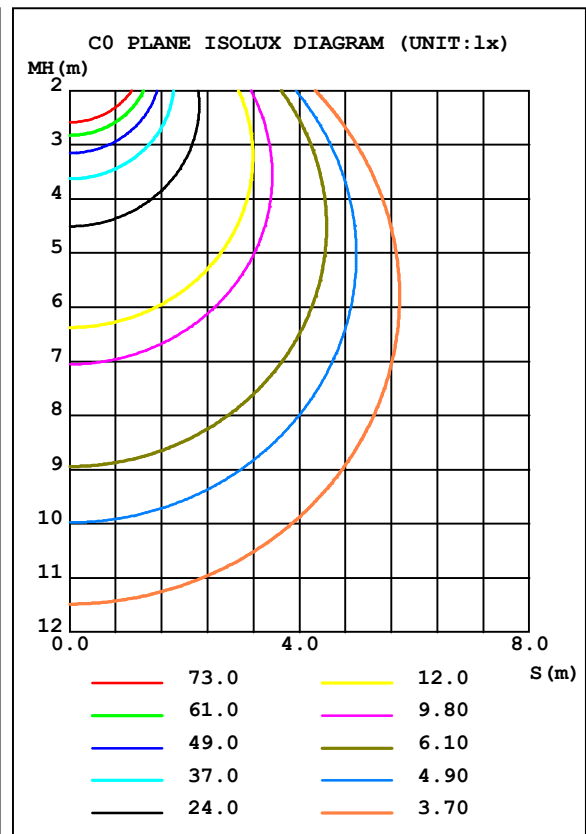
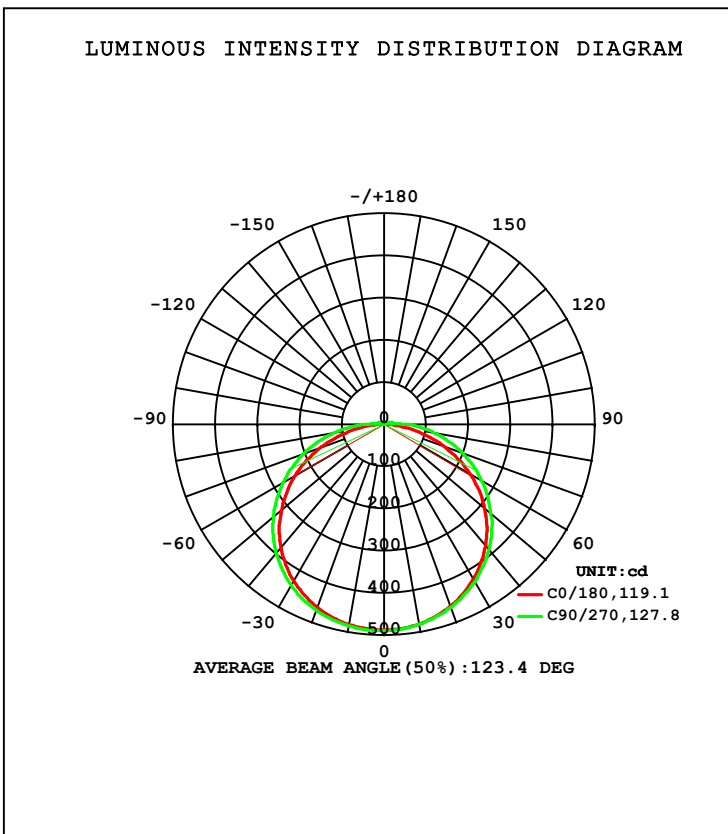


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TFXBD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 137.68 lm/W			
MODEL		I _{max} (cd)	489.2	S/MH (C0/180)	1.31
NOMINAL POWER (W)	12	LOR (%)	92.6	S/MH (C90/270)	1.34
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	1641.4	η UP, DN (C0-180)	1.2, 44.6
NOMINAL FLUX (lm)	1772.99	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.1, 45.7
LAMPS INSIDE	1	η up (%)	2.3	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	90.2	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: CHM
 Test Date: 2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 9.150m [K=1.0000]
 Remarks: 3200-3400K

