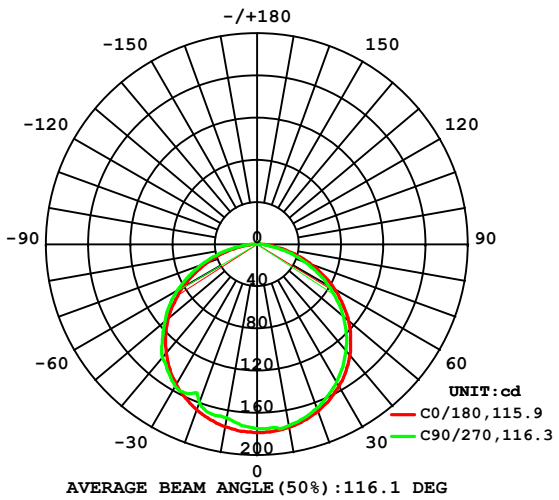
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

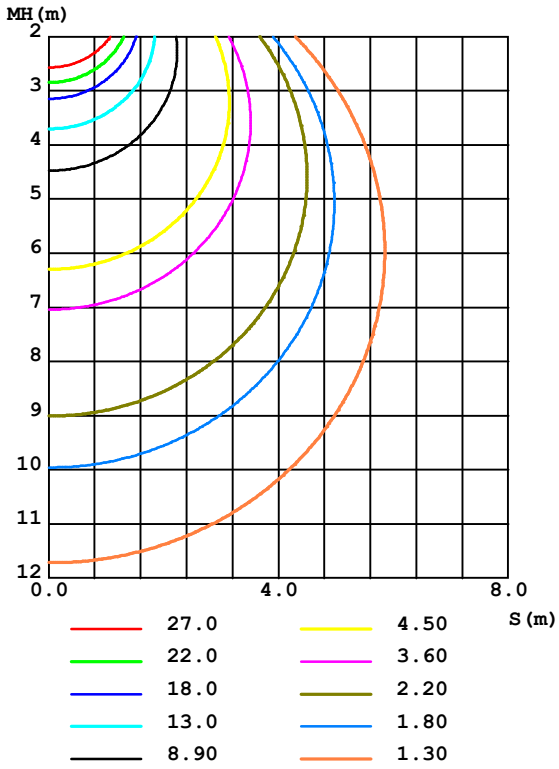
DATA OF LAMP		PHOTOMETRIC DATA Eff: 117.07 lm/W			
MODEL	TF5BD	Imax(cd)	178.4	S/MH(C0/180)	1.28
NOMINAL POWER(W)	4.8	LOR(%)	100.0	S/MH(C90/270)	1.32
RATED VOLTAGE(V)	12	TOTAL FLUX(lm)	534.47	η UP,DN(C0-180)	0.7,48.9
NOMINAL FLUX(lm)	534.471	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.7,49.7
LAMPS INSIDE	1	η up(%)	1.4	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	12	η down(%)	98.6	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):116.1 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	176.2	174.7	175.5	166.9					0- 10	16.70	16.70	3.12,3.12
20	168.5	165.5	167.2	160.2					10- 20	48.12	64.82	12.1,12.1
30	155.5	151.0	153.4	155.4					20- 30	73.64	138.5	25.9,25.9
40	137.1	131.4	134.3	140.2					30- 40	90.86	229.3	42.9,42.9
50	113.4	107.0	110.1	114.7					40- 50	95.63	325.0	60.8,60.8
60	84.90	78.26	81.23	87.00					50- 60	87.20	412.2	77.1,77.1
70	53.05	47.00	49.49	55.47					60- 70	66.41	478.6	89.5,89.5
80	22.29	18.11	19.50	24.81					70- 80	37.89	516.5	96.6,96.6
90	0.4818	1.653	0.5559	2.905					80- 90	10.62	527.1	98.6,98.6
100	0.5165	0.8418	0.5675	0.6036					90-100	0.7583	527.8	98.8,98.8
110	0.7653	1.066	0.8160	0.8219					100-110	0.7884	528.6	98.9,98.9
120	1.009	1.289	1.060	1.083					110-120	0.9795	529.6	99.1,99.1
130	1.276	1.489	1.315	1.326					120-130	1.104	530.7	99.3,99.3
140	1.507	1.681	1.539	1.569					130-140	1.134	531.8	99.5,99.5
150	1.706	1.819	1.732	1.756					140-150	1.044	532.9	99.7,99.7
160	1.874	1.887	1.893	1.912					150-160	0.8441	533.7	99.9,99.9
170	2.005	1.993	2.010	2.018					160-170	0.5515	534.3	100,100
180	2.061	2.080	2.061	2.055					170-180	0.1939	534.5	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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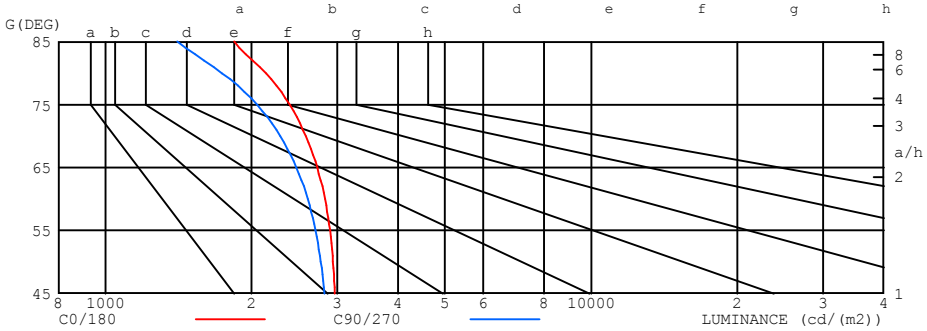
LUMINANCE LIMITATION CURVES

