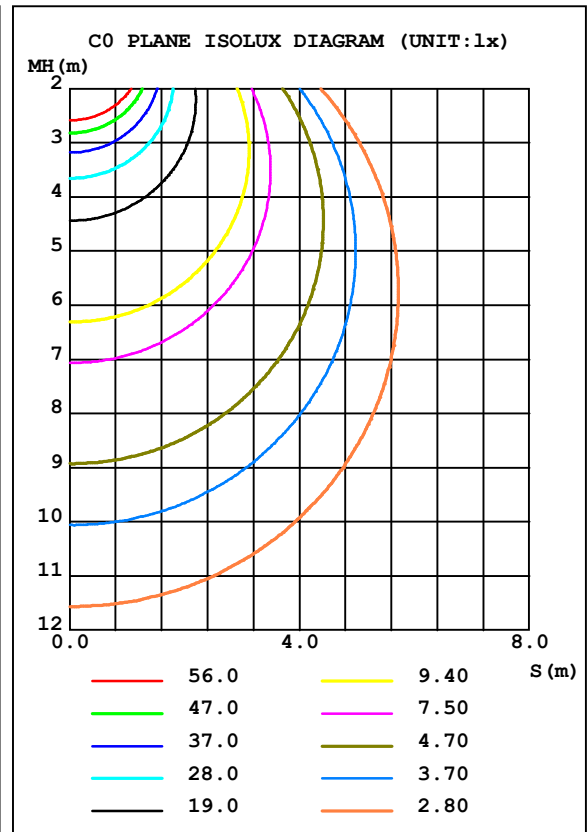
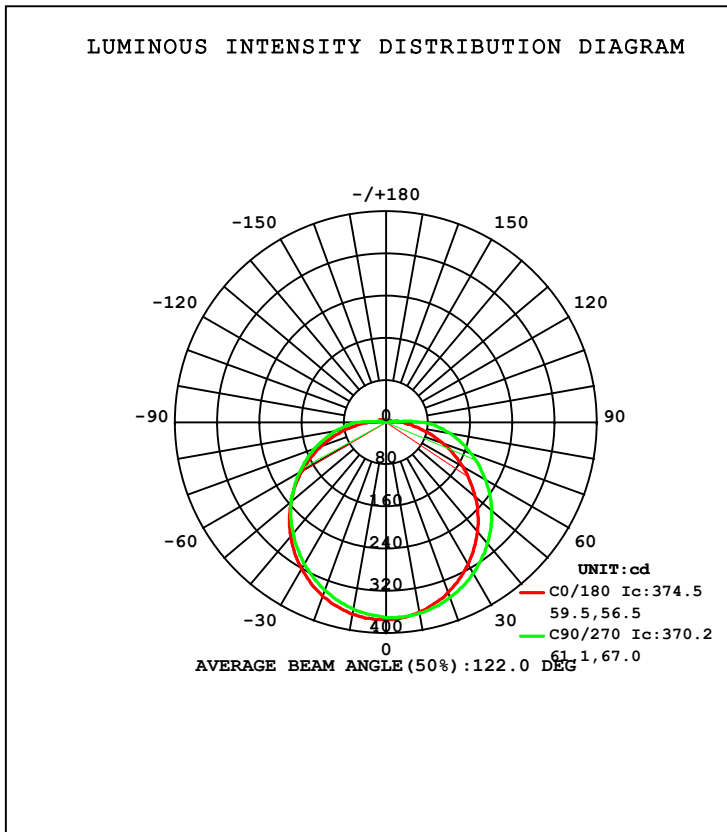


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.18V I:0.0665A P:15.003W PF:0.9803 Freq:49.99Hz Lamp Flux:1281.7x1 lm		
NAME: MPL10 15W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 85.43 lm/W			
MODEL	MPL10	I _{max} (cd)	374.5	S/MH (C0/180)	1.24
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH (C90/270)	1.33
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1281.7	η UP,DN (C0-180)	1.9,47.2
NOMINAL FLUX(lm)	1281.7	CIE CLASS	DIRECT	η UP,DN (C180-360)	2.1,48.7
LAMPS INSIDE	1	η up (%)	4.1	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	230	η down (%)	95.9	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

