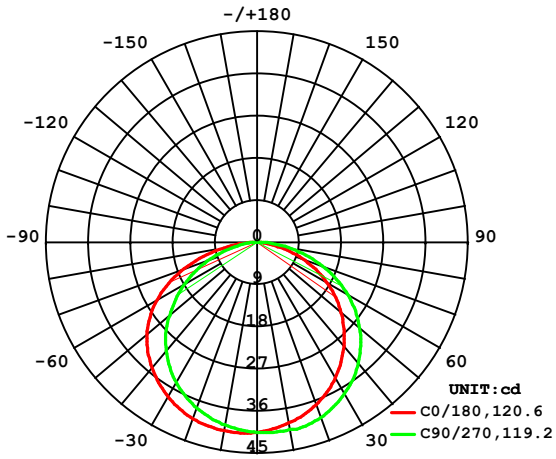
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

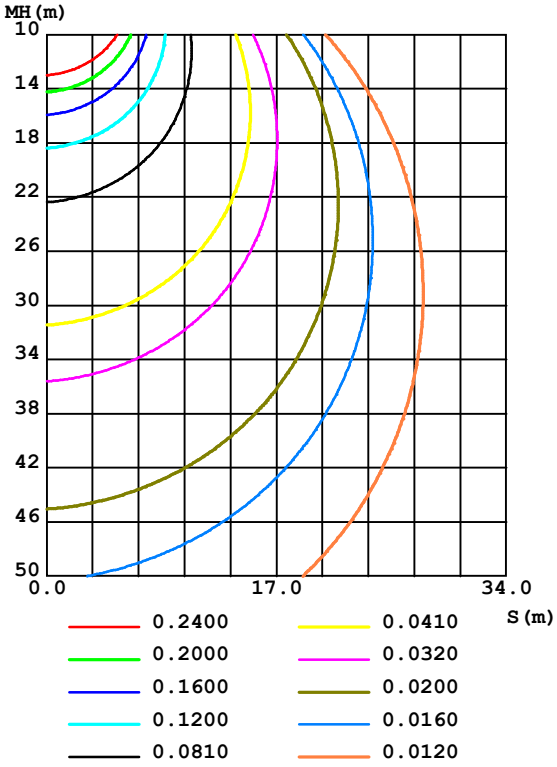
DATA OF LAMP		PHOTOMETRIC DATA Eff: 27.94 lm/W			
MODEL	TF5RGBW-300-R	Imax(cd)	40.86	S/MH(C0/180)	1.40
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	127.47	η UP,DN(C0-180)	0.4,48.5
NOMINAL FLUX(lm)	127.47	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.3,50.8
LAMPS INSIDE	1	η up(%)	0.7	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	99.3	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):119.9 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	39.16	40.57	40.82	39.59					0- 10	3.845	3.845	3.02,3.02
20	36.87	39.81	40.07	37.65					10- 20	11.16	15.00	11.8,11.8
30	33.45	37.33	38.04	34.56					20- 30	17.23	32.24	25.3,25.3
40	28.87	33.65	34.93	30.22					30- 40	21.30	53.53	42,42
50	23.46	28.62	30.71	24.38					40- 50	22.77	76.30	59.9,59.9
60	17.29	22.39	24.69	17.92					50- 60	21.28	97.58	76.6,76.6
70	10.25	14.90	16.57	10.67					60- 70	16.75	114.3	89.7,89.7
80	3.360	6.841	7.319	3.781					70- 80	9.640	124.0	97.3,97.3
90	0.0233	1.066	0	0.2461					80- 90	2.662	126.6	99.3,99.3
100	0.0335	0.0449	0.0057	0.0393					90-100	0.1084	126.7	99.4,99.4
110	0.0616	0.0786	0.0450	0.0783					100-110	0.0498	126.8	99.5,99.5
120	0.1262	0.1168	0.1008	0.1313					110-120	0.0914	126.9	99.5,99.5
130	0.1624	0.1515	0.1401	0.1681					120-130	0.1188	127.0	99.6,99.6
140	0.2073	0.1808	0.1682	0.2076					130-140	0.1330	127.1	99.7,99.7
150	0.2259	0.2216	0.2129	0.2357					140-150	0.1305	127.3	99.8,99.8
160	0.2520	0.2424	0.2311	0.2524					150-160	0.1074	127.4	99.9,99.9
170	0.2611	0.2709	0.2570	0.2686					160-170	0.0717	127.4	100,100
180	0.2689	0.2806	0.2633	0.2918					170-180	0.0256	127.5	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 64.911 lm

%lum = 50.9%
%lamp = 50.9%

Conical surface Flux(120deg): 97.581 lm

%lum = 76.6%
%lamp = 76.6%

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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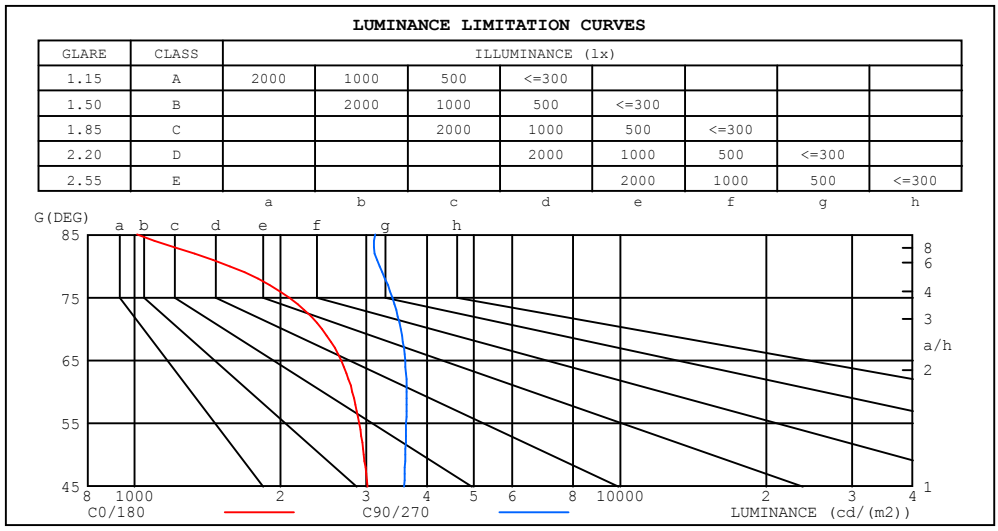
LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	**TYPE:**	**WEIGHT:**
SPEC.:	**DIM.:**	**SERIAL No.:**
MFR.:	**SUR.:**	**Shielding Angle:**



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	1012	3134
80	1572	3195
75	2083	3393
70	2436	3534
65	2664	3609
60	2809	3631
55	2902	3626
50	2966	3611
45	3017	3591

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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WEC AND CCEC

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	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	.319	.181	.057	.311	.178	.056	.298	.171	.055	.285	.164	.053	.273	.159	.051	
2.0	.299	.164	.050	.293	.161	.050	.280	.156	.048	.269	.151	.047	.259	.146	.046	
3.0	.276	.147	.044	.270	.145	.044	.260	.141	.043	.250	.137	.042	.240	.133	.041	
4.0	.254	.132	.039	.249	.130	.039	.240	.127	.038	.231	.124	.037	.222	.121	.037	
5.0	.235	.120	.035	.230	.118	.034	.222	.115	.034	.214	.113	.034	.206	.110	.033	
6.0	.217	.109	.031	.213	.108	.031	.206	.105	.031	.199	.103	.030	.192	.101	.030	
7.0	.202	.100	.028	.198	.099	.028	.191	.097	.028	.185	.095	.028	.179	.093	.027	
8.0	.188	.092	.026	.185	.091	.026	.179	.089	.026	.173	.088	.025	.168	.086	.025	
9.0	.176	.085	.024	.173	.084	.024	.168	.083	.024	.163	.082	.023	.158	.080	.023	
10.0	.166	.079	.022	.163	.079	.022	.158	.077	.022	.153	.076	.022	.149	.075	.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	.195	.195	.195	.167	.167	.167	.114	.114	.114	.066	.066	.066	.021	.021	.021	
1.0	.186	.161	.139	.159	.138	.119	.109	.095	.083	.063	.055	.048	.020	.018	.016	
2.0	.178	.137	.102	.153	.118	.088	.105	.082	.062	.060	.047	.036	.019	.015	.012	
3.0	.171	.119	.079	.146	.103	.068	.101	.072	.048	.058	.042	.028	.019	.014	.009	
4.0	.163	.106	.063	.140	.092	.054	.096	.064	.038	.056	.037	.023	.018	.012	.007	
5.0	.156	.096	.052	.134	.083	.045	.092	.058	.032	.053	.034	.019	.017	.011	.006	
6.0	.149	.088	.044	.128	.076	.038	.088	.053	.027	.051	.031	.016	.016	.010	.005	
7.0	.142	.081	.038	.122	.070	.033	.084	.049	.023	.049	.029	.014	.016	.009	.005	
8.0	.135	.075	.034	.116	.065	.029	.081	.046	.021	.047	.027	.012	.015	.009	.004	
9.0	.129	.070	.030	.111	.061	.026	.077	.043	.019	.045	.025	.011	.015	.008	.004	
10.0	.123	.066	.027	.106	.057	.024	.074	.040	.017	.043	.024	.010	.014	.008	.003	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	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	23.6	25.2	23.9	25.4	25.6	24.6	26.1	24.9	26.3	26.6
	3H	25.1	26.5	25.4	26.7	27.0	26.3	27.8	26.7	28.0	28.3
	4H	25.5	26.9	25.9	27.2	27.4	27.1	28.4	27.4	28.7	29.0
	6H	25.8	27.1	26.1	27.4	27.7	27.6	28.9	28.0	29.2	29.5
	8H	25.8	27.1	26.2	27.4	27.7	27.8	29.1	28.2	29.4	29.7
	12H	25.8	27.0	26.2	27.3	27.7	28.0	29.2	28.3	29.5	29.8
4H	2H	24.4	25.8	24.7	26.0	26.3	25.1	26.5	25.4	26.7	27.0
	3H	26.0	27.2	26.4	27.5	27.8	27.1	28.2	27.4	28.6	28.9
	4H	26.6	27.7	27.0	28.0	28.4	27.9	29.0	28.3	29.3	29.7
	6H	27.0	27.9	27.4	28.3	28.7	28.6	29.6	29.0	29.9	30.3
	8H	27.0	27.9	27.5	28.3	28.7	28.9	29.8	29.3	30.1	30.5
	12H	27.1	27.9	27.5	28.3	28.7	29.1	29.9	29.5	30.3	30.7
8H	4H	26.9	27.8	27.4	28.2	28.6	28.1	29.0	28.5	29.4	29.8
	6H	27.5	28.2	27.9	28.6	29.1	28.9	29.7	29.4	30.1	30.6
	8H	27.6	28.3	28.1	28.7	29.2	29.3	30.0	29.8	30.4	30.9
	12H	27.7	28.3	28.2	28.7	29.2	29.6	30.2	30.1	30.6	31.1
12H	4H	27.0	27.8	27.4	28.2	28.6	28.1	28.9	28.5	29.3	29.8
	6H	27.5	28.2	28.0	28.6	29.1	29.0	29.6	29.4	30.1	30.5
	8H	27.7	28.3	28.2	28.8	29.3	29.4	29.9	29.8	30.4	30.9

Variations with the observer position at spacings:		
S = 1.0H	+ 0.2 / - 0.2	+ 0.1 / - 0.2
1.5H	+ 0.2 / - 0.4	+ 0.1 / - 0.2
2.0H	+ 0.2 / - 0.5	+ 0.2 / - 0.3

CIE Pub.117, 127.5 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -7.2)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	**TYPE:**	**WEIGHT:**
SPEC.:	**DIM.:**	**SERIAL No.:**
MFR.:	**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) x RCR = 5									
k = 0.60	56	44	37	55	44	37	54	43	37	30
0.80	66	54	47	65	54	46	63	53	46	39
1.00	75	63	56	73	62	55	71	64	55	47
1.25	82	71	64	80	70	63	77	69	62	55
1.50	87	77	69	85	76	69	82	74	68	60
2.00	94	85	78	92	84	78	88	81	76	68
2.50	98	90	84	96	88	83	92	86	81	72
3.00	101	94	89	99	93	88	95	90	85	76
4.00	106	100	95	103	98	93	99	94	91	81
5.00	108	103	99	106	101	97	101	97	94	85
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
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Test Date:2019-12-21

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]
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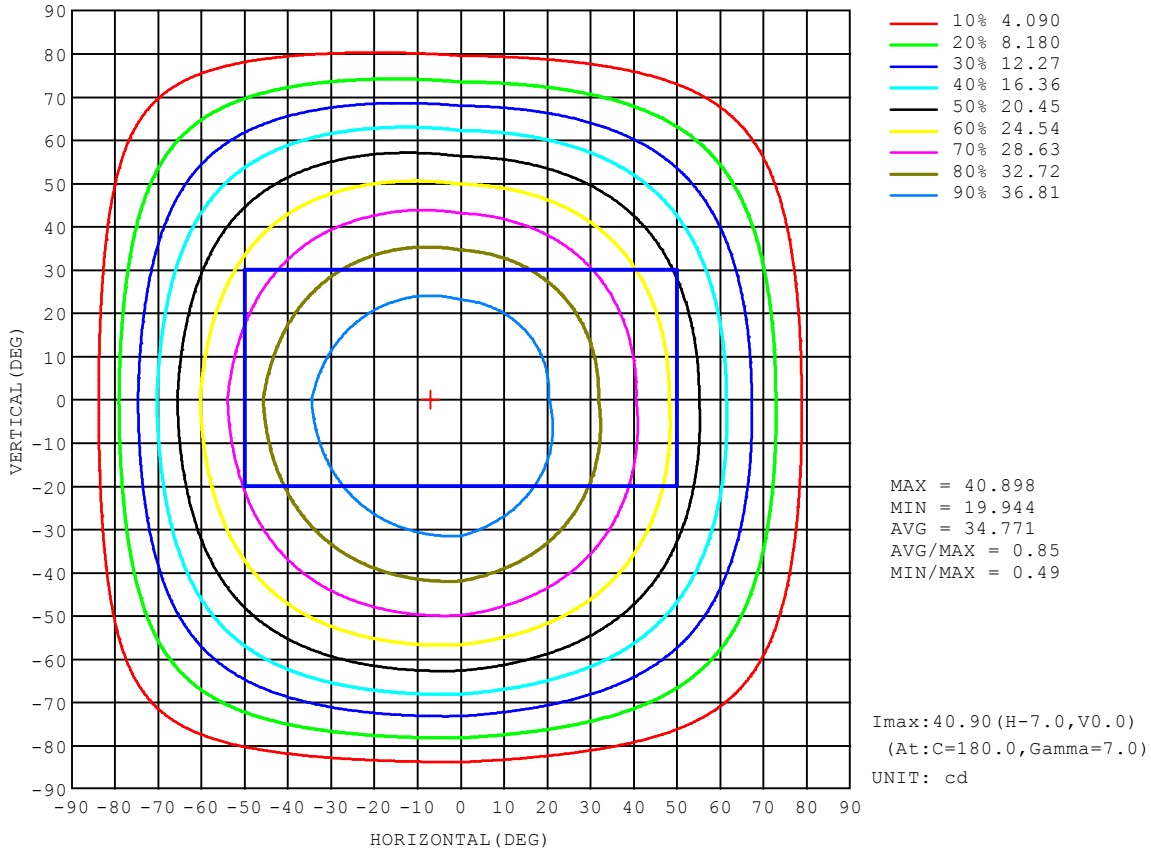
ISOCANDELA DIAGRAM

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	**TYPE:**	**WEIGHT:**
SPEC.:	**DIM.:**	**SERIAL No.:**
MFR.:	**SUR.:**	**Shielding Angle:**



C Range: 0 - 360DEG
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γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
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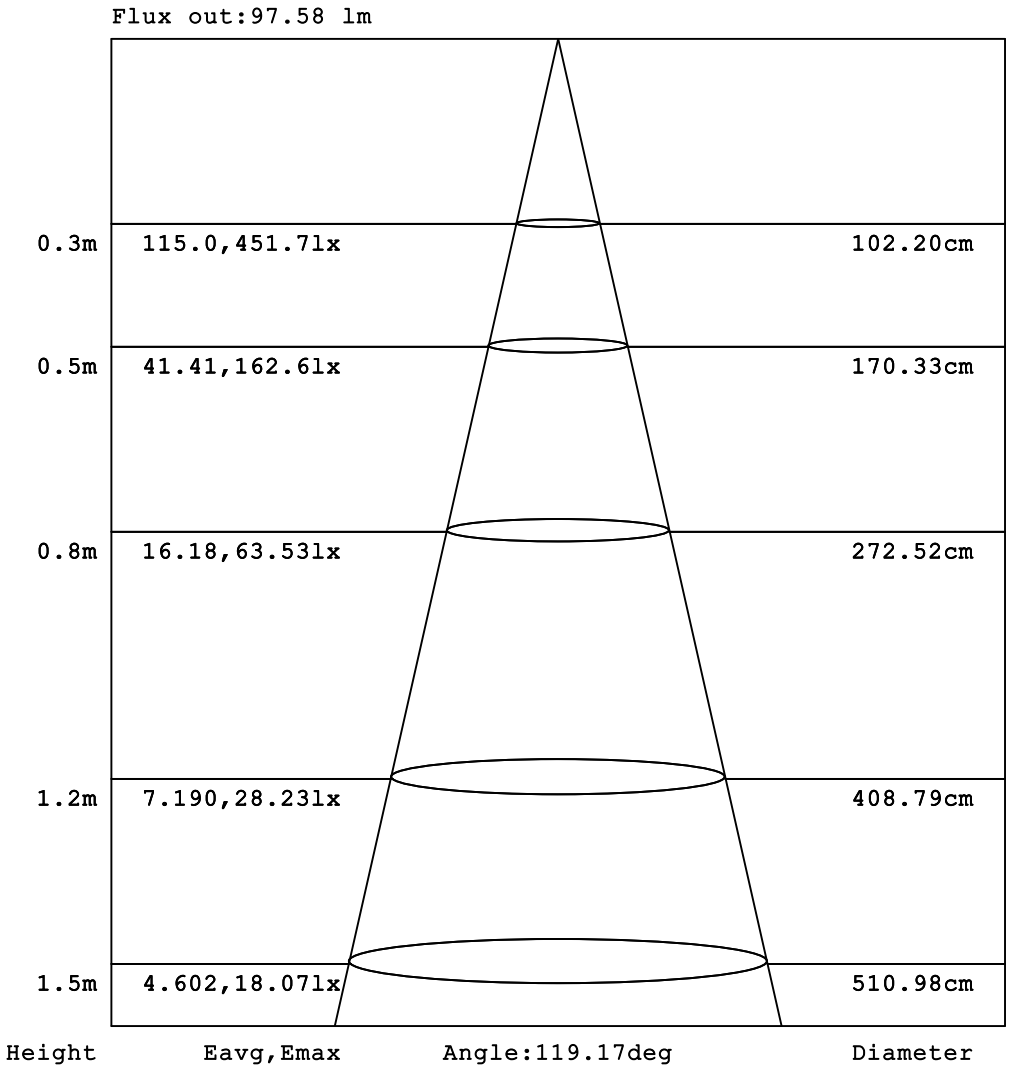
AAI Figure

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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
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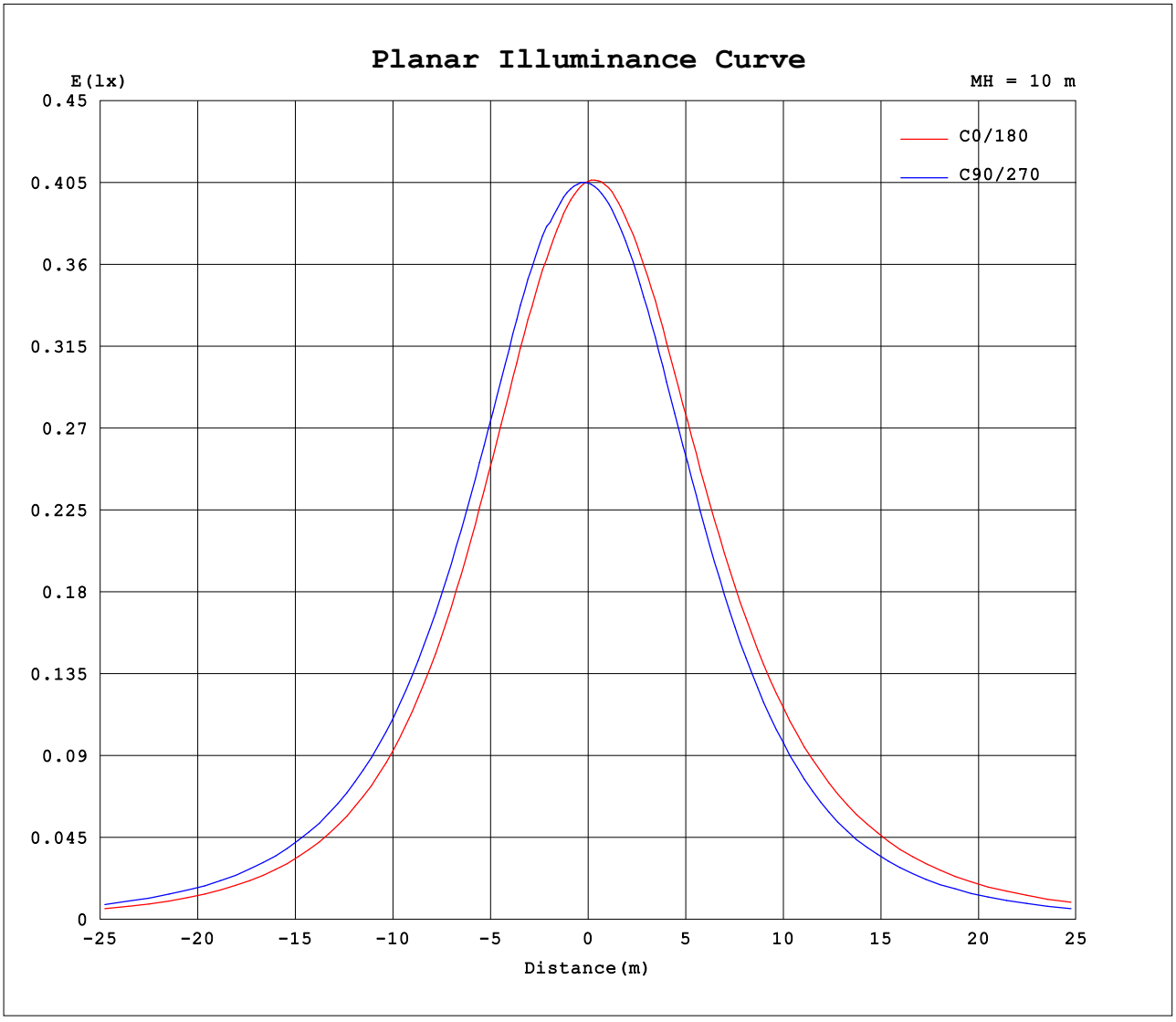
Planar Illuminance Curve



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LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.1901A P:4.5618W PF:1.0000 Freq:49.99Hz Lamp Flux:127.47x1 lm		
NAME: TF5RGBW-300-Red	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	90	180	270															
0	40.5	40.5	40.5	40.5															
5	40.0	40.7	40.8	40.2															
10	39.2	40.6	40.8	39.6															
15	38.2	40.5	40.5	38.8															
20	36.9	39.8	40.1	37.6															
25	35.3	38.7	39.2	36.3															
30	33.4	37.3	38.0	34.6															
35	31.3	35.7	36.6	32.5															
40	28.9	33.7	34.9	30.2															
45	26.3	31.3	33.0	27.6															
50	23.5	28.6	30.7	24.4															
55	20.5	25.6	28.0	21.2															
60	17.3	22.4	24.7	17.9															
65	13.9	18.8	20.9	14.3															
70	10.3	14.9	16.6	10.7															
75	6.64	10.8	11.9	7.08															
80	3.36	6.84	7.32	3.78															
85	1.09	3.37	3.13	1.41															
90	0.02	1.07	0.00	0.25															
95	0.01	0.21	0.00	0.05															
100	0.03	0.04	0.01	0.04															
105	0.04	0.06	0.02	0.04															
110	0.06	0.08	0.05	0.08															
115	0.10	0.10	0.07	0.11															
120	0.13	0.12	0.10	0.13															
125	0.14	0.13	0.11	0.14															
130	0.16	0.15	0.14	0.17															
135	0.18	0.16	0.16	0.19															
140	0.21	0.18	0.17	0.21															
145	0.22	0.20	0.19	0.22															
150	0.23	0.22	0.21	0.24															
155	0.24	0.23	0.21	0.25															
160	0.25	0.24	0.23	0.25															
165	0.26	0.26	0.24	0.26															
170	0.26	0.27	0.26	0.27															
175	0.27	0.27	0.26	0.28															
180	0.27	0.28	0.26	0.29															

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QSM
Test Date:2019-12-21

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: R

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