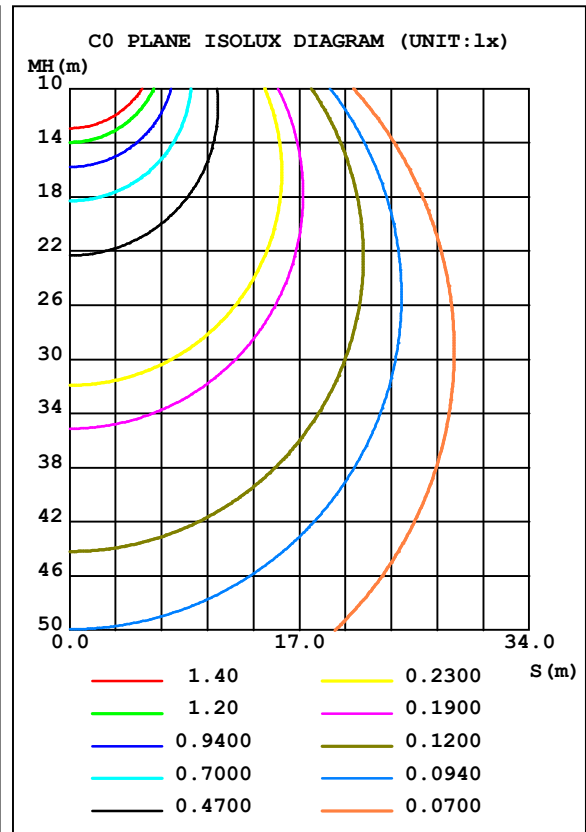
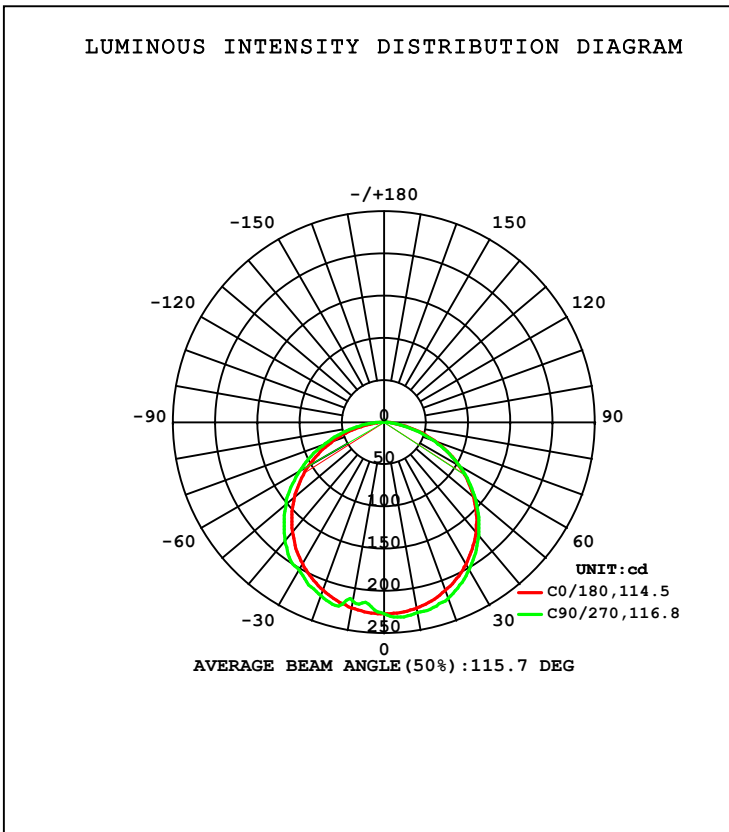


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 52.44 lm/W			
MODEL		I _{max} (cd)	231.6	S/MH (C0/180)	1.27
NOMINAL POWER (W)	12.8	LOR (%)	100.0	S/MH (C90/270)	1.34
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	683.27	η UP, DN (C0-180)	0.5, 48.4
NOMINAL FLUX (lm)	683.27	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.6, 50.5
LAMPS INSIDE	1	η up (%)	1.1	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	24	η down (%)	98.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2019-12-09

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: 1900K

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	223.4	229.2	223.1	215.1					0- 10	21.44	21.44	3.14,3.14
20	212.4	222.3	212.0	219.0					10- 20	62.52	83.96	12.3,12.3
30	194.3	201.9	193.8	202.0					20- 30	95.89	179.8	26.3,26.3
40	169.7	174.7	169.3	182.8					30- 40	117.1	296.9	43.5,43.5
50	139.0	141.4	138.9	152.1					40- 50	122.6	419.5	61.4,61.4
60	103.1	102.9	103.4	115.9					50- 60	111.8	531.3	77.8,77.8
70	63.07	60.70	63.71	74.36					60- 70	85.12	616.5	90.2,90.2
80	23.42	20.43	24.25	33.71					70- 80	47.40	663.9	97.2,97.2
90	0.1974	1.263	0.2336	4.164					80- 90	11.93	675.8	98.9,98.9
100	0.3313	1.043	0.4075	1.512					90-100	0.9414	676.7	99,99
110	0.5700	1.118	0.6519	1.478					100-110	0.9291	677.7	99.2,99.2
120	0.8144	1.264	0.9071	1.330					110-120	0.9809	678.6	99.3,99.3
130	1.069	1.582	1.157	1.478					120-130	1.066	679.7	99.5,99.5
140	1.276	1.675	1.369	1.697					130-140	1.085	680.8	99.6,99.6
150	1.466	1.768	1.543	1.860					140-150	0.9909	681.8	99.8,99.8
160	1.635	1.833	1.678	1.927					150-160	0.7929	682.6	99.9,99.9
170	1.759	1.878	1.781	1.957					160-170	0.5099	683.1	100,100
180	1.814	1.935	1.809	1.941					170-180	0.1772	683.3	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 358.58 lm

%lum = 52.5%

%lamp = 52.5%

Conical surface Flux(120deg): 531.34 lm

%lum = 77.8%

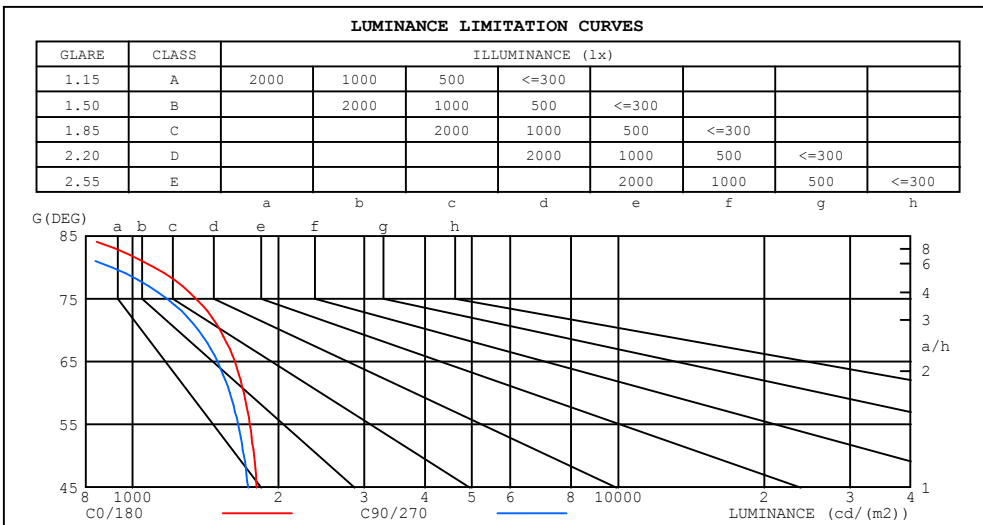
%lamp = 77.8%

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	770	556
80	1109	906
75	1352	1176
70	1516	1367
65	1623	1496
60	1694	1585
55	1744	1649
50	1778	1695
45	1803	1730

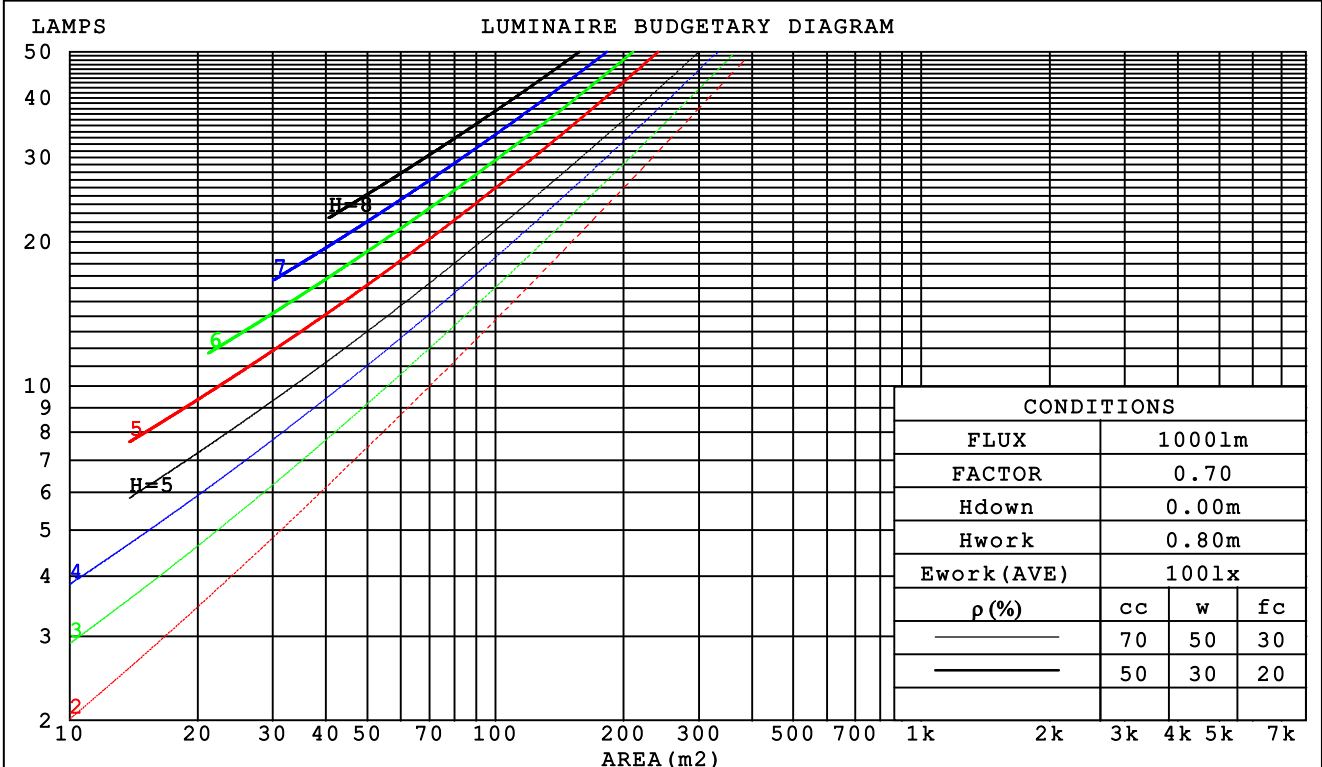
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.04	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.82	.76	.84	.79	.74	.81	.77	.73	.78	.74	.71	.69
3.0	.79	.71	.64	.77	.70	.64	.74	.68	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.68	.60	.54	.66	.59	.53	.63	.57	.52	.61	.56	.51	.49
5.0	.62	.53	.47	.61	.53	.46	.59	.51	.46	.57	.50	.45	.55	.49	.44	.42
6.0	.56	.47	.41	.55	.46	.40	.53	.45	.40	.51	.45	.39	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.41	.36	.48	.41	.35	.47	.40	.35	.45	.39	.34	.32
8.0	.46	.38	.32	.45	.37	.32	.44	.37	.31	.43	.36	.31	.41	.35	.31	.29
9.0	.42	.34	.29	.42	.34	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.25	.35	.29	.25	.23



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

WEC AND CCEC

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	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	.310	.176	.056	.302	.172	.055	.288	.165	.053	.276	.159	.051	.264	.153	.049	
2.0	.292	.160	.049	.286	.157	.048	.273	.152	.047	.262	.147	.046	.252	.142	.045	
3.0	.271	.144	.043	.265	.142	.043	.254	.138	.042	.244	.134	.041	.234	.130	.040	
4.0	.250	.130	.038	.245	.128	.038	.235	.125	.037	.226	.121	.037	.218	.118	.036	
5.0	.231	.118	.034	.226	.116	.034	.218	.113	.033	.210	.111	.033	.202	.108	.032	
6.0	.214	.107	.031	.210	.106	.031	.202	.104	.030	.195	.101	.030	.189	.099	.029	
7.0	.199	.099	.028	.196	.098	.028	.189	.095	.027	.182	.094	.027	.176	.092	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.165	.085	.025	
9.0	.174	.084	.024	.172	.084	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.147	.074	.021	

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	.199	.199	.199	.170	.170	.170	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.189	.165	.143	.161	.141	.123	.110	.097	.085	.064	.056	.049	.020	.018	.016	
2.0	.181	.140	.106	.155	.121	.092	.106	.084	.064	.061	.049	.038	.020	.016	.012	
3.0	.173	.123	.083	.148	.106	.072	.102	.074	.050	.059	.043	.030	.019	.014	.010	
4.0	.166	.110	.067	.142	.095	.058	.098	.066	.041	.057	.039	.024	.018	.013	.008	
5.0	.158	.099	.056	.136	.086	.048	.094	.060	.034	.054	.035	.020	.017	.011	.007	
6.0	.151	.091	.048	.130	.079	.041	.090	.055	.029	.052	.032	.017	.017	.011	.006	
7.0	.144	.084	.042	.124	.073	.036	.086	.051	.026	.050	.030	.015	.016	.010	.005	
8.0	.138	.078	.037	.119	.068	.032	.082	.048	.023	.048	.028	.014	.015	.009	.005	
9.0	.132	.073	.034	.113	.064	.029	.079	.045	.021	.046	.026	.012	.015	.009	.004	
10.0	.126	.069	.031	.109	.060	.027	.075	.042	.019	.044	.025	.011	.014	.008	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm										
NAME: TF5-CAR					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: VICTRONICS					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	16.1	17.6	16.3	17.8	18.0	15.8	17.3	16.1	17.6	17.8
3H	17.5	18.9	17.9	19.2	19.5	17.2	18.6	17.5	18.9	19.1
4H	18.1	19.4	18.4	19.7	20.0	17.7	19.0	18.0	19.3	19.6
6H	18.4	19.7	18.8	20.0	20.3	18.0	19.2	18.3	19.5	19.8
8H	18.5	19.7	18.9	20.0	20.3	18.0	19.2	18.4	19.5	19.8
12H	18.5	19.7	18.9	20.0	20.3	18.0	19.2	18.4	19.5	19.8
4H 2H	16.6	18.0	17.0	18.2	18.5	16.4	17.8	16.8	18.0	18.3
3H	18.3	19.4	18.6	19.8	20.1	18.0	19.2	18.4	19.5	19.8
4H	18.9	20.0	19.3	20.3	20.7	18.6	19.7	19.0	20.0	20.4
6H	19.4	20.3	19.8	20.7	21.1	19.0	19.9	19.4	20.3	20.7
8H	19.5	20.4	19.9	20.8	21.2	19.0	19.9	19.5	20.3	20.7
12H	19.6	20.4	20.0	20.8	21.2	19.1	19.9	19.5	20.3	20.7
8H 4H	19.1	20.0	19.6	20.4	20.8	18.8	19.7	19.3	20.1	20.5
6H	19.7	20.4	20.2	20.9	21.3	19.3	20.0	19.8	20.5	20.9
8H	19.9	20.5	20.4	21.0	21.4	19.4	20.1	19.9	20.5	21.0
12H	20.0	20.5	20.5	21.0	21.5	19.5	20.1	20.0	20.5	21.0
12H 4H	19.1	19.9	19.6	20.3	20.8	18.8	19.6	19.3	20.0	20.5
6H	19.7	20.4	20.2	20.8	21.3	19.3	20.0	19.8	20.4	20.9
8H	19.9	20.5	20.4	20.9	21.4	19.5	20.0	20.0	20.5	21.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 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, 683.3 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.3)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:

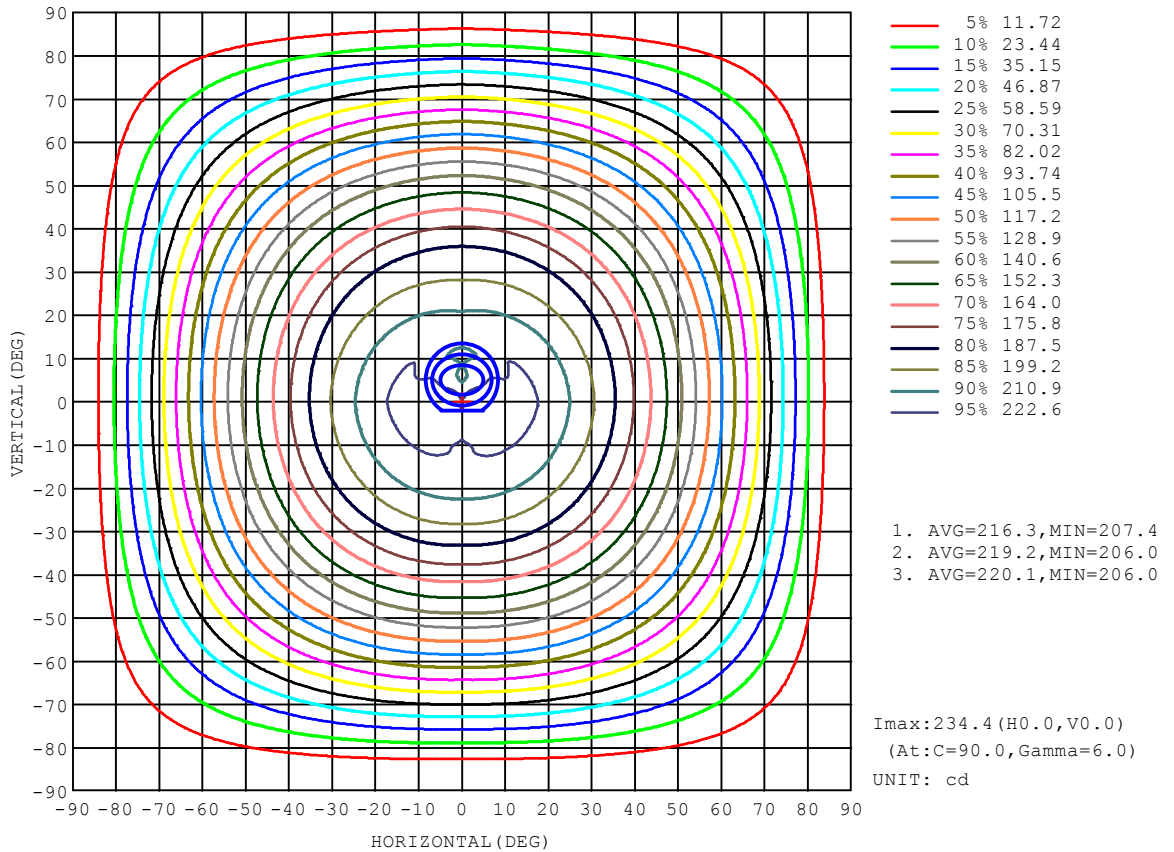
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	38	56	45	38	55	44	38	31
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	63	56	72	65	56	49
1.25	82	72	65	81	71	64	78	70	63	56
1.50	88	78	70	86	77	70	83	75	69	61
2.00	94	86	79	93	85	79	89	82	77	69
2.50	98	91	84	96	89	84	92	86	82	73
3.00	102	95	89	100	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	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
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:

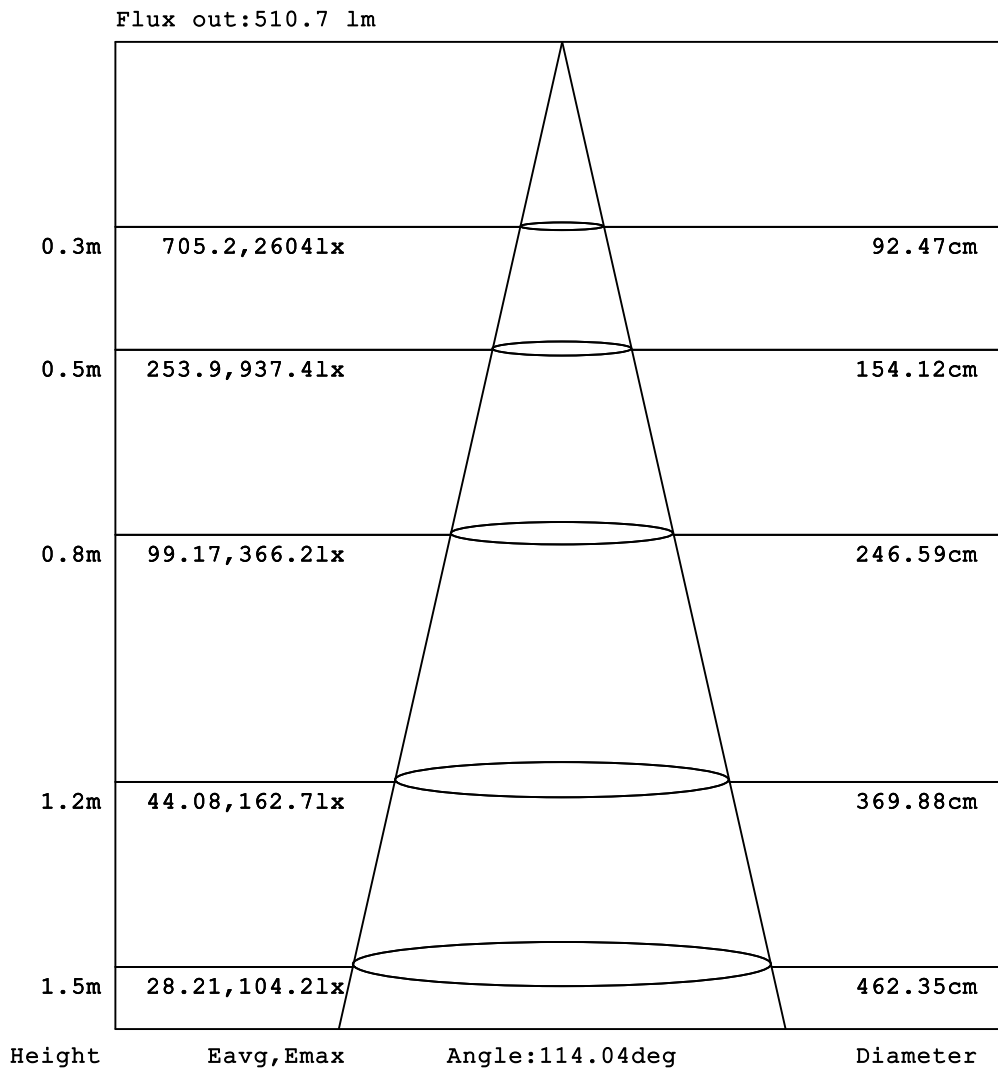


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

AAI Figure

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:



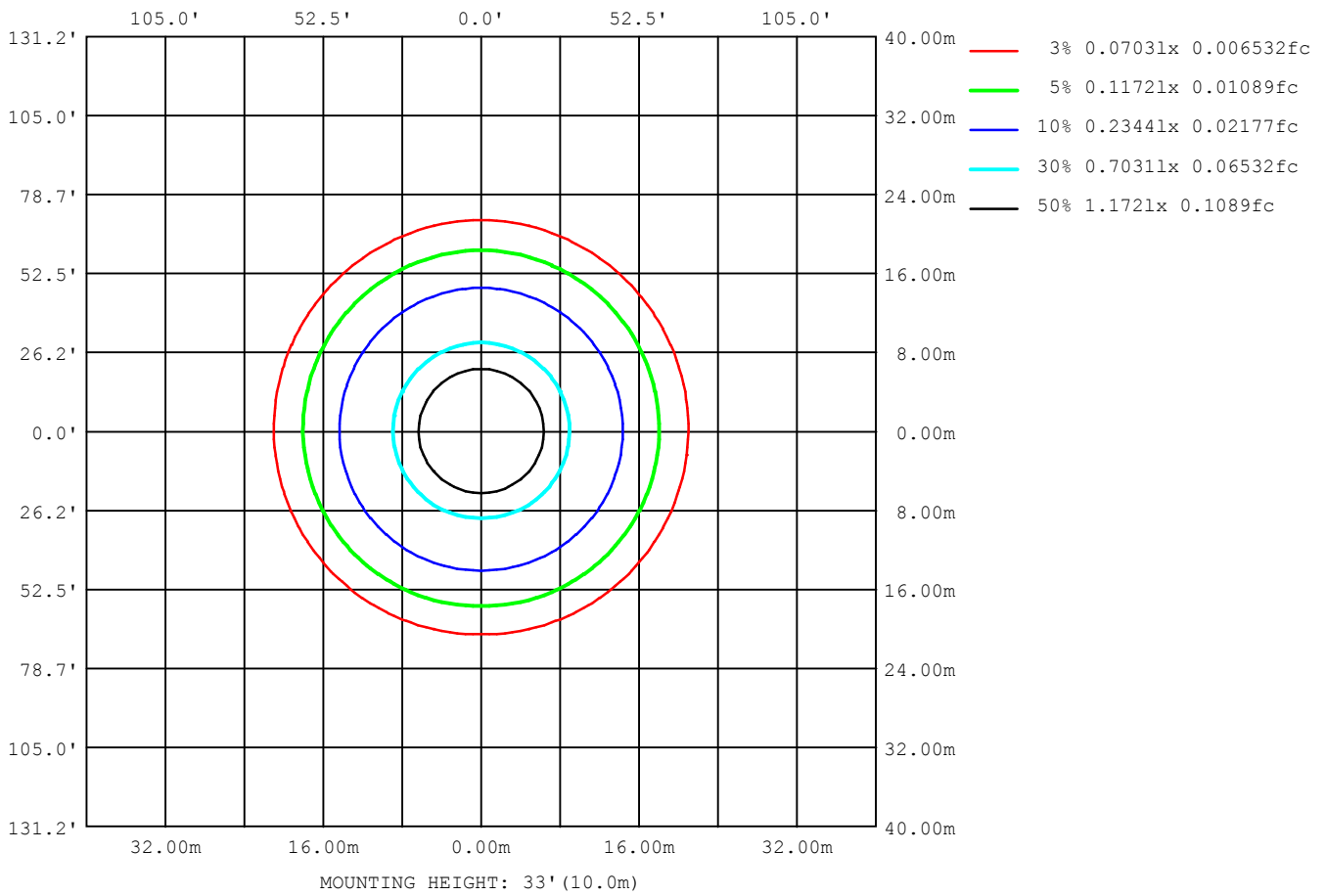
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

ISOLUX DIAGRAM

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

LED Avg.L Report

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:

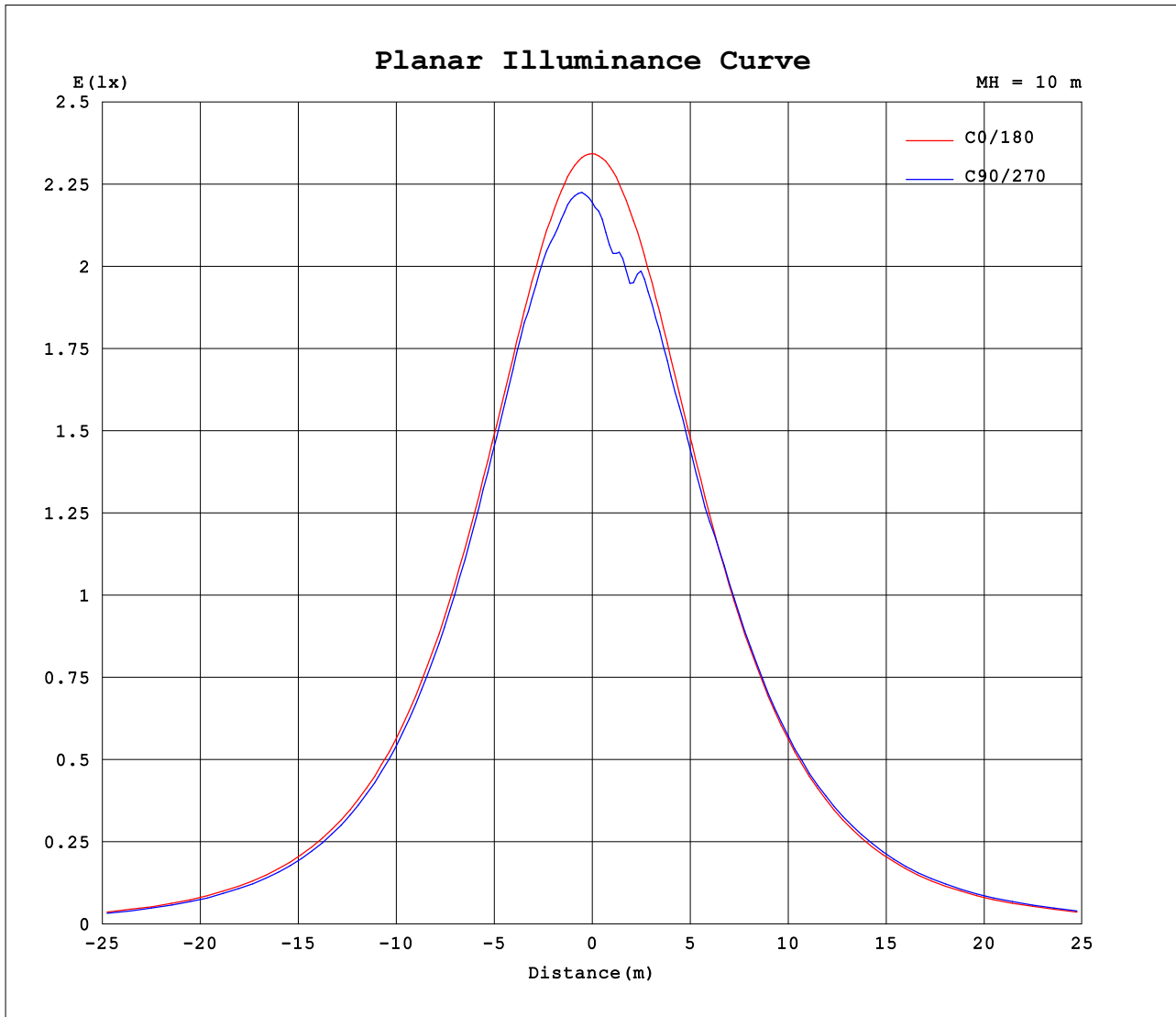
AvgL	cd/m2
L_0~180 (65) av	1574
L_0~180 (75) av	1325
L_0~180 (85) av	778
L_90~270 (65) av	1676
L_90~270 (75) av	1434
L_90~270 (85) av	1008
L_45 (65) av	1636
L_45 (75) av	1392
L_45 (85) av	920

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2019-12-09

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: 1900K

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.5430A P:13.030W PF:1.0000 Freq:49.99Hz Lamp Flux:683.27x1 lm		
NAME: TF5-CAR	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: VICTRONICS	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	227	227	227	227															
5	226	232	226	216															
10	223	229	223	215															
15	219	227	218	225															
20	212	222	212	219															
25	204	213	204	213															
30	194	202	194	202															
35	183	189	182	196															
40	170	175	169	183															
45	155	159	155	168															
50	139	141	139	152															
55	122	123	122	135															
60	103	103	103	116															
65	83.4	82.1	83.7	95.8															
70	63.1	60.7	63.7	74.4															
75	42.6	39.5	43.5	53.7															
80	23.4	20.4	24.3	33.7															
85	8.16	6.29	8.88	15.8															
90	0.20	1.26	0.23	4.16															
95	0.23	1.07	0.30	1.50															
100	0.33	1.04	0.41	1.51															
105	0.45	1.08	0.52	1.53															
110	0.57	1.12	0.65	1.48															
115	0.68	1.16	0.77	1.34															
120	0.81	1.26	0.91	1.33															
125	0.93	1.40	1.04	1.38															
130	1.07	1.58	1.16	1.48															
135	1.17	1.61	1.27	1.58															
140	1.28	1.67	1.37	1.70															
145	1.38	1.73	1.46	1.78															
150	1.47	1.77	1.54	1.86															
155	1.55	1.81	1.61	1.91															
160	1.63	1.83	1.68	1.93															
165	1.69	1.85	1.74	1.94															
170	1.76	1.88	1.78	1.96															
175	1.79	1.92	1.81	1.94															
180	1.81	1.94	1.81	1.94															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2019-12-09

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: 1900K