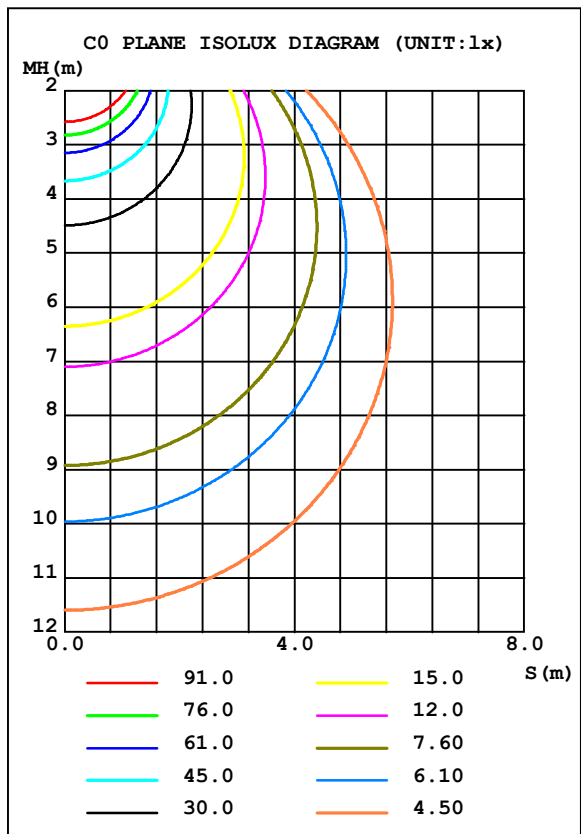
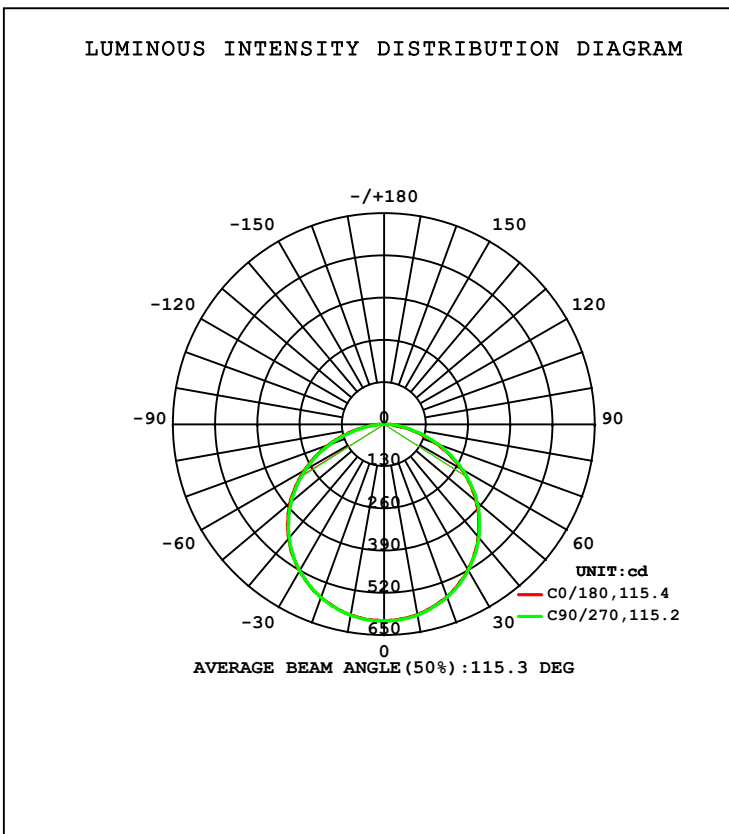


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.87 lm/W			
MODEL	TFXBC-MP	I _{max} (cd)	606.4	S/MH (C0/180)	1.28
NOMINAL POWER (W)	12	LOR (%)	100.0	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	1793.9	η UP, DN (C0-180)	0.4, 49.3
NOMINAL FLUX (lm)	1793.94	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.5, 49.8
LAMPS INSIDE	1	η up (%)	0.9	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	24	η down (%)	99.1	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QSM
 Test Date: 2020-05-27

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: 2400-2600

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

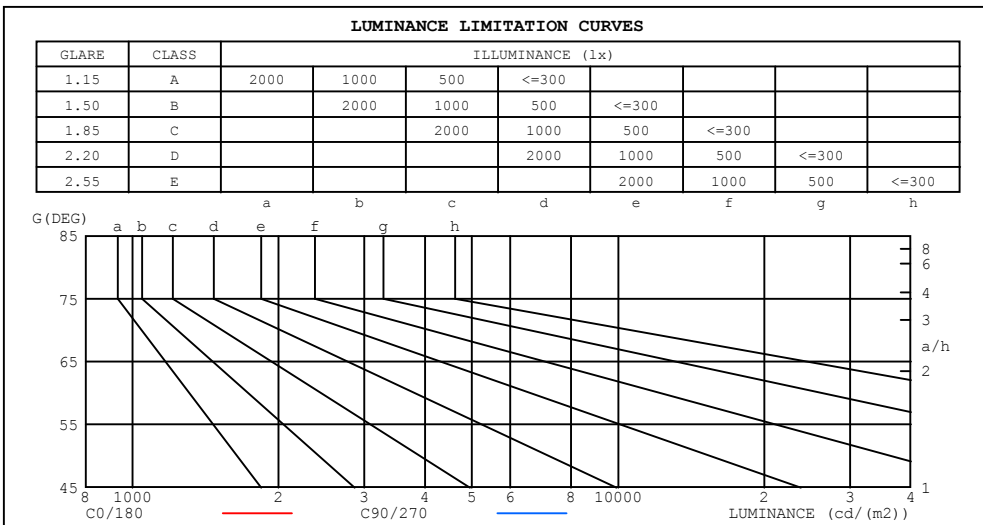
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	594.9	596.5	596.4	597.2					0- 10	57.37	57.37	3.2,3.2
20	565.5	567.3	568.4	568.3					10- 20	164.9	222.3	12.4,12.4
30	517.7	519.8	522.1	520.9					20- 30	251.7	474.0	26.4,26.4
40	452.7	455.2	458.6	455.9					30- 40	306.5	780.5	43.5,43.5
50	371.5	375.3	378.8	374.8					40- 50	321.8	1102	61.4,61.4
60	276.0	279.7	283.1	279.2					50- 60	293.7	1396	77.8,77.8
70	168.5	175.2	177.7	172.0					60- 70	224.8	1621	90.3,90.3
80	62.09	70.77	70.70	65.14					70- 80	125.7	1746	97.4,97.4
90	0.6705	6.632	1.872	4.314					80- 90	31.44	1778	99.1,99.1
100	1.037	1.022	1.173	1.172					90-100	1.451	1779	99.2,99.2
110	1.659	1.572	1.817	1.765					100-110	1.464	1781	99.3,99.3
120	2.326	2.232	2.491	2.427					110-120	2.015	1783	99.4,99.4
130	2.994	2.911	3.146	3.078					120-130	2.418	1785	99.5,99.5
140	3.566	3.499	3.696	3.633					130-140	2.567	1788	99.7,99.7
150	4.036	4.027	4.145	4.127					140-150	2.412	1790	99.8,99.8
160	4.435	4.436	4.508	4.491					150-160	1.979	1792	99.9,99.9
170	4.732	4.761	4.772	4.788					160-170	1.307	1793	100,100
180	4.895	4.917	4.895	4.923					170-180	0.4603	1794	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



LUMINANCE cd/ (m2)		
G (DEG)	C0/180	C90/270
85	72954	100913
80	108352	123502
75	133070	142274
70	149292	155222
65	160138	163770
60	167250	169507
55	171941	173042
50	175156	176912
45	177407	178758

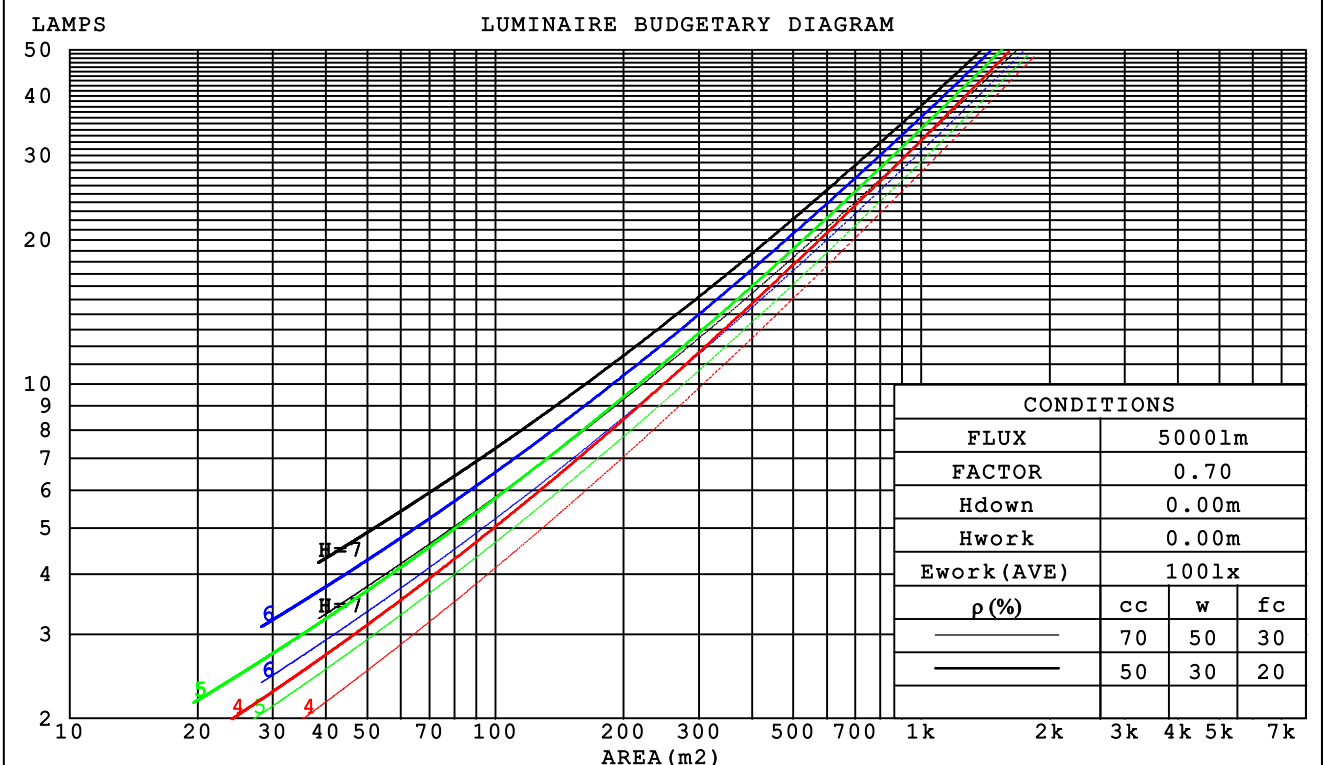
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	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	.75	.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	.46	.40	.51	.45	.39	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.41	.36	.48	.41	.35	.47	.40	.35	.45	.39	.35	.33
8.0	.46	.38	.32	.46	.37	.32	.44	.37	.31	.43	.36	.31	.42	.35	.31	.29
9.0	.42	.34	.29	.42	.34	.28	.41	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.37	.30	.26	.36	.30	.25	.36	.30	.25	.23



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

WEC AND CCEC

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	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	.303	.173	.055	.289	.166	.053	.276	.159	.051	.265	.153	.049	
2.0	.292	.160	.049	.286	.158	.049	.274	.152	.047	.263	.147	.046	.252	.143	.045	
3.0	.271	.144	.043	.265	.142	.043	.254	.138	.042	.244	.134	.041	.235	.130	.040	
4.0	.250	.130	.038	.245	.128	.038	.235	.125	.037	.226	.122	.037	.218	.119	.036	
5.0	.231	.118	.034	.227	.116	.034	.218	.114	.033	.210	.111	.033	.203	.108	.033	
6.0	.214	.107	.031	.210	.106	.031	.203	.104	.030	.196	.102	.030	.189	.099	.030	
7.0	.199	.099	.028	.196	.098	.028	.189	.096	.028	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.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	.197	.197	.197	.169	.169	.169	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.187	.163	.141	.160	.140	.122	.110	.096	.084	.063	.056	.049	.020	.018	.016	
2.0	.179	.139	.105	.154	.120	.091	.105	.083	.063	.061	.048	.037	.019	.016	.012	
3.0	.172	.121	.081	.147	.105	.070	.101	.073	.049	.058	.042	.029	.019	.014	.010	
4.0	.164	.108	.065	.141	.093	.057	.097	.065	.040	.056	.038	.024	.018	.012	.008	
5.0	.157	.098	.054	.135	.084	.047	.093	.059	.033	.054	.035	.020	.017	.011	.006	
6.0	.150	.089	.046	.129	.077	.040	.089	.054	.028	.051	.032	.017	.017	.010	.006	
7.0	.143	.082	.040	.123	.071	.035	.085	.050	.025	.049	.030	.015	.016	.010	.005	
8.0	.136	.077	.036	.117	.066	.031	.081	.047	.022	.047	.028	.013	.015	.009	.004	
9.0	.130	.072	.032	.112	.062	.028	.078	.044	.020	.045	.026	.012	.015	.008	.004	
10.0	.124	.067	.029	.107	.059	.026	.074	.041	.018	.043	.024	.011	.014	.008	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm										
NAME:					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:0.01			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	28.7	30.2	29.0	30.4	30.7	28.8	30.3	29.0	30.5	30.7
3H	30.2	31.6	30.5	31.9	32.1	30.3	31.7	30.6	32.0	32.2
4H	30.8	32.1	31.1	32.4	32.6	30.9	32.2	31.2	32.5	32.8
6H	31.1	32.4	31.4	32.6	32.9	31.3	32.6	31.6	32.8	33.1
8H	31.2	32.4	31.5	32.7	33.0	31.4	32.6	31.8	32.9	33.2
12H	31.2	32.4	31.6	32.7	33.0	31.5	32.6	31.8	32.9	33.3
4H 2H	29.3	30.7	29.7	30.9	31.2	29.4	30.7	29.7	31.0	31.2
3H	31.0	32.2	31.4	32.5	32.8	31.1	32.2	31.4	32.6	32.9
4H	31.7	32.7	32.1	33.1	33.4	31.8	32.9	32.2	33.2	33.6
6H	32.1	33.1	32.5	33.4	33.8	32.3	33.3	32.7	33.6	34.0
8H	32.2	33.1	32.7	33.5	33.9	32.5	33.4	32.9	33.7	34.1
12H	32.3	33.1	32.7	33.5	33.9	32.6	33.4	33.0	33.8	34.2
8H 4H	31.9	32.8	32.3	33.2	33.6	32.0	32.9	32.5	33.3	33.7
6H	32.5	33.2	33.0	33.6	34.1	32.7	33.4	33.1	33.8	34.3
8H	32.7	33.3	33.2	33.8	34.2	32.9	33.6	33.4	34.0	34.5
12H	32.8	33.3	33.3	33.8	34.3	33.1	33.6	33.6	34.1	34.6
12H 4H	31.9	32.7	32.4	33.1	33.6	32.0	32.8	32.5	33.2	33.7
6H	32.5	33.2	33.0	33.6	34.1	32.7	33.4	33.2	33.8	34.3
8H	32.8	33.3	33.2	33.8	34.3	33.0	33.5	33.5	34.0	34.5
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 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 1794 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:QSM
 Test Date:2020-05-27

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: 2400-2600

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

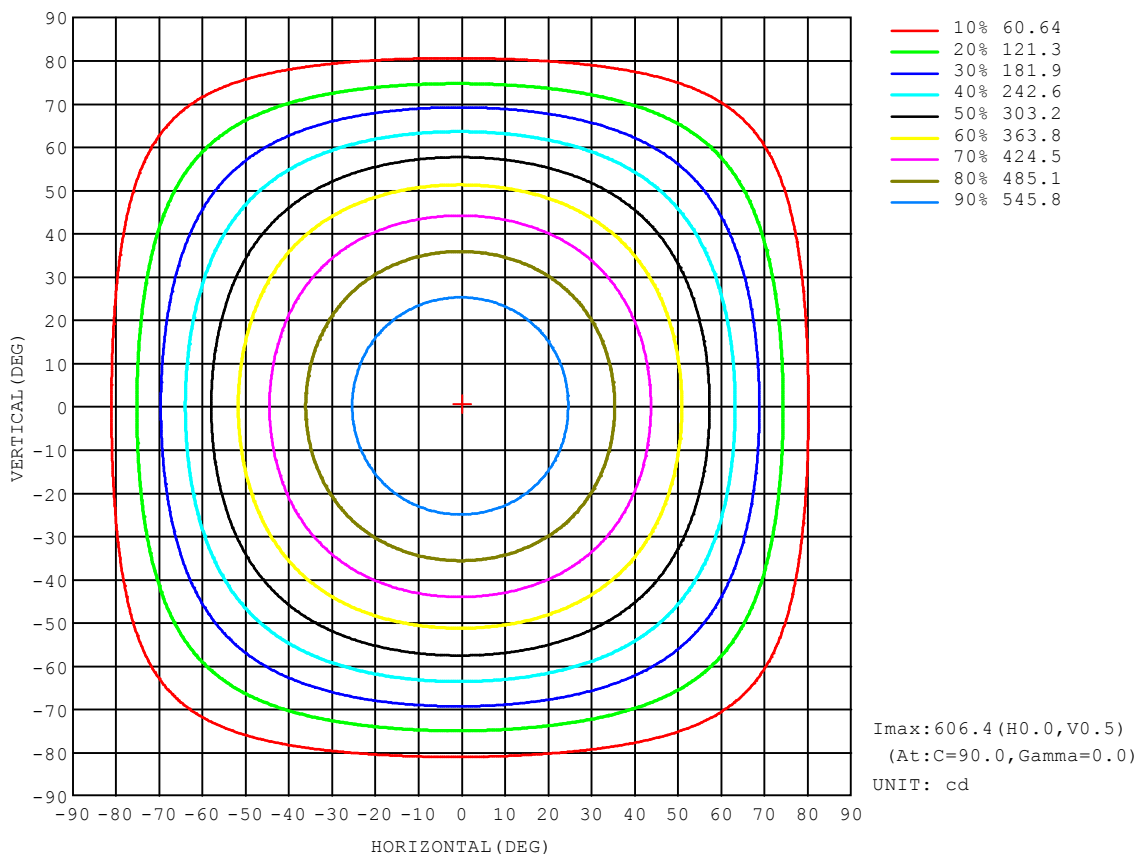
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) k(RI) x RCR = 5									
k = 0.60	57	45	38	56	45	38	55	44	38	31
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	64	56	72	65	56	49
1.25	83	72	65	81	71	64	78	70	63	56
1.50	88	78	71	86	77	70	83	75	69	61
2.00	95	86	79	93	85	79	89	82	77	69
2.50	98	91	85	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	104	99	106	101	98	101	98	95	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:QSM
 Test Date:2020-05-27

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: 2400-2600

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

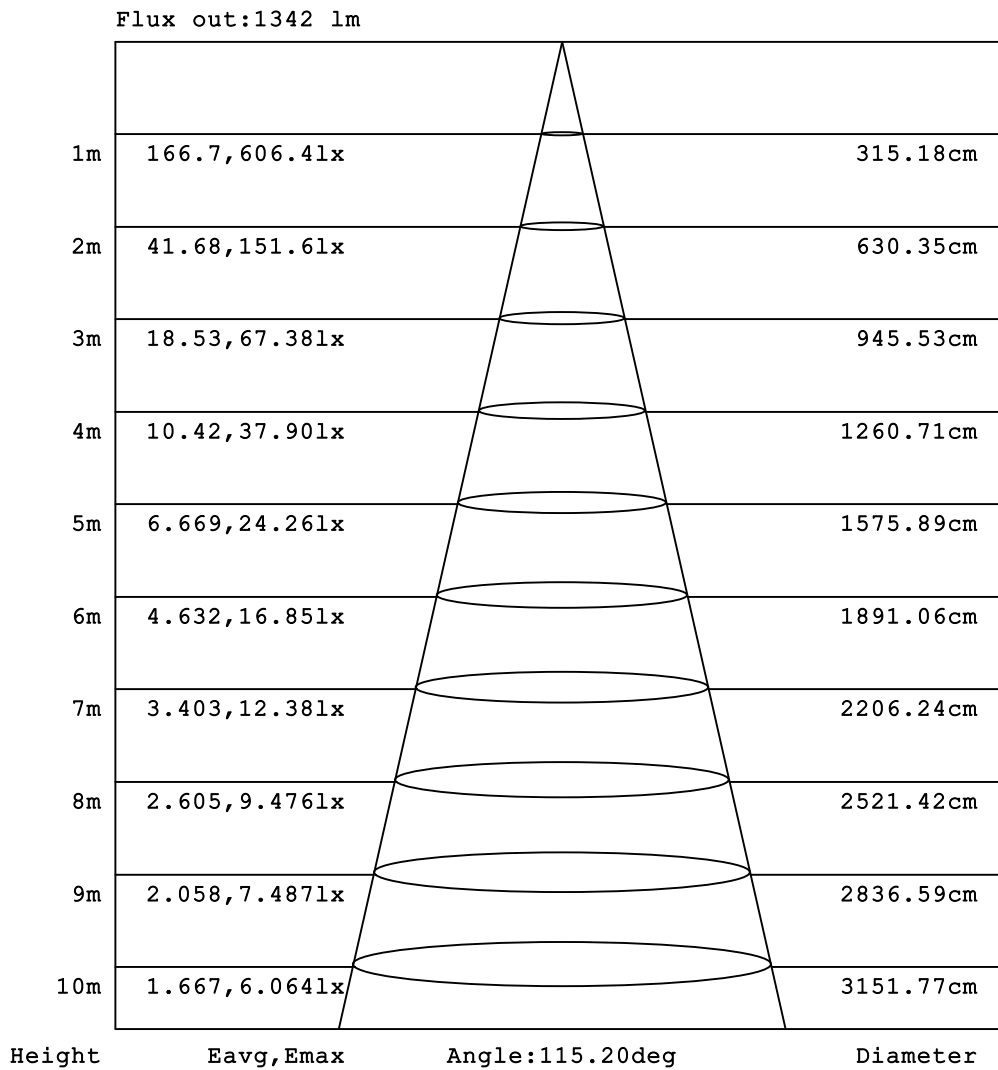


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QSM
 Test Date: 2020-05-27

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: 2400-2600

AAI Figure

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



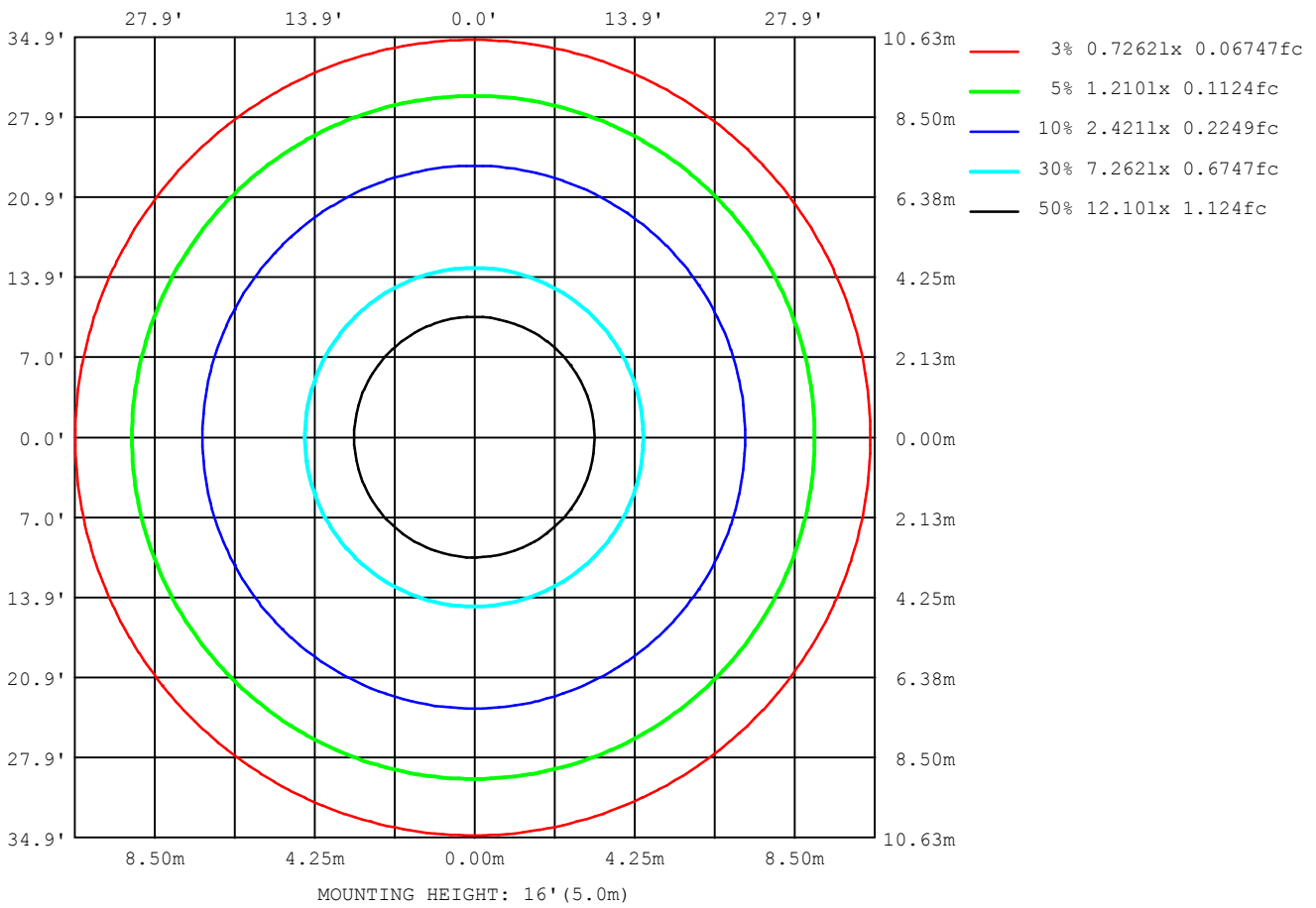
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QSM
 Test Date: 2020-05-27

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: 2400-2600

ISOLUX DIAGRAM

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

LED Avg.L Report

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

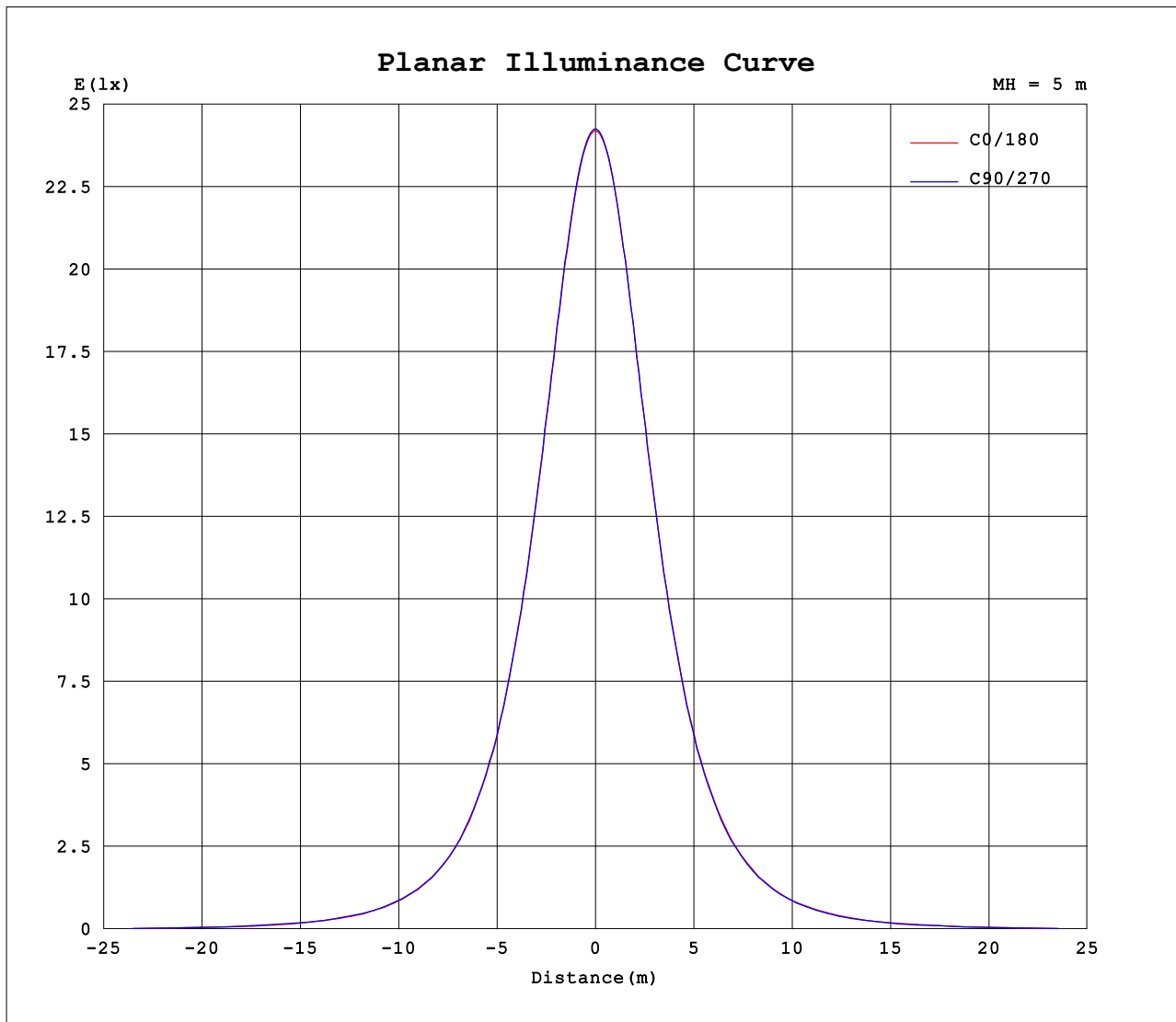
AvgL	cd/m2
L_0~180 (65) av	163080
L_0~180 (75) av	138609
L_0~180 (85) av	83604
L_90~270 (65) av	163157
L_90~270 (75) av	139653
L_90~270 (85) av	94438
L_45 (65) av	163312
L_45 (75) av	139608
L_45 (85) av	91041

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QSM
 Test Date: 2020-05-27

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: 2400-2600

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.5462A P:13.107W PF:1.0000 Freq:49.99Hz Lamp Flux:1793.94x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	605	606	605	606															
5	602	604	603	604															
10	595	597	596	597															
15	582	584	585	585															
20	565	567	568	568															
25	544	546	548	547															
30	518	520	522	521															
35	487	490	492	490															
40	453	455	459	456															
45	414	417	421	417															
50	372	375	379	375															
55	325	328	332	329															
60	276	280	283	279															
65	223	228	232	227															
70	169	175	178	172															
75	114	122	123	117															
80	62.1	70.8	70.7	65.1															
85	21.0	29.0	27.1	25.3															
90	0.67	6.63	1.87	4.31															
95	0.78	1.16	0.91	1.12															
100	1.04	1.02	1.17	1.17															
105	1.34	1.27	1.48	1.43															
110	1.66	1.57	1.82	1.76															
115	1.98	1.91	2.15	2.09															
120	2.33	2.23	2.49	2.43															
125	2.66	2.57	2.82	2.76															
130	2.99	2.91	3.15	3.08															
135	3.28	3.22	3.43	3.37															
140	3.57	3.50	3.70	3.63															
145	3.81	3.77	3.93	3.90															
150	4.04	4.03	4.14	4.13															
155	4.25	4.26	4.34	4.34															
160	4.43	4.44	4.51	4.49															
165	4.60	4.60	4.66	4.65															
170	4.73	4.76	4.77	4.79															
175	4.83	4.86	4.84	4.87															
180	4.89	4.92	4.89	4.92															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 2400-2600