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	1841	1406
80	2139	1738
75	2396	2051
70	2585	2290
65	2729	2473
60	2830	2609
55	2898	2705
50	2941	2774
45	2967	2824

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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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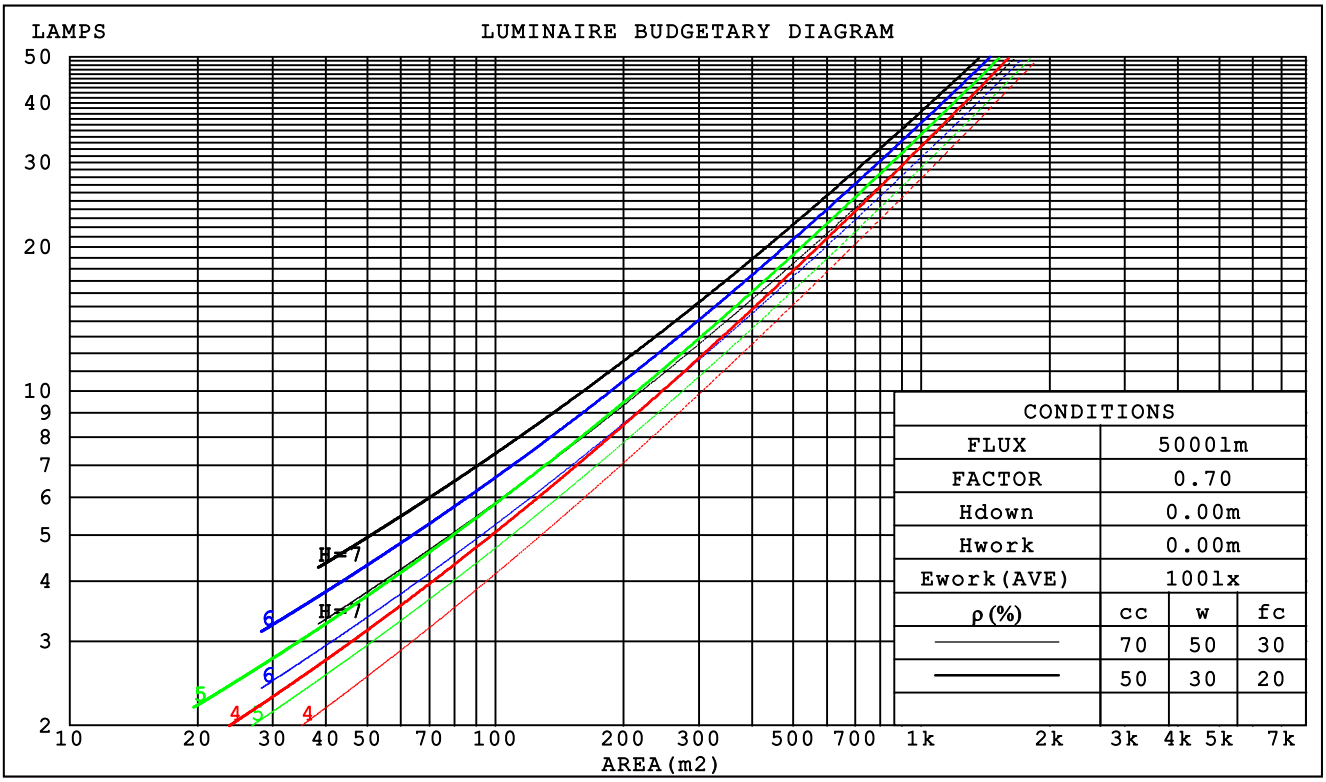
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

