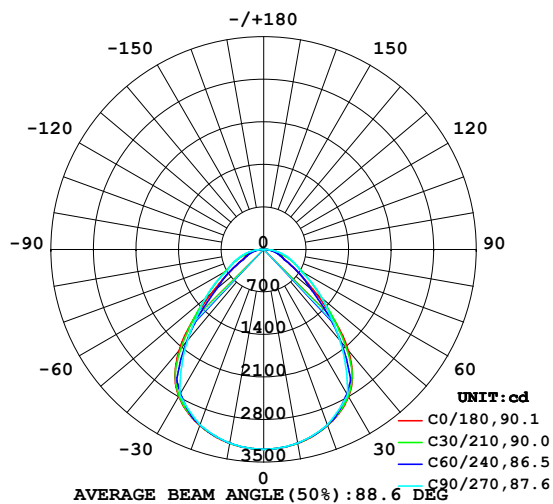


LUMINAIRE PHOTOMETRIC TEST REPORT

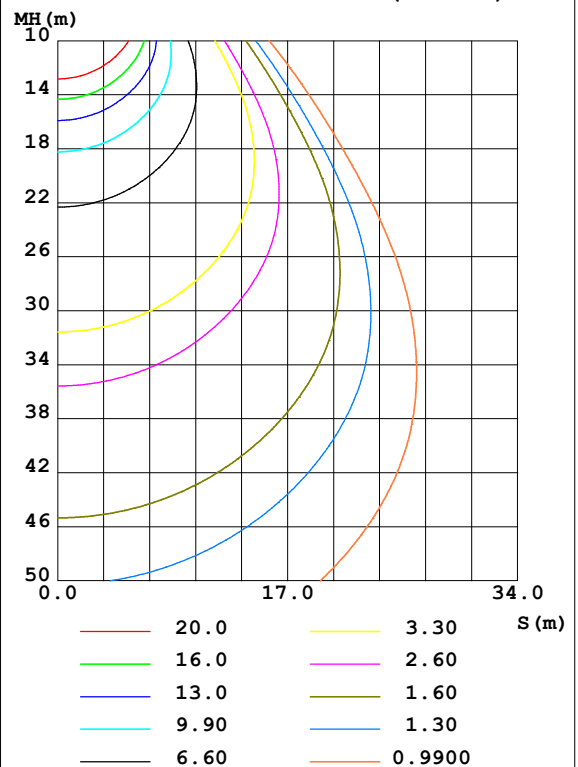
Test:U:230.3V I:0.2190A P:48.81W PF:0.9677 Freq:49.99Hz Lamp Flux:6983.08x1 lm		
NAME: VER-MP60120-50-840-TPA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ERVAN	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 143.08 lm/W			
MODEL		I _{max} (cd)	3290	S/MH (C0/180)	1.25
NOMINAL POWER (W)	50	LOR (%)	100.0	S/MH (C90/270)	1.22
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	6983.1	η UP, DN (C0-180)	0.0, 50.0
NOMINAL FLUX (lm)	6983.08	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QC
 Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 53.0%
 Test Distance: 10.530m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3239	3234	3236	3234	3239	3234	3236	3234	0- 10	311.3	311.3	4.46,4.46
20	3082	3075	3070	3075	3082	3075	3070	3075	10- 20	894.3	1206	17.3,17.3
30	2795	2752	2764	2752	2795	2752	2764	2752	20- 30	1354	2559	36.6,36.6
40	2166	2090	1952	2090	2166	2090	1952	2090	30- 40	1531	4091	58.6,58.6
50	1123	1126	1262	1126	1123	1126	1262	1126	40- 50	1223	5313	76.1,76.1
60	516.6	613.8	692.1	613.8	516.6	613.8	692.1	613.8	50- 60	774.6	6088	87.2,87.2
70	309.7	391.4	463.6	391.4	309.7	391.4	463.6	391.4	60- 70	479.2	6567	94,94
80	209.9	209.5	235.1	209.5	209.9	209.5	235.1	209.5	70- 80	308.2	6875	98.5,98.5
90	2.624	4.687	6.610	4.687	2.624	4.687	6.610	4.687	80- 90	107.7	6983	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 4763 lm