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

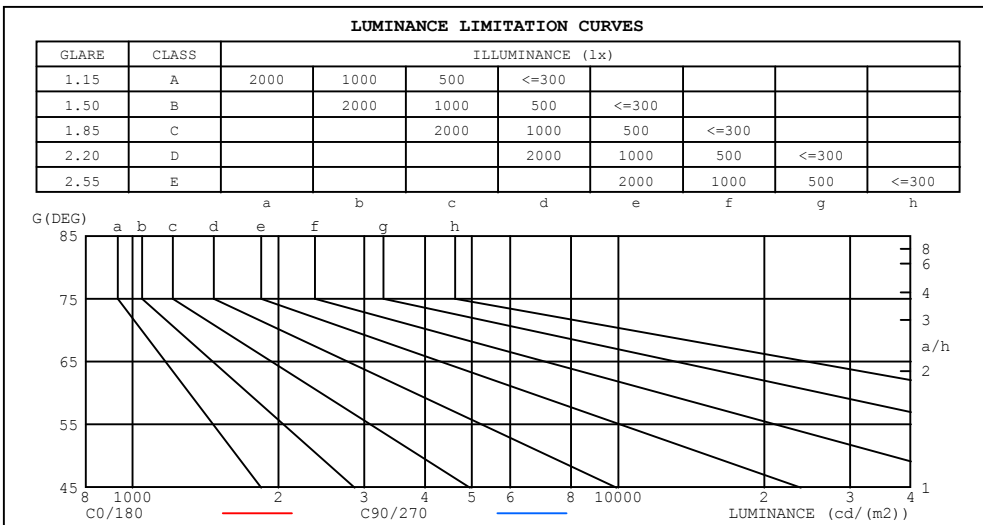
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	480.4	481.5	481.9	485.3					0- 10	46.33	46.33	2.82,2.61
20	459.2	462.0	462.4	469.5					10- 20	134.0	180.4	11,10.2
30	423.8	430.5	428.8	440.6					20- 30	207.0	387.3	23.6,21.8
40	374.9	387.2	381.3	398.4					30- 40	256.5	643.9	39.2,36.3
50	312.0	330.3	318.3	343.2					40- 50	275.9	919.8	56,51.9
60	236.2	267.4	244.1	276.9					50- 60	261.4	1181	72,66.6
70	148.5	196.8	158.4	202.0					60- 70	214.9	1396	85,78.7
80	60.10	122.9	68.48	120.9					70- 80	142.1	1538	93.7,86.7
90	1.063	55.88	3.495	47.05					80- 90	62.01	1600	97.5,90.2
100	1.950	16.32	1.089	13.45					90-100	16.61	1617	98.5,91.2
110	2.568	15.67	1.621	14.18					100-110	9.571	1626	99.1,91.7
120	2.529	2.638	2.160	3.971					110-120	5.216	1631	99.4,92
130	2.696	2.715	2.664	3.173					120-130	2.448	1634	99.5,92.2
140	3.078	3.101	3.101	3.280					130-140	2.305	1636	99.7,92.3
150	3.403	3.460	3.432	3.470					140-150	2.064	1638	99.8,92.4
160	3.689	3.712	3.712	3.717					150-160	1.655	1640	99.9,92.5
170	3.902	3.931	3.914	3.930					160-170	1.080	1641	100,92.6
180	4.020	4.026	4.015	4.043					170-180	0.3785	1641	100,92.6
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	38878	142544
80	49439	101141
75	57136	88250
70	62045	82214
65	65475	78726
60	67479	76409
55	68651	74780
50	69334	73409
45	69733	72999