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						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.99
1.0	1.03	.99	.95	1.01	.97	.93	.96	.93	.90	.92	.90	.87	.88	.86	.84	.82
2.0	.90	.83	.77	.88	.81	.76	.84	.79	.74	.81	.76	.72	.77	.74	.70	.68
3.0	.79	.70	.64	.77	.69	.63	.74	.67	.62	.71	.65	.61	.68	.63	.59	.57
4.0	.70	.61	.54	.68	.60	.53	.65	.58	.53	.63	.57	.52	.61	.55	.51	.49
5.0	.62	.53	.46	.61	.52	.46	.59	.51	.45	.56	.50	.45	.54	.49	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.39	.51	.44	.39	.49	.43	.39	.36
7.0	.50	.42	.35	.50	.41	.35	.48	.40	.35	.46	.40	.34	.45	.39	.34	.32
8.0	.46	.37	.31	.45	.37	.31	.44	.36	.31	.42	.36	.31	.41	.35	.31	.29
9.0	.42	.34	.28	.41	.34	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.26
10.0	.39	.31	.26	.38	.31	.25	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



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γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
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WEC AND CCEC

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

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						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.313	.178	.056	.306	.174	.055	.291	.167	.053	.279	.161	.052	.267	.155	.050	
2.0	.294	.161	.049	.288	.158	.049	.275	.153	.048	.264	.148	.046	.253	.143	.045	
3.0	.272	.145	.043	.266	.143	.043	.255	.138	.042	.245	.134	.041	.235	.130	.040	
4.0	.251	.130	.038	.246	.129	.038	.236	.125	.037	.227	.122	.037	.218	.119	.036	
5.0	.232	.118	.034	.227	.117	.034	.218	.114	.033	.210	.111	.033	.203	.108	.033	
6.0	.215	.108	.031	.211	.106	.031	.203	.104	.030	.196	.102	.030	.189	.099	.030	
7.0	.200	.099	.028	.196	.098	.028	.189	.096	.028	.183	.094	.027	.176	.092	.027	
8.0	.187	.091	.026	.183	.090	.026	.177	.088	.025	.171	.087	.025	.165	.085	.025	
9.0	.175	.085	.024	.172	.084	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.079	.022	.162	.078	.022	.156	.077	.022	.152	.075	.021	.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	.201	.201	.201	.172	.172	.172	.117	.117	.117	.067	.067	.067	.022	.022	.022	
1.0	.191	.167	.145	.164	.143	.125	.112	.098	.086	.064	.057	.050	.021	.018	.016	
2.0	.183	.143	.108	.157	.123	.094	.108	.085	.065	.062	.049	.038	.020	.016	.012	
3.0	.176	.125	.085	.151	.108	.073	.103	.075	.052	.060	.044	.030	.019	.014	.010	
4.0	.168	.112	.069	.144	.097	.060	.099	.067	.042	.057	.039	.025	.018	.013	.008	
5.0	.161	.101	.058	.138	.088	.050	.095	.061	.036	.055	.036	.021	.018	.012	.007	
6.0	.154	.093	.050	.132	.081	.043	.091	.056	.031	.053	.033	.018	.017	.011	.006	
7.0	.147	.086	.044	.126	.075	.038	.087	.052	.027	.051	.031	.016	.016	.010	.005	
8.0	.140	.081	.040	.121	.070	.034	.084	.049	.024	.049	.029	.015	.016	.009	.005	
9.0	.134	.076	.036	.116	.066	.031	.080	.046	.022	.047	.027	.013	.015	.009	.004	
10.0	.128	.071	.033	.111	.062	.029	.077	.044	.021	.045	.026	.012	.015	.008	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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UGR(Unified Glare Rating) Table

