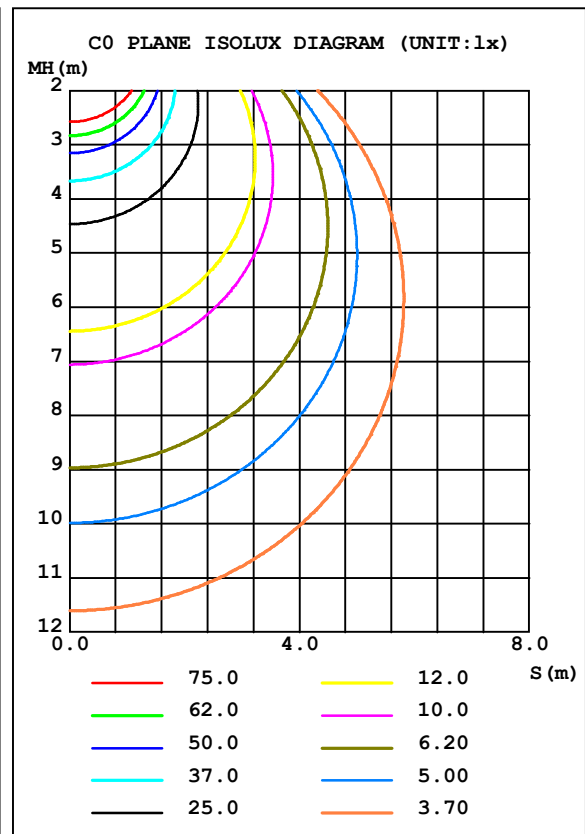
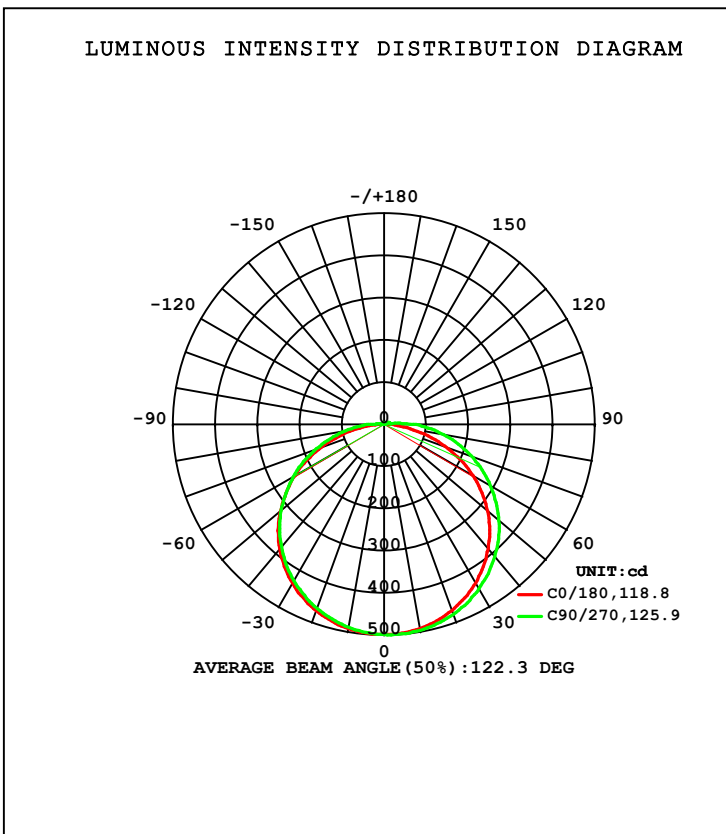


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.10 lm/W			
MODEL	TFXBF-MP-IP66	I _{max} (cd)	498.9	S/MH (C0/180)	1.30
NOMINAL POWER (W)	12	LOR (%)	97.8	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	1650.3	η UP, DN (C0-180)	1.4, 49.5
NOMINAL FLUX (lm)	1687.14	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.8, 46.1
LAMPS INSIDE	1	η up (%)	2.2	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	95.6	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2020-05-29

