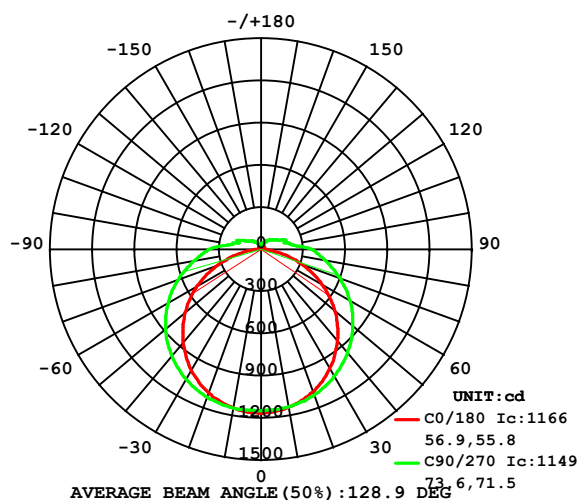


LUMINAIRE PHOTOMETRIC TEST REPORT

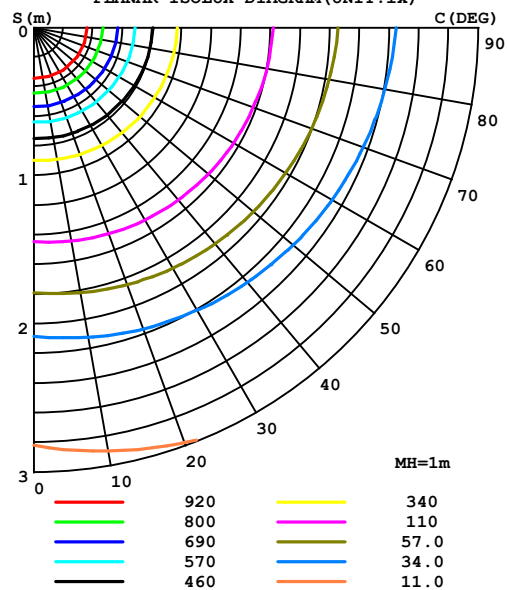
Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 107.61 lm/W			
MODEL	TP2	I _{max} (cd)	1166	S/MH (C0/180)	1.27
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH (C90/270)	1.39
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4538.3	η UP,DN (C0-180)	5.9,43.5
NOMINAL FLUX(lm)	4538.31	CIE CLASS	SEMI-D.	η UP,DN (C180-360)	5.6,45.0
LAMPS INSIDE	1	η up (%)	11.5	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	230	η down (%)	88.5	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:SEE
Test Date:2021-03-27

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	1141	1139	1147	1146					0- 10	109.7	109.7	2.42,2.42
20	1079	1105	1089	1122					10- 20	317.7	427.4	9.42,9.42
30	979.6	1042	994.2	1067					20- 30	490.5	917.9	20.2,20.2
40	847.9	957.6	863.8	989.0					30- 40	608.2	1526	33.6,33.6
50	685.7	854.0	707.1	887.7					40- 50	657.7	2184	48.1,48.1
60	503.8	730.4	526.2	764.9					50- 60	634.8	2819	62.1,62.1
70	303.3	595.2	326.2	626.8					60- 70	542.8	3361	74.1,74.1
80	108.8	464.4	126.9	486.2					70- 80	399.1	3761	82.9,82.9
90	5.701	362.4	6.346	371.5					80- 90	254.5	4015	88.5,88.5
100	8.383	210.0	6.106	211.4					90-100	160.9	4176	92,92
110	15.38	192.4	12.32	181.5					100-110	106.6	4282	94.4,94.4
120	19.74	136.4	17.27	126.0					110-120	87.97	4370	96.3,96.3
130	24.16	110.8	22.13	92.64					120-130	61.29	4432	97.7,97.7
140	24.89	87.90	23.71	67.48					130-140	44.49	4476	98.6,98.6
150	25.49	71.92	24.94	57.05					140-150	29.92	4506	99.3,99.3
160	28.86	52.45	28.62	43.42					150-160	18.33	4524	99.7,99.7
170	33.33	40.09	33.47	35.75					160-170	10.64	4535	99.9,99.9
180	35.86	25.25	36.29	25.05					170-180	3.183	4538	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 20.4 %									UNIT:lm		