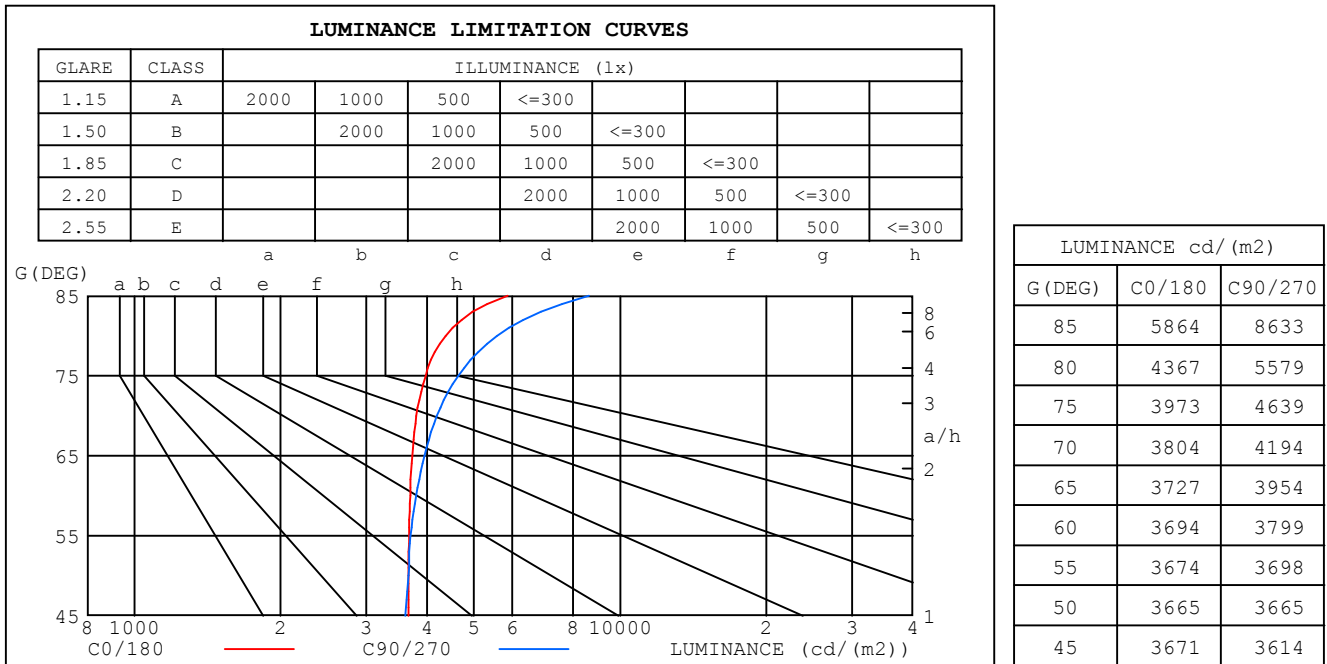
ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	369.3	359.5	365.6	367.7					0- 10	35.19	35.19	2.75,2.75
20	351.2	339.4	343.4	354.3					10- 20	101.0	136.2	10.6,10.6
30	320.9	310.5	311.0	331.1					20- 30	153.9	290.1	22.6,22.6
40	281.8	275.0	270.0	299.7					30- 40	188.4	478.5	37.3,37.3
50	235.6	235.6	221.1	261.8					40- 50	201.4	679.9	53,53
60	184.7	190.0	168.3	218.0					50- 60	192.0	871.9	68,68
70	130.1	143.5	113.8	171.2					60- 70	163.5	1035	80.8,80.8
80	75.84	96.88	61.79	123.4					70- 80	120.8	1156	90.2,90.2
90	30.63	55.67	30.78	73.17					80- 90	73.49	1230	95.9,95.9
100	3.587	16.25	13.52	22.47					90-100	27.09	1257	98,98
110	13.31	2.610	6.170	2.138					100-110	7.614	1264	98.6,98.6
120	10.34	2.757	6.816	2.479					110-120	6.256	1271	99.1,99.1
130	5.411	2.961	3.211	2.795					120-130	4.118	1275	99.5,99.5
140	2.951	3.123	2.805	2.909					130-140	2.462	1277	99.6,99.6
150	3.176	3.223	2.904	2.902					140-150	1.839	1279	99.8,99.8
160	3.350	3.280	3.180	3.146					150-160	1.456	1280	99.9,99.9
170	3.370	3.438	3.349	3.280					160-170	0.9283	1281	100,100
180	3.392	3.357	3.423	3.334					170-180	0.3220	1282	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 18.3 %									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