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: 4000-4500K

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

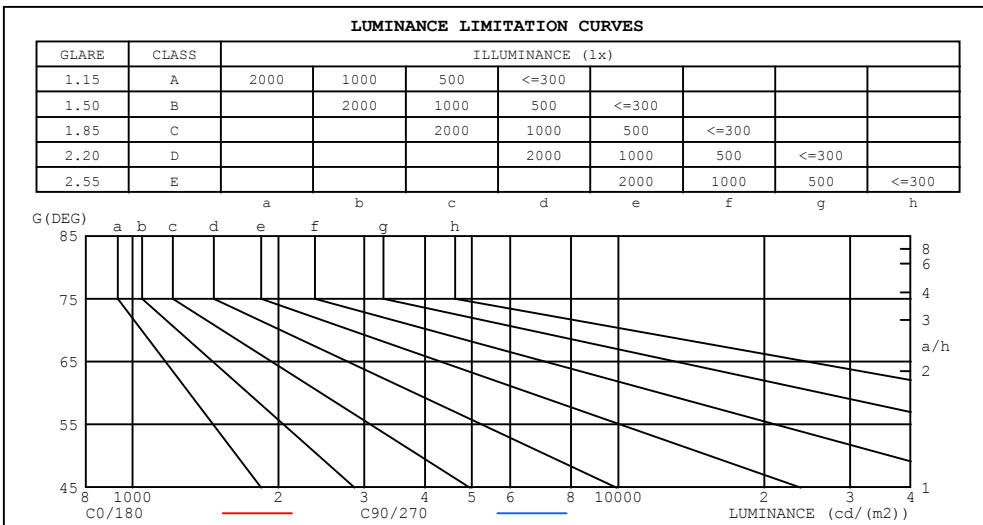
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	491.2	495.6	491.6	488.1					0- 10	47.25	47.25	2.86,2.8
20	469.9	479.5	470.7	464.6					10- 20	136.5	183.7	11.1,10.9
30	434.1	450.4	435.2	428.1					20- 30	210.2	393.9	23.9,23.3
40	384.2	408.9	385.7	379.2					30- 40	259.6	653.5	39.6,38.7
50	320.6	355.9	320.9	318.8					40- 50	278.4	932.0	56.5,55.2
60	243.5	291.1	244.9	248.7					50- 60	262.9	1195	72.4,70.8
70	154.7	220.0	157.8	171.3					60- 70	215.1	1410	85.4,83.6
80	63.57	143.7	67.25	93.70					70- 80	141.1	1551	94,91.9
90	1.240	70.09	2.176	33.27					80- 90	61.53	1613	97.7,95.6
100	1.760	15.41	1.217	9.531					90-100	16.46	1629	98.7,96.6
110	1.806	12.39	1.700	3.423					100-110	6.162	1635	99.1,96.9
120	2.264	8.771	2.227	2.540					110-120	4.443	1640	99.3,97.2
130	2.842	3.644	2.748	2.920					120-130	3.082	1643	99.5,97.4
140	3.240	2.995	3.169	3.291					130-140	2.359	1645	99.7,97.5
150	3.565	3.398	3.511	3.616					140-150	2.102	1647	99.8,97.6
160	3.846	3.746	3.796	3.868					150-160	1.697	1649	99.9,97.7
170	4.065	3.998	3.998	4.048					160-170	1.111	1650	100,97.8
180	4.127	4.088	4.110	4.099					170-180	0.3871	1650	100,97.8
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	91599	366963
80	110929	250840
75	126924	213291
70	137021	194928
65	143707	183830
60	147550	176404
55	149879	171051
50	151156	167766
45	151754	164424

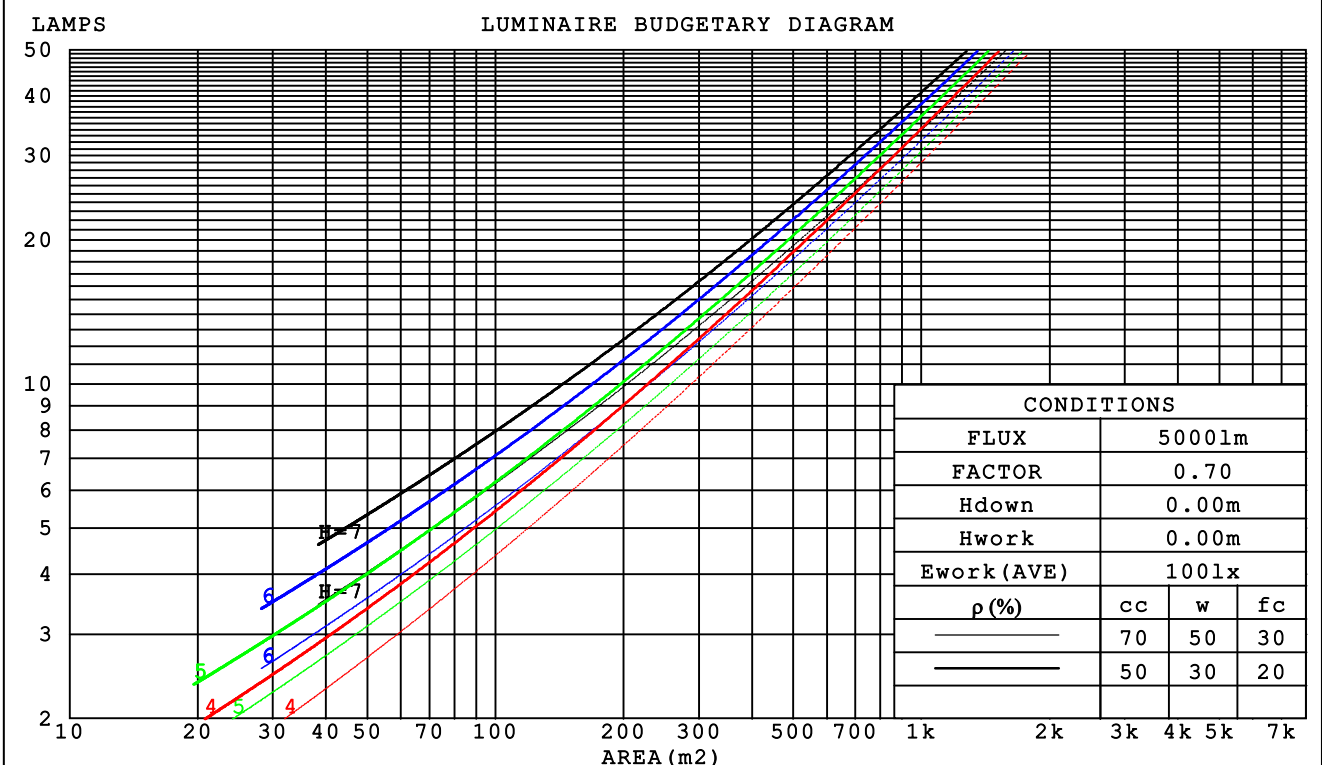
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2020-05-29

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: 4000-4500K

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 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	1.16	1.16	1.16	1.13	1.13	1.13	1.07	1.07	1.07	1.02	1.02	1.02	.98	.98	.98	.96
1.0	.99	.95	.91	.97	.93	.89	.92	.89	.86	.88	.85	.83	.84	.82	.80	.78
2.0	.86	.79	.73	.84	.77	.72	.80	.74	.70	.76	.72	.68	.73	.69	.66	.63
3.0	.75	.66	.60	.73	.65	.59	.70	.63	.58	.67	.61	.56	.64	.59	.55	.53
4.0	.66	.57	.50	.65	.56	.50	.62	.54	.49	.59	.53	.48	.57	.51	.47	.45
5.0	.59	.50	.43	.58	.49	.42	.55	.48	.42	.53	.46	.41	.51	.45	.40	.38
6.0	.53	.44	.37	.52	.43	.37	.50	.42	.36	.48	.41	.36	.46	.40	.35	.33
7.0	.48	.39	.33	.47	.38	.32	.45	.38	.32	.43	.37	.32	.42	.36	.31	.29
8.0	.43	.35	.29	.43	.34	.29	.41	.34	.29	.40	.33	.28	.38	.32	.28	.26
9.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.25	.35	.29	.25	.23
10.0	.37	.29	.23	.36	.28	.23	.35	.28	.23	.34	.27	.23	.33	.27	.23	.21



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

WEC AND CCEC

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	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	.326	.186	.059	.311	.178	.057	.298	.172	.055	.286	.166	.053	
2.0	.305	.167	.051	.298	.164	.051	.285	.159	.049	.273	.153	.048	.262	.148	.047	
3.0	.278	.148	.044	.272	.146	.044	.260	.141	.043	.250	.137	.042	.240	.133	.041	
4.0	.254	.132	.039	.249	.130	.038	.238	.126	.038	.229	.123	.037	.220	.120	.036	
5.0	.233	.119	.034	.228	.117	.034	.219	.114	.034	.211	.111	.033	.203	.109	.033	
6.0	.215	.108	.031	.211	.107	.031	.203	.104	.030	.195	.101	.030	.188	.099	.029	
7.0	.199	.099	.028	.196	.097	.028	.188	.095	.027	.182	.093	.027	.175	.091	.027	
8.0	.186	.091	.026	.182	.090	.025	.176	.088	.025	.170	.086	.025	.164	.084	.024	
9.0	.174	.084	.023	.171	.083	.023	.165	.081	.023	.159	.080	.023	.154	.078	.023	
10.0	.163	.078	.022	.160	.077	.022	.155	.076	.021	.150	.074	.021	.145	.073	.021	

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	.203	.203	.203	.174	.174	.174	.119	.119	.119	.068	.068	.068	.022	.022	.022	
1.0	.196	.170	.146	.167	.146	.126	.115	.100	.087	.066	.058	.051	.021	.019	.016	
2.0	.188	.146	.111	.161	.126	.096	.111	.087	.067	.064	.051	.039	.020	.016	.013	
3.0	.181	.129	.088	.155	.112	.076	.107	.078	.054	.062	.045	.032	.020	.015	.010	
4.0	.173	.117	.073	.149	.101	.063	.102	.070	.045	.059	.041	.026	.019	.013	.009	
5.0	.166	.106	.063	.143	.092	.054	.098	.064	.038	.057	.038	.023	.018	.012	.008	
6.0	.159	.098	.055	.137	.085	.048	.094	.060	.034	.055	.035	.020	.018	.011	.007	
7.0	.152	.092	.049	.131	.079	.043	.090	.056	.031	.052	.033	.018	.017	.011	.006	
8.0	.146	.086	.045	.125	.075	.039	.087	.052	.028	.050	.031	.017	.016	.010	.006	
9.0	.139	.081	.042	.120	.071	.037	.083	.050	.026	.048	.029	.015	.016	.010	.005	
10.0	.134	.077	.039	.115	.067	.034	.080	.047	.024	.047	.028	.015	.015	.009	.005	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 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	28.4	30.0	28.8	30.2	30.5	29.1	30.6	29.4	30.9	31.1
3H	30.1	31.5	30.4	31.8	32.1	31.2	32.6	31.5	32.9	33.2
4H	30.7	32.1	31.1	32.4	32.7	32.2	33.6	32.5	33.9	34.2
6H	31.2	32.5	31.5	32.8	33.1	33.2	34.5	33.6	34.8	35.2
8H	31.3	32.5	31.7	32.9	33.2	33.7	35.0	34.1	35.3	35.7
12H	31.4	32.6	31.8	32.9	33.3	34.3	35.5	34.7	35.8	36.2
4H 2H	29.2	30.6	29.6	30.9	31.2	29.7	31.1	30.1	31.4	31.7
3H	31.1	32.3	31.5	32.6	33.0	32.0	33.2	32.4	33.5	33.9
4H	31.9	33.0	32.3	33.3	33.7	33.2	34.3	33.6	34.6	35.0
6H	32.5	33.4	32.9	33.8	34.3	34.4	35.3	34.8	35.7	36.2
8H	32.7	33.6	33.1	34.0	34.4	35.0	35.9	35.4	36.3	36.7
12H	32.8	33.6	33.3	34.1	34.5	35.6	36.5	36.1	36.9	37.4
8H 4H	32.4	33.3	32.8	33.7	34.1	33.5	34.4	33.9	34.8	35.2
6H	33.2	33.9	33.7	34.4	34.9	34.9	35.6	35.4	36.1	36.6
8H	33.5	34.2	34.0	34.6	35.2	35.6	36.3	36.1	36.8	37.3
12H	33.7	34.3	34.3	34.8	35.4	36.5	37.1	37.0	37.6	38.1
12H 4H	32.4	33.3	32.9	33.7	34.2	33.5	34.3	34.0	34.8	35.2
6H	33.4	34.1	33.9	34.5	35.0	35.0	35.6	35.5	36.1	36.6
8H	33.8	34.4	34.3	34.9	35.4	35.8	36.4	36.3	36.9	37.4
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 / - 0.2				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				

CIE Pub.117, 1687 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.8)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

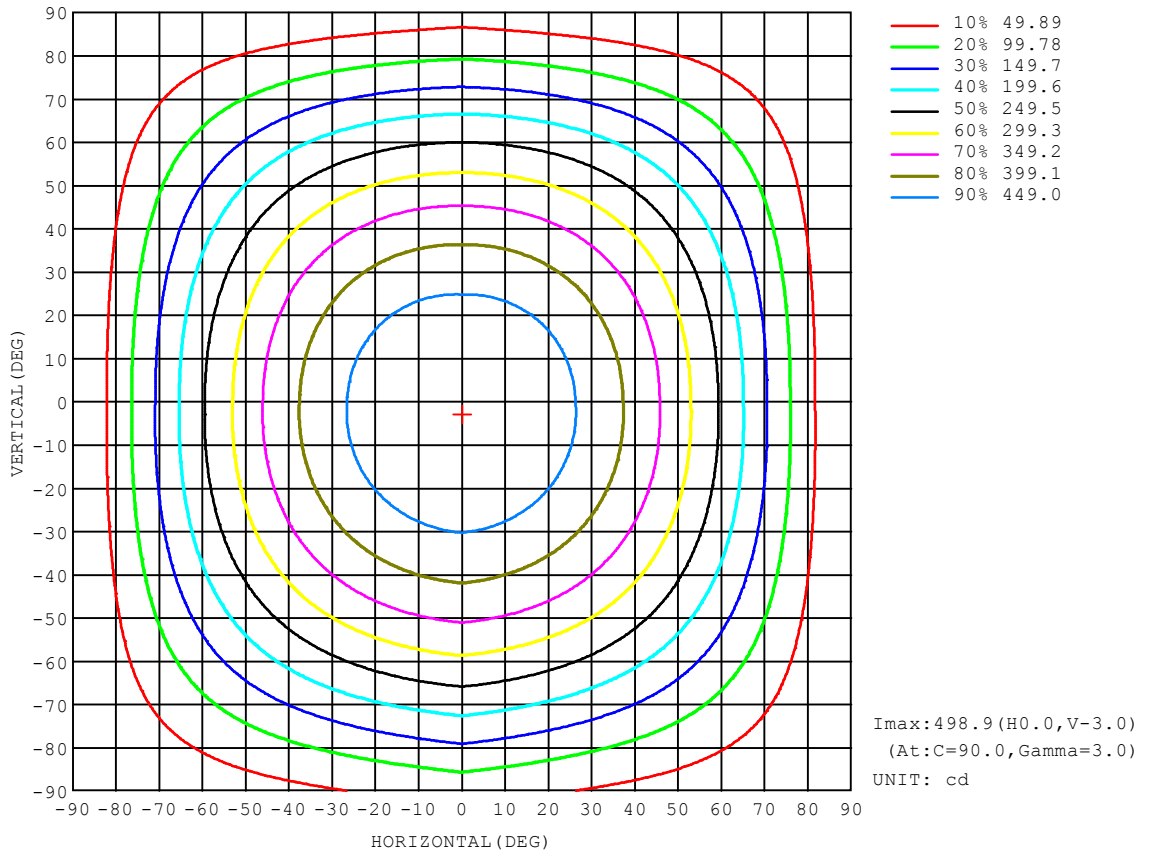
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) k(RI) x RCR = 5									
k = 0.60	53	42	35	53	41	35	51	41	34	28
0.80	63	51	44	62	51	43	60	50	43	36
1.00	71	60	52	70	59	52	67	60	51	44
1.25	78	67	60	77	66	59	74	65	58	51
1.50	83	73	65	81	72	65	78	70	64	56
2.00	90	81	74	88	80	73	84	77	72	63
2.50	94	86	79	92	84	78	88	81	76	67
3.00	98	90	84	95	88	83	91	85	81	72
4.00	102	96	90	99	94	89	95	90	86	77
5.00	104	99	95	102	97	93	97	93	90	80
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:2020-05-29

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: 4000-4500K

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

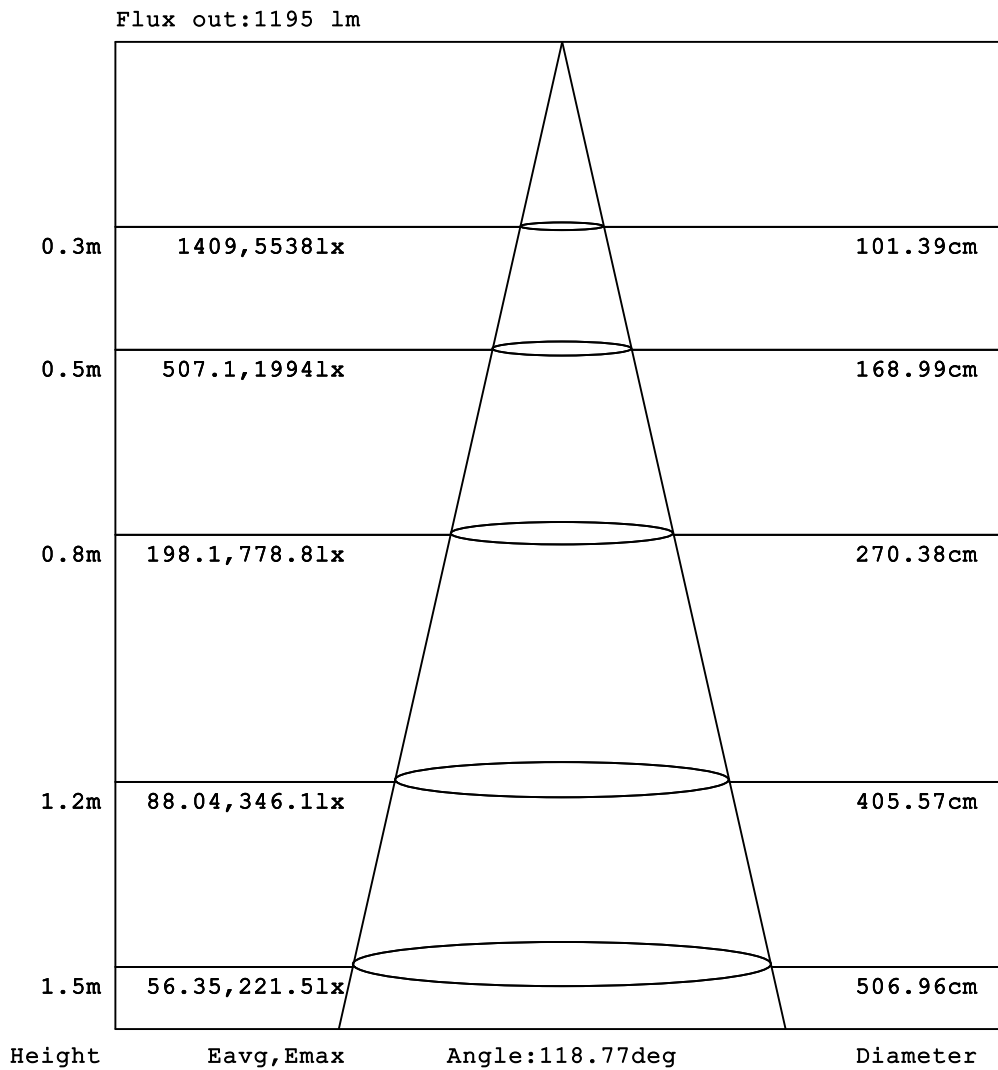


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2020-05-29

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: 4000-4500K

AAI Figure

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



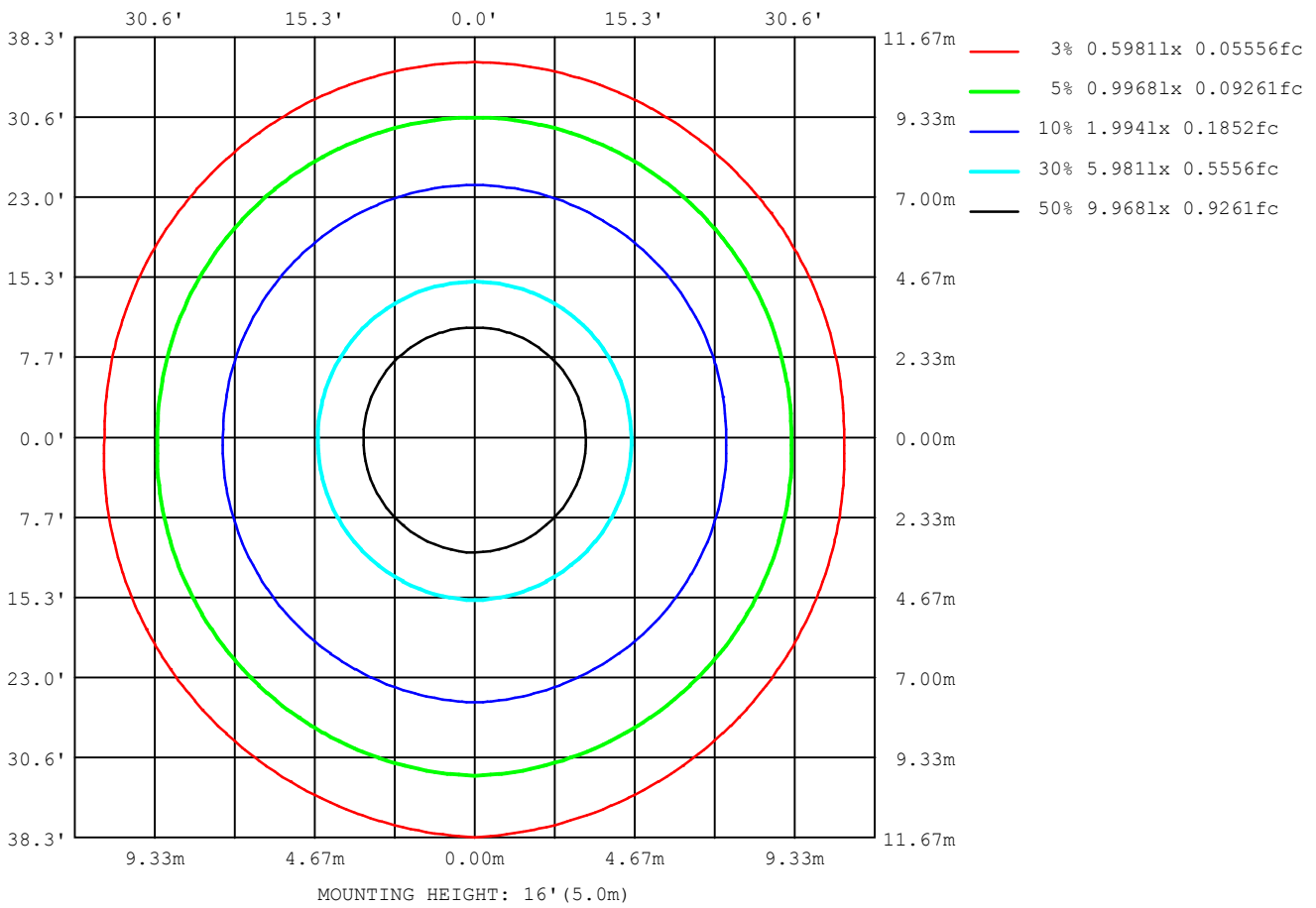
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

ISOLUX DIAGRAM

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 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:LCG
 Test Date:2020-05-29

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: 4000-4500K

LED Avg.L Report

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

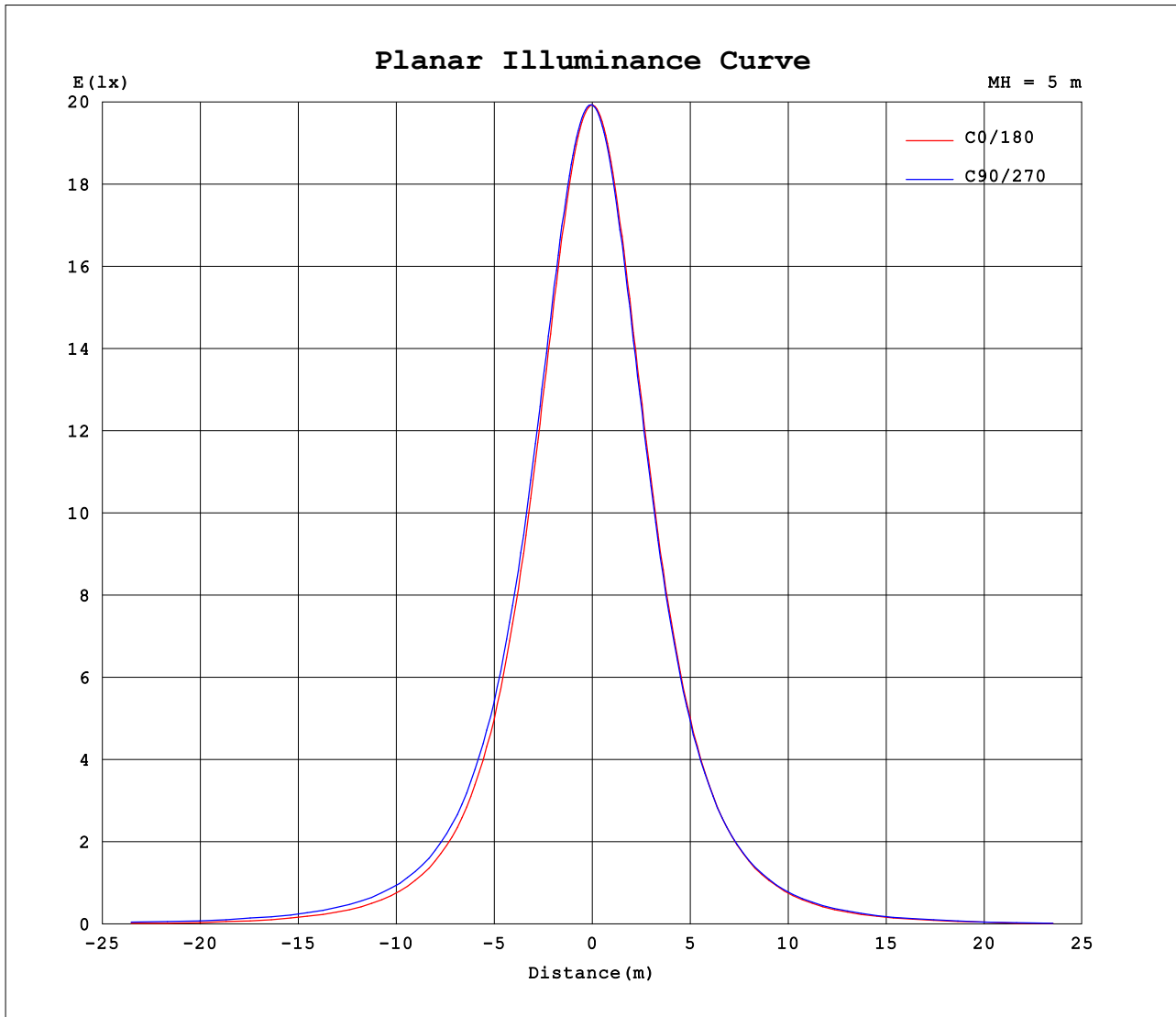
AvgL	cd/m2
L_0~180 (65) av	144430
L_0~180 (75) av	129031
L_0~180 (85) av	95708
L_90~270 (65) av	167523
L_90~270 (75) av	183720
L_90~270 (85) av	286250
L_45 (65) av	158908
L_45 (75) av	163343
L_45 (85) av	215054

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LCG
 Test Date: 2020-05-29

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: 4000-4500K

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.5053A P:12.126W PF:1.0000 Freq:49.99Hz Lamp Flux:1687.14x1 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	498	498	498	498															
5	497	499	497	495															
10	491	496	492	488															
15	482	489	483	478															
20	470	480	471	465															
25	454	467	455	448															
30	434	450	435	428															
35	411	431	412	405															
40	384	409	386	379															
45	354	384	356	350															
50	321	356	321	319															
55	284	324	284	285															
60	243	291	245	249															
65	200	256	202	211															
70	155	220	158	171															
75	108	182	112	132															
80	63.6	144	67.3	93.7															
85	26.3	106	28.7	59.1															
90	1.24	70.1	2.18	33.3															
95	1.08	38.6	1.03	18.6															
100	1.76	15.4	1.22	9.53															
105	2.04	12.9	1.44	6.79															
110	1.81	12.4	1.70	3.42															
115	1.97	11.3	1.96	2.92															
120	2.26	8.77	2.23	2.54															
125	2.61	5.78	2.50	2.70															
130	2.84	3.64	2.75	2.92															
135	3.04	2.93	2.97	3.12															
140	3.24	2.99	3.17	3.29															
145	3.42	3.20	3.35	3.46															
150	3.57	3.40	3.51	3.62															
155	3.72	3.58	3.66	3.75															
160	3.85	3.75	3.80	3.87															
165	3.98	3.89	3.90	3.96															
170	4.06	4.00	4.00	4.05															
175	4.10	4.03	4.07	4.08															
180	4.13	4.09	4.11	4.10															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LCG
 Test Date:2020-05-29

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: 4000-4500K