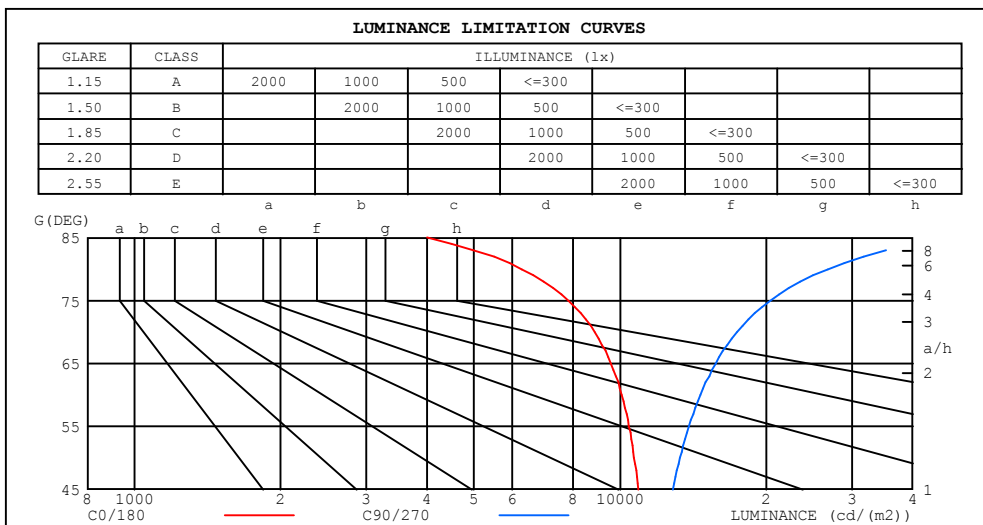
0 - 60 DEG Zonal Flux:2818.6 %lum: 62.1%
 0 - 45 DEG Zonal Flux:1853.2 %lum: 40.8%
 @35% Iavg: 10.5%
 @50% Iavg: 14.9%

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4000	46975
80	6263	26743
75	7824	20345
70	8868	17401
65	9570	15734
60	10076	14608
55	10426	13853
50	10667	13286
45	10892	12840