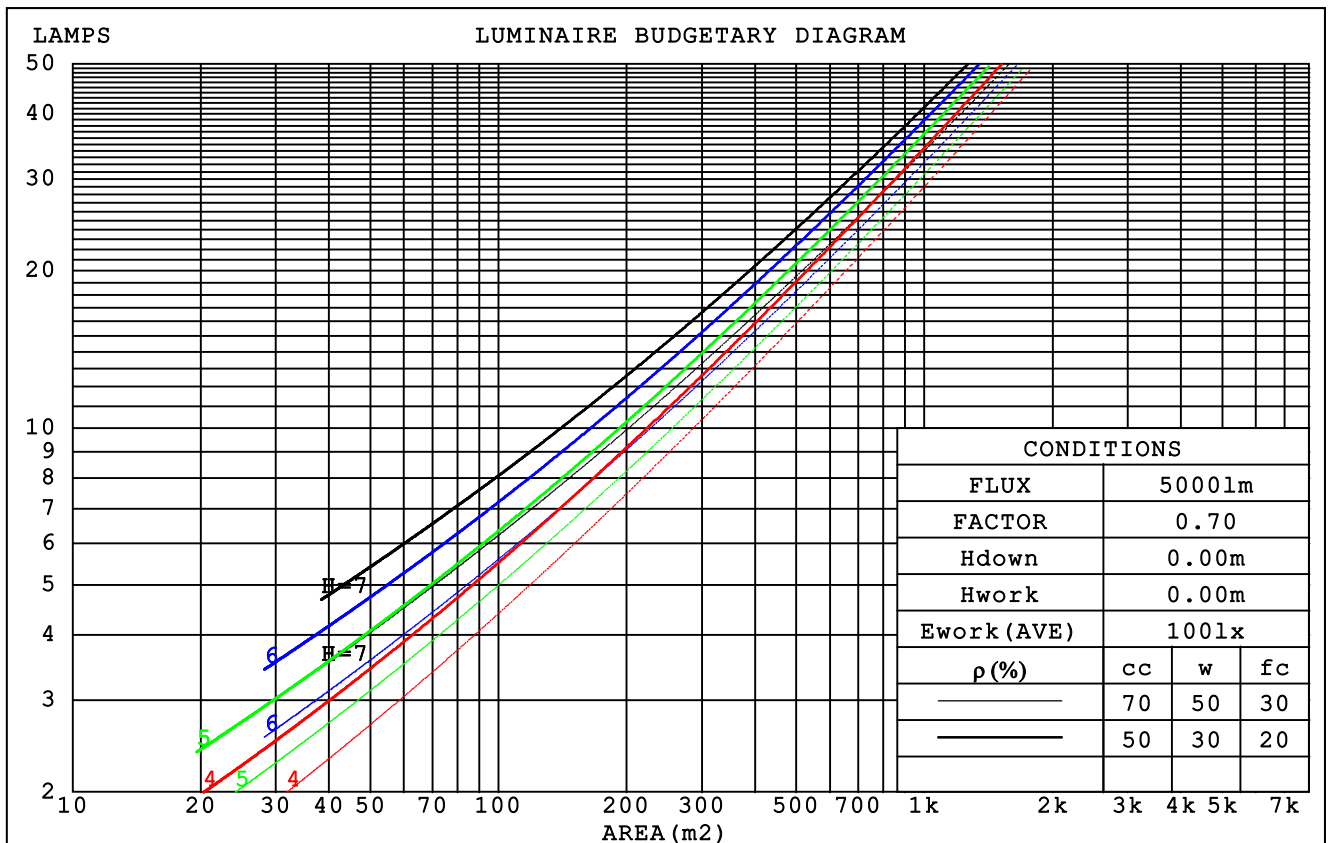


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2020-04-13

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

pcc	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			Coefficients of Utilization(CU)												
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.03	1.03	1.03	.98	.98	.98	.96
1.0	1.00	.95	.90	.97	.93	.88	.92	.88	.85	.88	.84	.82	.83	.81	.78	.76
2.0	.86	.78	.72	.84	.77	.71	.79	.74	.68	.75	.71	.66	.72	.68	.64	.62
3.0	.75	.66	.59	.73	.65	.58	.69	.62	.57	.66	.60	.55	.63	.58	.53	.51
4.0	.66	.57	.49	.64	.56	.49	.61	.54	.48	.58	.52	.47	.56	.50	.45	.43
5.0	.59	.49	.42	.57	.48	.42	.55	.47	.41	.52	.45	.40	.50	.44	.39	.37
6.0	.53	.43	.37	.51	.43	.36	.49	.41	.36	.47	.40	.35	.45	.39	.34	.32
7.0	.48	.39	.32	.47	.38	.32	.45	.37	.31	.43	.36	.31	.41	.35	.30	.28
8.0	.43	.35	.29	.43	.34	.28	.41	.33	.28	.39	.32	.27	.38	.32	.27	.25
9.0	.40	.31	.26	.39	.31	.25	.38	.30	.25	.36	.29	.25	.35	.29	.24	.22
10.0	.37	.29	.23	.36	.28	.23	.35	.28	.23	.33	.27	.22	.32	.26	.22	.20



