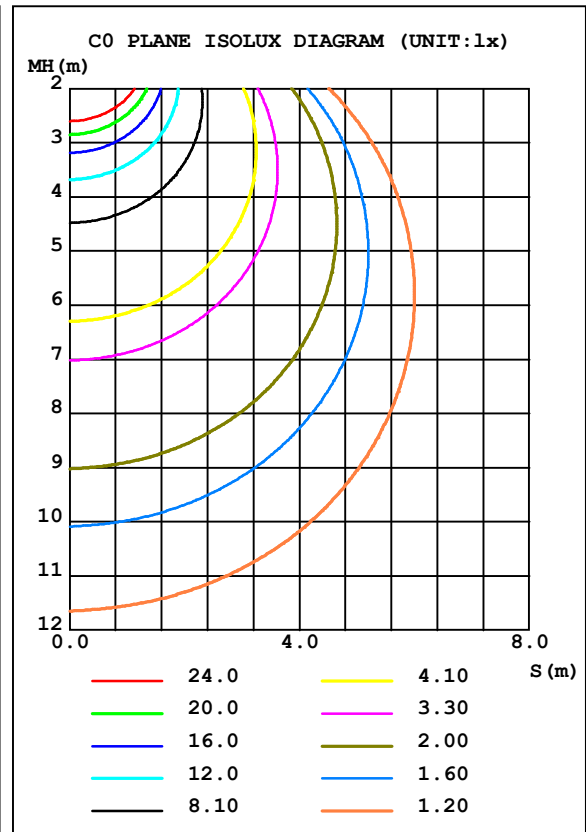
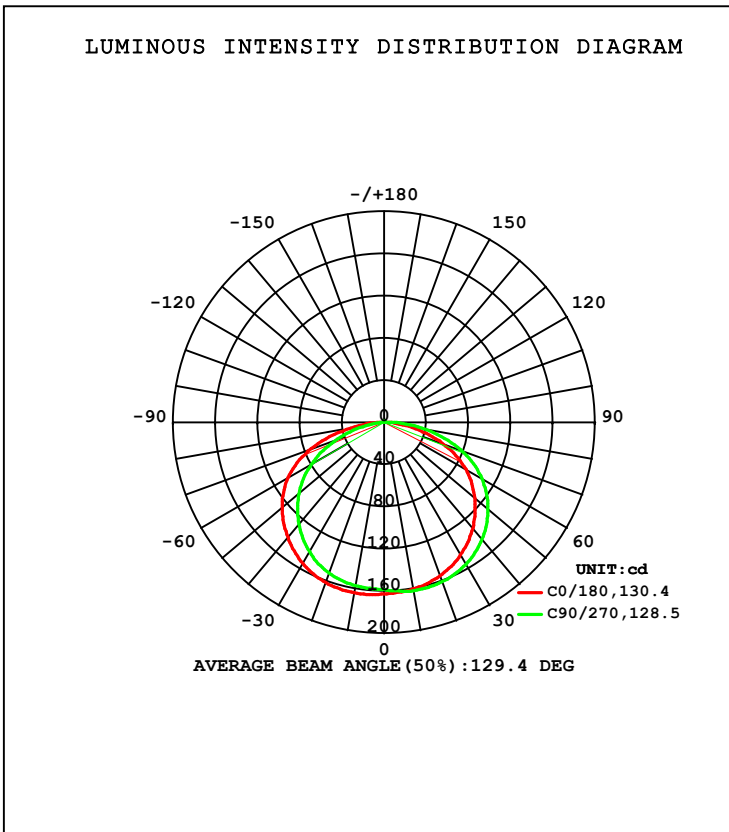


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 29.95 lm/W			
MODEL	TF5RGB-480	I _{max} (cd)	164.2	S/MH (C0/180)	1.41
NOMINAL POWER (W)	18.43	LOR (%)	100.0	S/MH (C90/270)	1.32
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	564.35	η UP, DN (C0-180)	0.5, 51.0
NOMINAL FLUX (lm)	564.349	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.4, 48.0
LAMPS INSIDE	1	η up (%)	0.9	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	99.1	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: RGB

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

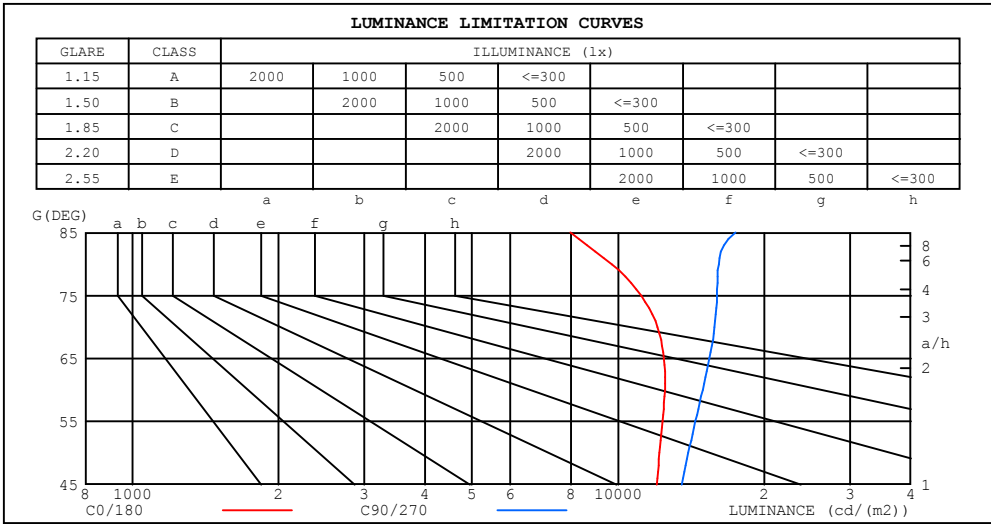
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	160.4	162.3	164.2	157.2					0- 10	15.38	15.38	2.73,2.73
20	155.2	160.9	161.7	152.4					10- 20	45.20	60.58	10.7,10.7
30	145.3	155.4	154.5	141.8					20- 30	71.08	131.7	23.3,23.3
40	131.1	144.7	142.4	125.9					30- 40	89.67	221.3	39.2,39.2
50	112.4	128.8	126.3	105.6					40- 50	98.53	319.9	56.7,56.7
60	89.64	107.2	105.3	79.73					50- 60	96.19	416.0	73.7,73.7
70	59.21	77.69	73.57	47.44					60- 70	79.90	495.9	87.9,87.9
80	24.23	40.19	32.49	14.94					70- 80	48.71	544.6	96.5,96.5
90	0.6243	7.700	0.3689	0.4251					80- 90	14.48	559.1	99.1,99.1
100	0.3472	0.3703	0.3534	0.4258					90-100	0.8426	560.0	99.2,99.2
110	0.5546	0.4996	0.5443	0.6274					100-110	0.4911	560.5	99.3,99.3
120	0.7508	0.6509	0.7402	0.8292					110-120	0.6464	561.1	99.4,99.4
130	0.9361	0.8132	0.9200	0.9922					120-130	0.7435	561.9	99.6,99.6
140	1.076	0.9589	1.060	1.110					130-140	0.7619	562.6	99.7,99.7
150	1.177	1.082	1.166	1.211					140-150	0.6945	563.3	99.8,99.8
160	1.267	1.178	1.250	1.262					150-160	0.5550	563.9	99.9,99.9
170	1.313	1.273	1.329	1.301					160-170	0.3613	564.2	100,100
180	1.340	1.323	1.363	1.312					170-180	0.1259	564.3	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: RGB

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	7966	17459
80	9706	16099
75	11154	15984
70	12042	15802
65	12427	15415
60	12472	14921
55	12338	14425
50	12161	13944
45	12024	13516

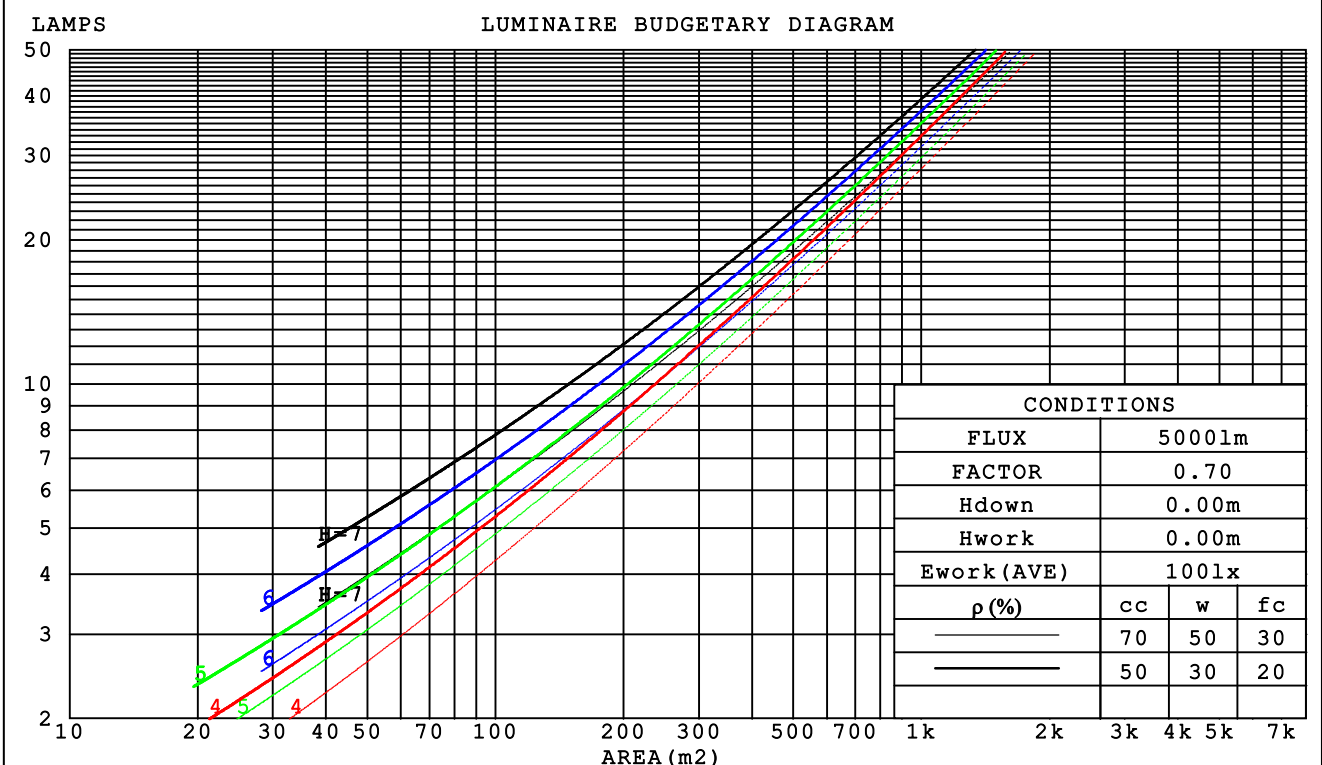
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: RGB

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 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	1.02	.98	.94	1.00	.96	.92	.96	.92	.89	.91	.89	.86	.88	.85	.83	.81
2.0	.88	.81	.75	.86	.80	.74	.83	.77	.72	.79	.74	.70	.76	.72	.68	.66
3.0	.77	.68	.61	.75	.67	.61	.72	.65	.59	.69	.63	.58	.66	.61	.57	.55
4.0	.68	.58	.51	.66	.58	.51	.63	.56	.50	.61	.54	.49	.59	.53	.48	.46
5.0	.60	.51	.44	.59	.50	.43	.57	.49	.43	.54	.48	.42	.52	.46	.42	.39
6.0	.54	.44	.38	.53	.44	.37	.51	.43	.37	.49	.42	.37	.47	.41	.36	.34
7.0	.49	.39	.33	.48	.39	.33	.46	.38	.33	.44	.37	.32	.43	.37	.32	.30
8.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.41	.34	.29	.39	.33	.28	.26
9.0	.40	.32	.26	.40	.32	.26	.38	.31	.26	.37	.31	.26	.36	.30	.25	.24
10.0	.37	.29	.24	.37	.29	.24	.36	.28	.23	.34	.28	.23	.34	.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: RGB

WEC AND CCEC

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 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	.333	.189	.060	.325	.186	.059	.312	.179	.057	.299	.172	.055	.287	.166	.054	
2.0	.310	.170	.052	.303	.167	.051	.291	.162	.050	.280	.157	.049	.269	.152	.048	
3.0	.285	.151	.045	.279	.149	.045	.268	.145	.044	.258	.141	.043	.248	.137	.043	
4.0	.261	.136	.040	.256	.134	.040	.246	.130	.039	.237	.127	.038	.229	.124	.038	
5.0	.240	.122	.035	.235	.121	.035	.227	.118	.035	.219	.115	.034	.211	.113	.034	
6.0	.222	.111	.032	.218	.110	.032	.210	.108	.031	.203	.105	.031	.196	.103	.031	
7.0	.206	.102	.029	.202	.101	.029	.195	.099	.028	.188	.097	.028	.182	.095	.028	
8.0	.191	.094	.026	.188	.093	.026	.182	.091	.026	.176	.089	.026	.170	.088	.025	
9.0	.179	.087	.024	.176	.086	.024	.170	.084	.024	.165	.083	.024	.160	.081	.023	
10.0	.168	.080	.022	.165	.080	.022	.160	.078	.022	.155	.077	.022	.151	.076	.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	.198	.198	.198	.169	.169	.169	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.189	.163	.140	.162	.140	.120	.111	.096	.083	.064	.056	.048	.020	.018	.016	
2.0	.182	.139	.103	.156	.120	.089	.107	.083	.062	.062	.048	.036	.020	.016	.012	
3.0	.174	.122	.079	.150	.105	.069	.103	.073	.048	.059	.043	.028	.019	.014	.009	
4.0	.167	.108	.064	.143	.094	.055	.099	.065	.039	.057	.038	.023	.018	.012	.008	
5.0	.160	.098	.053	.137	.085	.046	.094	.059	.033	.055	.035	.019	.018	.011	.006	
6.0	.152	.090	.045	.131	.078	.039	.090	.055	.028	.052	.032	.017	.017	.010	.005	
7.0	.145	.083	.040	.125	.072	.034	.086	.051	.024	.050	.030	.015	.016	.010	.005	
8.0	.139	.077	.035	.119	.067	.031	.083	.047	.022	.048	.028	.013	.016	.009	.004	
9.0	.132	.072	.032	.114	.063	.028	.079	.044	.020	.046	.026	.012	.015	.009	.004	
10.0	.126	.068	.029	.109	.059	.026	.076	.042	.018	.044	.025	.011	.014	.008	.004	

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: RGB

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 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	23.8	25.4	24.1	25.6	25.9	24.5	26.1	24.8	26.3	26.5
3H	25.6	27.0	25.9	27.3	27.6	26.5	28.0	26.9	28.3	28.5
4H	26.3	27.6	26.6	27.9	28.2	27.4	28.8	27.8	29.1	29.4
6H	26.7	28.0	27.1	28.3	28.6	28.2	29.5	28.5	29.8	30.1
8H	26.8	28.1	27.2	28.4	28.7	28.5	29.7	28.8	30.0	30.4
12H	26.9	28.1	27.3	28.4	28.8	28.7	29.9	29.1	30.2	30.6
4H 2H	24.7	26.0	25.0	26.3	26.6	25.2	26.5	25.5	26.8	27.1
3H	26.6	27.8	27.0	28.1	28.5	27.4	28.6	27.7	28.9	29.2
4H	27.4	28.5	27.8	28.9	29.2	28.4	29.5	28.8	29.9	30.2
6H	28.0	29.0	28.4	29.3	29.7	29.3	30.3	29.7	30.6	31.0
8H	28.2	29.1	28.6	29.5	29.9	29.6	30.6	30.1	31.0	31.4
12H	28.3	29.1	28.7	29.5	30.0	29.9	30.8	30.4	31.2	31.6
8H 4H	27.8	28.7	28.2	29.1	29.5	28.7	29.6	29.1	30.0	30.4
6H	28.6	29.3	29.0	29.8	30.2	29.7	30.5	30.2	30.9	31.4
8H	28.8	29.5	29.3	30.0	30.5	30.2	30.9	30.7	31.3	31.8
12H	29.0	29.6	29.5	30.1	30.6	30.6	31.2	31.1	31.7	32.2
12H 4H	27.9	28.7	28.3	29.1	29.6	28.7	29.6	29.1	30.0	30.4
6H	28.7	29.4	29.2	29.8	30.3	29.8	30.5	30.3	30.9	31.4
8H	29.0	29.6	29.5	30.1	30.6	30.3	30.9	30.8	31.4	31.9
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 / - 0.2				
2.0H	+ 0.2 / - 0.5					+ 0.1 / - 0.3				

CIE Pub.117, 564.3 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.0)

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: RGB

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

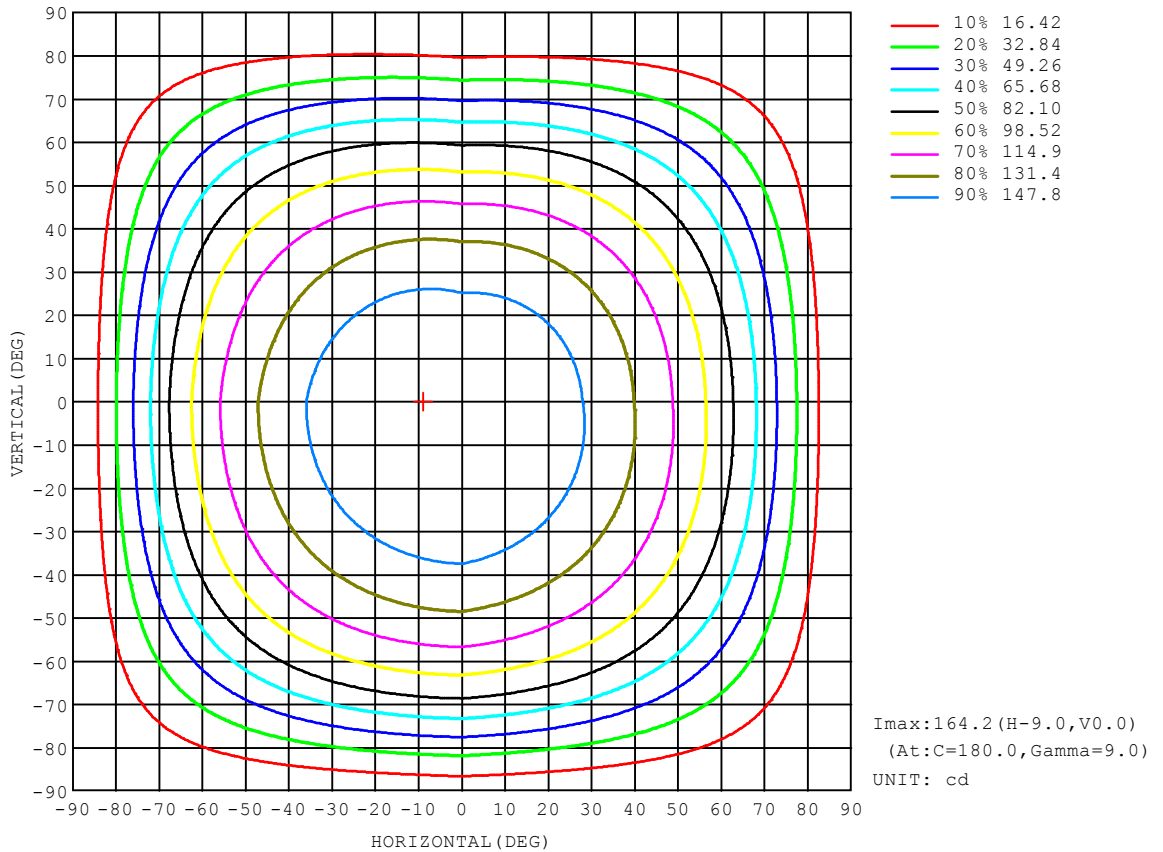
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	54	42	35	54	42	35	52	42	35	28
0.80	64	52	44	63	52	44	61	51	44	37
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	58
2.00	93	83	76	91	82	76	87	80	74	66
2.50	97	89	82	95	87	81	91	84	79	70
3.00	100	93	87	98	91	86	94	88	84	75
4.00	105	99	94	102	97	92	98	93	89	80
5.00	107	102	98	105	100	96	100	96	93	83
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: RGB

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

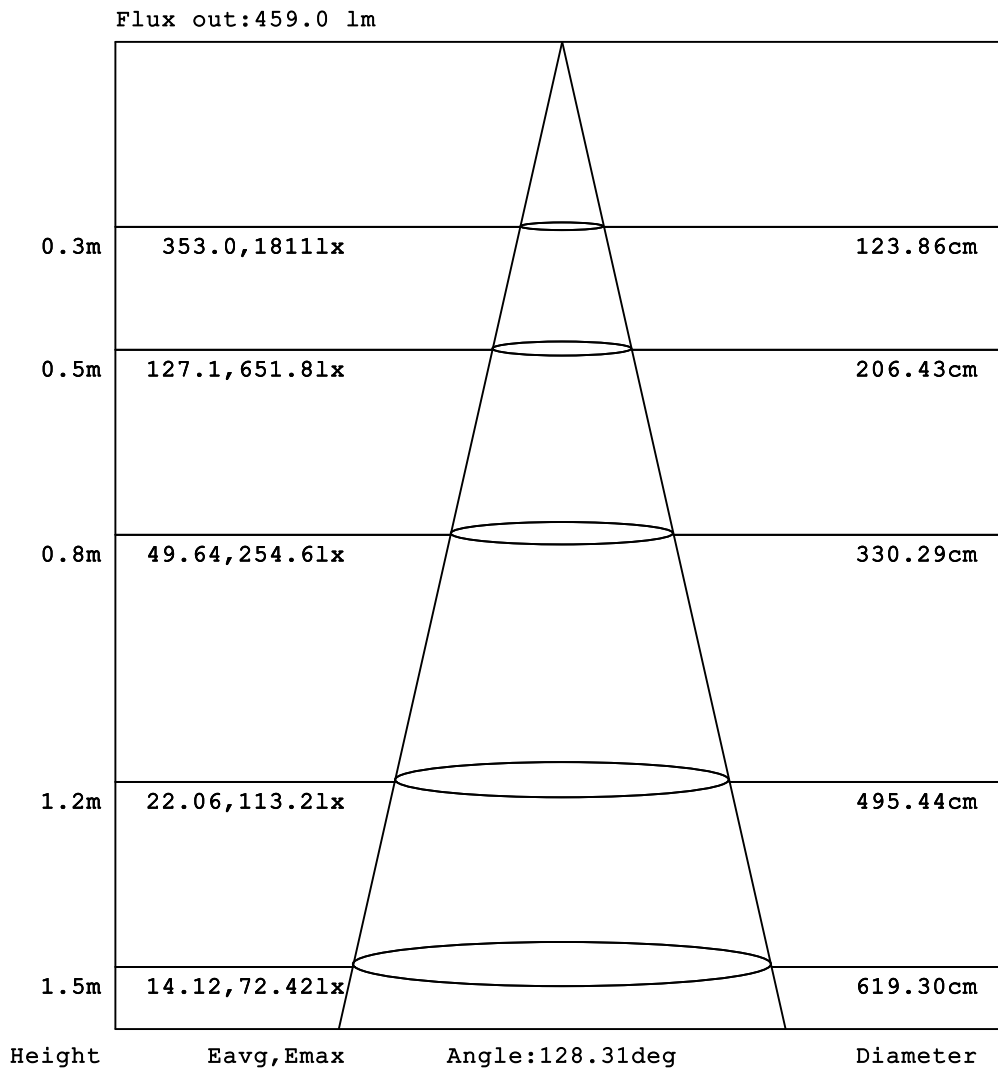


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LJ
 Test Date:2020-07-15

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: RGB

AAI Figure

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



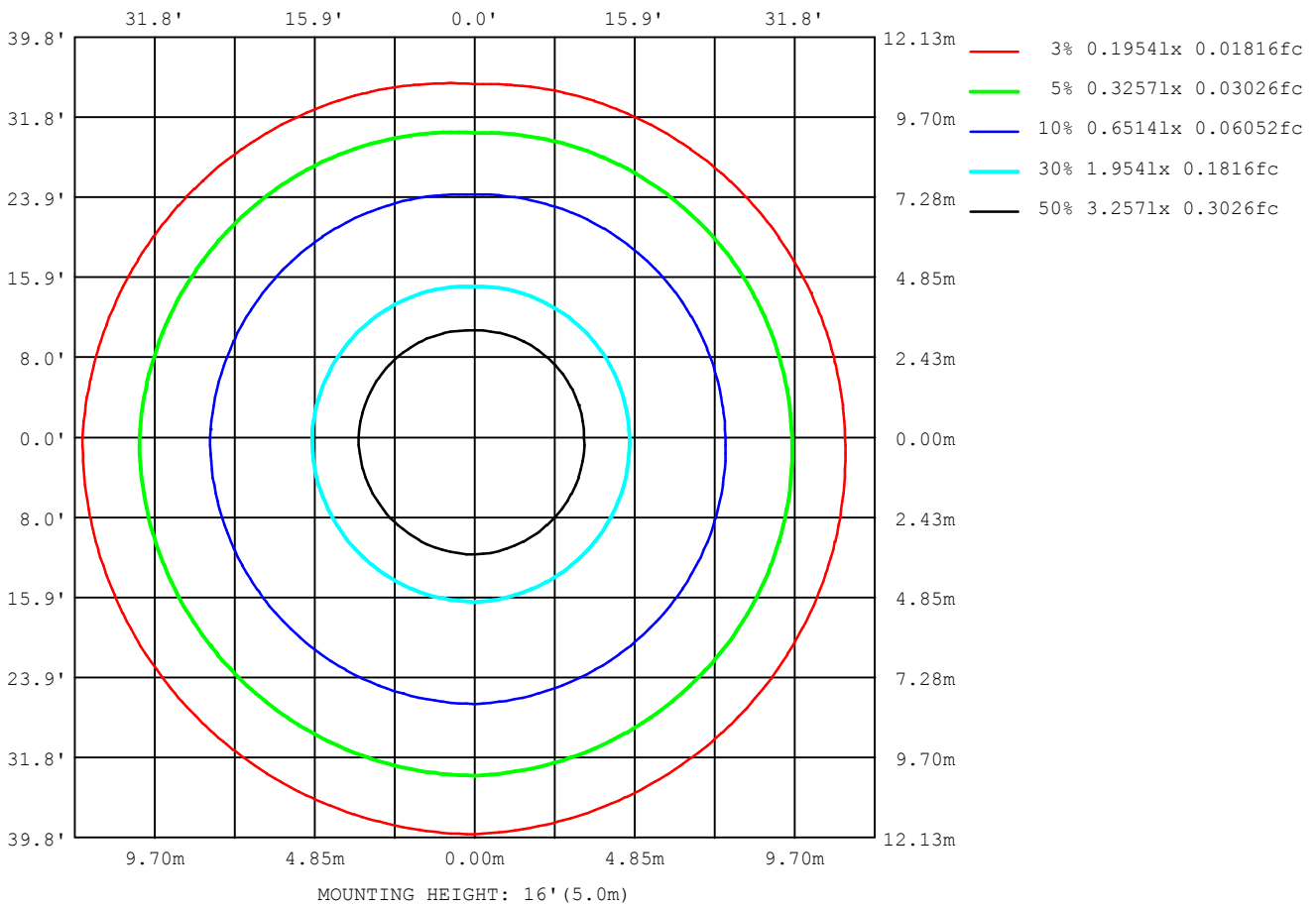
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: RGB

ISOLUX DIAGRAM

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 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: RGB

LED Avg.L Report

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

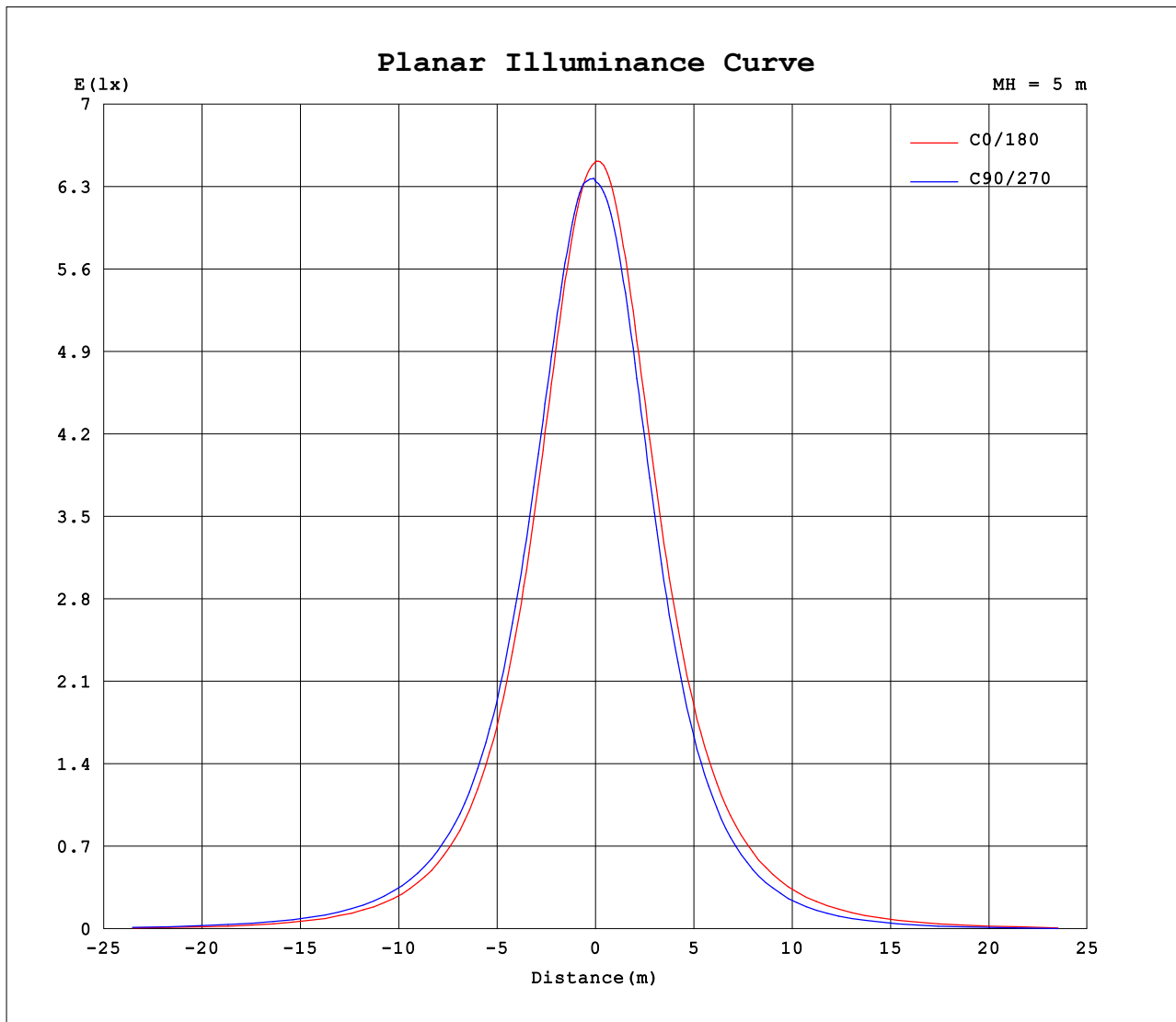
AvgL	cd/m2
L_0~180 (65) av	13700
L_0~180 (75) av	12764
L_0~180 (85) av	9369
L_90~270 (65) av	12989
L_90~270 (75) av	12071
L_90~270 (85) av	10379
L_45 (65) av	13335
L_45 (75) av	12431
L_45 (85) av	10088

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: RGB

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: RGB

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.7851A P:18.840W PF:1.0000 Freq:49.99Hz Lamp Flux:564.349x1 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	163	159	163	159															
5	162	161	164	158															
10	160	162	164	157															
15	158	162	164	155															
20	155	161	162	152															
25	151	159	159	148															
30	145	155	155	142															
35	139	151	149	135															
40	131	145	142	126															
45	122	137	135	116															
50	112	129	126	106															
55	102	119	117	93.5															
60	89.6	107	105	79.7															
65	75.5	93.7	91.0	64.2															
70	59.2	77.7	73.6	47.4															
75	41.5	59.5	53.5	30.3															
80	24.2	40.2	32.5	14.9															
85	9.98	21.9	13.5	4.13															
90	0.62	7.70	0.37	0.43															
95	0.25	1.26	0.30	0.34															
100	0.35	0.37	0.35	0.43															
105	0.45	0.42	0.45	0.53															
110	0.55	0.50	0.54	0.63															
115	0.66	0.58	0.64	0.73															
120	0.75	0.65	0.74	0.83															
125	0.85	0.73	0.83	0.90															
130	0.94	0.81	0.92	0.99															
135	1.02	0.89	1.00	1.05															
140	1.08	0.96	1.06	1.11															
145	1.14	1.02	1.12	1.15															
150	1.18	1.08	1.17	1.21															
155	1.23	1.14	1.21	1.23															
160	1.27	1.18	1.25	1.26															
165	1.30	1.23	1.29	1.30															
170	1.31	1.27	1.33	1.30															
175	1.33	1.31	1.36	1.31															
180	1.34	1.32	1.36	1.31															

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: RGB