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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	18.7	20.2	19.0	20.5	20.7	18.4	19.9	18.7	20.2	20.4
3H	20.3	21.7	20.6	21.9	22.2	19.8	21.2	20.2	21.5	21.8
4H	20.9	22.2	21.2	22.5	22.8	20.4	21.7	20.7	22.0	22.3
6H	21.3	22.5	21.6	22.8	23.2	20.7	22.0	21.1	22.3	22.6
8H	21.4	22.6	21.8	22.9	23.3	20.8	22.0	21.2	22.3	22.7
12H	21.5	22.7	21.9	23.0	23.3	20.9	22.0	21.2	22.3	22.7
4H 2H	19.3	20.6	19.6	20.9	21.2	19.1	20.4	19.4	20.7	20.9
3H	21.0	22.2	21.4	22.5	22.8	20.7	21.8	21.0	22.1	22.5
4H	21.7	22.8	22.1	23.1	23.5	21.3	22.4	21.7	22.7	23.1
6H	22.3	23.2	22.7	23.6	24.0	21.8	22.7	22.2	23.1	23.5
8H	22.5	23.3	22.9	23.7	24.2	21.9	22.8	22.3	23.2	23.6
12H	22.6	23.4	23.0	23.8	24.2	22.0	22.8	22.4	23.2	23.6
8H 4H	21.9	22.8	22.4	23.2	23.6	21.6	22.5	22.0	22.8	23.3
6H	22.6	23.4	23.1	23.8	24.3	22.2	22.9	22.6	23.3	23.8
8H	22.9	23.6	23.4	24.0	24.5	22.4	23.0	22.9	23.5	24.0
12H	23.1	23.7	23.6	24.1	24.6	22.5	23.1	23.0	23.6	24.1
12H 4H	21.9	22.8	22.4	23.2	23.6	21.6	22.4	22.0	22.8	23.2
6H	22.7	23.3	23.2	23.8	24.3	22.2	22.9	22.7	23.3	23.8
8H	23.0	23.5	23.5	24.0	24.5	22.5	23.0	23.0	23.5	24.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 534.5 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.2)

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γ Range: 0 - 180DEG
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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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UTILIZATION FACTORS TABLE

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
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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) x RCR = 5									
k = 0.60	56	45	38	56	44	38	54	44	37	31
0.80	67	55	47	65	54	47	64	53	47	40
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	81	71	64	78	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	79	92	84	78	89	82	76	68
2.50	98	90	84	96	89	83	92	86	81	72
3.00	102	95	89	99	93	88	95	90	85	77
4.00	106	100	95	103	98	94	99	94	91	81
5.00	108	103	99	106	101	97	101	97	94	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

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ISOCANDELA DIAGRAM

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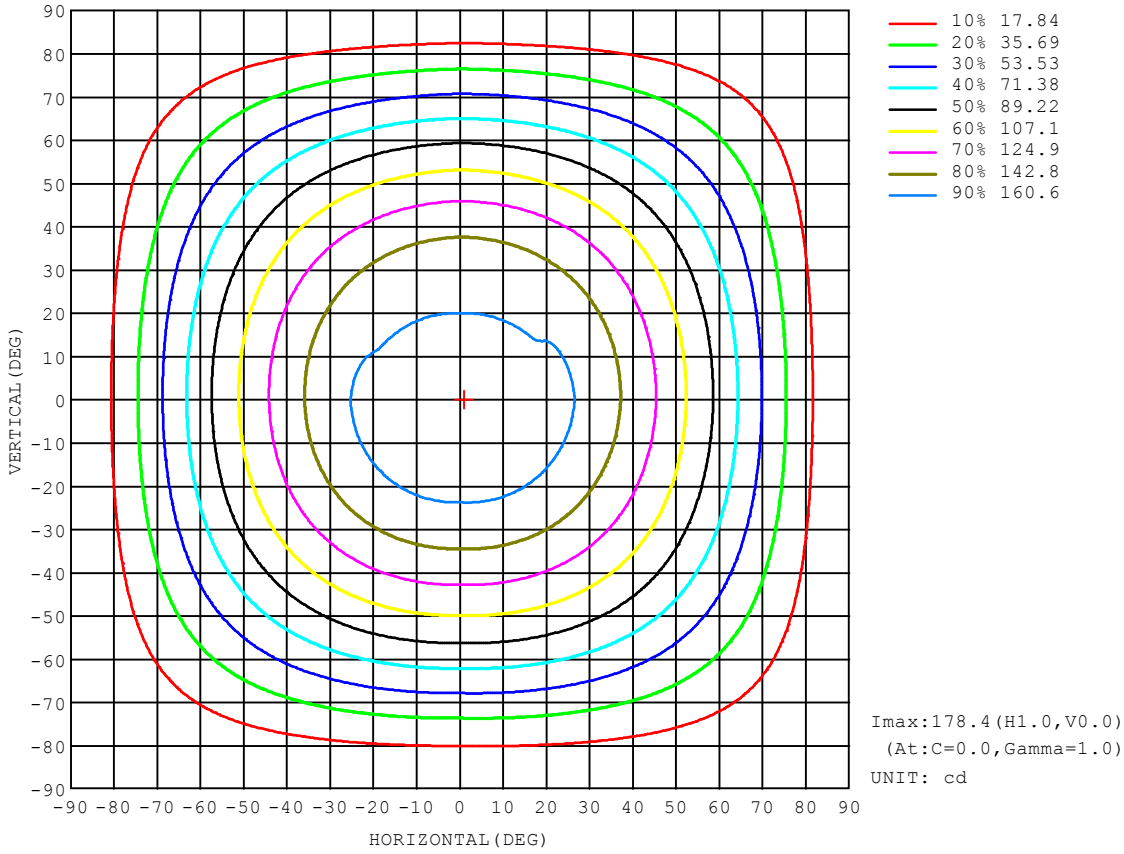

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AAI Figure

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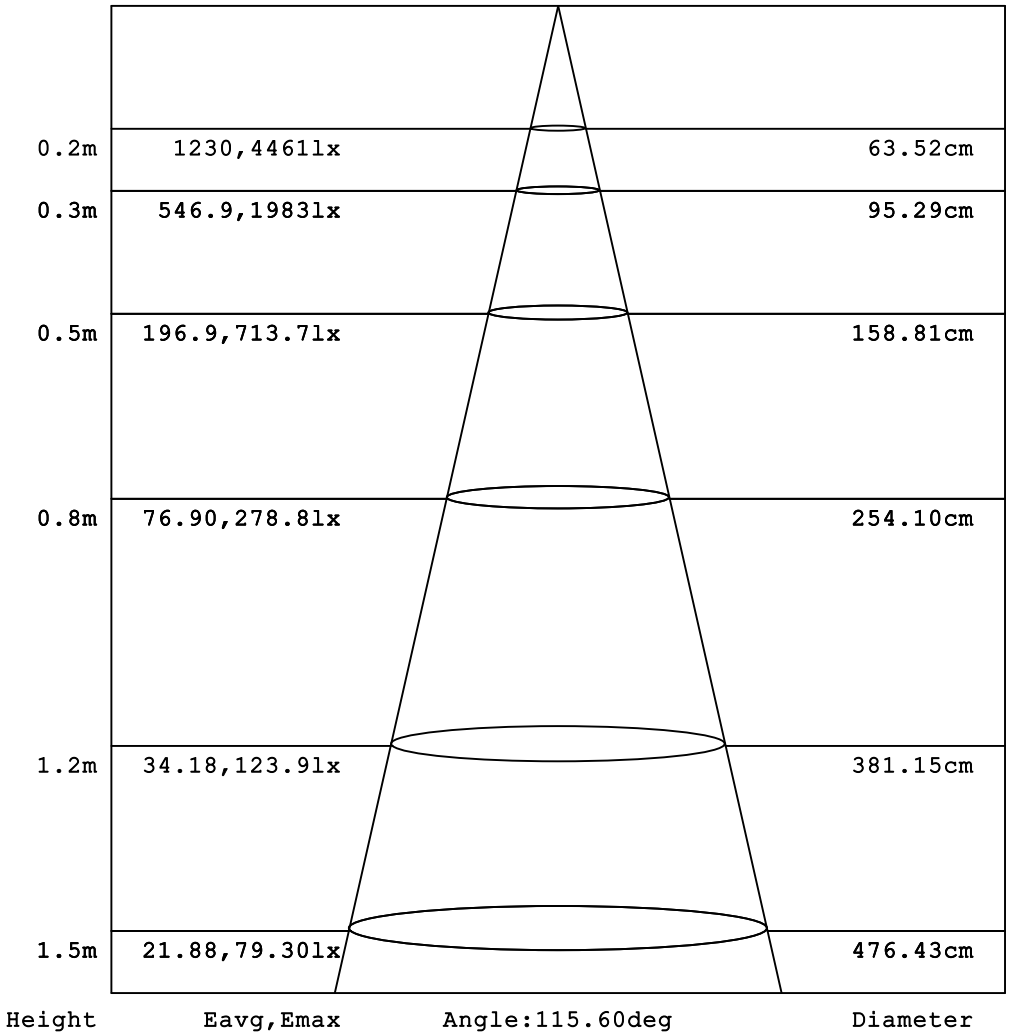
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Flux out:396.0 lm



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

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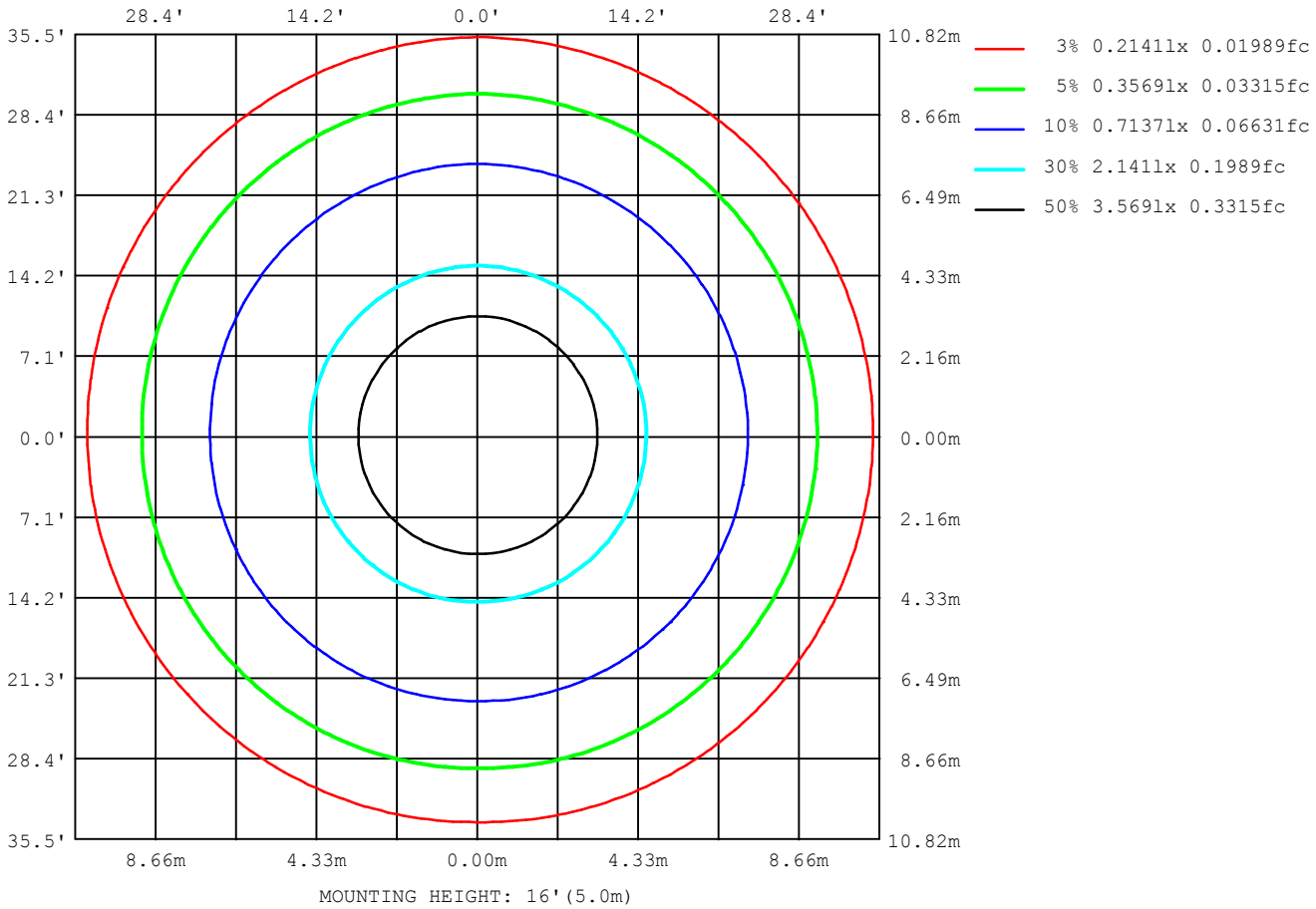
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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LED Avg.L Report

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

AvgL	cd/m2
L_0~180(65)av	2656
L_0~180(75)av	2294
L_0~180(85)av	1640
L_90~270(65)av	2641
L_90~270(75)av	2317
L_90~270(85)av	1810
L_45(65)av	2642
L_45(75)av	2302
L_45(85)av	1734

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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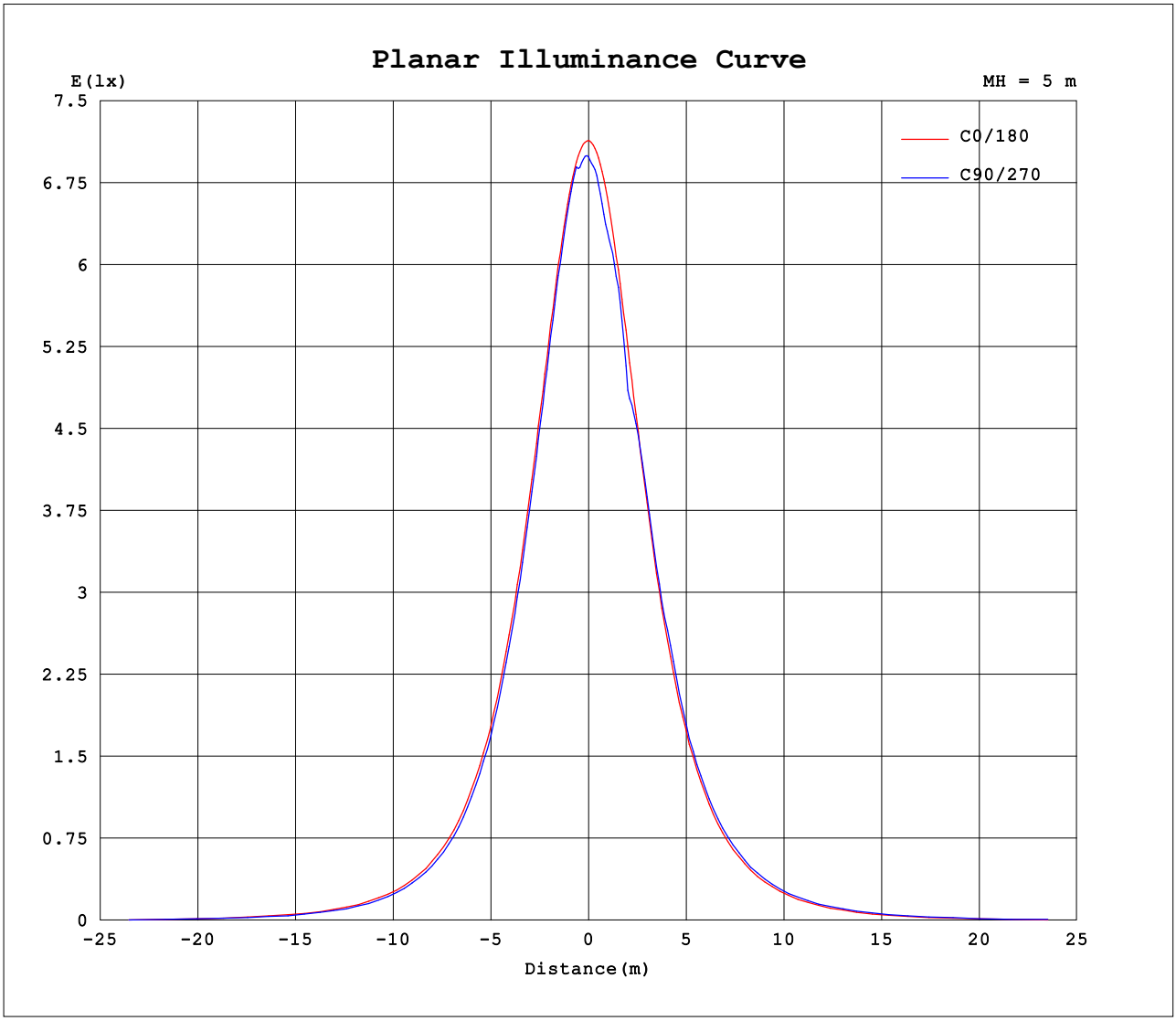
Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: 4000K

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LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:11.998V I:0.3805A P:4.5652W PF:1.0000 Freq:49.99Hz Lamp Flux:534.471x1 lm		
NAME: TF5BD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	90	180	270															
0	178	175	178	175															
5	178	174	178	172															
10	176	175	176	167															
15	173	171	172	167															
20	169	165	167	160															
25	163	159	161	156															
30	155	151	153	155															
35	147	142	144	147															
40	137	131	134	140															
45	126	120	123	127															
50	113	107	110	115															
55	99.7	93.1	96.2	102															
60	84.9	78.3	81.2	87.0															
65	69.2	62.7	65.5	71.2															
70	53.1	47.0	49.5	55.5															
75	37.2	31.8	34.0	40.1															
80	22.3	18.1	19.5	24.8															
85	9.63	7.35	7.53	11.6															
90	0.48	1.65	0.56	2.91															
95	0.42	0.74	0.47	0.64															
100	0.52	0.84	0.57	0.60															
105	0.64	0.96	0.69	0.70															
110	0.77	1.07	0.82	0.82															
115	0.90	1.18	0.94	0.94															
120	1.01	1.29	1.06	1.08															
125	1.14	1.40	1.19	1.20															
130	1.28	1.49	1.31	1.33															
135	1.40	1.59	1.43	1.45															
140	1.51	1.68	1.54	1.57															
145	1.61	1.75	1.64	1.67															
150	1.71	1.82	1.73	1.76															
155	1.78	1.87	1.82	1.86															
160	1.87	1.89	1.89	1.91															
165	1.94	1.92	1.96	1.98															
170	2.01	1.99	2.01	2.02															
175	2.04	2.04	2.05	2.04															
180	2.06	2.08	2.06	2.06															

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZXH
Test Date:2020-12-25

γ Range: 0 - 180DEG
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