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

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						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.365	.208	.066	.357	.203	.065	.341	.196	.062	.326	.188	.060	.313	.181	.058	
2.0	.325	.178	.055	.317	.175	.054	.303	.169	.052	.290	.163	.051	.278	.157	.050	
3.0	.292	.156	.047	.286	.153	.046	.273	.148	.045	.261	.143	.044	.250	.139	.043	
4.0	.265	.138	.040	.259	.136	.040	.248	.131	.039	.237	.127	.038	.228	.124	.038	
5.0	.242	.123	.036	.237	.122	.035	.227	.118	.035	.217	.115	.034	.209	.111	.033	
6.0	.223	.112	.032	.218	.110	.032	.209	.107	.031	.200	.104	.031	.192	.101	.030	
7.0	.206	.102	.029	.202	.100	.029	.193	.098	.028	.186	.095	.028	.179	.093	.027	
8.0	.191	.093	.026	.187	.092	.026	.180	.090	.026	.173	.088	.025	.167	.086	.025	
9.0	.179	.086	.024	.175	.085	.024	.168	.083	.024	.162	.081	.023	.156	.079	.023	
10.0	.167	.080	.022	.164	.079	.022	.158	.077	.022	.152	.076	.022	.147	.074	.021	

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	.221	.221	.221	.189	.189	.189	.129	.129	.129	.074	.074	.074	.024	.024	.024	
1.0	.215	.187	.161	.184	.160	.139	.126	.110	.096	.073	.064	.056	.023	.021	.018	
2.0	.208	.163	.125	.178	.140	.108	.122	.097	.076	.070	.057	.044	.023	.018	.014	
3.0	.200	.146	.103	.172	.126	.089	.118	.088	.062	.068	.051	.037	.022	.017	.012	
4.0	.193	.133	.088	.165	.115	.076	.114	.080	.054	.066	.047	.032	.021	.015	.010	
5.0	.185	.123	.077	.159	.106	.067	.109	.074	.047	.063	.044	.028	.020	.014	.009	
6.0	.177	.115	.070	.152	.099	.061	.105	.070	.043	.061	.041	.026	.020	.013	.008	
7.0	.170	.108	.064	.146	.093	.056	.101	.066	.040	.059	.039	.024	.019	.013	.008	
8.0	.163	.102	.060	.141	.089	.052	.097	.062	.037	.057	.037	.022	.018	.012	.007	
9.0	.157	.097	.057	.135	.084	.050	.094	.059	.035	.055	.035	.021	.018	.011	.007	
10.0	.151	.093	.054	.130	.081	.047	.090	.057	.034	.053	.034	.020	.017	.011	.007	

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	17.1	18.6	17.4	18.9	19.2	17.1	18.7	17.5	19.0	19.2
3H	18.9	20.4	19.3	20.7	21.0	19.2	20.6	19.5	20.9	21.3
4H	19.8	21.2	20.2	21.5	21.9	20.2	21.6	20.6	21.9	22.3
6H	20.6	21.9	21.0	22.3	22.7	21.3	22.6	21.7	22.9	23.3
8H	21.0	22.3	21.4	22.6	23.0	21.8	23.1	22.2	23.4	23.8
12H	21.4	22.6	21.8	23.0	23.4	22.4	23.6	22.8	24.0	24.4
4H 2H	17.8	19.1	18.2	19.5	19.8	17.8	19.2	18.2	19.5	19.9
3H	19.9	21.1	20.3	21.5	21.9	20.1	21.3	20.5	21.7	22.1
4H	20.9	22.0	21.4	22.4	22.9	21.3	22.4	21.7	22.8	23.2
6H	21.9	22.9	22.4	23.3	23.8	22.5	23.5	23.0	23.9	24.4
8H	22.4	23.3	22.9	23.8	24.2	23.2	24.1	23.6	24.5	25.0
12H	22.9	23.7	23.4	24.2	24.7	23.9	24.7	24.4	25.2	25.7
8H 4H	21.4	22.3	21.9	22.8	23.2	21.7	22.6	22.2	23.1	23.6
6H	22.6	23.4	23.1	23.9	24.4	23.2	24.0	23.7	24.4	25.0
8H	23.3	24.0	23.8	24.5	25.0	24.0	24.7	24.5	25.2	25.7
12H	23.9	24.5	24.5	25.1	25.6	24.9	25.5	25.4	26.0	26.6
12H 4H	21.5	22.3	22.0	22.8	23.3	21.8	22.6	22.3	23.1	23.6
6H	22.8	23.5	23.3	24.0	24.6	23.3	24.0	23.8	24.5	25.1
8H	23.5	24.2	24.1	24.7	25.3	24.2	24.8	24.8	25.3	25.9
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 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 1282 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 0.9)