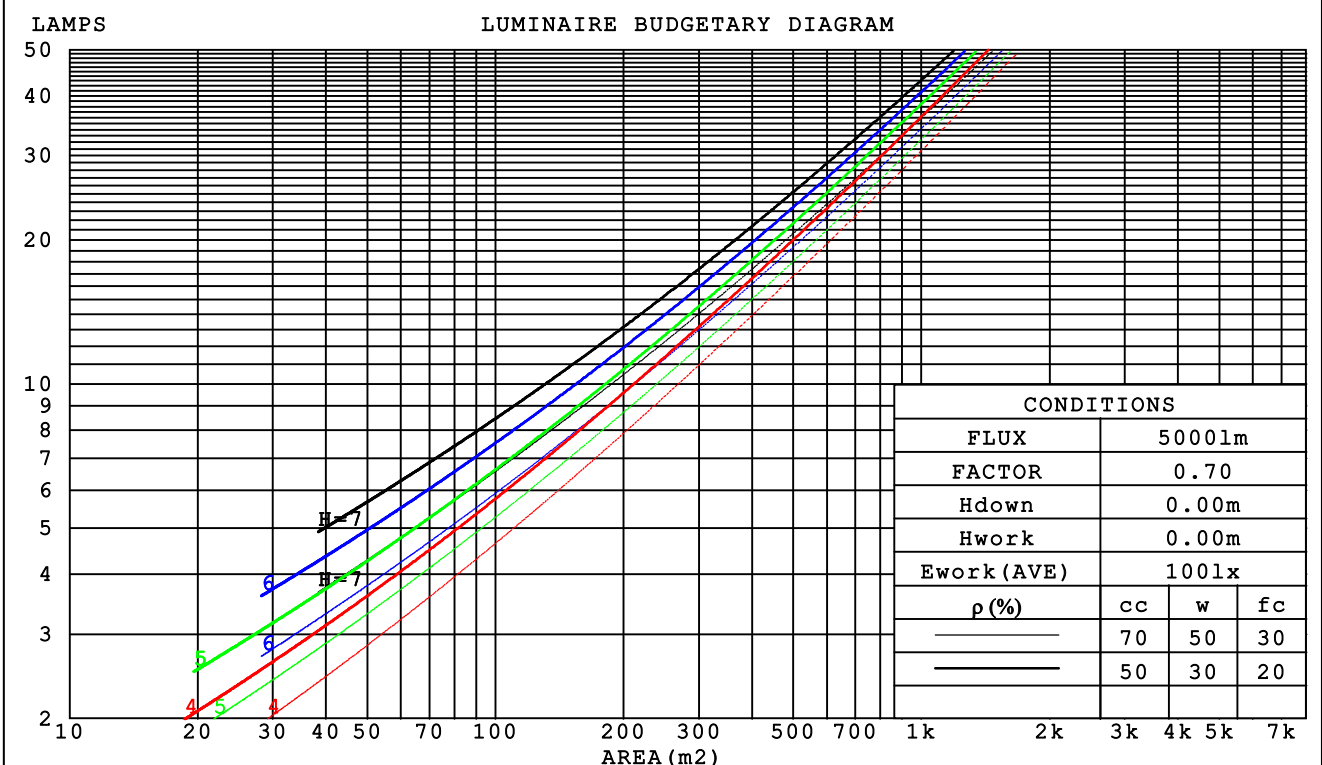
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	.97	.97	.97	.92	.92	.92	.90
1.0	.94	.90	.86	.92	.88	.84	.87	.84	.81	.83	.81	.78	.79	.77	.75	.73
2.0	.81	.74	.69	.79	.73	.68	.75	.70	.66	.72	.68	.64	.69	.65	.62	.60
3.0	.71	.63	.56	.69	.62	.56	.66	.60	.54	.63	.58	.53	.60	.56	.52	.50
4.0	.62	.54	.47	.61	.53	.47	.58	.51	.46	.56	.50	.45	.53	.48	.44	.42
5.0	.55	.47	.40	.54	.46	.40	.52	.45	.39	.50	.44	.39	.48	.42	.38	.36
6.0	.50	.41	.35	.49	.41	.35	.47	.40	.34	.45	.39	.34	.43	.38	.33	.31
7.0	.45	.37	.31	.44	.36	.31	.42	.35	.30	.41	.34	.30	.39	.34	.29	.27
8.0	.41	.33	.27	.40	.32	.27	.39	.32	.27	.37	.31	.26	.36	.30	.26	.24
9.0	.38	.30	.24	.37	.29	.24	.36	.29	.24	.34	.28	.24	.33	.28	.24	.22
10.0	.35	.27	.22	.34	.27	.22	.33	.26	.22	.32	.26	.22	.31	.25	.21	.20



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

WEC AND CCEC

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	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	.317	.180	.057	.309	.176	.056	.296	.170	.054	.283	.163	.052	.271	.157	.051	
2.0	.289	.159	.049	.283	.156	.048	.271	.150	.047	.259	.145	.046	.249	.141	.044	
3.0	.264	.140	.042	.258	.138	.042	.247	.134	.041	.237	.130	.040	.228	.126	.039	
4.0	.241	.125	.037	.236	.123	.036	.226	.120	.036	.217	.117	.035	.209	.113	.035	
5.0	.221	.113	.033	.217	.111	.032	.208	.108	.032	.200	.105	.031	.192	.103	.031	
6.0	.204	.102	.029	.200	.101	.029	.192	.098	.029	.185	.096	.028	.178	.094	.028	
7.0	.189	.093	.027	.185	.092	.026	.178	.090	.026	.172	.088	.026	.166	.086	.025	
8.0	.176	.086	.024	.173	.085	.024	.166	.083	.024	.161	.081	.023	.155	.080	.023	
9.0	.165	.080	.022	.162	.079	.022	.156	.077	.022	.151	.075	.022	.146	.074	.021	
10.0	.154	.074	.021	.152	.073	.020	.147	.072	.020	.142	.070	.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	.194	.194	.194	.166	.166	.166	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.187	.162	.140	.160	.139	.120	.109	.096	.083	.063	.055	.048	.020	.018	.016	
2.0	.180	.140	.106	.154	.121	.092	.106	.083	.064	.061	.049	.038	.020	.016	.012	
3.0	.173	.124	.085	.148	.107	.074	.102	.074	.052	.059	.043	.030	.019	.014	.010	
4.0	.166	.112	.071	.142	.097	.061	.098	.067	.043	.057	.039	.026	.018	.013	.008	
5.0	.159	.102	.061	.136	.089	.053	.094	.062	.037	.054	.036	.022	.018	.012	.007	
6.0	.152	.095	.054	.131	.082	.047	.090	.057	.033	.052	.034	.020	.017	.011	.006	
7.0	.146	.088	.048	.125	.077	.042	.087	.054	.030	.050	.032	.018	.016	.010	.006	
8.0	.139	.083	.044	.120	.072	.039	.083	.051	.027	.048	.030	.016	.016	.010	.005	
9.0	.134	.079	.041	.115	.068	.036	.080	.048	.026	.046	.028	.015	.015	.009	.005	
10.0	.128	.075	.039	.111	.065	.034	.077	.046	.024	.045	.027	.014	.015	.009	.005	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm										
NAME: TF5BD-MP-IP66					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:0.01*1M			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	25.4	26.9	25.7	27.2	27.5	25.8	27.4	26.1	27.6	27.9
3H	27.0	28.4	27.3	28.7	29.0	27.8	29.2	28.1	29.5	29.8
4H	27.6	29.0	28.0	29.3	29.6	28.8	30.1	29.1	30.4	30.7
6H	28.1	29.3	28.4	29.7	30.0	29.7	31.0	30.1	31.3	31.6
8H	28.2	29.4	28.6	29.8	30.1	30.2	31.4	30.5	31.7	32.1
12H	28.2	29.4	28.6	29.8	30.1	30.6	31.8	31.0	32.2	32.5
4H 2H	26.1	27.5	26.5	27.8	28.1	26.5	27.8	26.8	28.1	28.4
3H	27.9	29.1	28.3	29.5	29.8	28.6	29.8	29.0	30.2	30.5
4H	28.7	29.8	29.1	30.2	30.6	29.7	30.8	30.1	31.2	31.6
6H	29.3	30.3	29.7	30.7	31.1	30.8	31.8	31.3	32.2	32.6
8H	29.5	30.4	29.9	30.8	31.2	31.4	32.3	31.8	32.7	33.1
12H	29.6	30.4	30.1	30.9	31.3	31.9	32.8	32.4	33.2	33.7
8H 4H	29.1	30.1	29.6	30.5	30.9	30.0	30.9	30.5	31.4	31.8
6H	29.9	30.7	30.4	31.1	31.6	31.3	32.1	31.8	32.5	33.0
8H	30.2	30.9	30.7	31.4	31.9	32.0	32.7	32.5	33.2	33.7
12H	30.4	31.0	31.0	31.5	32.1	32.8	33.4	33.3	33.8	34.4
12H 4H	29.2	30.1	29.7	30.5	31.0	30.0	30.9	30.5	31.3	31.8
6H	30.1	30.8	30.6	31.2	31.8	31.4	32.1	31.9	32.6	33.1
8H	30.5	31.1	31.0	31.5	32.1	32.1	32.7	32.7	33.2	33.8
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 / - 0.3				
2.0H	+ 0.2 / - 0.4					+ 0.1 / - 0.3				

CIE Pub.117, 1773 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.0)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:

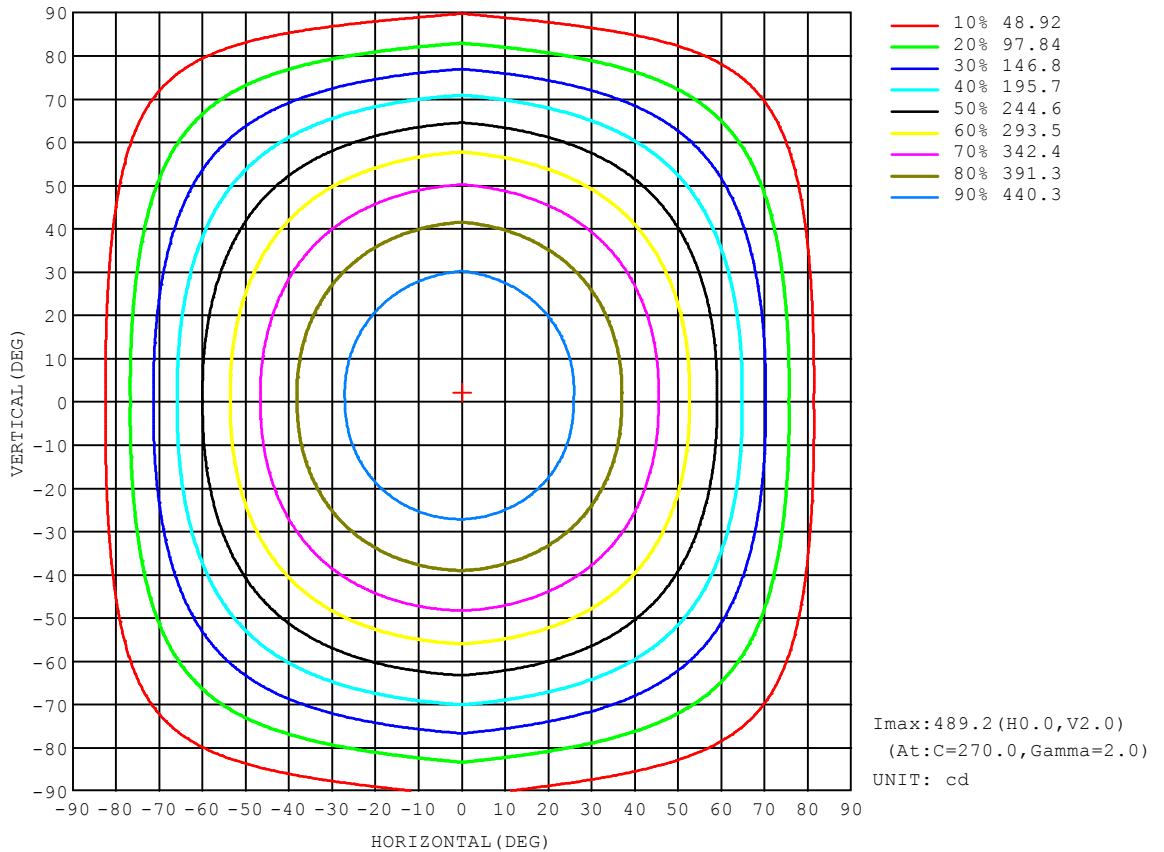
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	50	39	33	50	39	32	48	38	32	26
0.80	59	48	41	58	48	41	57	47	40	34
1.00	67	56	49	66	56	49	64	57	48	41
1.25	74	63	56	72	63	56	70	61	55	48
1.50	78	69	62	77	68	61	74	66	60	52
2.00	85	76	70	83	75	69	80	73	67	59
2.50	89	81	75	87	80	74	83	77	72	63
3.00	92	85	79	90	84	78	86	81	76	67
4.00	96	90	85	94	88	84	89	85	81	72
5.00	99	94	89	96	92	88	92	88	85	75
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:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:

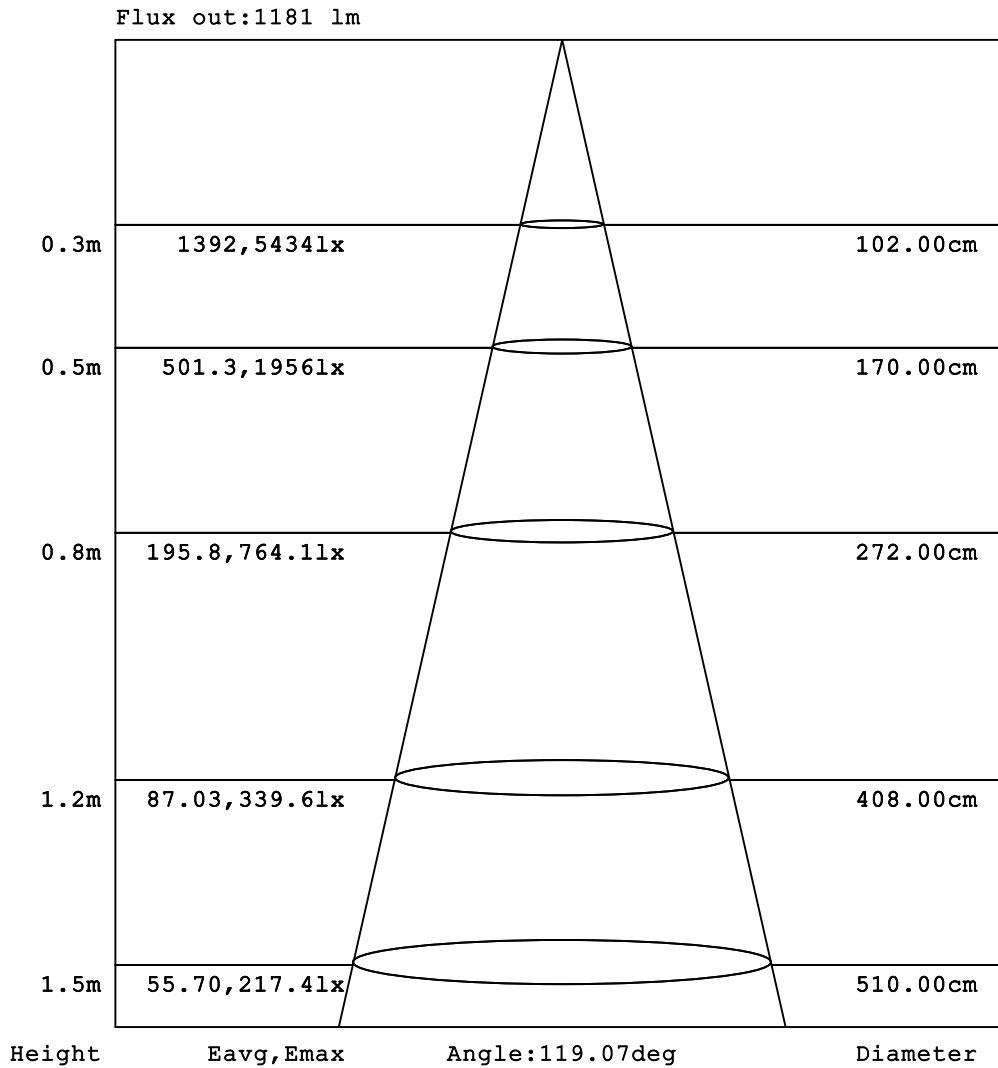


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: CHM
 Test Date: 2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 9.150m [K=1.0000]
 Remarks: 3200-3400K

AAI Figure

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:



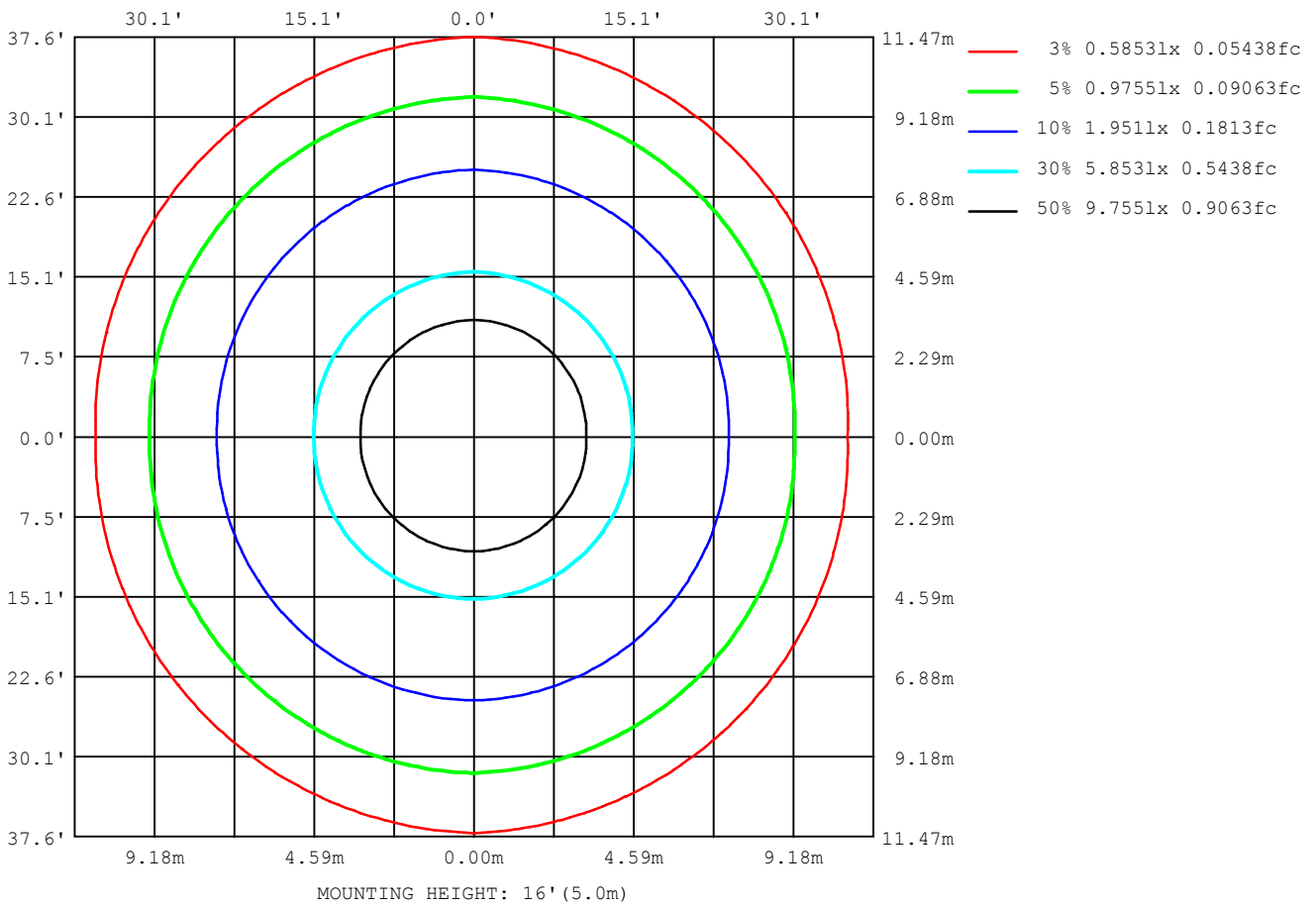
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

ISOLUX DIAGRAM

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

LED Avg.L Report

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:

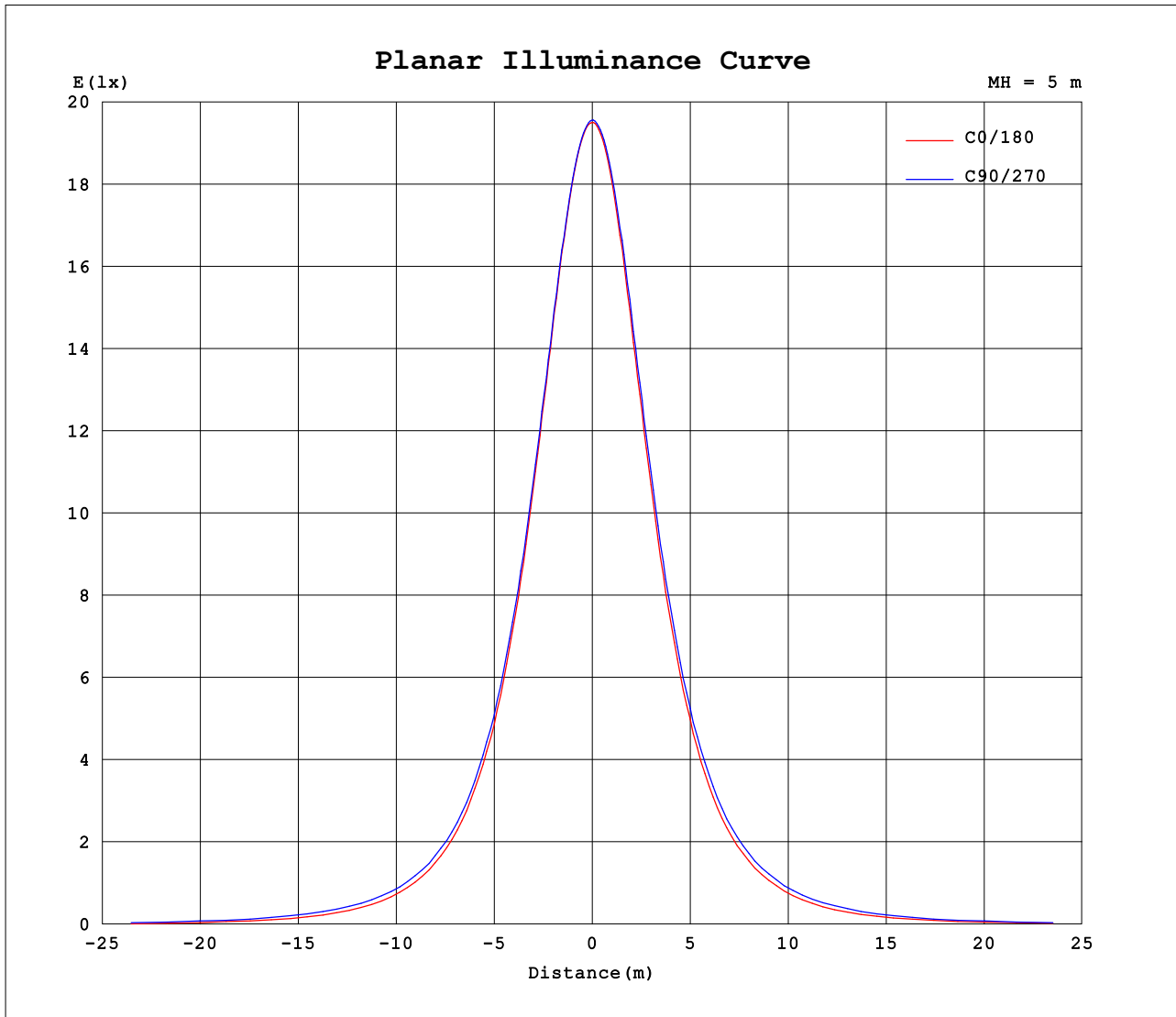
AvgL	cd/m2
L_0~180 (65) av	66968
L_0~180 (75) av	59740
L_0~180 (85) av	44175
L_90~270 (65) av	79972
L_90~270 (75) av	88725
L_90~270 (85) av	137027
L_45 (65) av	75188
L_45 (75) av	78019
L_45 (85) av	102538

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:9.150m [K=1.0000]
 Remarks: 3200-3400K

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: CHM
 Test Date: 2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 9.150m [K=1.0000]
 Remarks: 3200-3400K

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.4968A P:11.922W PF:1.0000 Freq:46.11Hz Lamp Flux:1772.99x1 lm		
NAME: TF5BD-MP-IP66	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01*1M	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	488	489	488	489															
5	486	487	487	489															
10	480	482	482	485															
15	472	473	474	479															
20	459	462	462	470															
25	443	448	447	457															
30	424	431	429	441															
35	401	410	407	421															
40	375	387	381	398															
45	345	361	352	372															
50	312	330	318	343															
55	276	300	283	311															
60	236	267	244	277															
65	194	233	203	240															
70	149	197	158	202															
75	104	160	113	162															
80	60.1	123	68.5	121															
85	23.7	87.0	30.2	80.2															
90	1.06	55.9	3.49	47.1															
95	1.33	31.8	0.86	25.4															
100	1.95	16.3	1.09	13.5															
105	2.22	19.0	1.34	15.0															
110	2.57	15.7	1.62	14.2															
115	2.82	6.95	1.90	7.93															
120	2.53	2.64	2.16	3.97															
125	2.52	2.52	2.42	3.35															
130	2.70	2.71	2.66	3.17															
135	2.89	2.92	2.89	3.23															
140	3.08	3.10	3.10	3.28															
145	3.25	3.28	3.28	3.38															
150	3.40	3.46	3.43	3.47															
155	3.54	3.61	3.58	3.61															
160	3.69	3.71	3.71	3.72															
165	3.81	3.84	3.82	3.83															
170	3.90	3.93	3.91	3.93															
175	3.99	3.99	3.99	3.99															
180	4.02	4.03	4.01	4.04															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:CHM
 Test Date:2020-05-14

γ Range: 0 - 180DEG
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