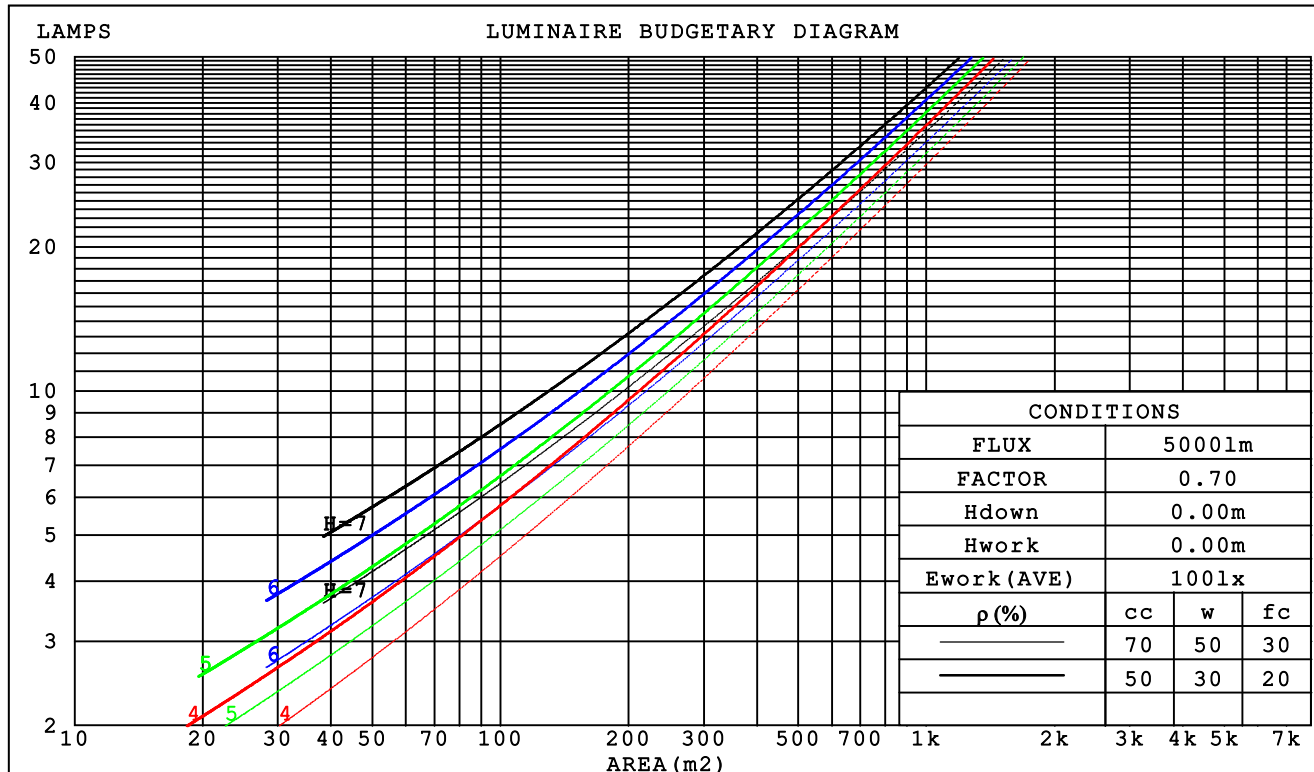
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

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						Coefficients of Utilization(CU)									
0.0	1.16	1.16	1.16	1.12	1.12	1.12	1.05	1.05	1.05	.98	.98	.98	.91	.91	.91	.88
1.0	.98	.93	.89	.95	.90	.86	.89	.85	.81	.83	.80	.77	.77	.75	.73	.70
2.0	.85	.77	.71	.82	.75	.69	.76	.70	.66	.71	.66	.62	.66	.63	.59	.56
3.0	.74	.65	.58	.71	.63	.56	.66	.60	.54	.62	.56	.52	.58	.53	.49	.47
4.0	.65	.55	.48	.63	.54	.47	.59	.51	.45	.55	.49	.44	.51	.46	.42	.39
5.0	.58	.48	.41	.56	.47	.40	.52	.45	.39	.49	.43	.37	.46	.40	.36	.33
6.0	.52	.42	.36	.50	.41	.35	.47	.39	.34	.44	.38	.33	.42	.36	.31	.29
7.0	.47	.38	.31	.45	.37	.31	.43	.35	.30	.40	.34	.29	.38	.32	.28	.25
8.0	.42	.34	.28	.41	.33	.27	.39	.32	.26	.37	.30	.26	.35	.29	.25	.23
9.0	.39	.30	.25	.38	.30	.24	.36	.29	.24	.34	.27	.23	.32	.26	.22	.20
10.0	.36	.28	.22	.35	.27	.22	.33	.26	.21	.31	.25	.21	.30	.24	.20	.18



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm					
NAME: TP2 45W			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: SEE			SUR.:		Shielding Angle:

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	.362	.206	.065	.351	.200	.064	.331	.190	.061	.313	.180	.058	.296	.171	.055		
2.0	.321	.176	.054	.312	.172	.053	.294	.163	.051	.277	.155	.049	.262	.148	.047		
3.0	.289	.154	.046	.280	.150	.045	.264	.143	.044	.249	.137	.042	.235	.130	.040		
4.0	.262	.136	.040	.254	.133	.039	.240	.127	.038	.226	.121	.037	.214	.116	.035		
5.0	.240	.122	.035	.233	.119	.035	.219	.114	.034	.207	.109	.032	.195	.104	.031		
6.0	.220	.110	.032	.214	.108	.031	.202	.104	.030	.191	.099	.029	.180	.095	.028		
7.0	.204	.101	.029	.198	.099	.028	.187	.095	.027	.177	.091	.026	.167	.087	.026		
8.0	.189	.093	.026	.184	.091	.026	.174	.087	.025	.165	.083	.024	.156	.080	.023		
9.0	.177	.085	.024	.172	.084	.024	.163	.080	.023	.154	.077	.022	.146	.074	.021		
10.0	.166	.079	.022	.161	.078	.022	.153	.075	.021	.145	.072	.020	.137	.069	.020		