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:

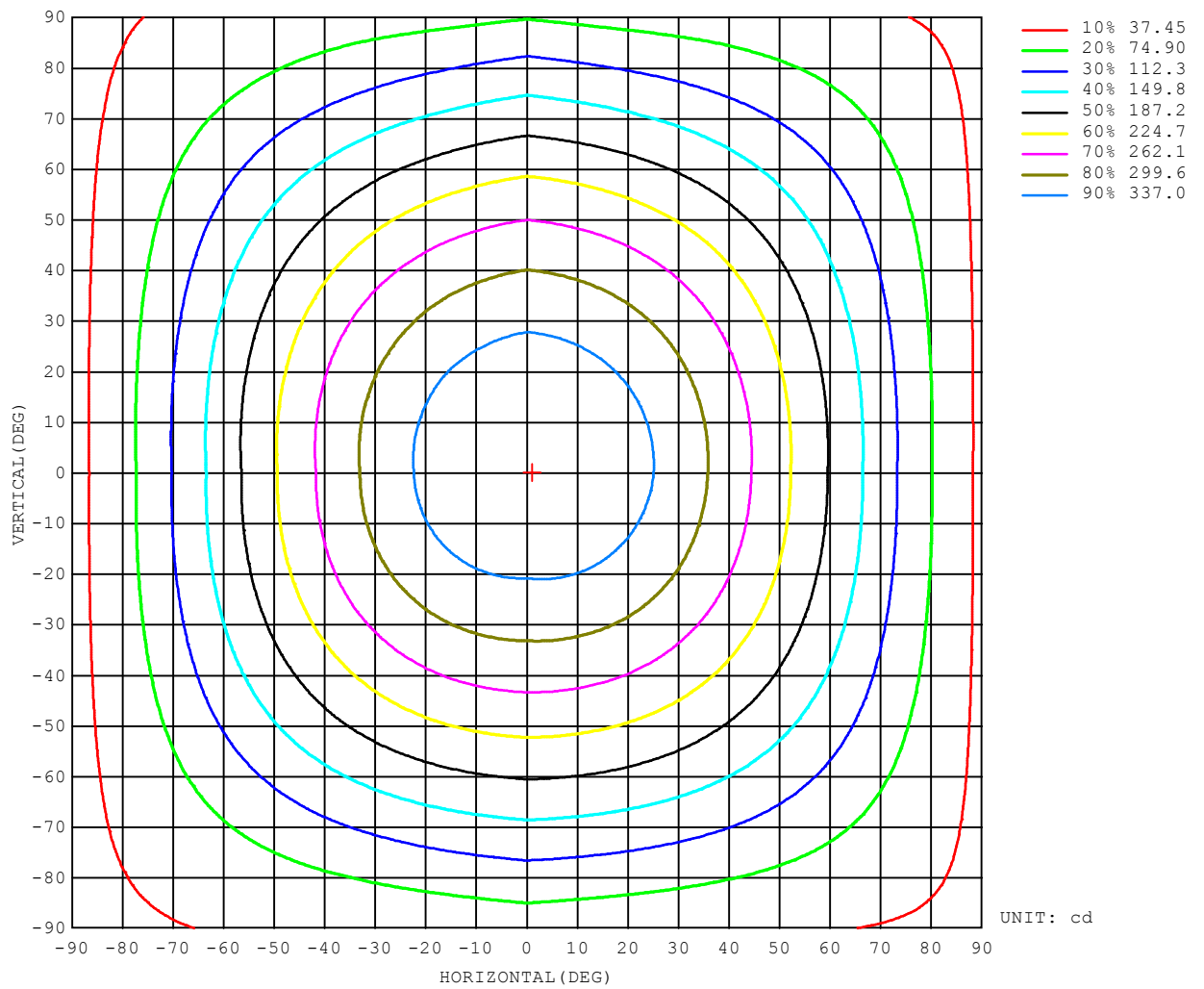
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	53	41	34	53	41	34	51	40	34	27
0.80	63	51	43	62	50	42	60	49	42	35
1.00	71	59	51	70	58	51	67	60	50	42
1.25	78	66	58	76	65	58	73	64	57	49
1.50	83	72	64	81	71	63	78	69	62	54
2.00	90	80	73	88	79	72	84	76	70	61
2.50	94	85	78	92	84	77	88	81	75	65
3.00	98	90	83	95	88	82	91	85	79	70
4.00	102	95	90	100	93	88	95	89	85	75
5.00	105	99	94	102	97	92	97	93	89	78
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:

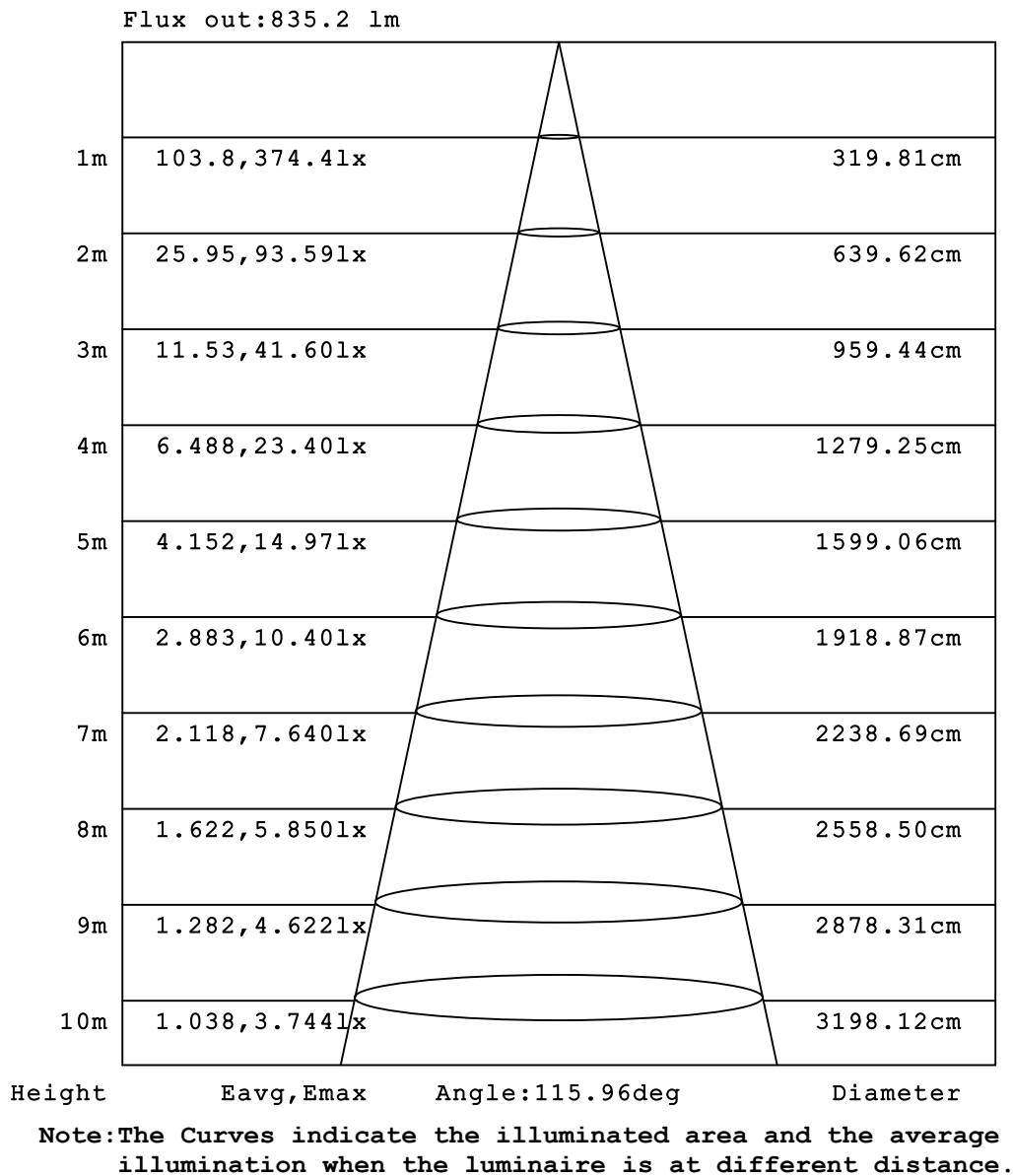
ISOCANDELA DIAGRAM



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:

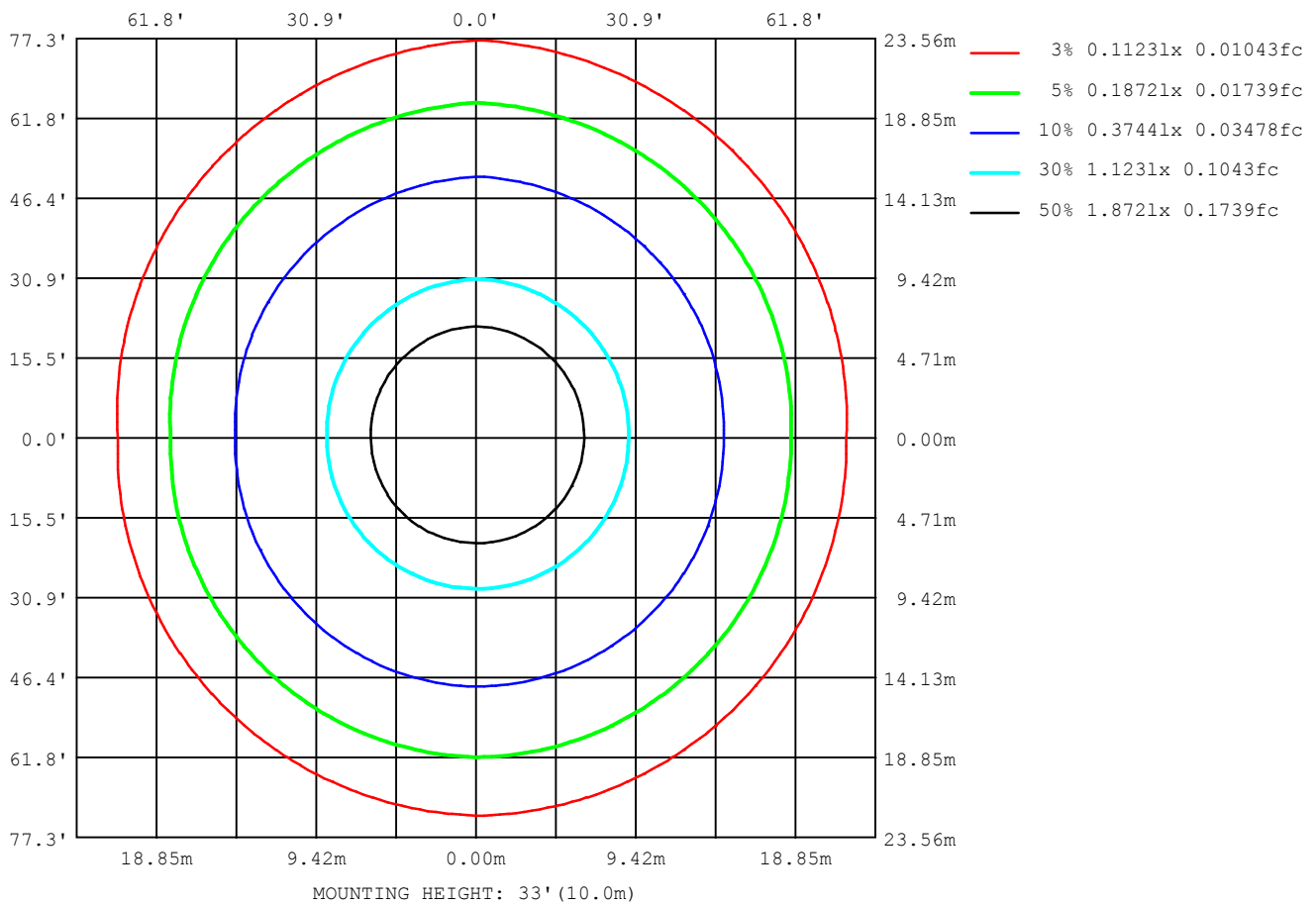
AAI Figure



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:230.18V I:0.0665A P:15.003W PF:0.9803 Freq:49.99Hz Lamp Flux:1281.7x1 lm		
NAME: MPL10 15W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

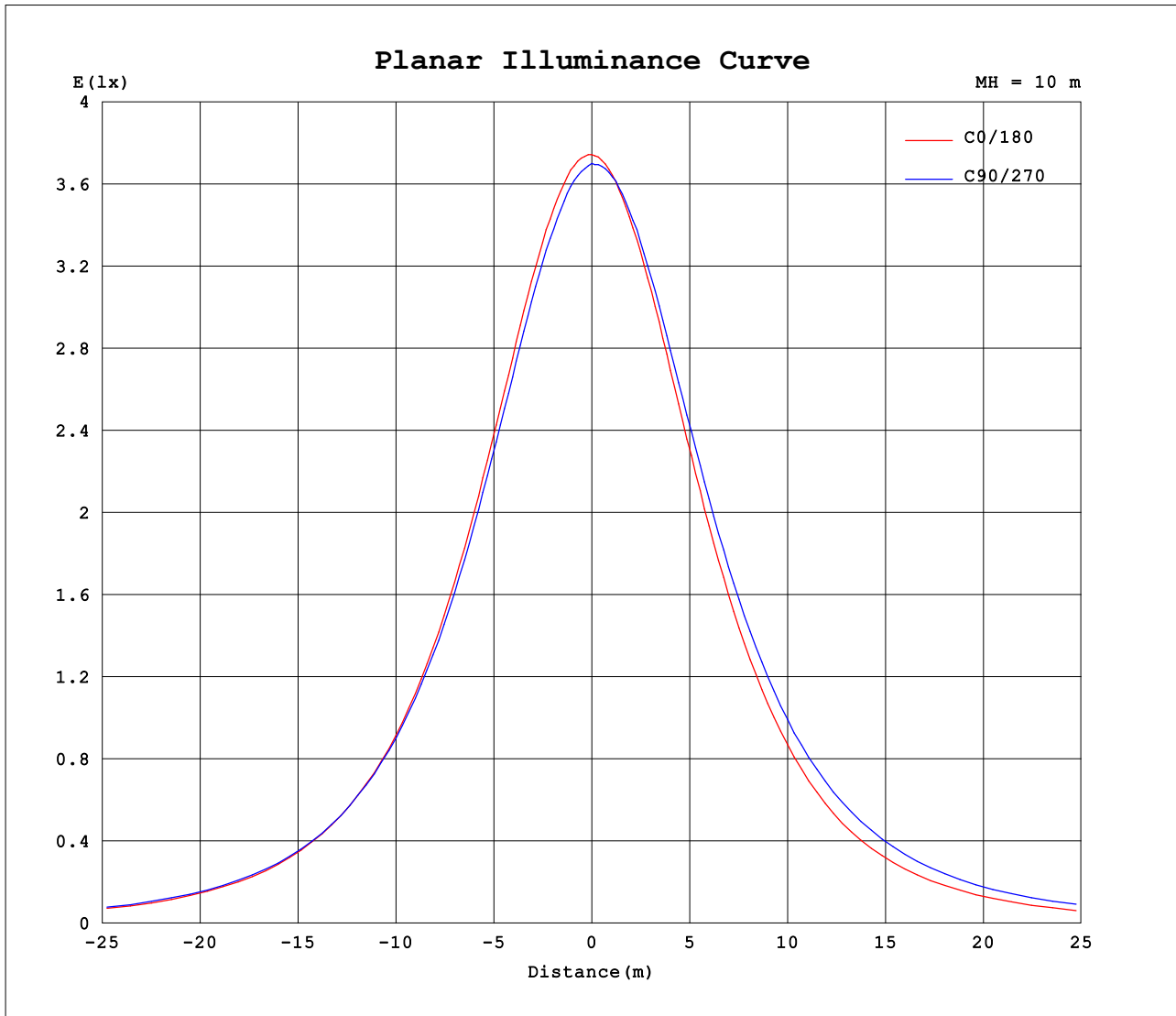
AvgL	cd/m2
L_0~180 (65) av	3535
L_0~180 (75) av	3661
L_0~180 (85) av	5343
L_90~270 (65) av	4278
L_90~270 (75) av	5172
L_90~270 (85) av	10035
L_45 (65) av	3988
L_45 (75) av	4586
L_45 (85) av	8243

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
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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: