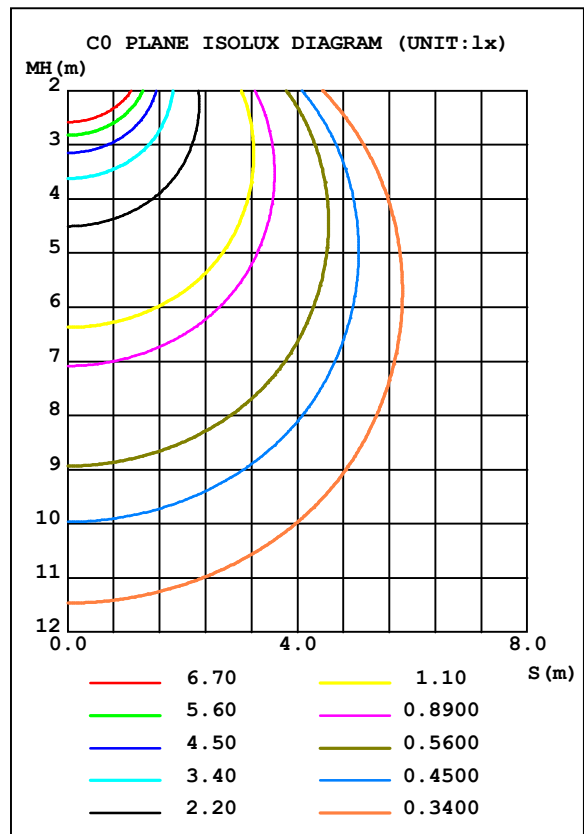
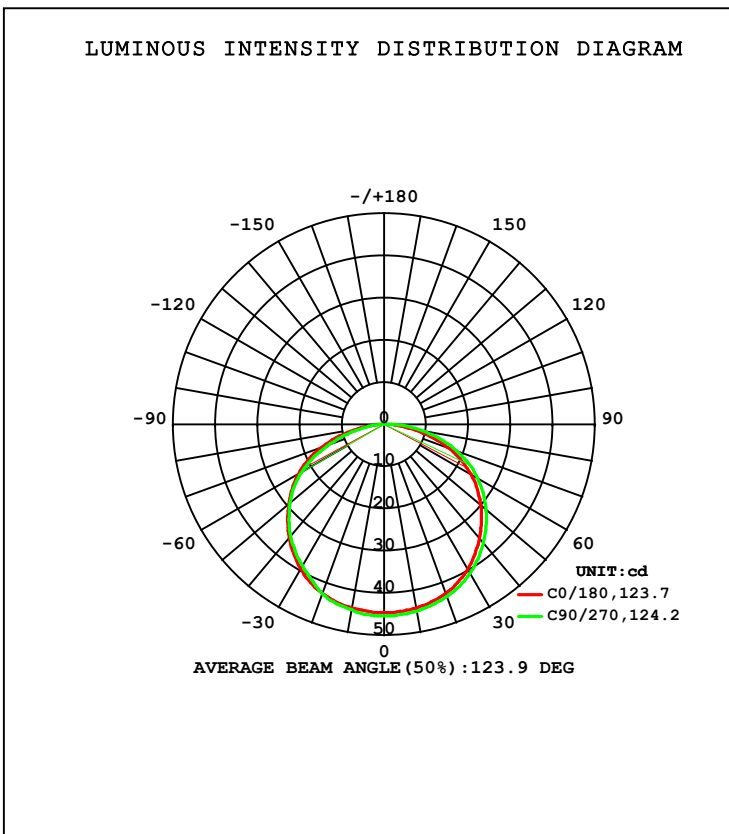


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 24.49 lm/W			
MODEL	TF5RGB-480	I _{max} (cd)	45.42	S/MH (C0/180)	1.31
NOMINAL POWER (W)	18.43	LOR (%)	100.0	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	145.01	η UP, DN (C0-180)	0.3, 51.5
NOMINAL FLUX (lm)	145.01	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.3, 47.9
LAMPS INSIDE	1	η up (%)	0.6	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	99.4	CIBSE SHR MAX	1.50