%lum = 68.2%

%lamp = 68.2%

Conical surface Flux(120deg): 6088 lm

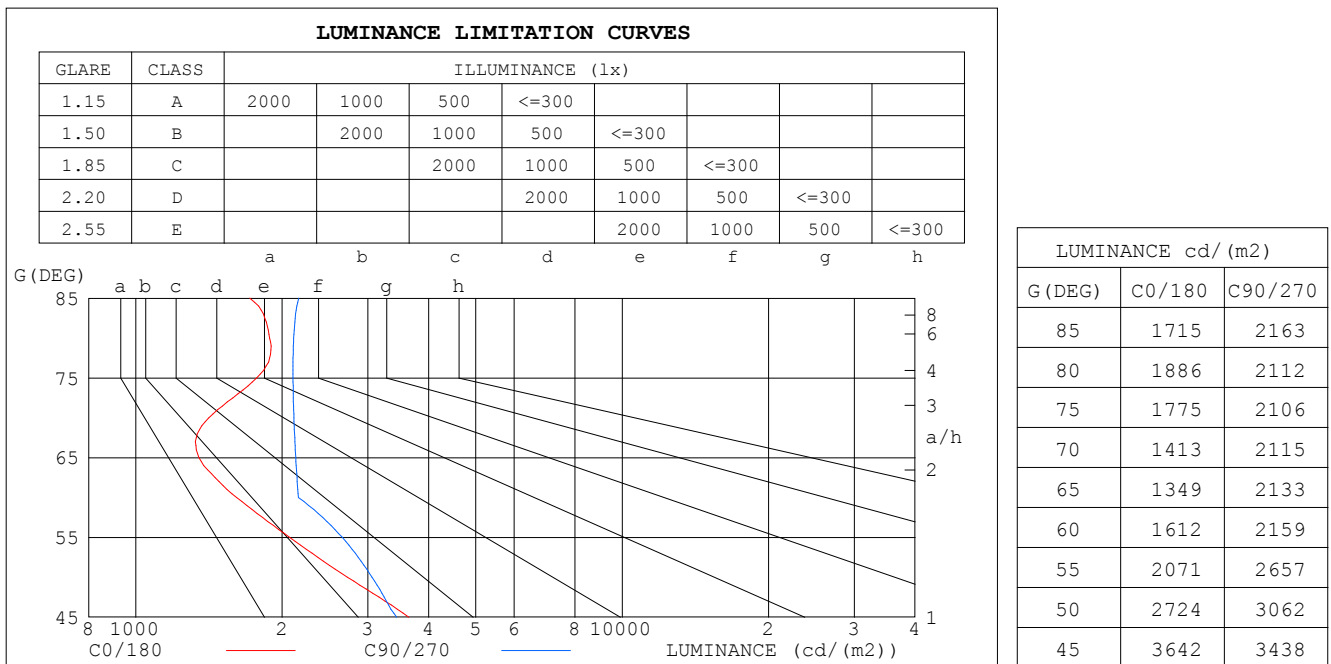
%lum = 87.2%

%lamp = 87.2%

C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QC
 Test Date:2020-12-09

γ Range:-90 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:53.0%
 Test Distance:10.530m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

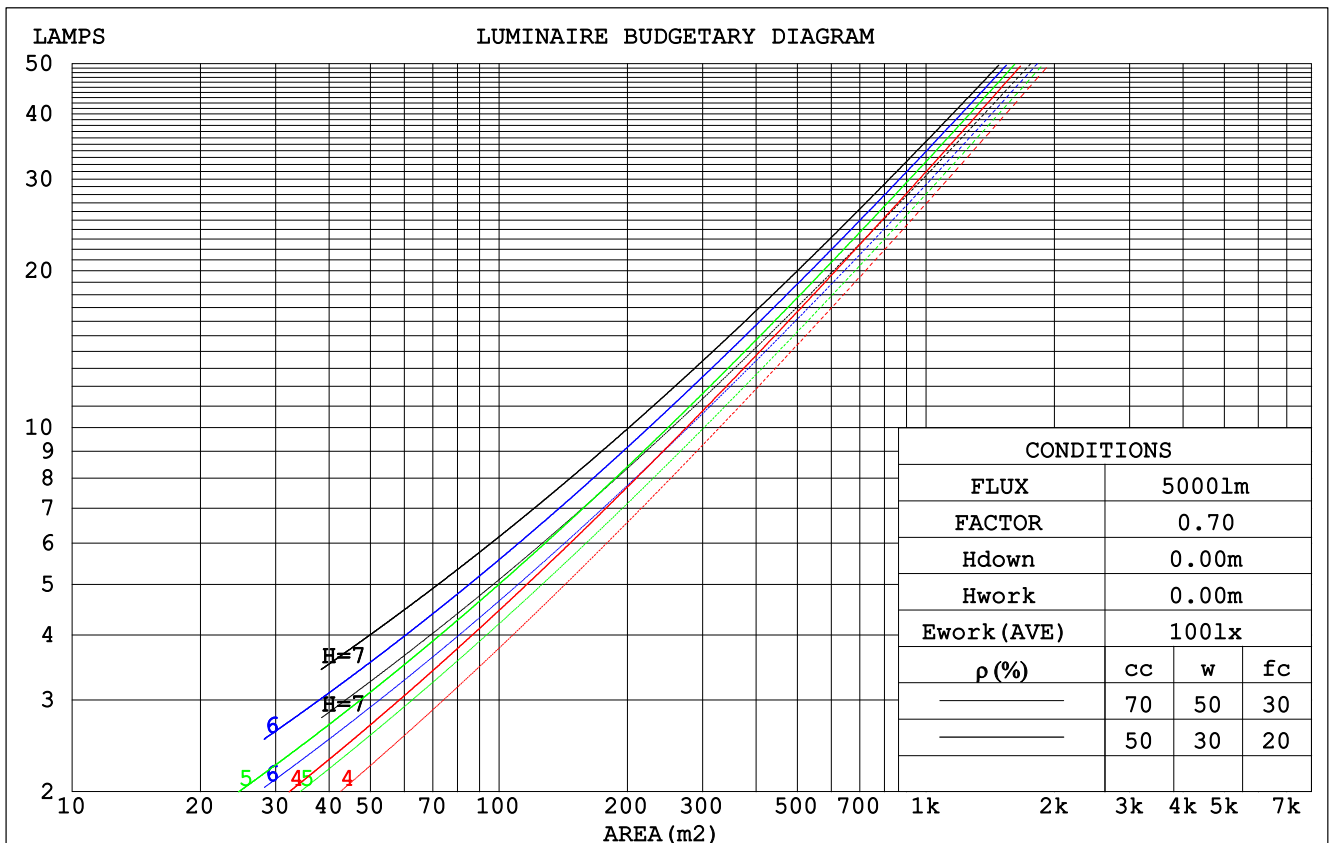


C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: QC
Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 53.0%
Test Distance: 10.530m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{fc}	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	1.02	1.02	1.02	1.00
1.0	1.06	1.02	.99	1.04	1.00	.97	.00	.97	.94	.96	.93	.91	.92	.90	.89	.87
2.0	.94	.88	.83	.92	.87	.82	.89	.84	.80	.86	.82	.79	.83	.80	.77	.75
3.0	.84	.77	.71	.83	.76	.71	.80	.74	.70	.77	.72	.68	.75	.71	.67	.65
4.0	.76	.68	.62	.75	.67	.62	.72	.66	.61	.70	.65	.60	.68	.63	.59	.57
5.0	.69	.61	.55	.68	.60	.54	.66	.59	.54	.64	.58	.53	.62	.57	.53	.51
6.0	.63	.55	.49	.62	.54	.48	.60	.53	.48	.58	.52	.48	.57	.51	.47	.45
7.0	.57	.49	.44	.57	.49	.43	.55	.48	.43	.54	.48	.43	.52	.47	.43	.41
8.0	.53	.45	.39	.52	.45	.39	.51	.44	.39	.50	.43	.39	.48	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.34
10.0	.45	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.32	.42	.36	.32	.31



C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QC
 Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 53.0%
 Test Distance: 10.530m [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	.269	.153	.049	.262	.150	.048	.249	.143	.046	.237	.137	.044	.226	.131	.042		
2.0	.254	.139	.043	.248	.137	.042	.237	.132	.041	.226	.127	.040	.217	.123	.039		
3.0	.238	.126	.038	.232	.124	.037	.222	.120	.037	.213	.117	.036	.205	.113	.035		
4.0	.222	.115	.034	.217	.113	.034	.208	.110	.033	.200	.107	.032	.192	.105	.032		
5.0	.207	.105	.031	.203	.104	.030	.195	.102	.030	.188	.099	.029	.181	.097	.029		
6.0	.194	.097	.028	.190	.096	.028	.183	.094	.027	.177	.092	.027	.171	.090	.027		
7.0	.182	.090	.025	.179	.089	.025	.172	.087	.025	.167	.085	.025	.161	.084	.025		
8.0	.171	.084	.024	.168	.083	.023	.163	.081	.023	.157	.080	.023	.153	.078	.023		
9.0	.161	.078	.022	.159	.077	.022	.154	.076	.022	.149	.075	.021	.145	.074	.021		
10.0	.153	.073	.020	.150	.073	.020	.146	.071	.020	.142	.070	.020	.138	.069	.020		

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.178	.156	.138	.152	.134	.118	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.057	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.136	.098	.068	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.062	.129	.087	.054	.089	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.036	.111	.064	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.042	.019	.043	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.097	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QC
 Test Date:2020-12-09

γ Range:-90 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:53.0%
 Test Distance:10.530m [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	8.6	9.9	8.8	10.1	10.3	8.2	9.6	8.5	9.8	10.0
3H	9.4	10.6	9.6	10.8	11.1	9.3	10.6	9.6	10.8	11.0
4H	9.9	11.1	10.2	11.3	11.6	9.9	11.1	10.2	11.3	11.6
6H	10.4	11.5	10.7	11.8	12.0	10.5	11.6	10.8	11.9	12.1
8H	10.6	11.6	10.9	11.9	12.2	10.7	11.8	11.0	12.1	12.3
12H	10.7	11.7	11.0	12.0	12.3	10.9	11.9	11.2	12.2	12.5
4H 2H	8.8	10.0	9.1	10.3	10.5	8.5	9.7	8.8	9.9	10.2
3H	10.0	11.0	10.3	11.3	11.6	9.7	10.7	10.0	11.0	11.3
4H	10.7	11.6	11.1	12.0	12.3	10.4	11.3	10.7	11.6	11.9
6H	11.4	12.2	11.8	12.6	12.9	11.1	11.9	11.4	12.2	12.6
8H	11.6	12.4	12.0	12.8	13.1	11.4	12.2	11.8	12.5	12.9
12H	11.8	12.5	12.2	12.9	13.3	11.6	12.4	12.1	12.7	13.1
8H 4H	10.9	11.7	11.3	12.1	12.4	10.6	11.4	11.0	11.7	12.1
6H	11.8	12.4	12.2	12.8	13.2	11.4	12.0	11.8	12.4	12.9
8H	12.1	12.7	12.6	13.1	13.6	11.8	12.3	12.2	12.8	13.2
12H	12.4	12.9	12.9	13.3	13.8	12.1	12.6	12.6	13.1	13.5
12H 4H	10.9	11.6	11.3	12.0	12.4	10.6	11.4	11.1	11.7	12.1
6H	11.8	12.4	12.3	12.8	13.3	11.5	12.0	11.9	12.5	12.9
8H	12.2	12.7	12.7	13.2	13.7	11.9	12.4	12.4	12.8	13.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.5					+ 0.3 / - 0.4				
1.5H	+ 0.2 / - 0.5					+ 0.2 / - 0.4				
2.0H	+ 0.7 / - 1.1					+ 0.8 / - 1.1				

CIE Pub.117, 6983 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 6.8)

C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QC
Test Date:2020-12-09

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

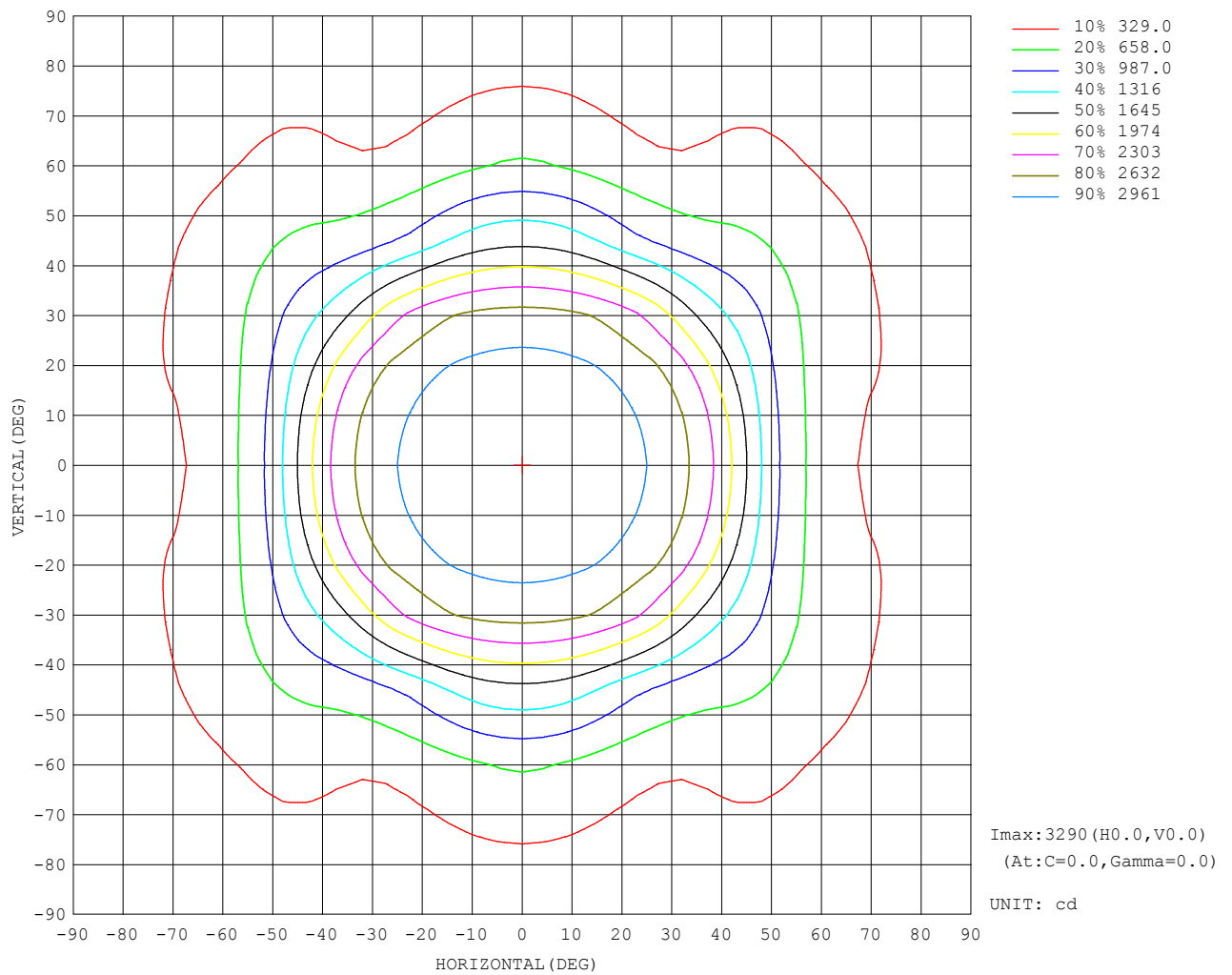
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	65	55	49	64	55	49	44
0.80	75	66	59	75	65	59	73	64	59	53
1.00	83	74	68	82	73	67	80	74	67	61
1.25	89	81	75	88	80	74	86	79	73	67
1.50	94	86	80	92	85	79	89	83	78	72
2.00	99	92	87	98	91	86	94	89	85	78
2.50	103	96	91	101	95	90	97	92	88	81
3.00	105	99	95	103	98	94	99	95	92	84
4.00	109	104	100	106	102	98	102	99	96	87
5.00	110	106	103	108	104	101	104	101	98	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QC
 Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 53.0%
 Test Distance: 10.530m [K=1.0000]
 Remarks:

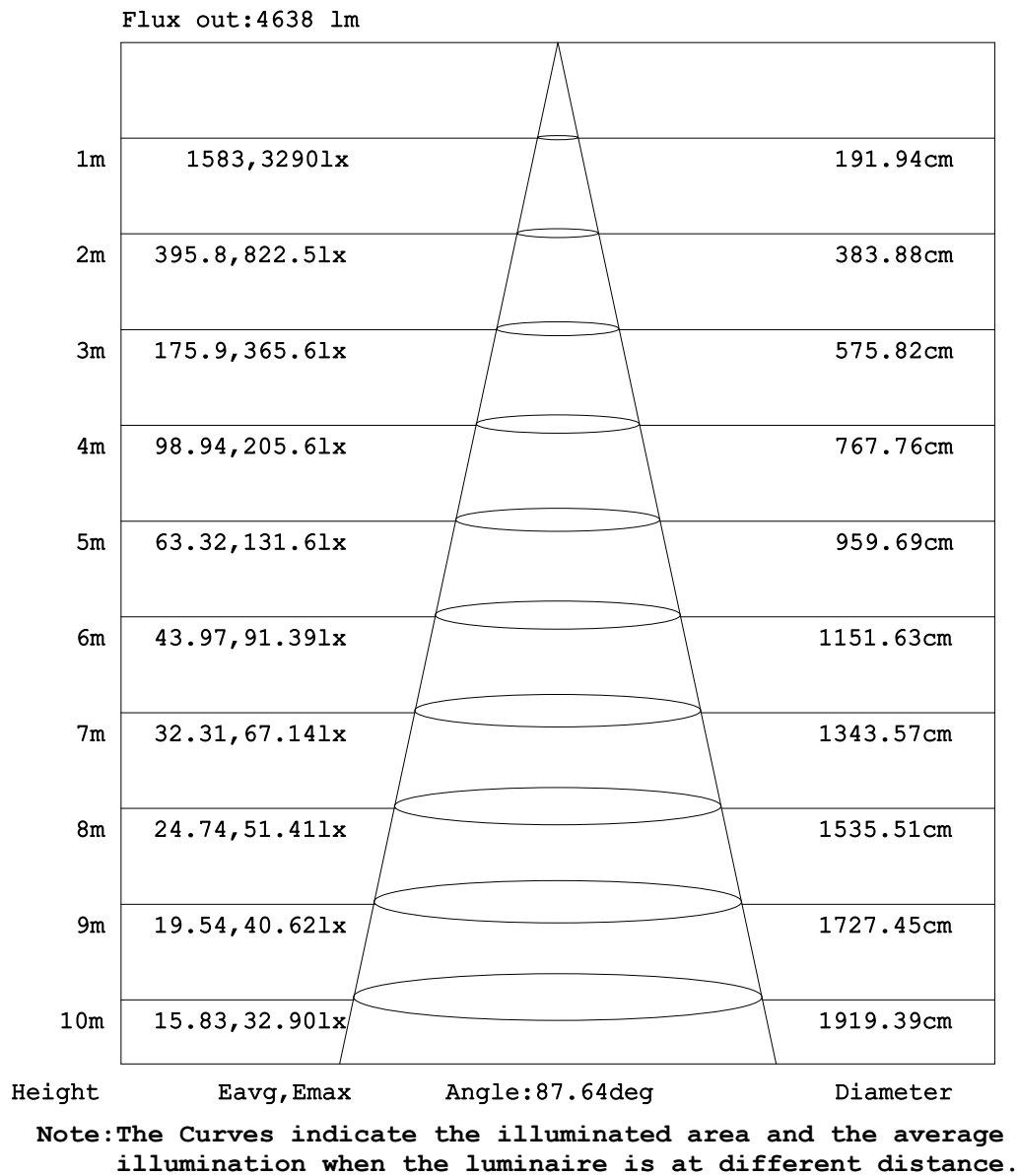
ISOCANDELA DIAGRAM



C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: QC
Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 53.0%
Test Distance: 10.530m [K=1.0000]
Remarks:

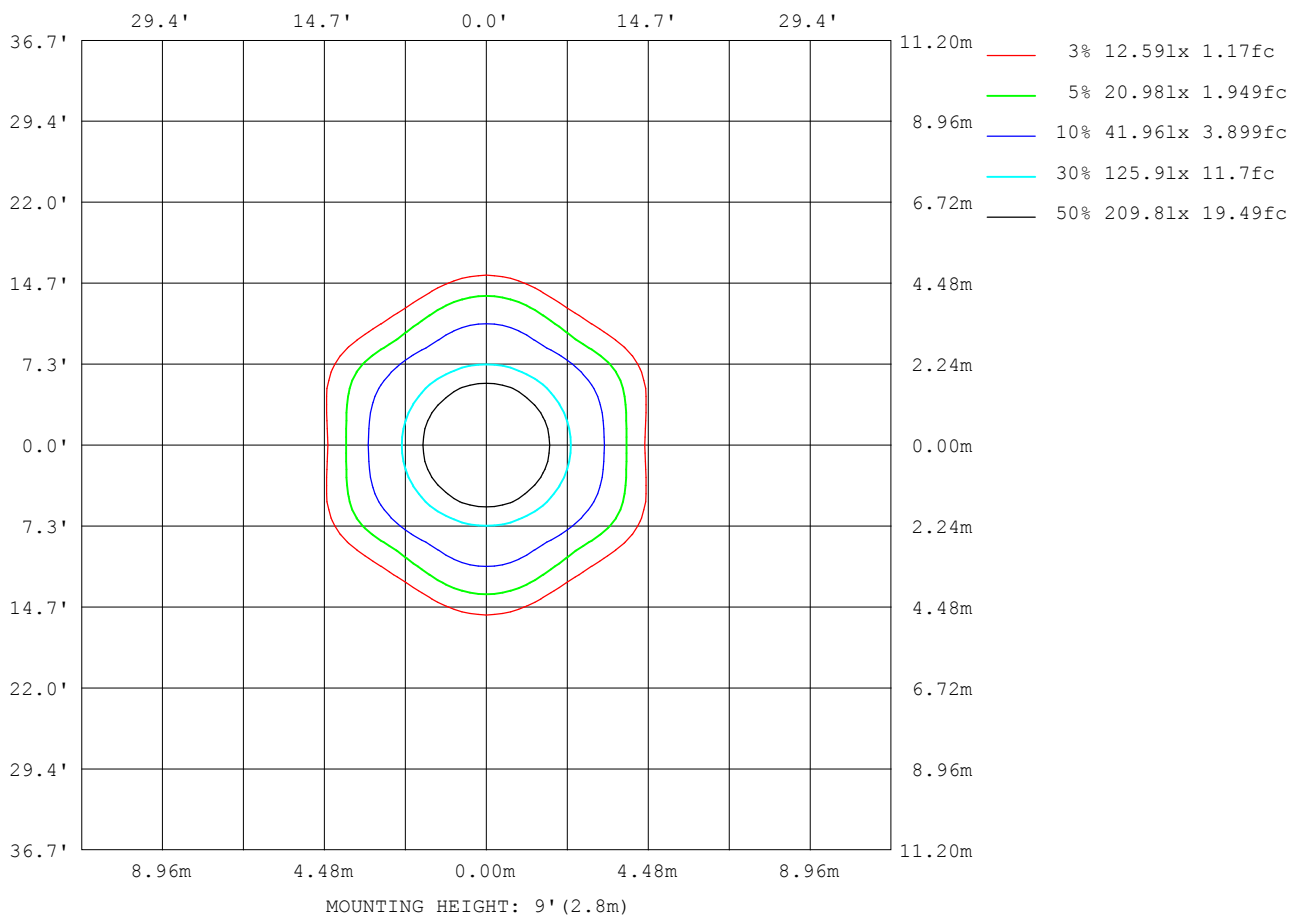
AAI Figure



C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QC
 Test Date:2020-12-09

γ Range:-90 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:53.0%
 Test Distance:10.530m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM



C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: QC
Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 53.0%
Test Distance: 10.530m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.3V I:0.2190A P:48.81W PF:0.9677 Freq:49.99Hz Lamp Flux:6983.08x1 lm		
NAME: VER-MP60120-50-840-TPA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ERVAN	SUR.:	Shielding Angle:

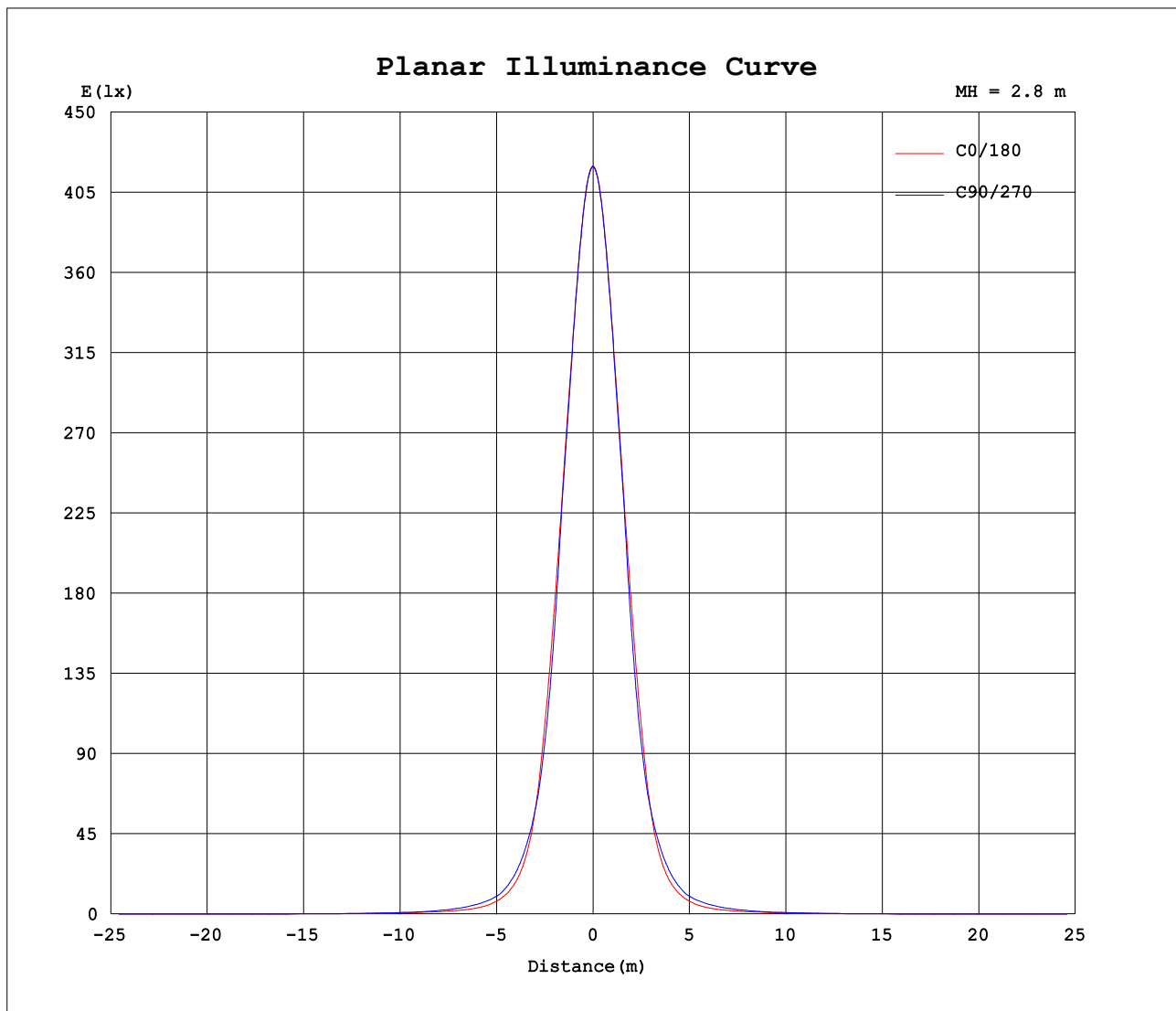
AvgL	cd/m2
L_0~180 (65) av	1349
L_0~180 (75) av	1775
L_0~180 (85) av	1715
L_90~270 (65) av	2133
L_90~270 (75) av	2106
L_90~270 (85) av	2163
L_45 (65) av	1802
L_45 (75) av	1841
L_45 (85) av	1936

Standard: GB/T 29293-2012

C Range: 0 - 90DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QC
 Test Date:2020-12-09

γ Range:-90 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:53.0%
 Test Distance:10.530m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: QC
Test Date: 2020-12-09

γ Range: -90 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 53.0%
Test Distance: 10.530m [K=1.0000]
Remarks:

Table--1

UNIT: cd

C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QC
Test Date:2020-12-09

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

Table--2

UNIT: cd

C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QC
Test Date:2020-12-09

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

Table--3

UNIT: cd

C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QC
Test Date:2020-12-09

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

Table--4

UNIT: cd

C Range: 0 - 90DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QC
Test Date:2020-12-09

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```


[illegible]

```

√ Range:-90 - 90DEG
√ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

[illegible]

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

[illegible]

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```

[illegible]

```

γ Range:-90 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:53.0%
Test Distance:10.530m [K=1.0000]
Remarks:

```