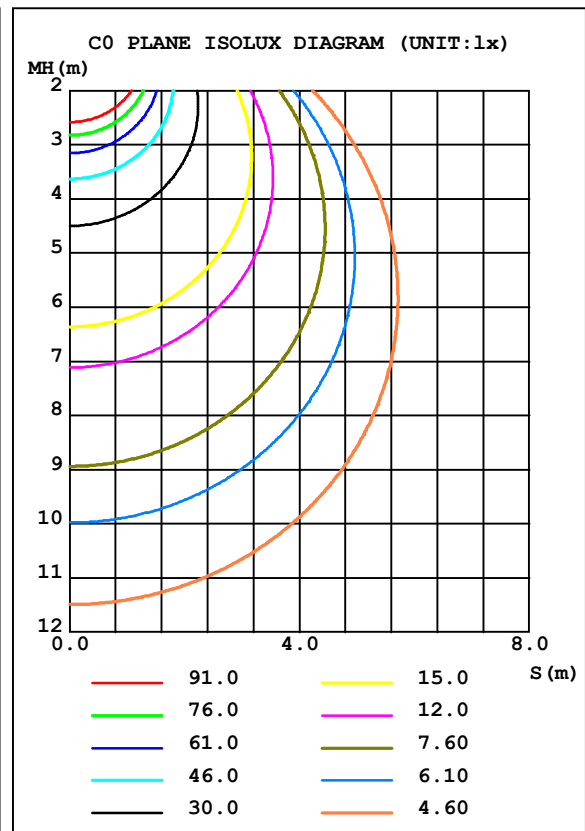
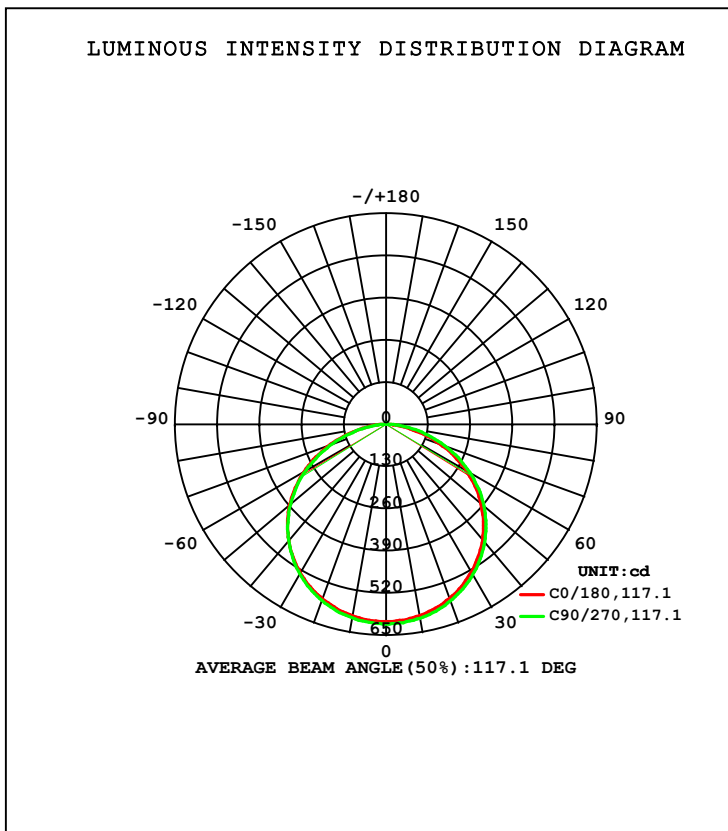


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 149.65 lm/W			
MODEL	TFXBF-MP	I _{max} (cd)	614.9	S/MH (C0/180)	1.29
NOMINAL POWER (W)	12	LOR (%)	251.9	S/MH (C90/270)	1.29
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	1849.8	η UP, DN (C0-180)	1.2, 125.3
NOMINAL FLUX (lm)	734.466	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.2, 124.2
LAMPS INSIDE	1	η up (%)	2.4	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	249.5	CIBSE SHR MAX	1.50



