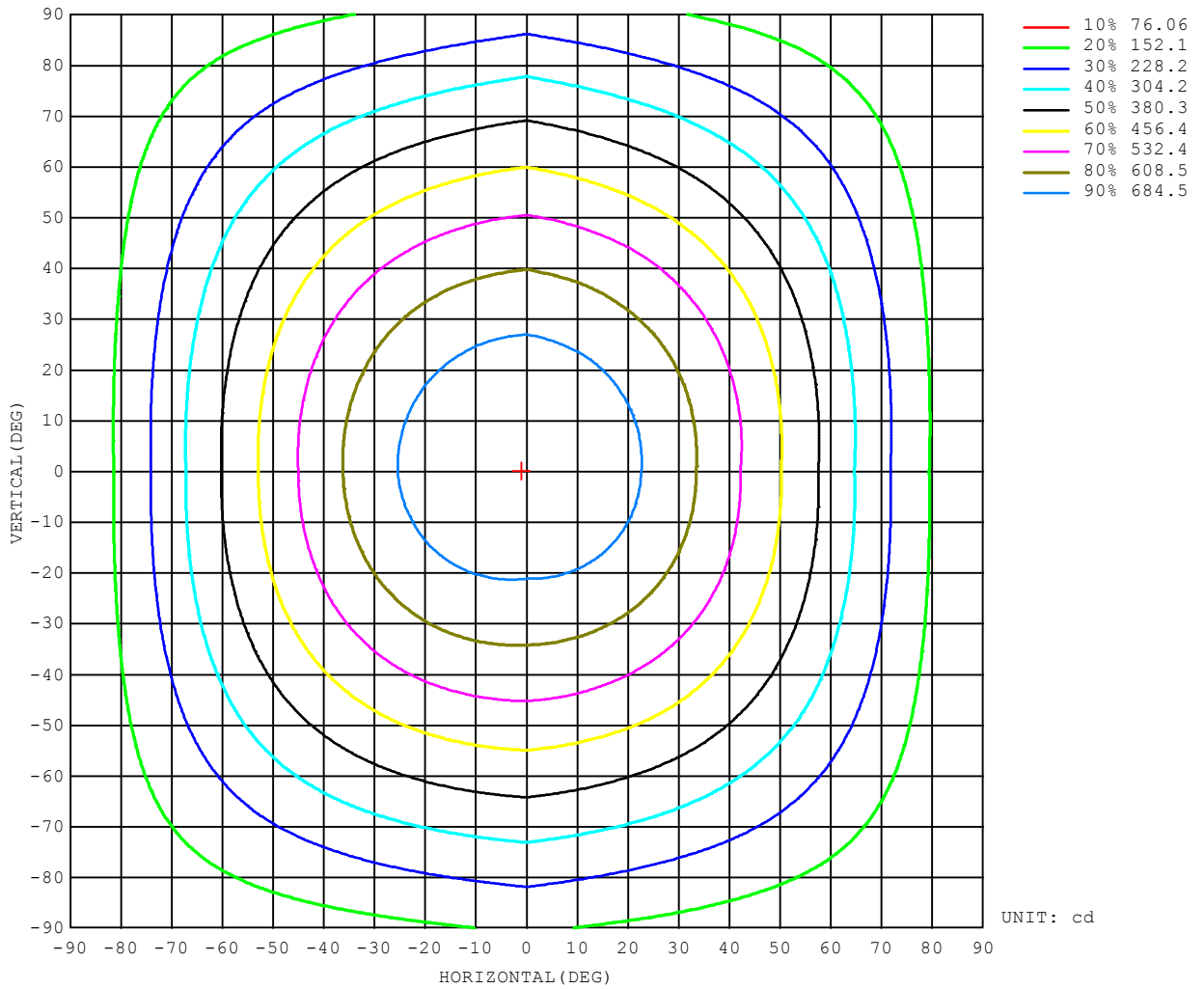
UTILIZATION FACTORS TABLE

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	52	40	33	51	40	32	50	39	32	26
0.80	62	49	41	60	48	41	58	48	40	33
1.00	70	57	49	68	56	49	66	58	48	40
1.25	77	65	56	75	64	56	72	62	55	47
1.50	82	70	62	80	69	61	76	67	60	51
2.00	89	78	71	86	77	70	82	74	68	59
2.50	93	84	76	91	82	75	86	79	73	63
3.00	97	88	81	94	86	80	89	83	77	67
4.00	101	94	88	98	92	86	93	88	83	72
5.00	104	98	92	101	95	90	96	91	87	76
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: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

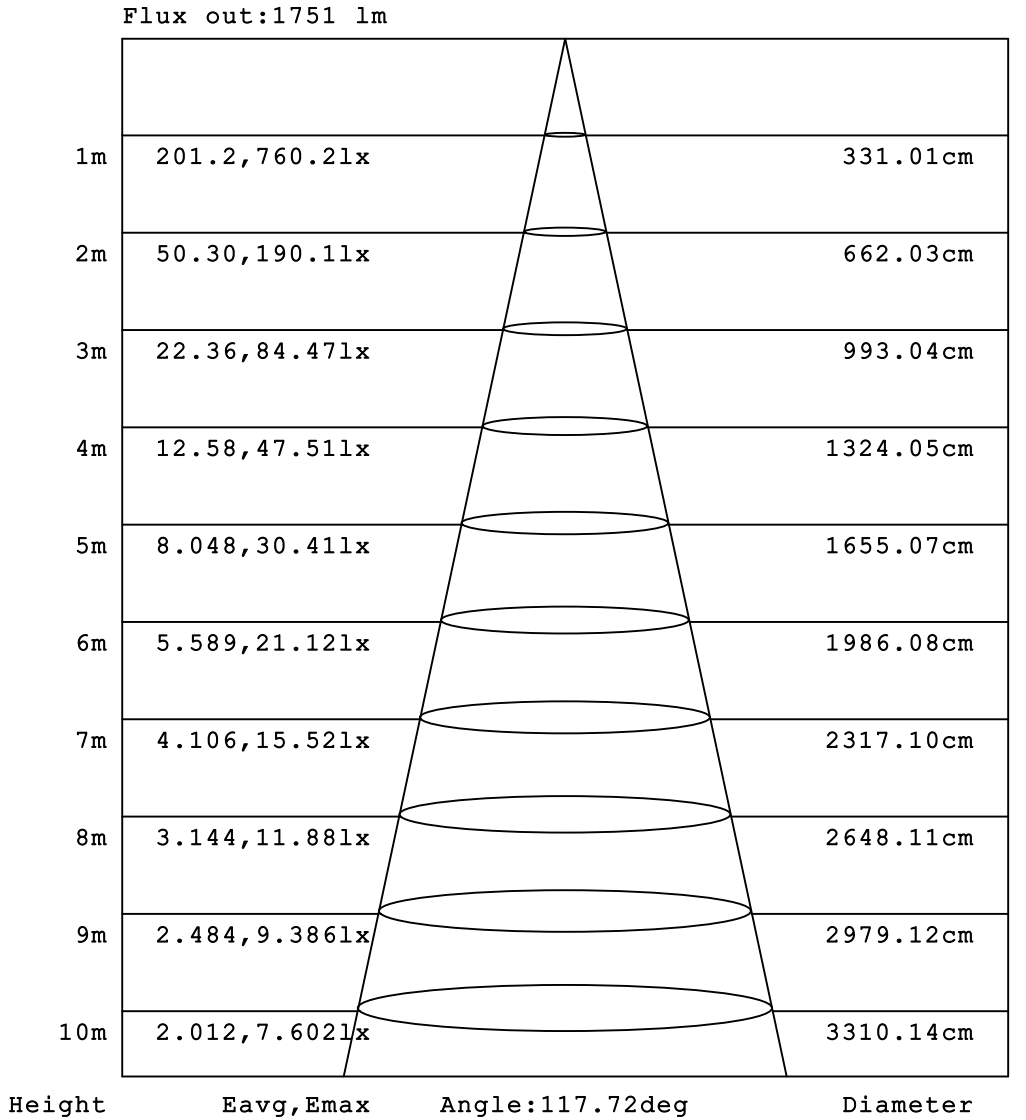
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

AAI Figure

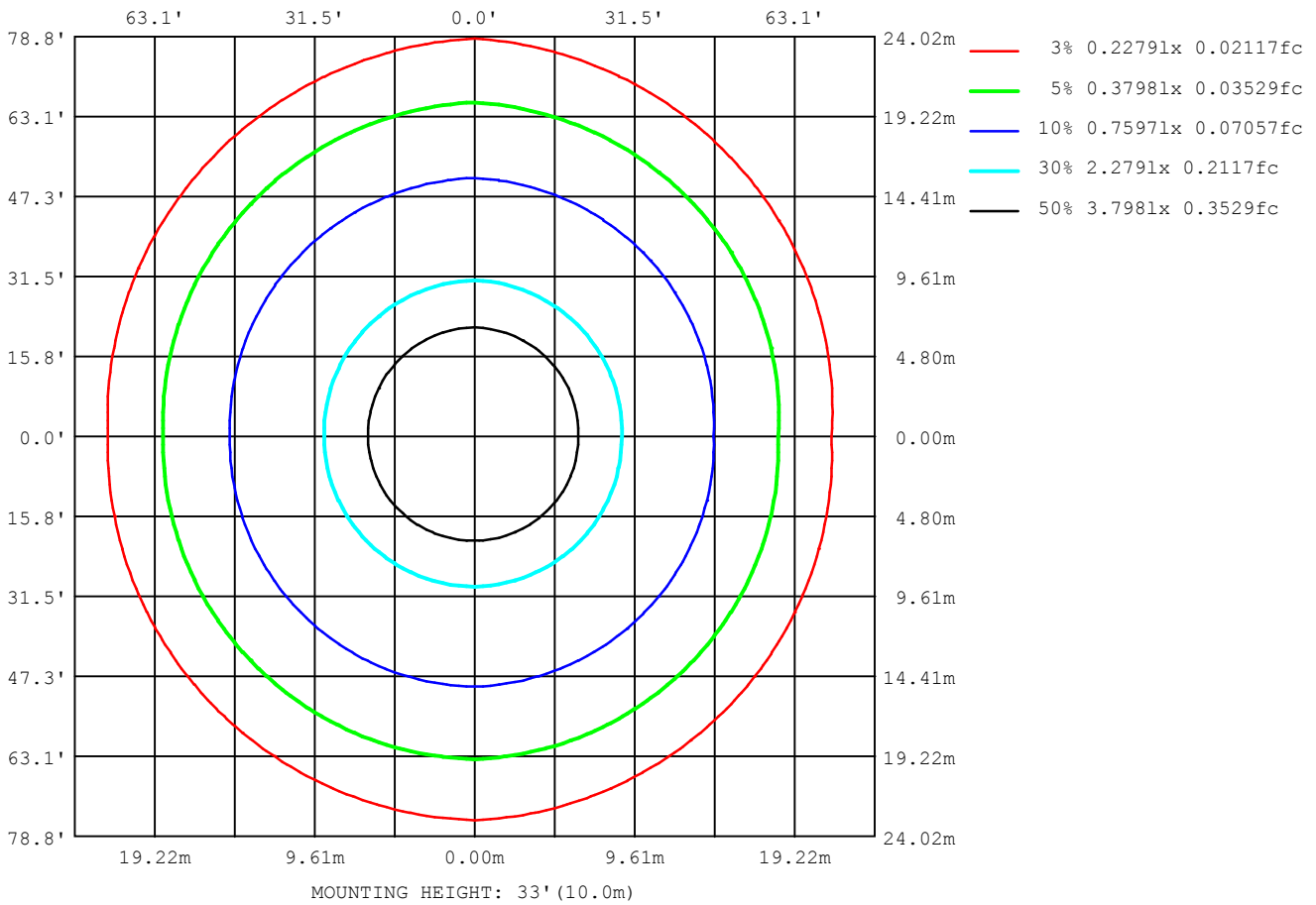


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:7.630m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:230.26V I:0.1333A P:29.566W PF:0.9635 Freq:49.99Hz Lamp Flux:2749.87x1 lm		
NAME: MPL8 30W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

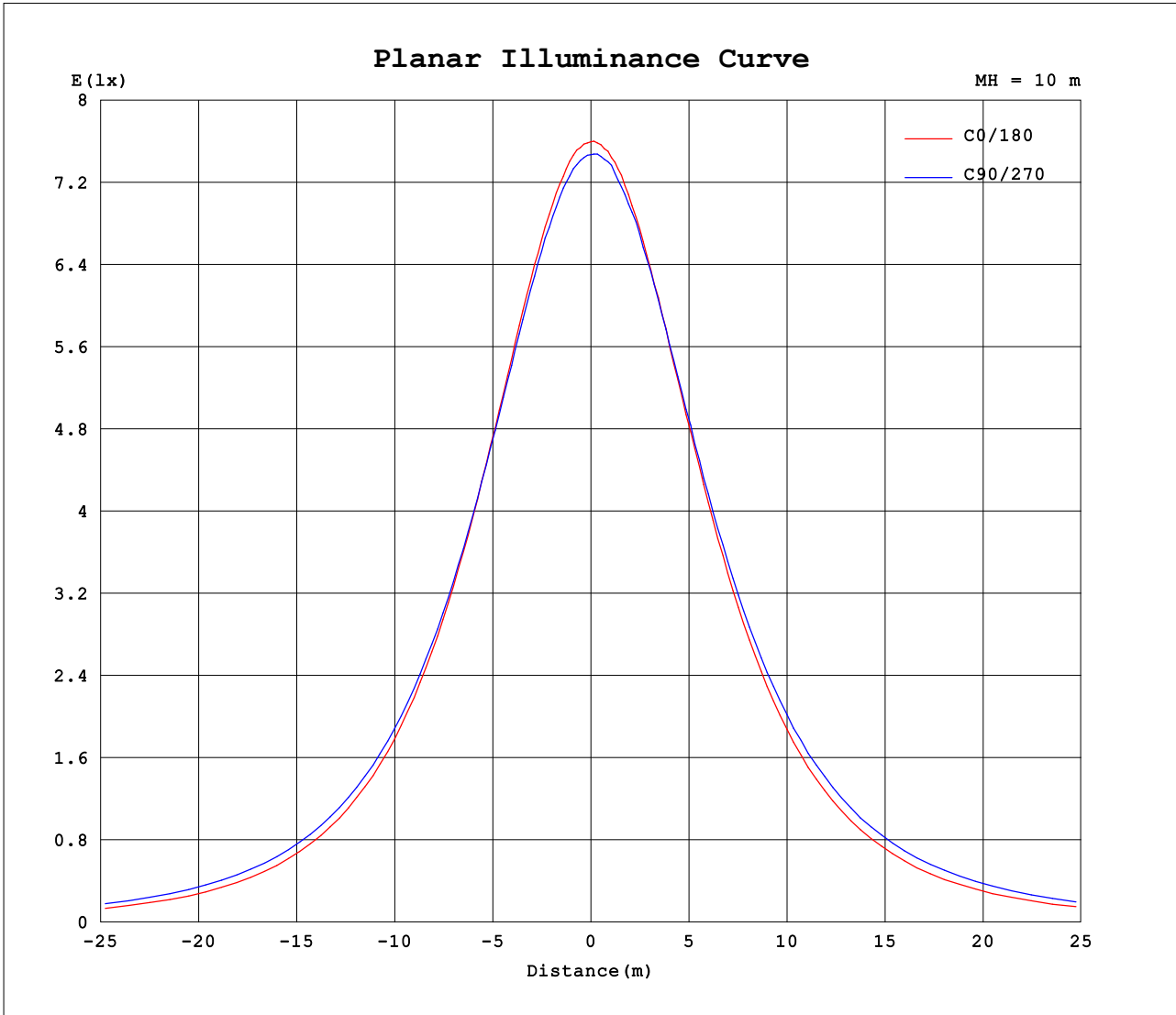
AvgL	cd/m2
L_0~180 (65) av	7433
L_0~180 (75) av	7961
L_0~180 (85) av	13054
L_90~270 (65) av	9333
L_90~270 (75) av	11931
L_90~270 (85) av	25193
L_45 (65) av	8641
L_45 (75) av	10470
L_45 (85) av	20689

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
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 Test Date:2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:7.630m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks: