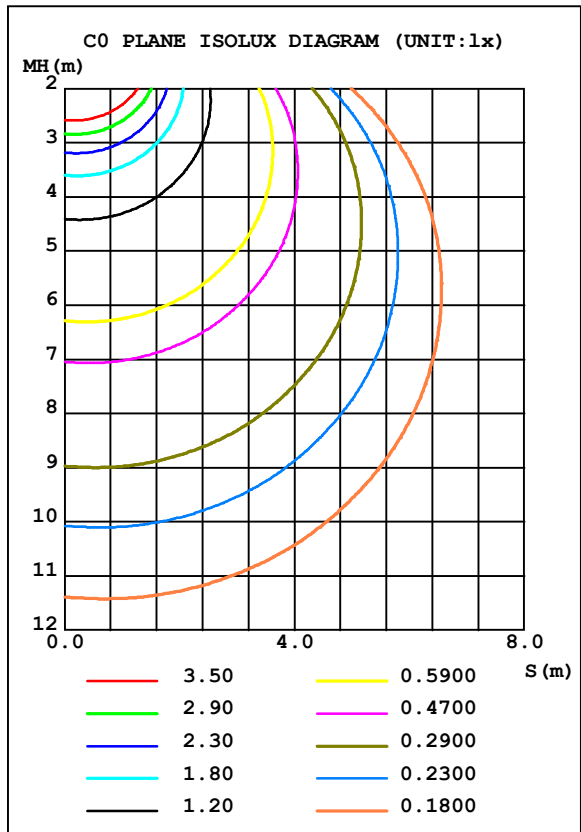
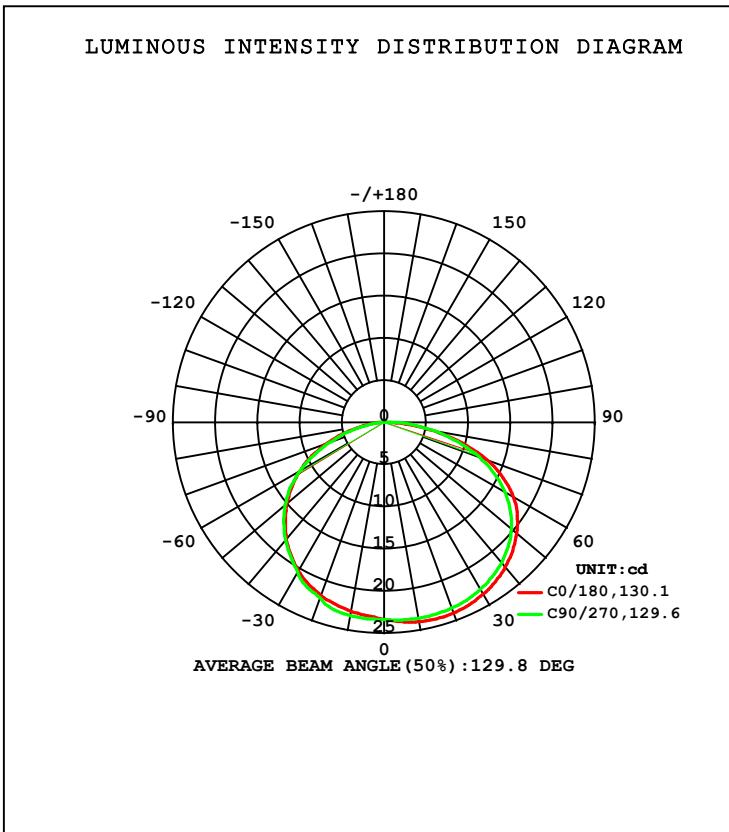


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 12.44 lm/W			
MODEL	TF5RGB-480	I _{max} (cd)	24.10	S/MH (C0/180)	1.30
NOMINAL POWER (W)	18.43	LOR (%)	100.0	S/MH (C90/270)	1.30
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	83.147	η UP, DN (C0-180)	0.2, 57.3
NOMINAL FLUX (lm)	83.1473	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.2, 42.3
LAMPS INSIDE	1	η up (%)	0.4	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	99.6	CIBSE SHR MAX	1.55



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LJ
 Test Date: 2020-07-15

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: B

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

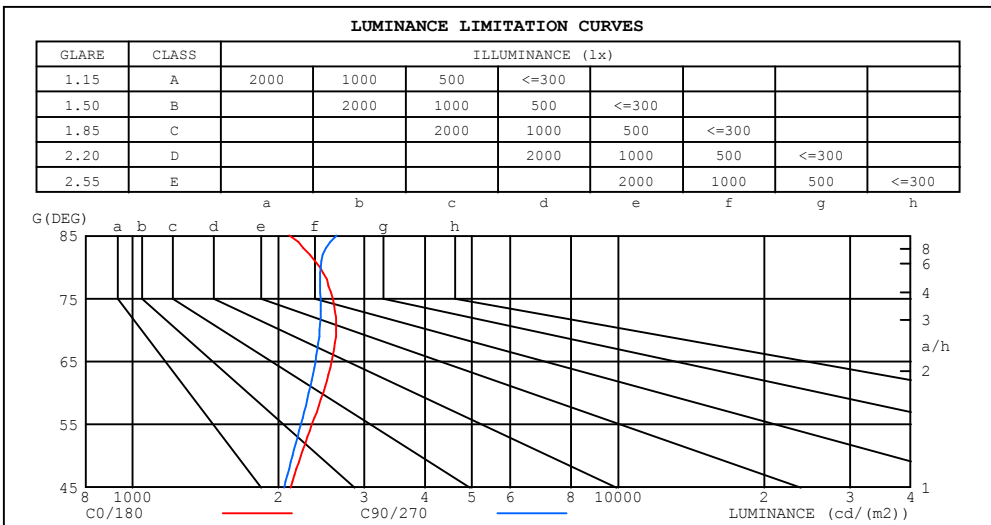
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	23.99	23.57	22.72	23.24					0- 10	2.233	2.233	2.69,2.69
20	24.08	23.45	21.86	22.15					10- 20	6.571	8.804	10.6,10.6
30	23.52	22.88	20.34	20.54					20- 30	10.36	19.17	23.1,23.1
40	22.39	21.70	18.05	18.18					30- 40	13.16	32.33	38.9,38.9
50	20.52	19.73	15.06	15.34					40- 50	14.63	46.96	56.5,56.5
60	17.74	16.57	11.54	11.48					50- 60	14.41	61.37	73.8,73.8
70	12.91	11.94	7.132	6.664					60- 70	11.99	73.37	88.2,88.2
80	6.066	6.096	2.508	1.999					70- 80	7.279	80.64	97,97
90	0.0403	1.120	0	0.0122					80- 90	2.156	82.80	99.6,99.6
100	0	0	0.0114	0					90-100	0.0727	82.87	99.7,99.7
110	0	0.0002	0.0393	0.0224					100-110	0.0082	82.88	99.7,99.7
120	0.0056	0.0170	0.0675	0.0449					110-120	0.0257	82.91	99.7,99.7
130	0.0447	0.0560	0.0920	0.0672					120-130	0.0433	82.95	99.8,99.8
140	0.0505	0.0729	0.1124	0.0784					130-140	0.0541	83.00	99.8,99.8
150	0.0673	0.0897	0.1191	0.0953					140-150	0.0534	83.06	99.9,99.9
160	0.0841	0.1037	0.1234	0.1147					150-160	0.0459	83.10	99.9,99.9
170	0.1076	0.1242	0.1312	0.1177					160-170	0.0322	83.14	100,100
180	0.1290	0.1402	0.1290	0.1234					170-180	0.0120	83.15	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2105	2632
80	2430	2442
75	2584	2437
70	2627	2428
65	2570	2379
60	2468	2305
55	2341	2220
50	2220	2135
45	2119	2050

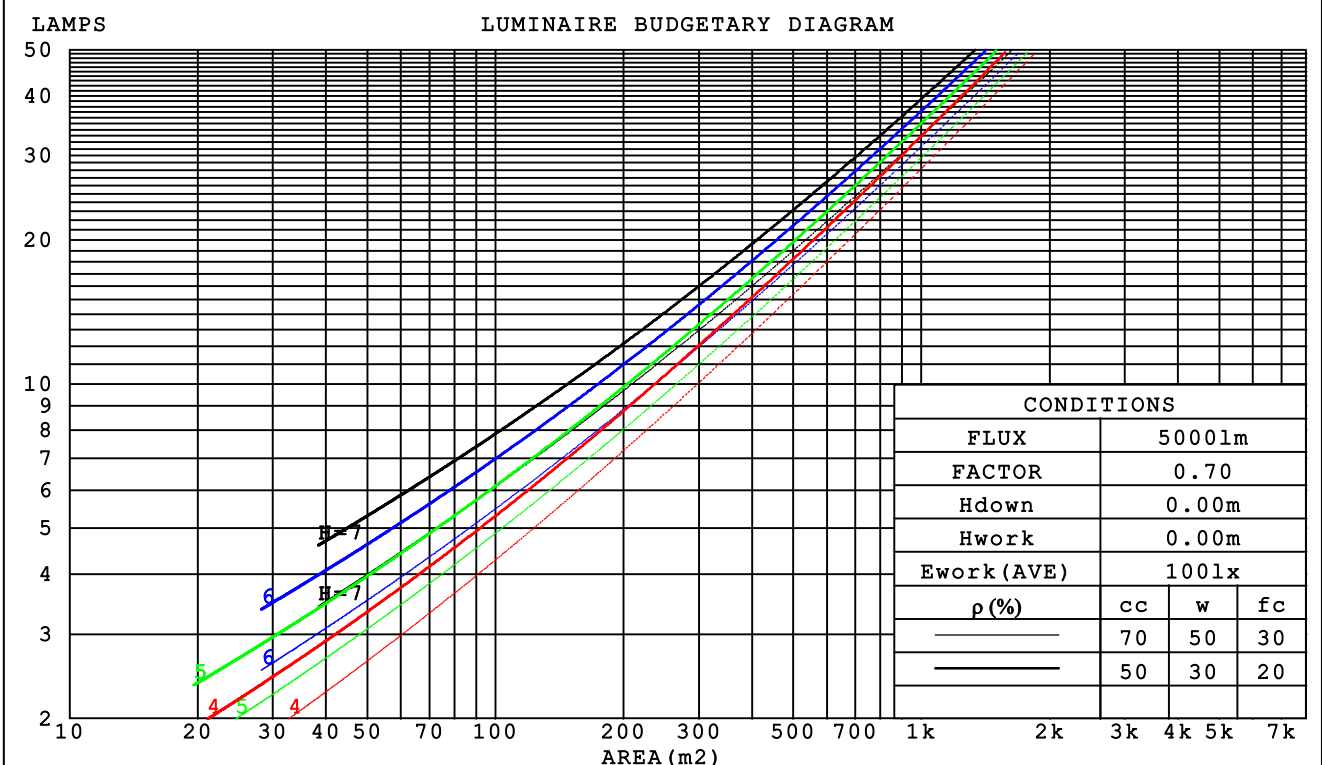
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LJ
 Test Date: 2020-07-15

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: B

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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	1.02	1.02	1.02	.00
1.0	1.02	.98	.94	1.00	.96	.92	.96	.92	.89	.92	.89	.86	.88	.86	.84	.81
2.0	.88	.81	.75	.86	.80	.74	.83	.77	.72	.79	.74	.70	.76	.72	.69	.66
3.0	.77	.68	.61	.75	.67	.60	.72	.65	.59	.69	.63	.58	.66	.61	.57	.55
4.0	.67	.58	.51	.66	.57	.51	.63	.56	.50	.61	.54	.49	.59	.53	.48	.46
5.0	.60	.50	.43	.59	.50	.43	.56	.49	.43	.54	.47	.42	.52	.46	.41	.39
6.0	.54	.44	.37	.53	.44	.37	.51	.43	.37	.49	.42	.36	.47	.41	.36	.34
7.0	.48	.39	.33	.47	.39	.33	.46	.38	.32	.44	.37	.32	.43	.37	.32	.30
8.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.40	.34	.28	.39	.33	.28	.26
9.0	.40	.32	.26	.40	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.23
10.0	.37	.29	.23	.36	.29	.23	.35	.28	.23	.34	.28	.23	.33	.27	.23	.21



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LJ
Test Date:2020-07-15

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: B

WEC AND CCEC

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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	.335	.190	.060	.327	.187	.059	.314	.180	.057	.301	.174	.056	.290	.168	.054	
2.0	.312	.171	.052	.305	.168	.052	.293	.163	.051	.282	.158	.050	.272	.154	.048	
3.0	.286	.152	.046	.280	.150	.045	.270	.146	.044	.260	.142	.044	.250	.139	.043	
4.0	.262	.136	.040	.257	.135	.040	.248	.131	.039	.239	.128	.039	.231	.125	.038	
5.0	.241	.123	.036	.237	.122	.035	.228	.119	.035	.220	.116	.035	.213	.114	.034	
6.0	.223	.112	.032	.219	.110	.032	.211	.108	.031	.204	.106	.031	.197	.104	.031	
7.0	.206	.102	.029	.203	.101	.029	.196	.099	.029	.190	.097	.028	.184	.095	.028	
8.0	.192	.094	.026	.189	.093	.026	.183	.091	.026	.177	.090	.026	.172	.088	.026	
9.0	.180	.087	.024	.177	.086	.024	.171	.085	.024	.166	.083	.024	.161	.082	.024	
10.0	.168	.081	.022	.166	.080	.022	.161	.079	.022	.156	.078	.022	.152	.076	.022	

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	.185	.159	.136	.158	.137	.117	.108	.094	.081	.062	.054	.047	.020	.018	.015	
2.0	.178	.135	.099	.153	.116	.085	.105	.080	.060	.060	.047	.035	.019	.015	.011	
3.0	.171	.118	.075	.146	.101	.065	.101	.071	.046	.058	.041	.027	.019	.013	.009	
4.0	.163	.105	.060	.140	.090	.052	.096	.063	.036	.056	.037	.022	.018	.012	.007	
5.0	.156	.094	.049	.134	.082	.042	.092	.057	.030	.053	.033	.018	.017	.011	.006	
6.0	.149	.086	.041	.128	.074	.036	.088	.052	.025	.051	.031	.015	.016	.010	.005	
7.0	.142	.079	.035	.122	.069	.031	.084	.048	.022	.049	.028	.013	.016	.009	.004	
8.0	.135	.073	.031	.116	.064	.027	.080	.045	.019	.047	.026	.011	.015	.009	.004	
9.0	.129	.068	.028	.111	.059	.024	.077	.042	.017	.045	.025	.010	.014	.008	.003	
10.0	.123	.064	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm										
NAME:					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	25.3	26.9	25.6	27.2	27.4	25.1	26.7	25.4	26.9	27.1
3H	27.5	28.9	27.8	29.2	29.4	27.1	28.6	27.4	28.9	29.1
4H	28.3	29.7	28.7	30.0	30.3	28.0	29.4	28.3	29.7	30.0
6H	29.0	30.3	29.3	30.6	30.9	28.7	30.0	29.1	30.3	30.6
8H	29.2	30.5	29.6	30.8	31.1	29.0	30.3	29.3	30.6	30.9
12H	29.4	30.6	29.7	30.9	31.2	29.2	30.4	29.6	30.7	31.1
4H 2H	26.1	27.5	26.4	27.8	28.1	25.9	27.3	26.3	27.6	27.9
3H	28.4	29.6	28.8	29.9	30.3	28.1	29.4	28.5	29.7	30.0
4H	29.4	30.5	29.8	30.9	31.2	29.1	30.3	29.5	30.6	30.9
6H	30.2	31.2	30.6	31.6	31.9	30.0	31.0	30.4	31.3	31.7
8H	30.5	31.4	30.9	31.8	32.2	30.3	31.2	30.7	31.6	32.0
12H	30.7	31.5	31.1	31.9	32.3	30.6	31.4	31.0	31.8	32.3
8H 4H	29.8	30.7	30.2	31.1	31.5	29.5	30.5	30.0	30.9	31.3
6H	30.7	31.5	31.2	31.9	32.4	30.6	31.3	31.0	31.7	32.2
8H	31.1	31.8	31.6	32.2	32.7	31.0	31.7	31.5	32.1	32.6
12H	31.4	32.0	31.9	32.5	33.0	31.4	32.0	31.9	32.4	32.9
12H 4H	29.8	30.7	30.2	31.1	31.5	29.6	30.4	30.0	30.8	31.3
6H	30.8	31.5	31.3	32.0	32.4	30.7	31.4	31.1	31.8	32.2
8H	31.3	31.9	31.7	32.3	32.8	31.1	31.8	31.6	32.2	32.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.4				

CIE Pub.117, 83.15 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -8.6)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

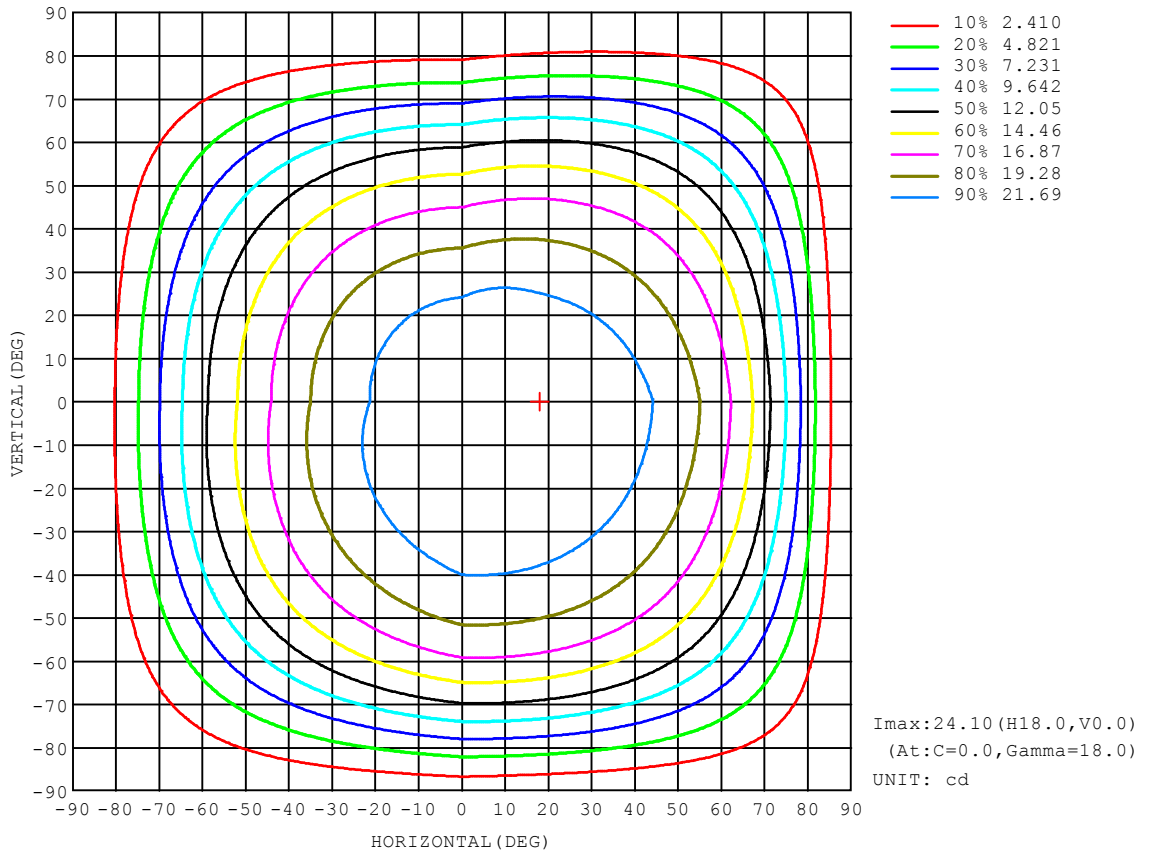
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	54	42	35	53	42	35	52	41	35	28
0.80	64	52	44	63	52	44	61	51	44	36
1.00	73	61	53	72	60	53	69	62	52	45
1.25	80	69	61	79	68	61	76	67	60	52
1.50	85	75	67	84	74	67	80	72	66	57
2.00	93	83	76	91	82	76	87	80	74	66
2.50	97	88	82	95	87	81	91	84	79	70
3.00	101	93	87	98	91	86	94	88	84	75
4.00	105	99	94	102	97	92	98	93	89	80
5.00	108	102	98	105	100	96	100	97	93	84
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:LJ
 Test Date:2020-07-15

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: B

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

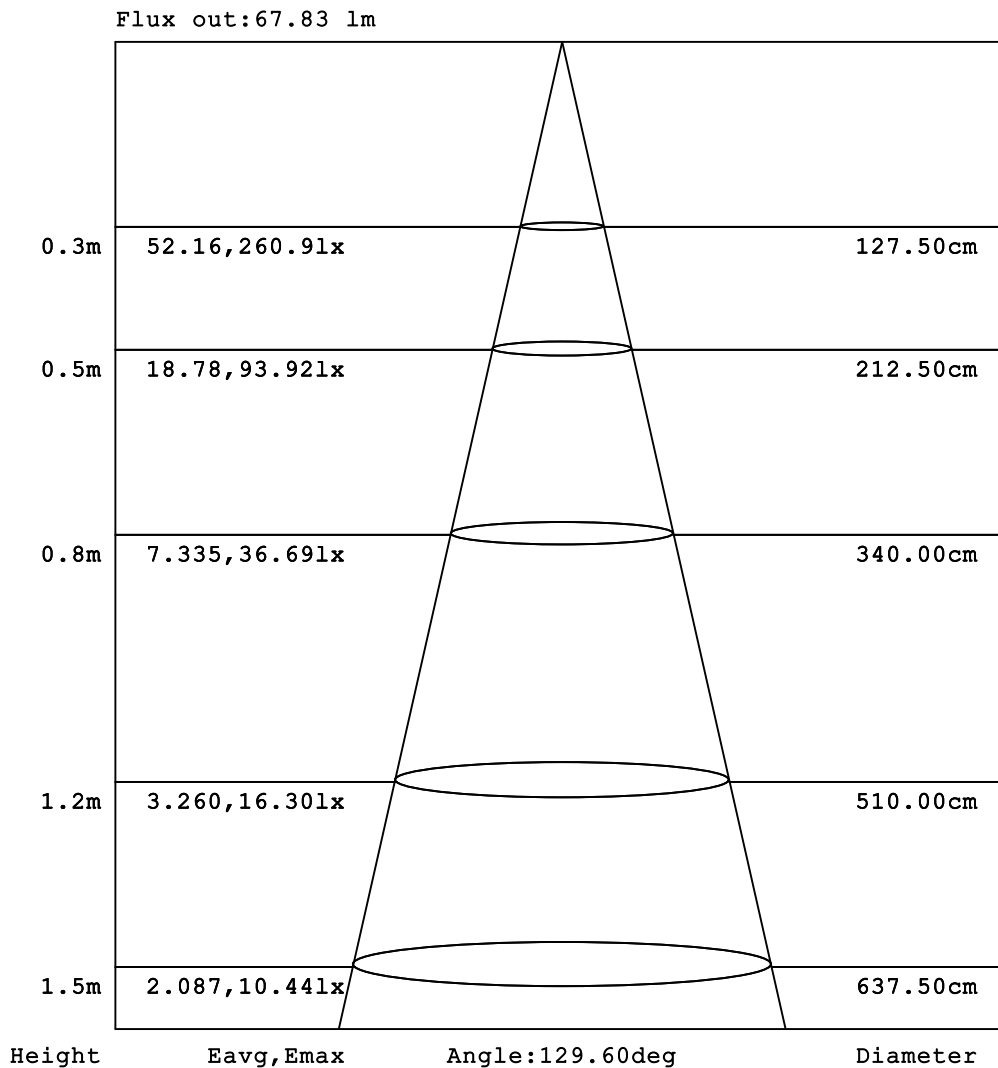


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

AAI Figure

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



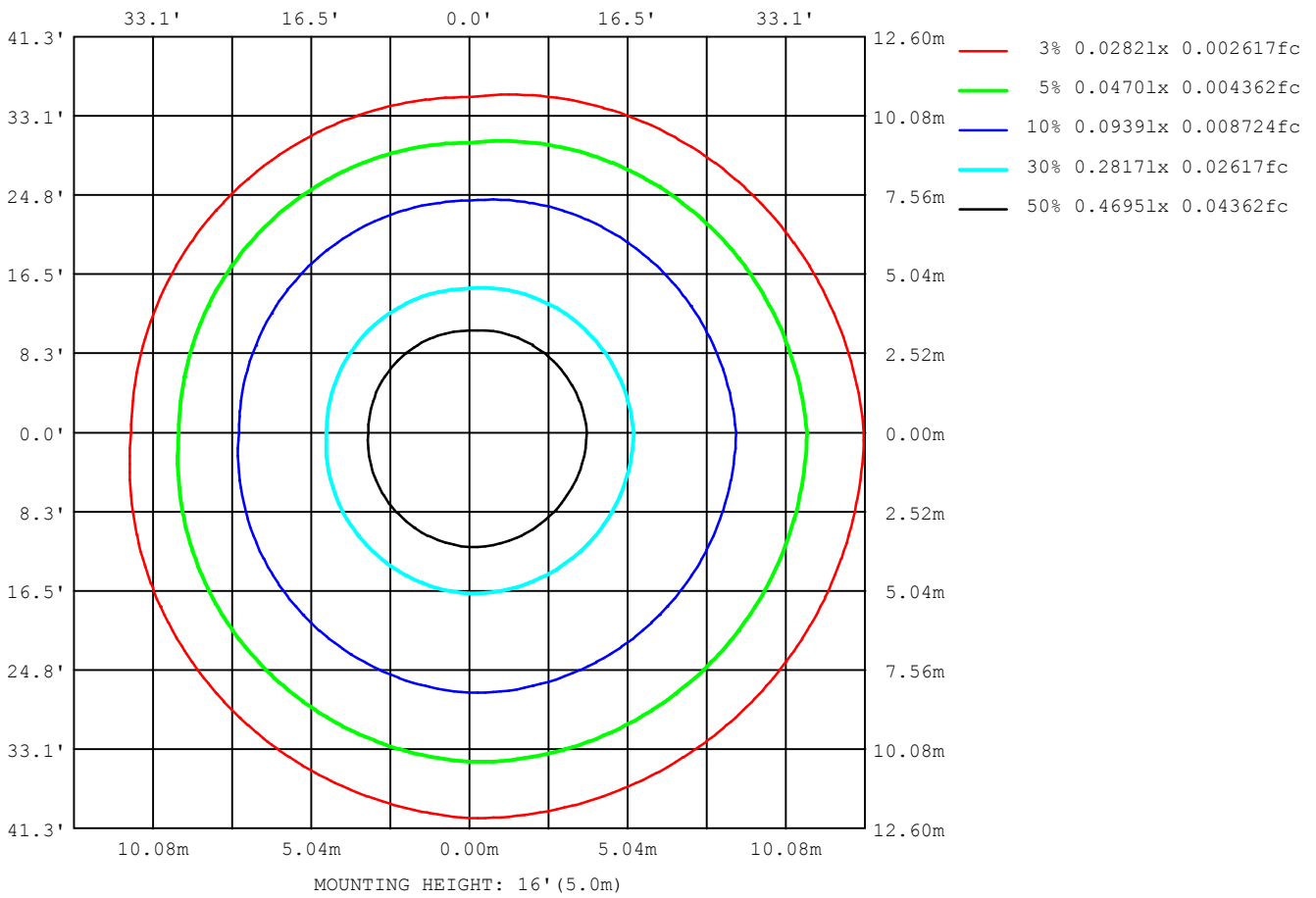
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

ISOLUX DIAGRAM

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	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:LJ
 Test Date:2020-07-15

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: B

LED Avg.L Report

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

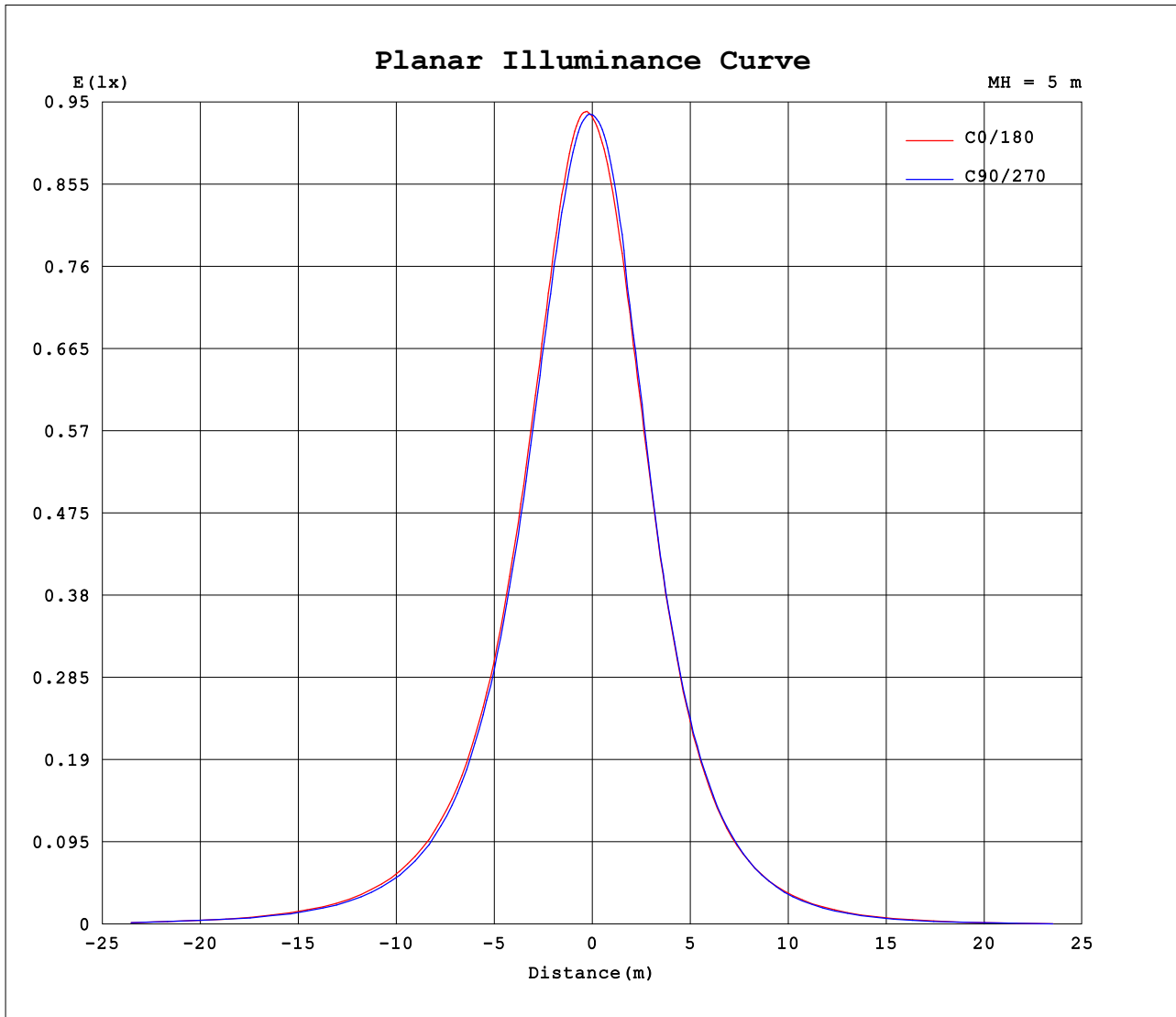
AvgL	cd/m2
L_0~180 (65) av	2064
L_0~180 (75) av	1925
L_0~180 (85) av	1438
L_90~270 (65) av	1943
L_90~270 (75) av	1781
L_90~270 (85) av	1526
L_45 (65) av	1957
L_45 (75) av	1794
L_45 (85) av	1451

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LJ
 Test Date: 2020-07-15

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: B

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.2786A P:6.6856W PF:1.0000 Freq:49.99Hz Lamp Flux:83.1473x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	23.3	23.4	23.3	23.4															
5	23.7	23.5	23.0	23.3															
10	24.0	23.6	22.7	23.2															
15	24.1	23.5	22.3	23.0															
20	24.1	23.5	21.9	22.2															
25	23.9	23.2	21.2	21.6															
30	23.5	22.9	20.3	20.5															
35	23.0	22.4	19.3	19.4															
40	22.4	21.7	18.0	18.2															
45	21.5	20.8	16.6	16.8															
50	20.5	19.7	15.1	15.3															
55	19.3	18.3	13.4	13.6															
60	17.7	16.6	11.5	11.5															
65	15.6	14.5	9.46	9.15															
70	12.9	11.9	7.13	6.66															
75	9.62	9.07	4.71	4.18															
80	6.07	6.10	2.51	2.00															
85	2.64	3.30	0.97	0.53															
90	0.04	1.12	0.00	0.01															
95	0.00	0.13	0.00	0.00															
100	0.00	0.00	0.01	0.00															
105	0.00	0.00	0.02	0.00															
110	0.00	0.00	0.04	0.02															
115	0.00	0.01	0.06	0.04															
120	0.01	0.02	0.07	0.04															
125	0.03	0.04	0.08	0.06															
130	0.04	0.06	0.09	0.07															
135	0.04	0.06	0.10	0.07															
140	0.05	0.07	0.11	0.08															
145	0.06	0.08	0.11	0.09															
150	0.07	0.09	0.12	0.10															
155	0.08	0.10	0.12	0.11															
160	0.08	0.10	0.12	0.11															
165	0.09	0.12	0.13	0.13															
170	0.11	0.12	0.13	0.12															
175	0.12	0.13	0.13	0.13															
180	0.13	0.14	0.13	0.12															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: B