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: R

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

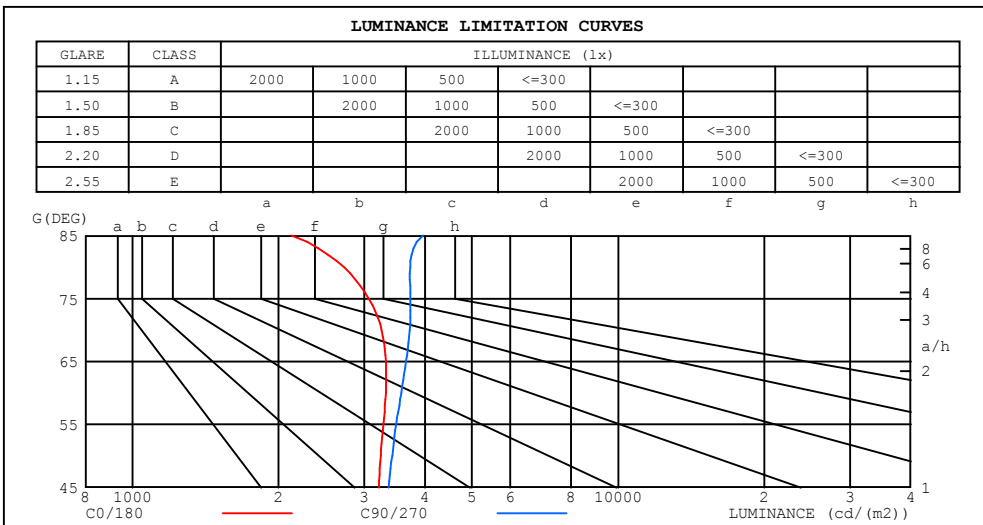
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	44.20	44.95	44.19	44.60					0- 10	4.275	4.275	2.95,2.95
20	42.71	43.48	42.70	42.81					10- 20	12.40	16.67	11.5,11.5
30	39.71	40.80	39.61	38.78					20- 30	19.13	35.80	24.7,24.7
40	35.21	36.67	35.05	34.50					30- 40	23.58	59.38	41,41
50	29.96	31.64	29.54	29.17					40- 50	25.32	84.71	58.4,58.4
60	23.89	25.68	23.38	22.56					50- 60	24.26	109.0	75.1,75.1
70	16.02	18.30	15.60	13.57					60- 70	19.83	128.8	88.8,88.8
80	6.809	9.303	6.455	4.499					70- 80	11.93	140.7	97,97
90	0.0732	1.743	0.0225	0.0523					80- 90	3.371	144.1	99.4,99.4
100	0	0.0337	0.0338	0.0336					90-100	0.1360	144.2	99.5,99.5
110	0.0503	0.0729	0.0899	0.0783					100-110	0.0516	144.3	99.5,99.5
120	0.1230	0.1123	0.1402	0.1290					110-120	0.0944	144.4	99.6,99.6
130	0.1567	0.1625	0.1806	0.1782					120-130	0.1311	144.5	99.7,99.7
140	0.1961	0.2007	0.2157	0.2259					130-140	0.1442	144.6	99.7,99.7
150	0.2252	0.2385	0.2467	0.2411					140-150	0.1408	144.8	99.8,99.8
160	0.2483	0.2636	0.2731	0.2690					150-160	0.1158	144.9	99.9,99.9
170	0.2859	0.2938	0.2865	0.2960					160-170	0.0779	145.0	100,100
180	0.3028	0.3084	0.2916	0.3084					170-180	0.0283	145.0	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: R

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2126	3964
80	2728	3727
75	3068	3733
70	3259	3722
65	3326	3658
60	3323	3572
55	3284	3490
50	3242	3424
45	3213	3369

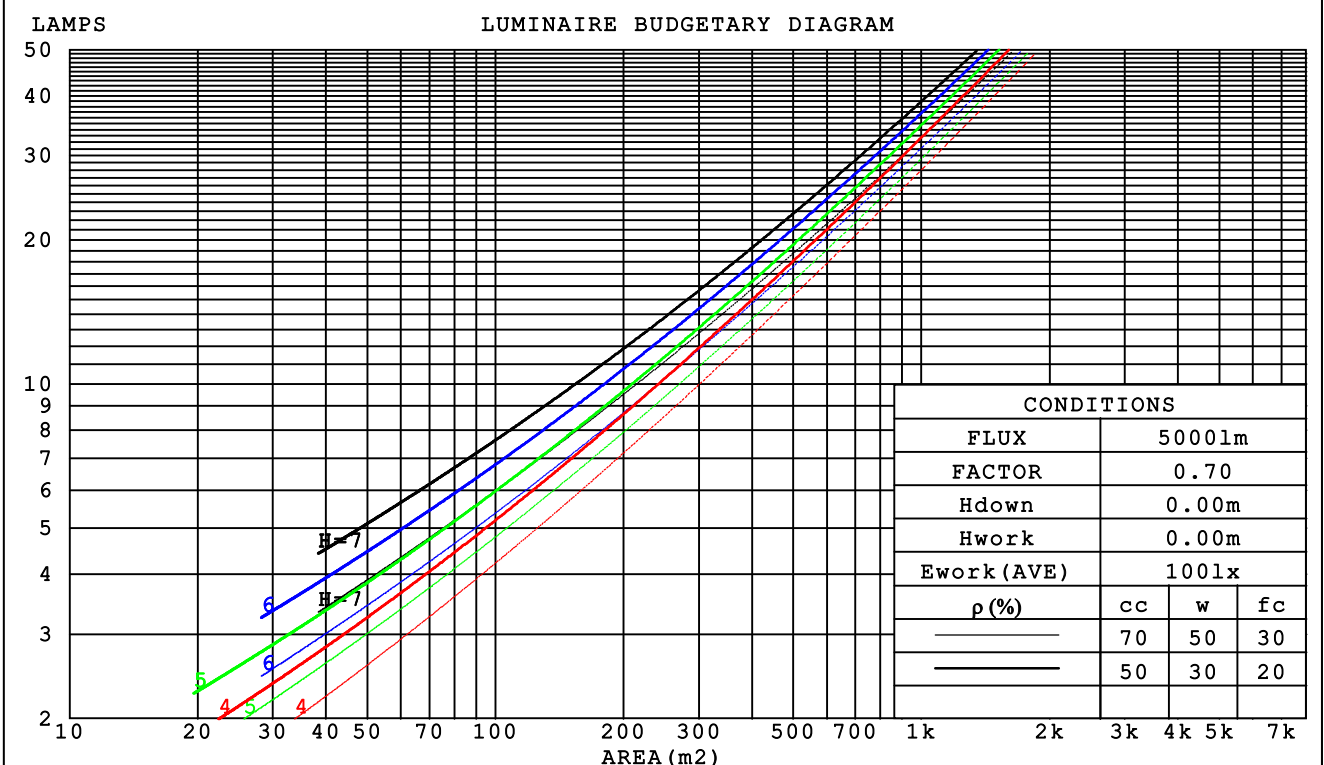
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LJ
 Test Date: 2020-07-15

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: R

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 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	1.01	1.01	1.01	.99
1.0	1.03	.98	.94	1.01	.96	.93	.96	.93	.90	.92	.89	.87	.88	.86	.84	.82
2.0	.89	.82	.76	.87	.80	.75	.83	.78	.73	.80	.75	.71	.77	.73	.69	.67
3.0	.78	.69	.62	.76	.68	.62	.73	.66	.60	.70	.64	.59	.67	.62	.58	.56
4.0	.68	.59	.52	.67	.58	.52	.64	.57	.51	.62	.55	.50	.60	.54	.50	.47
5.0	.61	.52	.45	.60	.51	.44	.57	.50	.44	.55	.49	.43	.53	.47	.43	.41
6.0	.55	.45	.39	.54	.45	.39	.52	.44	.38	.50	.43	.38	.48	.42	.37	.35
7.0	.49	.40	.34	.49	.40	.34	.47	.39	.34	.45	.38	.33	.44	.38	.33	.31
8.0	.45	.36	.30	.44	.36	.30	.43	.35	.30	.41	.35	.30	.40	.34	.29	.27
9.0	.41	.33	.27	.41	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.26	.25
10.0	.38	.30	.24	.37	.30	.24	.36	.29	.24	.35	.29	.24	.34	.28	.24	.22



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: R

WEC AND CCEC

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	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 Coefficients (WEC)									
0.0																
1.0	.326	.185	.059	.319	.182	.058	.305	.175	.056	.292	.169	.054	.281	.163	.052	
2.0	.304	.167	.051	.298	.164	.051	.286	.159	.049	.275	.154	.048	.264	.149	.047	
3.0	.280	.149	.045	.274	.147	.044	.264	.143	.043	.254	.139	.043	.244	.135	.042	
4.0	.257	.134	.039	.252	.132	.039	.243	.129	.038	.234	.126	.038	.226	.123	.037	
5.0	.237	.121	.035	.233	.119	.035	.224	.117	.034	.216	.114	.034	.209	.111	.033	
6.0	.219	.110	.031	.215	.109	.031	.208	.106	.031	.200	.104	.031	.194	.102	.030	
7.0	.203	.101	.029	.200	.100	.028	.193	.098	.028	.187	.096	.028	.181	.094	.028	
8.0	.190	.093	.026	.186	.092	.026	.180	.090	.026	.175	.088	.026	.169	.087	.025	
9.0	.177	.086	.024	.174	.085	.024	.169	.084	.024	.164	.082	.023	.159	.081	.023	
10.0	.166	.080	.022	.164	.079	.022	.159	.078	.022	.154	.077	.022	.150	.075	.022	

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	.065	.065	.065	.021	.021	.021	
1.0	.186	.161	.138	.159	.138	.119	.109	.095	.082	.063	.055	.048	.020	.018	.015	
2.0	.179	.137	.101	.153	.118	.088	.105	.081	.061	.061	.047	.036	.019	.015	.012	
3.0	.171	.119	.078	.147	.103	.067	.101	.071	.047	.058	.042	.028	.019	.014	.009	
4.0	.164	.106	.062	.141	.092	.054	.097	.064	.038	.056	.037	.022	.018	.012	.007	
5.0	.156	.096	.051	.134	.083	.044	.092	.058	.031	.054	.034	.019	.017	.011	.006	
6.0	.149	.088	.043	.128	.076	.038	.088	.053	.027	.051	.031	.016	.017	.010	.005	
7.0	.142	.081	.038	.122	.070	.033	.084	.049	.023	.049	.029	.014	.016	.009	.005	
8.0	.136	.075	.033	.117	.065	.029	.081	.046	.021	.047	.027	.012	.015	.009	.004	
9.0	.129	.070	.030	.111	.061	.026	.077	.043	.018	.045	.025	.011	.015	.008	.004	
10.0	.124	.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: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: R

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 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	23.9	25.5	24.2	25.7	25.9	24.2	25.8	24.5	26.0	26.2
3H	25.7	27.2	26.1	27.4	27.7	26.2	27.6	26.5	27.9	28.1
4H	26.5	27.8	26.8	28.1	28.4	27.0	28.4	27.4	28.7	28.9
6H	27.0	28.3	27.3	28.5	28.8	27.7	29.0	28.1	29.3	29.6
8H	27.1	28.4	27.5	28.7	29.0	28.0	29.2	28.3	29.5	29.8
12H	27.2	28.4	27.5	28.7	29.0	28.2	29.4	28.6	29.7	30.0
4H 2H	24.7	26.1	25.0	26.4	26.6	24.9	26.3	25.2	26.6	26.8
3H	26.7	27.9	27.0	28.2	28.5	27.0	28.3	27.4	28.6	28.9
4H	27.5	28.6	27.9	29.0	29.3	28.0	29.1	28.4	29.5	29.8
6H	28.2	29.1	28.6	29.5	29.9	28.9	29.8	29.3	30.2	30.6
8H	28.4	29.3	28.8	29.7	30.1	29.2	30.1	29.6	30.5	30.9
12H	28.5	29.3	28.9	29.7	30.1	29.5	30.3	29.9	30.7	31.1
8H 4H	27.9	28.8	28.3	29.2	29.6	28.3	29.3	28.8	29.6	30.0
6H	28.7	29.5	29.2	29.9	30.3	29.3	30.1	29.8	30.5	31.0
8H	29.0	29.7	29.5	30.1	30.6	29.8	30.5	30.2	30.9	31.4
12H	29.2	29.8	29.7	30.3	30.7	30.2	30.8	30.7	31.2	31.7
12H 4H	27.9	28.8	28.4	29.2	29.6	28.4	29.2	28.8	29.6	30.0
6H	28.8	29.5	29.3	29.9	30.4	29.4	30.1	29.9	30.5	31.0
8H	29.2	29.7	29.6	30.2	30.7	29.9	30.5	30.4	30.9	31.4
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, 145.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -6.7)

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: R

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

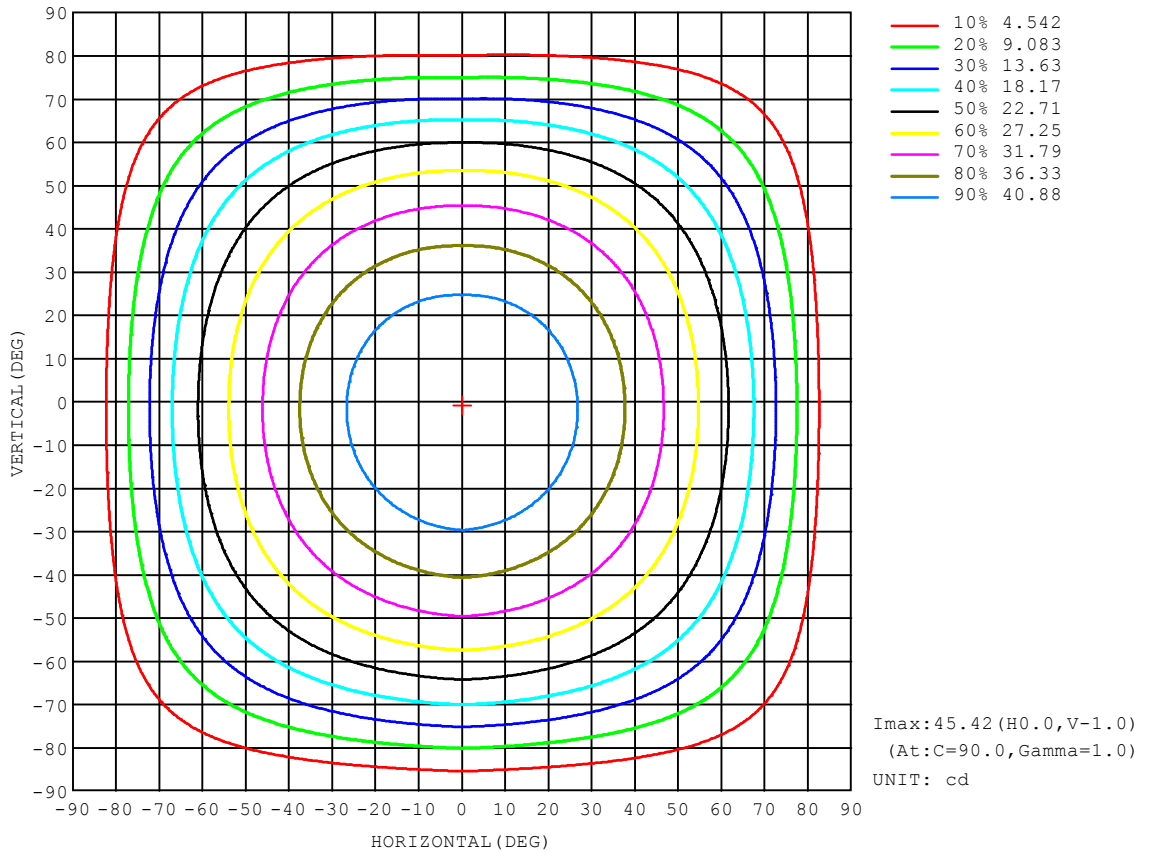
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	55	44	36	55	43	36	53	43	36	29
0.80	65	53	46	64	53	46	62	52	45	38
1.00	74	62	55	73	62	54	70	63	54	46
1.25	81	70	63	80	69	62	77	68	61	54
1.50	86	76	68	84	75	68	81	73	67	59
2.00	93	84	78	91	83	77	88	81	75	67
2.50	97	89	83	95	88	82	91	85	80	71
3.00	101	94	88	99	92	87	95	89	85	76
4.00	105	99	94	103	97	93	98	94	90	81
5.00	108	103	98	105	101	97	101	97	94	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: R

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

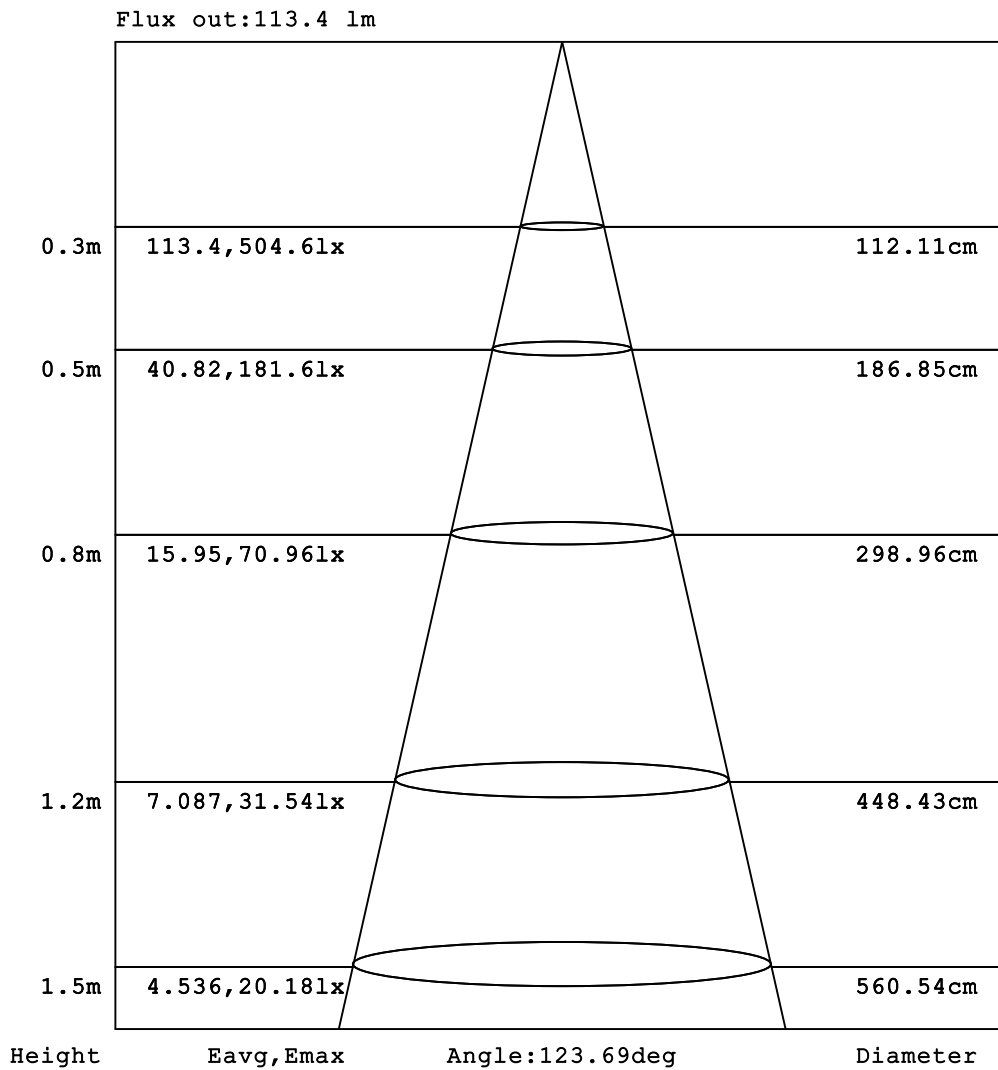


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LJ
 Test Date: 2020-07-15

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: R

AAI Figure

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



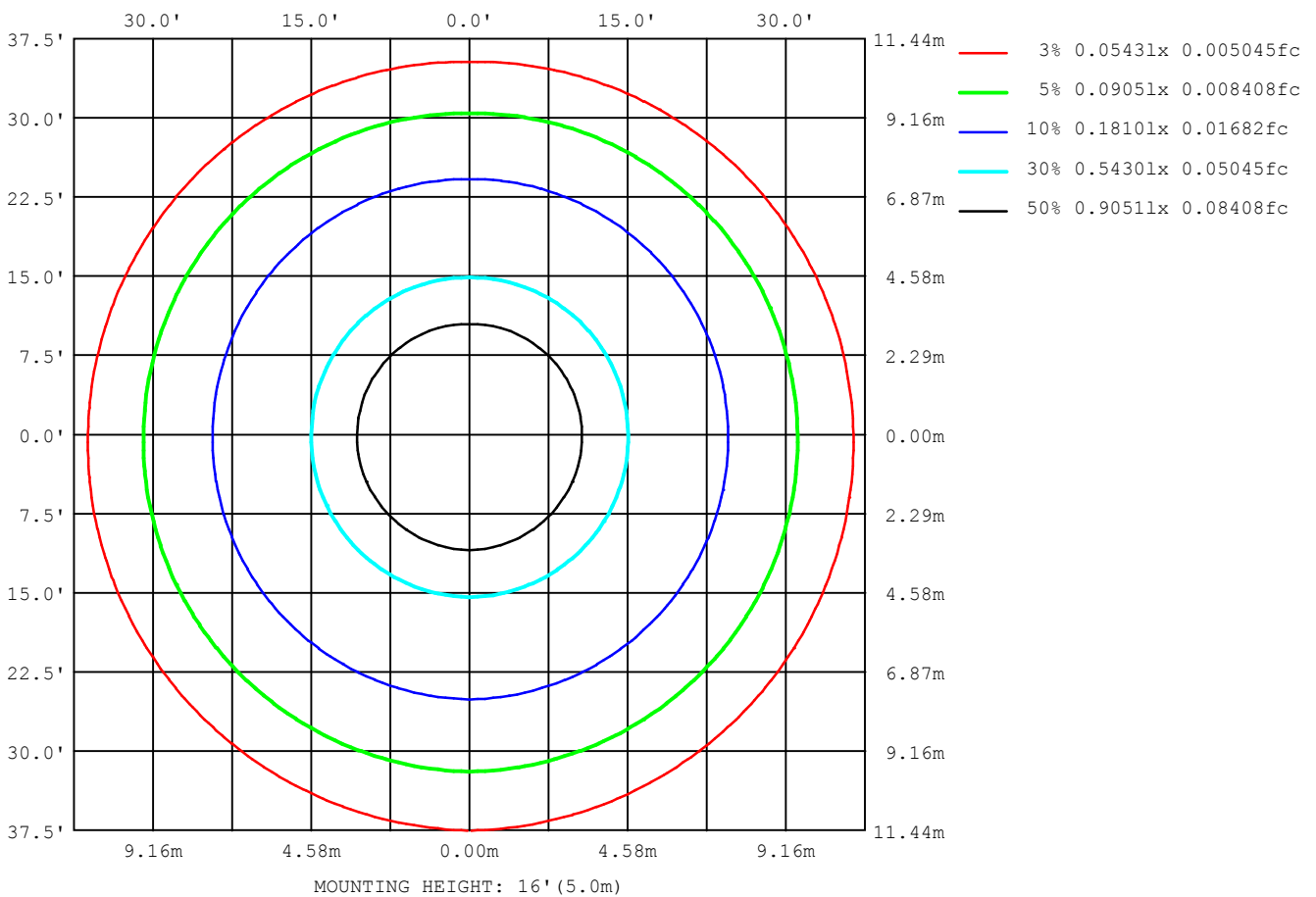
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: R

ISOLUX DIAGRAM

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 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: R

LED Avg.L Report

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

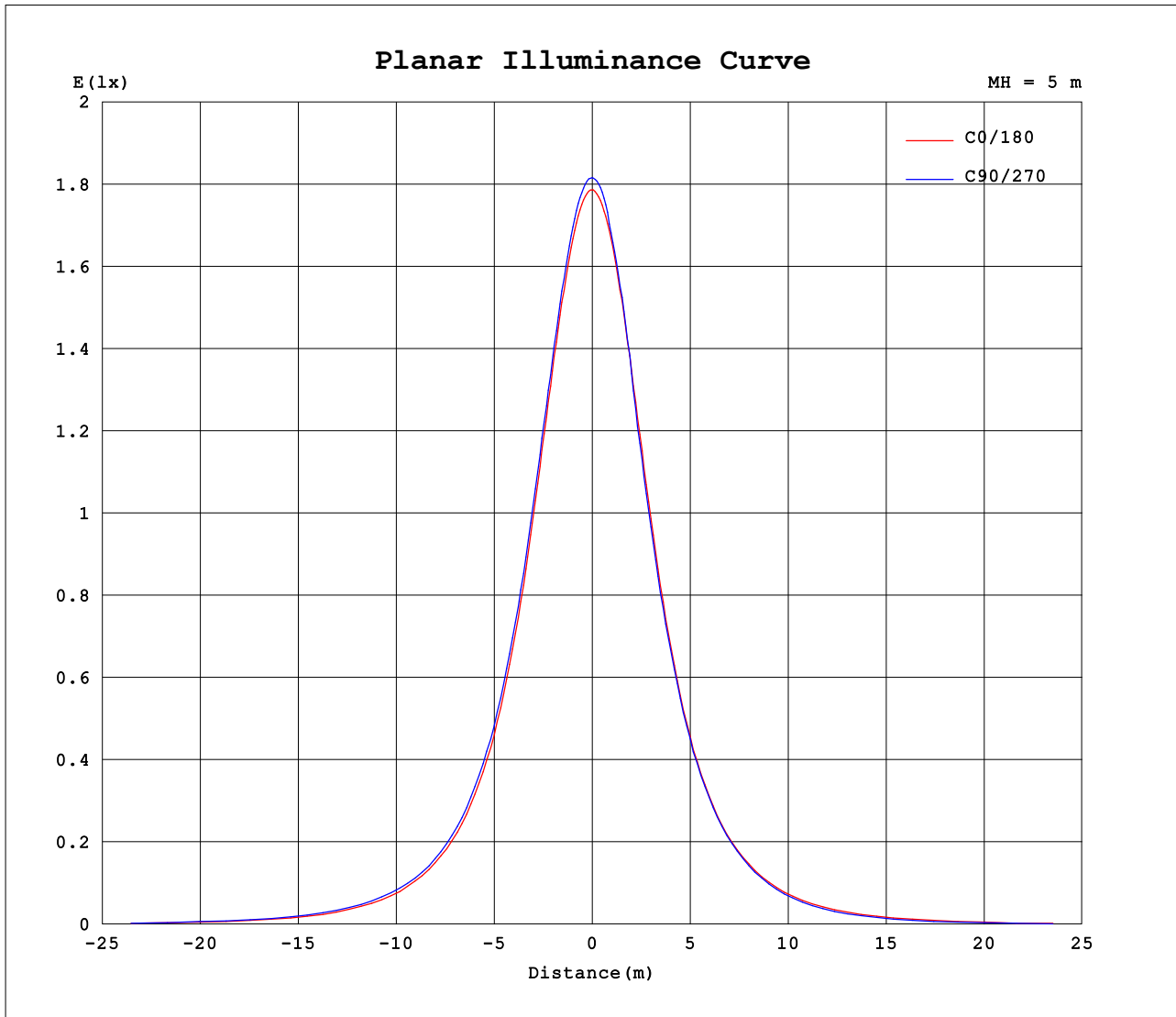
AvgL	cd/m2
L_0~180 (65) av	3288
L_0~180 (75) av	3016
L_0~180 (85) av	2032
L_90~270 (65) av	3330
L_90~270 (75) av	3064
L_90~270 (85) av	2482
L_45 (65) av	3312
L_45 (75) av	3043
L_45 (85) av	2307

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: R

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: R

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.2467A P:5.9201W PF:1.0000 Freq:49.99Hz Lamp Flux:145.01x1 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	44.7	45.4	44.7	45.4																
5	44.5	45.3	44.5	45.3																
10	44.2	44.9	44.2	44.6																
15	43.6	44.4	43.6	44.0																
20	42.7	43.5	42.7	42.8																
25	41.4	42.3	41.4	40.7																
30	39.7	40.8	39.6	38.8																
35	37.6	38.8	37.5	36.7																
40	35.2	36.7	35.1	34.5																
45	32.7	34.2	32.4	31.9																
50	30.0	31.6	29.5	29.2																
55	27.1	28.8	26.6	26.2																
60	23.9	25.7	23.4	22.6																
65	20.2	22.2	19.7	18.2																
70	16.0	18.3	15.6	13.6																
75	11.4	13.9	11.0	8.91																
80	6.81	9.30	6.46	4.50																
85	2.66	4.97	2.43	1.25																
90	0.07	1.74	0.02	0.05																
95	0.00	0.25	0.02	0.01																
100	0.00	0.03	0.03	0.03																
105	0.02	0.06	0.07	0.04																
110	0.05	0.07	0.09	0.08																
115	0.07	0.09	0.11	0.11																
120	0.12	0.11	0.14	0.13																
125	0.13	0.14	0.16	0.16																
130	0.16	0.16	0.18	0.18																
135	0.17	0.17	0.20	0.20																
140	0.20	0.20	0.22	0.23																
145	0.22	0.22	0.23	0.24																
150	0.23	0.24	0.25	0.24																
155	0.24	0.25	0.26	0.25																
160	0.25	0.26	0.27	0.27																
165	0.26	0.28	0.28	0.28																
170	0.29	0.29	0.29	0.30																
175	0.30	0.30	0.29	0.31																
180	0.30	0.31	0.29	0.31																

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: R