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: 4000-4500

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

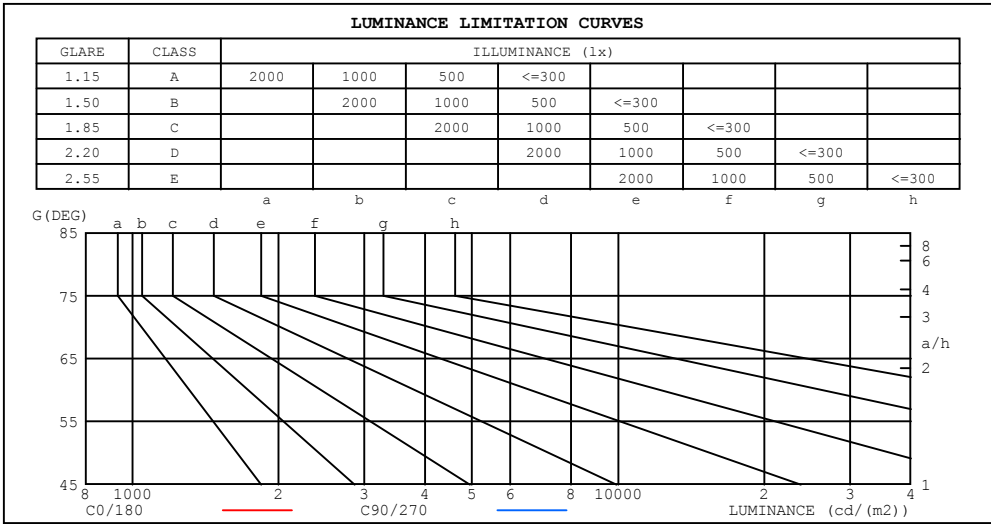
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	598.4	606.4	599.2	605.7					0- 10	57.92	57.92	3.13,7.89
20	571.1	579.8	573.0	578.1					10- 20	167.0	224.9	12.2,30.6
30	526.1	535.4	529.1	532.2					20- 30	256.0	480.9	26,65.5
40	463.1	473.4	467.4	467.8					30- 40	313.7	794.7	43,108
50	382.6	394.5	388.6	385.5					40- 50	331.5	1126	60.9,153
60	285.7	298.3	291.8	286.5					50- 60	304.7	1431	77.4,195
70	175.7	191.4	184.1	174.3					60- 70	234.4	1665	90,227
80	65.73	82.25	74.10	64.88					70- 80	132.2	1797	97.2,245
90	0.6811	11.24	5.669	4.734					80- 90	35.05	1832	99.1,249
100	1.075	1.100	1.246	1.267					90-100	2.217	1835	99.2,250
110	1.719	1.611	1.919	1.878					100-110	1.543	1836	99.3,250
120	2.387	2.288	2.592	2.572					110-120	2.104	1838	99.4,250
130	3.060	2.984	3.243	3.235					120-130	2.506	1841	99.5,251
140	3.637	3.589	3.791	3.789					130-140	2.645	1844	99.7,251
150	4.120	4.121	4.234	4.255					140-150	2.476	1846	99.8,251
160	4.496	4.531	4.593	4.631					150-160	2.024	1848	99.9,252
170	4.788	4.850	4.850	4.895					160-170	1.332	1849	100,252
180	4.968	5.013	4.968	5.046					170-180	0.4685	1850	100,252
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: 4000-4500

LUMINANCE LIMITATION CURVES

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	81090	130984
80	114698	143539
75	139098	158661
70	155707	169543
65	166407	176424
60	173152	180792
55	177655	184763
50	180378	185971
45	182112	186904

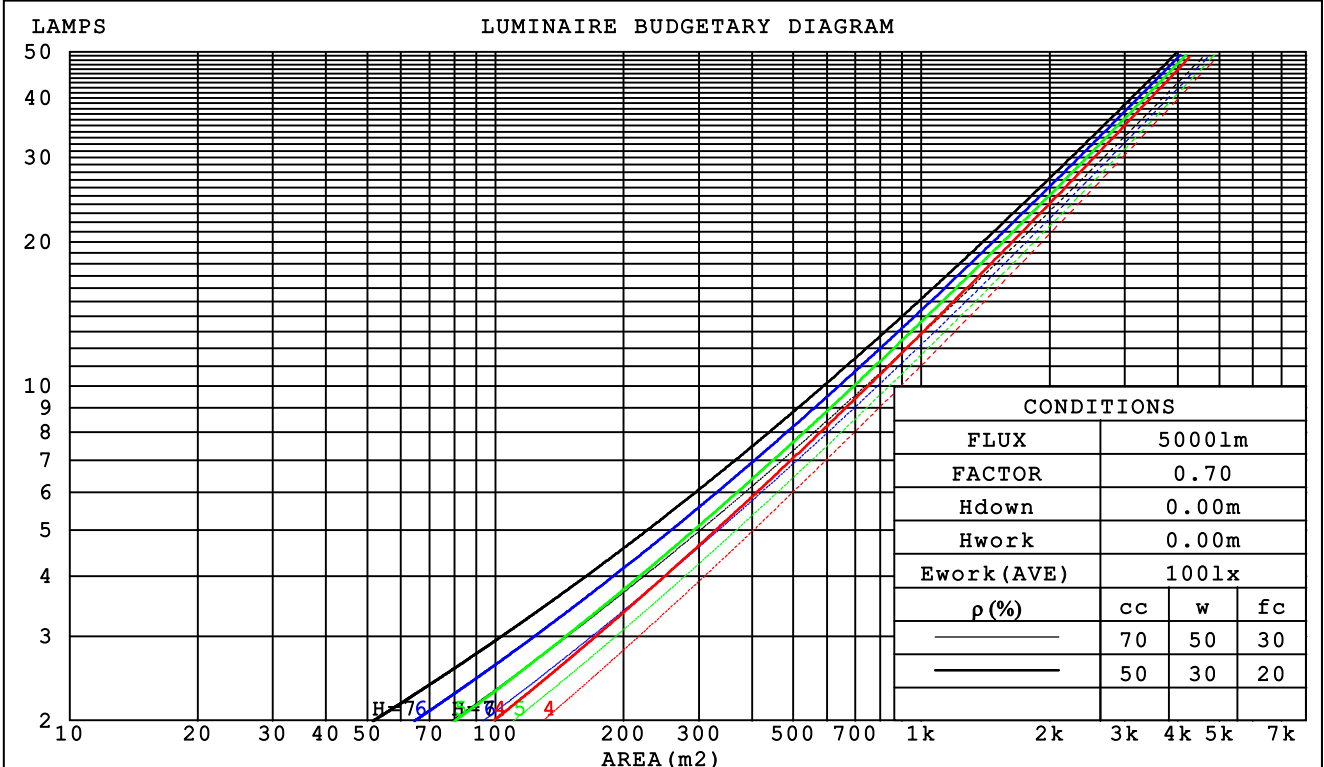
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:QSM
 Test Date:2020-05-27

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: 4000-4500

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 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	2.99	2.99	2.99	2.92	2.92	2.92	2.79	2.79	2.79	2.66	2.66	2.66	2.55	2.55	2.55	2.49
1.0	2.61	2.50	2.40	2.55	2.45	2.36	2.44	2.35	2.28	2.33	2.27	2.20	2.24	2.18	2.13	2.08
2.0	2.26	2.09	1.94	2.22	2.05	1.92	2.12	1.99	1.87	2.03	1.92	1.82	1.95	1.86	1.78	1.72
3.0	1.98	1.77	1.61	1.94	1.75	1.59	1.86	1.70	1.56	1.79	1.65	1.53	1.72	1.60	1.50	1.44
4.0	1.75	1.53	1.36	1.72	1.51	1.35	1.65	1.47	1.32	1.59	1.43	1.30	1.53	1.40	1.28	1.23
5.0	1.56	1.33	1.16	1.53	1.32	1.16	1.48	1.29	1.14	1.42	1.26	1.13	1.37	1.23	1.11	1.06
6.0	1.40	1.18	1.01	1.38	1.16	1.01	1.33	1.14	.00	1.29	1.11	.98	1.24	1.09	.97	.92
7.0	1.27	1.05	.89	1.25	1.04	.89	1.21	1.02	.88	1.17	.00	.87	1.13	.98	.86	.81
8.0	1.16	.94	.79	1.14	.93	.79	1.10	.92	.78	1.07	.90	.78	1.04	.88	.77	.72
9.0	1.06	.85	.71	1.05	.85	.71	1.01	.83	.70	.99	.82	.70	.96	.81	.69	.65
10.0	.98	.78	.64	.96	.77	.64	.94	.76	.64	.91	.75	.63	.89	.74	.63	.58



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: 4000-4500

WEC AND CCEC

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 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	.788	.448	.142	.769	.439	.139	.735	.421	.135	.703	.405	.130	.673	.390	.126	
2.0	.742	.407	.125	.725	.400	.123	.695	.386	.120	.666	.374	.117	.640	.362	.114	
3.0	.686	.365	.109	.672	.360	.108	.644	.349	.106	.619	.339	.104	.596	.330	.102	
4.0	.633	.329	.097	.620	.325	.096	.596	.316	.094	.573	.308	.093	.552	.300	.091	
5.0	.585	.298	.086	.573	.294	.086	.552	.287	.085	.532	.281	.083	.513	.274	.082	
6.0	.542	.272	.078	.532	.269	.077	.513	.263	.076	.495	.257	.076	.478	.251	.075	
7.0	.504	.249	.071	.495	.247	.070	.478	.242	.070	.462	.237	.069	.446	.232	.068	
8.0	.471	.230	.065	.462	.228	.064	.447	.223	.064	.432	.219	.063	.419	.215	.063	
9.0	.441	.213	.060	.434	.211	.059	.420	.207	.059	.406	.204	.058	.394	.200	.058	
10.0	.414	.199	.055	.408	.197	.055	.395	.194	.055	.383	.190	.054	.372	.187	.054	

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	.498	.498	.498	.425	.425	.425	.290	.290	.290	.167	.167	.167	.053	.053	.053	
1.0	.473	.411	.356	.404	.353	.306	.277	.243	.212	.159	.141	.123	.051	.045	.040	
2.0	.453	.350	.264	.388	.302	.228	.266	.209	.159	.153	.121	.093	.049	.039	.030	
3.0	.434	.306	.205	.372	.264	.177	.255	.184	.124	.147	.107	.073	.047	.035	.024	
4.0	.415	.273	.164	.356	.236	.143	.245	.164	.101	.142	.096	.060	.046	.031	.020	
5.0	.396	.247	.137	.340	.214	.119	.234	.149	.084	.136	.088	.050	.044	.029	.016	
6.0	.378	.226	.117	.325	.196	.101	.224	.137	.072	.130	.081	.043	.042	.026	.014	
7.0	.361	.209	.102	.310	.181	.089	.215	.127	.063	.125	.075	.037	.040	.024	.012	
8.0	.345	.194	.091	.297	.168	.079	.205	.118	.056	.119	.070	.033	.039	.023	.011	
9.0	.329	.182	.082	.284	.158	.071	.197	.111	.051	.114	.065	.030	.037	.021	.010	
10.0	.315	.171	.075	.271	.148	.065	.188	.104	.046	.110	.062	.028	.036	.020	.009	

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: 4000-4500

UGR(Unified Glare Rating) Table

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 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	32.0	33.5	32.3	33.7	33.9	32.1	33.7	32.4	33.9	34.1
3H	33.5	34.9	33.8	35.1	35.4	33.7	35.1	34.0	35.4	35.7
4H	34.0	35.4	34.4	35.7	35.9	34.4	35.7	34.7	36.0	36.3
6H	34.4	35.7	34.7	35.9	36.2	34.8	36.1	35.2	36.4	36.7
8H	34.5	35.7	34.8	36.0	36.3	35.0	36.2	35.3	36.5	36.8
12H	34.5	35.7	34.9	36.0	36.3	35.1	36.3	35.4	36.6	36.9
4H 2H	32.6	34.0	32.9	34.2	34.5	32.7	34.1	33.1	34.3	34.6
3H	34.3	35.5	34.7	35.8	36.1	34.5	35.7	34.9	36.0	36.3
4H	35.0	36.1	35.4	36.4	36.7	35.3	36.4	35.7	36.7	37.0
6H	35.5	36.4	35.9	36.8	37.2	35.9	36.8	36.3	37.2	37.6
8H	35.6	36.5	36.0	36.9	37.3	36.1	37.0	36.5	37.3	37.7
12H	35.6	36.5	36.1	36.9	37.3	36.2	37.0	36.7	37.4	37.9
8H 4H	35.3	36.1	35.7	36.5	36.9	35.5	36.4	36.0	36.8	37.2
6H	35.9	36.6	36.3	37.0	37.5	36.2	37.0	36.7	37.4	37.9
8H	36.1	36.7	36.5	37.2	37.6	36.5	37.2	37.0	37.6	38.1
12H	36.2	36.7	36.7	37.2	37.7	36.8	37.3	37.2	37.8	38.3
12H 4H	35.3	36.1	35.7	36.5	36.9	35.5	36.3	36.0	36.7	37.2
6H	35.9	36.6	36.4	37.0	37.5	36.3	36.9	36.8	37.4	37.9
8H	36.2	36.7	36.6	37.2	37.7	36.6	37.2	37.1	37.6	38.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 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, 734.5 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.1)

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: 4000-4500

UTILIZATION FACTORS TABLE

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

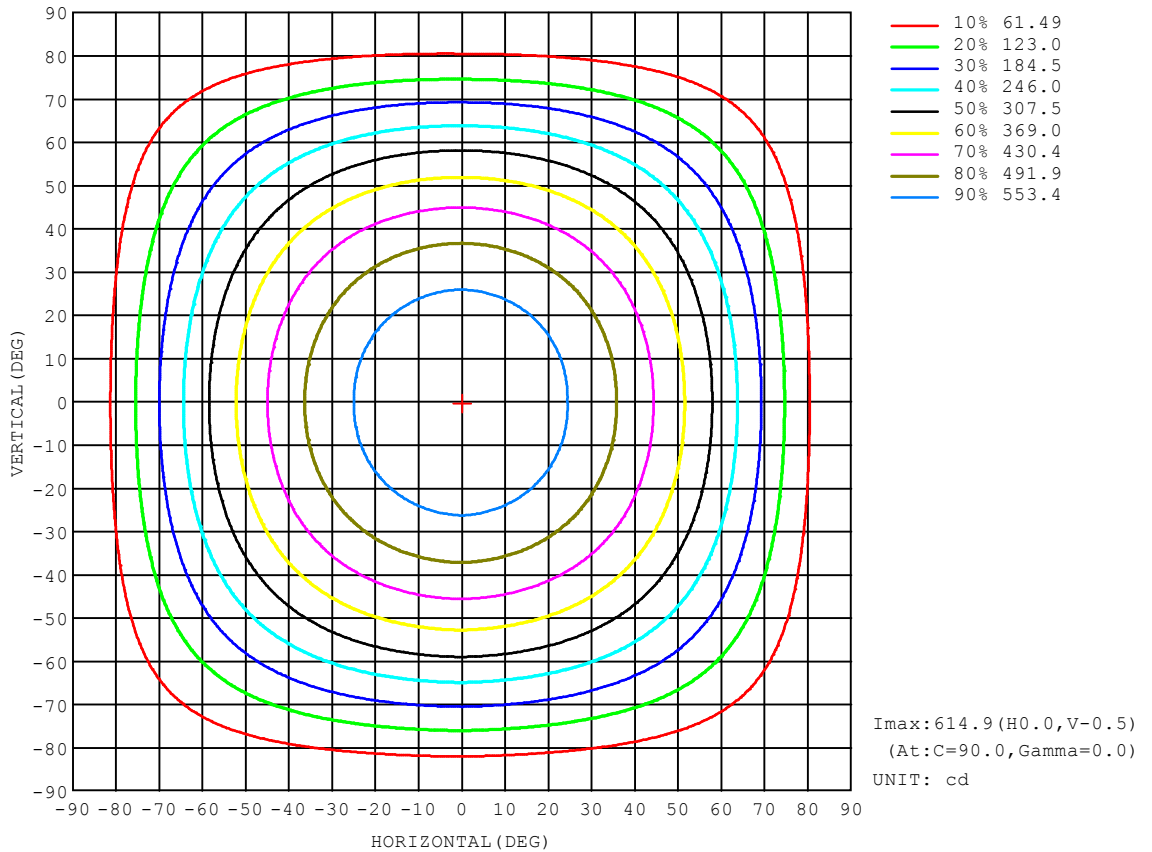
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	142	113	95	140	112	95	137	111	94	78
0.80	168	138	119	165	137	119	160	135	118	100
1.00	189	161	142	186	159	141	180	163	140	121
1.25	207	180	162	203	178	161	196	174	159	140
1.50	220	195	177	215	192	175	208	187	172	153
2.00	237	216	199	233	212	197	223	206	193	172
2.50	247	228	212	242	224	210	232	217	205	183
3.00	256	239	224	250	234	222	240	227	216	194
4.00	266	252	240	260	247	236	249	238	229	206
5.00	273	260	250	266	255	246	254	246	238	214
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: 4000-4500

ISOCANDELA DIAGRAM

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

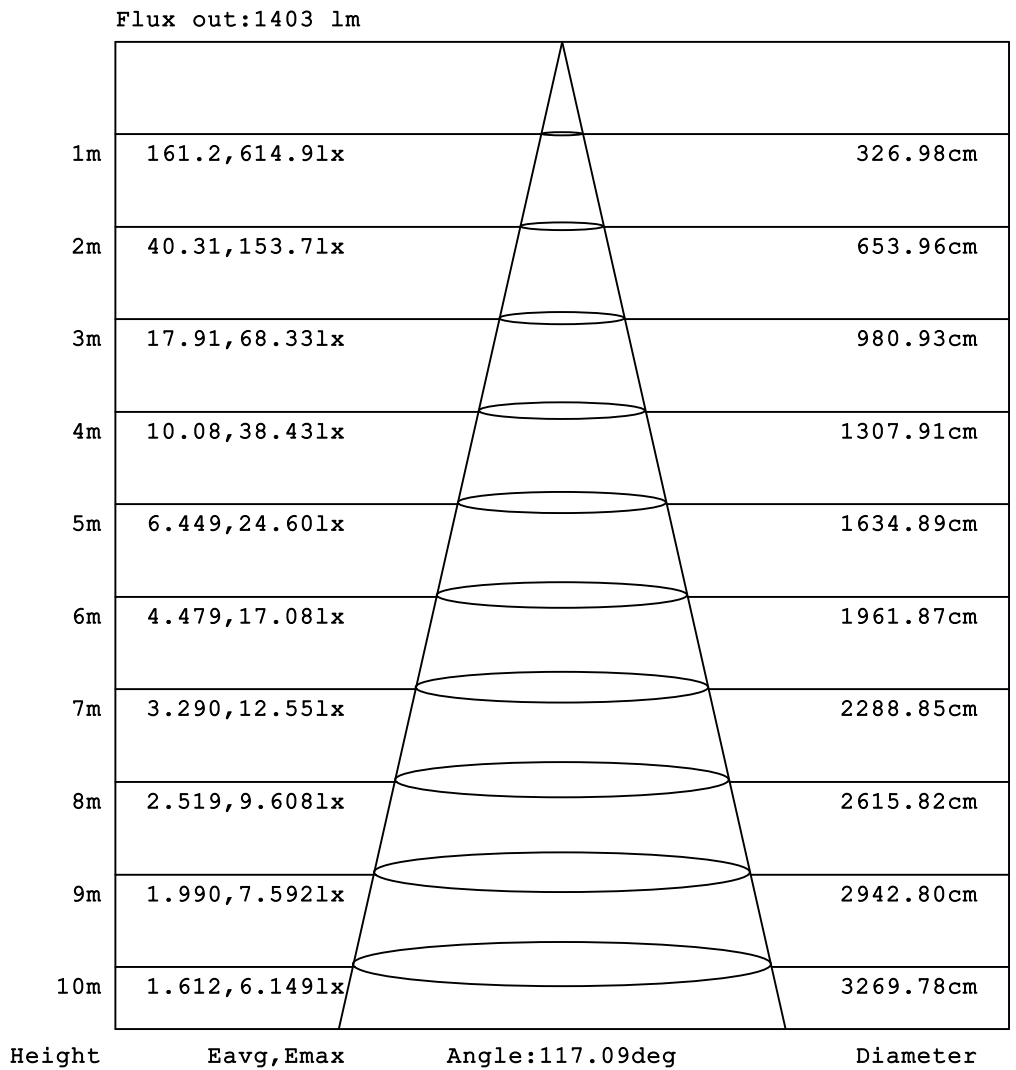


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: QSM
 Test Date: 2020-05-27

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: 4000-4500

AAI Figure

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:



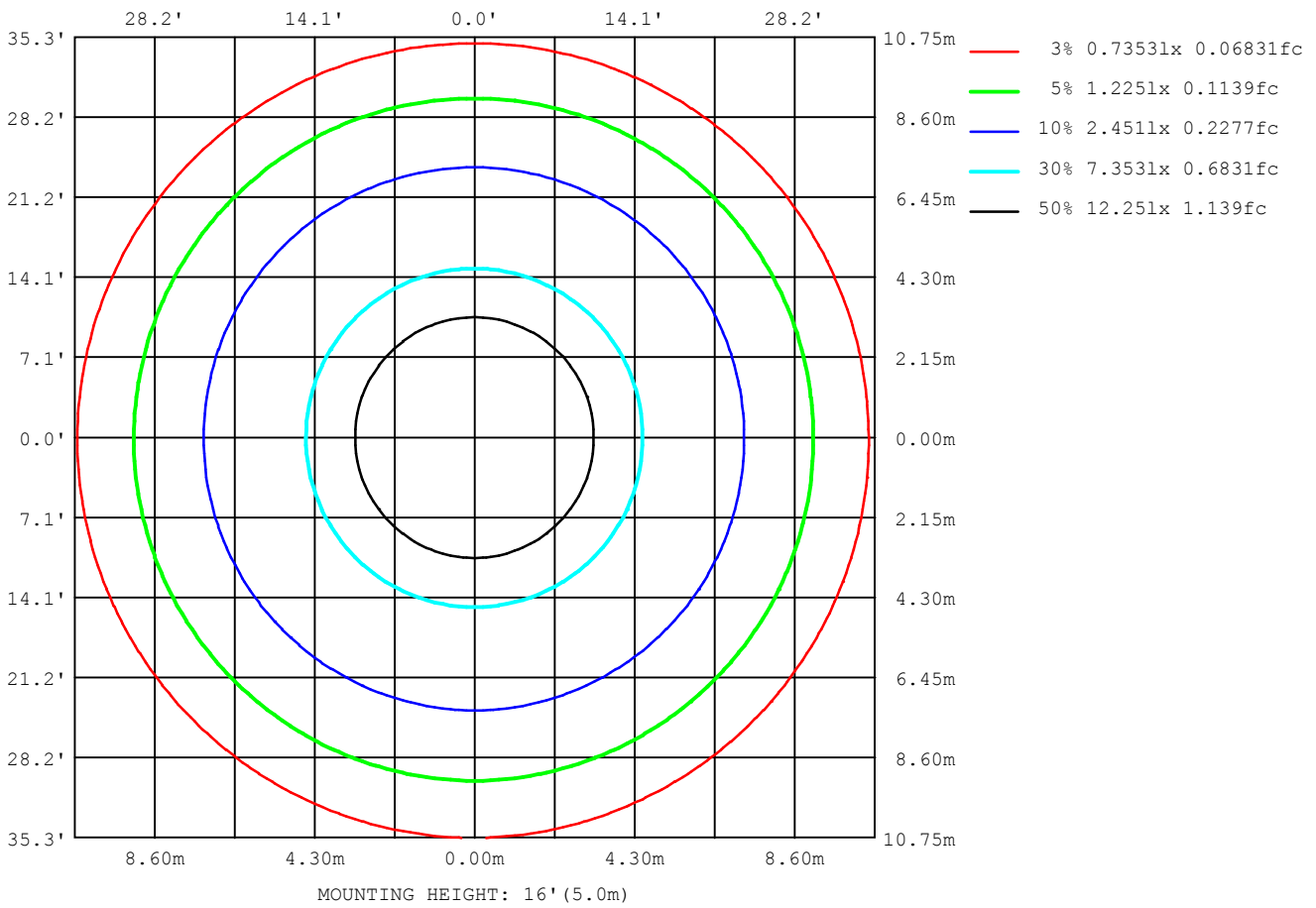
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: 4000-4500

ISOLUX DIAGRAM

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 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: 4000-4500

LED Avg.L Report

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.01	Shielding Angle:

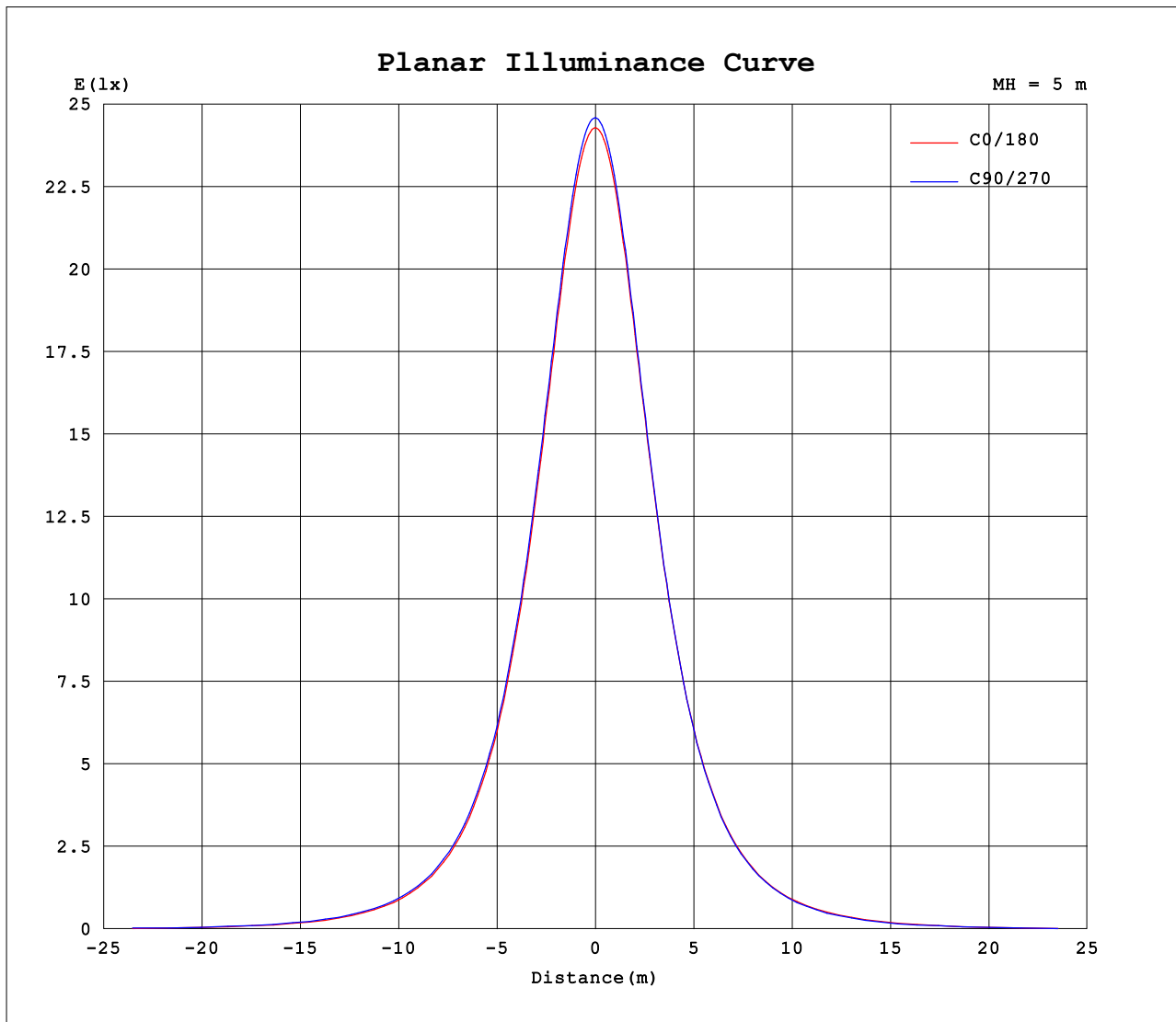
AvgL	cd/m2
L_0~180 (65) av	169004
L_0~180 (75) av	144442
L_0~180 (85) av	92060
L_90~270 (65) av	171239
L_90~270 (75) av	147869
L_90~270 (85) av	109420
L_45 (65) av	170563
L_45 (75) av	146918
L_45 (85) av	103596

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: 4000-4500

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: 4000-4500

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.997V I:0.5151A P:12.361W PF:1.0000 Freq:49.99Hz Lamp Flux:734.466x1 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	607	615	607	615															
5	605	613	606	613															
10	598	606	599	606															
15	587	595	588	594															
20	571	580	573	578															
25	551	560	553	557															
30	526	535	529	532															
35	497	506	500	502															
40	463	473	467	468															
45	425	436	430	429															
50	383	394	389	386															
55	336	350	342	338															
60	286	298	292	287															
65	232	246	239	232															
70	176	191	184	174															
75	119	136	128	117															
80	65.7	82.3	74.1	64.9															
85	23.3	37.7	29.6	25.3															
90	0.68	11.2	5.67	4.73															
95	0.81	2.37	0.97	1.17															
100	1.08	1.10	1.25	1.27															
105	1.39	1.32	1.56	1.55															
110	1.72	1.61	1.92	1.88															
115	2.05	1.95	2.26	2.23															
120	2.39	2.29	2.59	2.57															
125	2.73	2.64	2.93	2.90															
130	3.06	2.98	3.24	3.23															
135	3.36	3.30	3.53	3.53															
140	3.64	3.59	3.79	3.79															
145	3.89	3.87	4.03	4.04															
150	4.12	4.12	4.23	4.26															
155	4.33	4.35	4.42	4.46															
160	4.50	4.53	4.59	4.63															
165	4.66	4.71	4.73	4.77															
170	4.79	4.85	4.85	4.89															
175	4.88	4.97	4.92	4.98															
180	4.97	5.01	4.97	5.05															

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]
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