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	.278	.278	.278	.238	.238	.238	.162	.162	.162	.093	.093	.093	.030	.030	.030	
1.0	.272	.244	.219	.233	.210	.188	.159	.144	.130	.092	.083	.076	.029	.027	.024	
2.0	.265	.221	.184	.227	.190	.159	.156	.132	.111	.090	.077	.065	.029	.025	.021	
3.0	.258	.204	.161	.221	.176	.140	.152	.122	.098	.088	.071	.058	.028	.023	.019	
4.0	.250	.191	.146	.215	.165	.127	.148	.115	.090	.085	.067	.053	.027	.022	.017	
5.0	.242	.181	.136	.208	.157	.118	.143	.110	.084	.083	.064	.050	.027	.021	.016	
6.0	.235	.173	.129	.202	.150	.112	.139	.105	.079	.081	.062	.047	.026	.020	.016	
7.0	.228	.167	.123	.196	.144	.108	.136	.101	.076	.079	.060	.045	.025	.020	.015	
8.0	.221	.161	.119	.191	.140	.104	.132	.098	.074	.077	.058	.044	.025	.019	.015	
9.0	.215	.156	.116	.185	.135	.101	.128	.095	.072	.075	.056	.043	.024	.018	.014	
10.0	.209	.152	.114	.181	.132	.099	.125	.093	.070	.073	.055	.042	.024	.018	.014	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm										
NAME: TP2 45W					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: SEE					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	21.6	20.6	22.0	22.4	21.5	22.9	21.9	23.3	23.7
3H	21.6	23.0	22.1	23.4	23.9	23.8	25.1	24.3	25.6	26.0
4H	22.2	23.4	22.7	23.9	24.4	25.0	26.3	25.5	26.8	27.3
6H	22.5	23.7	23.0	24.2	24.7	26.4	27.6	26.9	28.1	28.6
8H	22.6	23.8	23.1	24.2	24.8	27.2	28.3	27.7	28.8	29.4
12H	22.6	23.7	23.2	24.2	24.8	28.1	29.2	28.6	29.7	30.3
4H 2H	21.0	22.3	21.5	22.7	23.2	22.0	23.3	22.5	23.7	24.2
3H	22.7	23.8	23.3	24.3	24.9	24.5	25.6	25.0	26.1	26.7
4H	23.5	24.5	24.0	25.0	25.6	25.9	26.9	26.5	27.5	28.0
6H	24.0	24.9	24.5	25.4	26.0	27.5	28.4	28.1	29.0	29.6
8H	24.1	25.0	24.7	25.5	26.2	28.4	29.2	29.0	29.8	30.4
12H	24.2	25.0	24.8	25.6	26.2	29.4	30.2	30.0	30.8	31.5
8H 4H	24.1	25.0	24.7	25.5	26.2	26.2	27.0	26.8	27.6	28.2
6H	24.9	25.6	25.5	26.2	26.9	28.0	28.7	28.6	29.3	30.0
8H	25.2	25.9	25.9	26.5	27.2	29.1	29.7	29.7	30.3	31.0
12H	25.5	26.0	26.1	26.7	27.4	30.4	30.9	31.0	31.6	32.3
12H 4H	24.3	25.1	24.9	25.7	26.3	26.2	27.0	26.8	27.6	28.2
6H	25.3	25.9	25.9	26.5	27.2	28.1	28.7	28.7	29.3	30.0
8H	25.7	26.2	26.3	26.9	27.6	29.2	29.8	29.9	30.4	31.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.2				
2.0H	+ 0.2 / - 0.5					+ 0.2 / - 0.3				

CIE Pub.117, 4538 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 5.3$)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

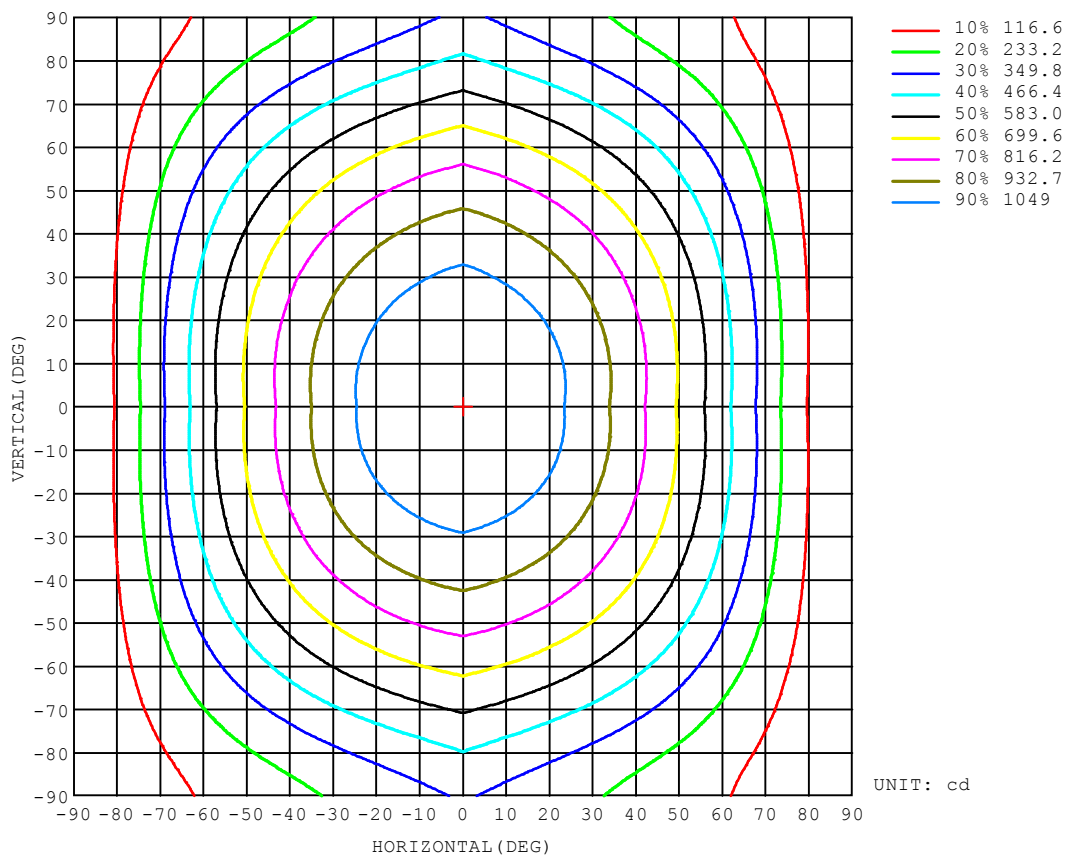
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	51	39	31	50	38	31	48	37	31	24
0.80	60	48	40	59	47	40	56	46	39	31
1.00	68	56	48	67	55	47	64	56	46	38
1.25	75	63	55	73	62	55	70	60	53	44
1.50	80	69	61	78	68	60	74	65	58	49
2.00	88	77	70	85	76	68	80	72	66	56
2.50	92	83	75	89	80	74	84	77	71	60
3.00	96	87	80	92	85	79	87	80	75	64
4.00	100	93	87	97	90	85	91	85	81	68
5.00	103	97	91	99	94	89	93	88	85	72
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: 2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

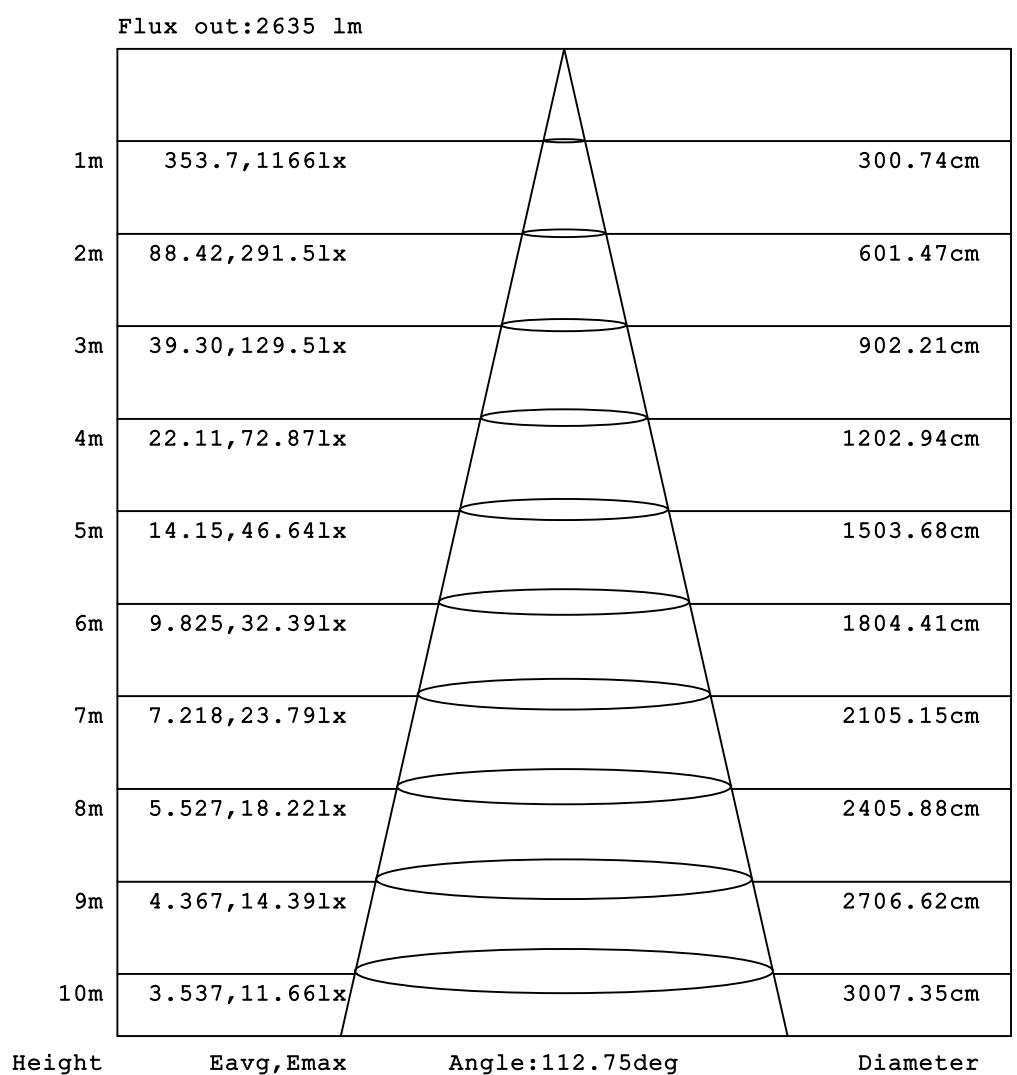


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: SEE
 Test Date: 2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:



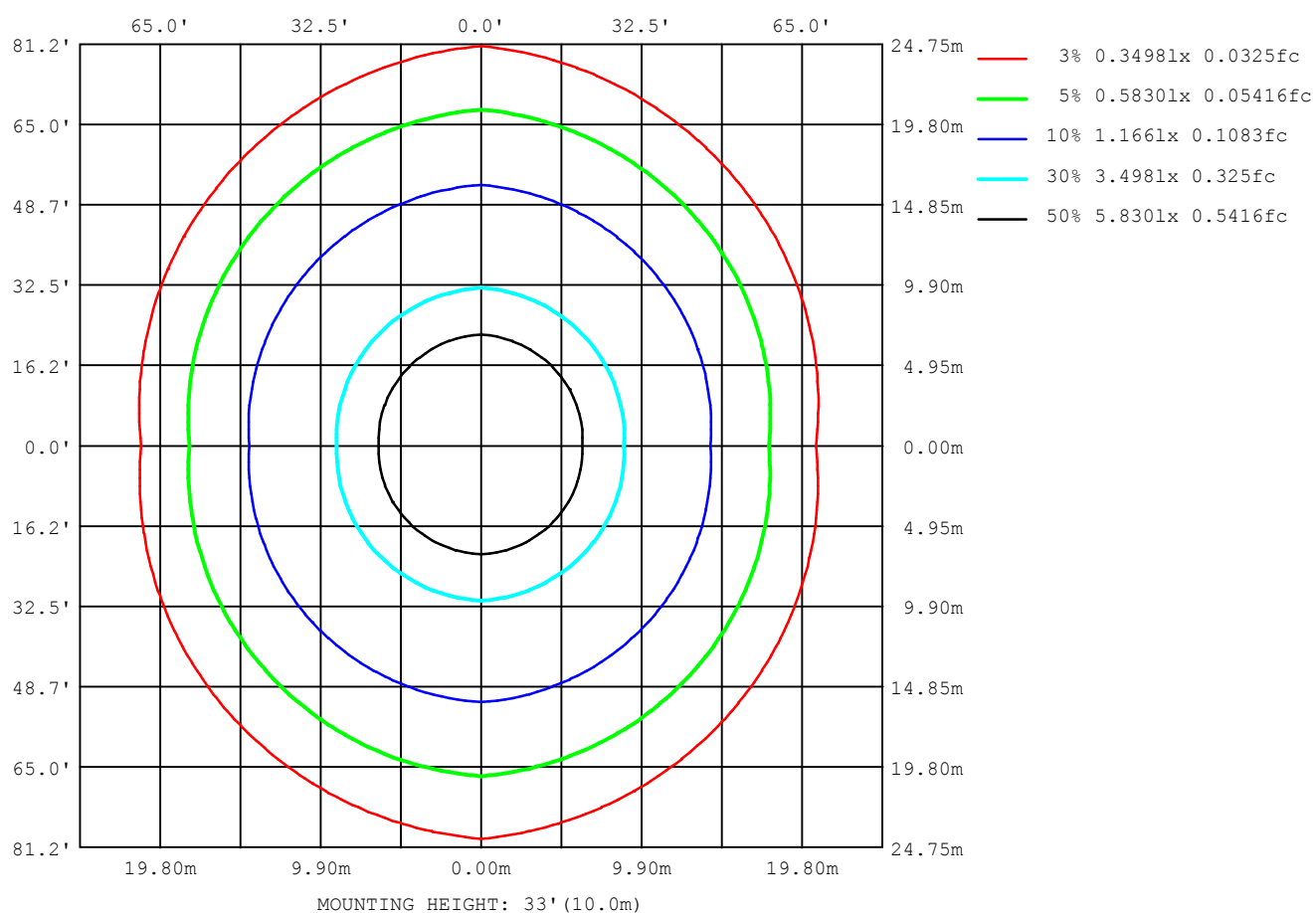
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2021-03-27

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

Test:U:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:SEE
Test Date:2021-03-27

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:230.20V I:0.199A P:42.17W PF:0.9189 Freq:49.99Hz Lamp Flux:4538.31x1 lm		
NAME: TP2 45W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: SEE	SUR.:	Shielding Angle:

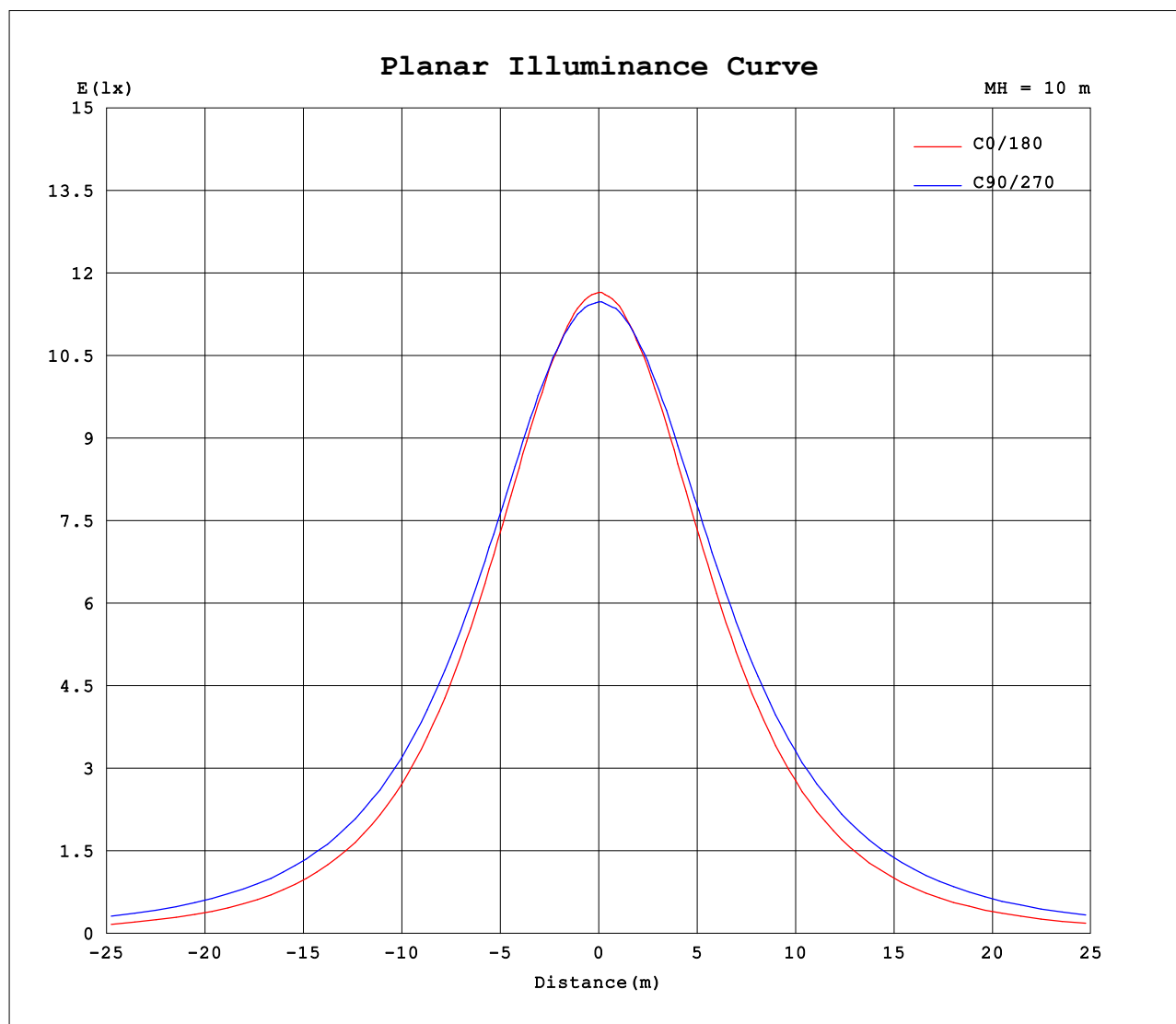
AvgL	cd/m2
L_0~180 (65) av	9836
L_0~180 (75) av	8234
L_0~180 (85) av	4731
L_90~270 (65) av	16132
L_90~270 (75) av	20890
L_90~270 (85) av	47854
L_45 (65) av	13788
L_45 (75) av	16170
L_45 (85) av	31729

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:SEE
 Test Date:2021-03-27

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: 2021-03-27

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: