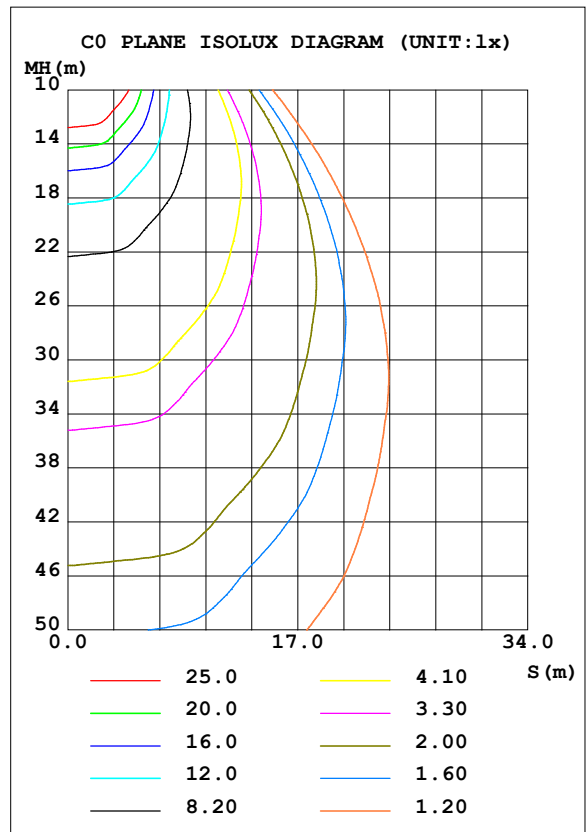
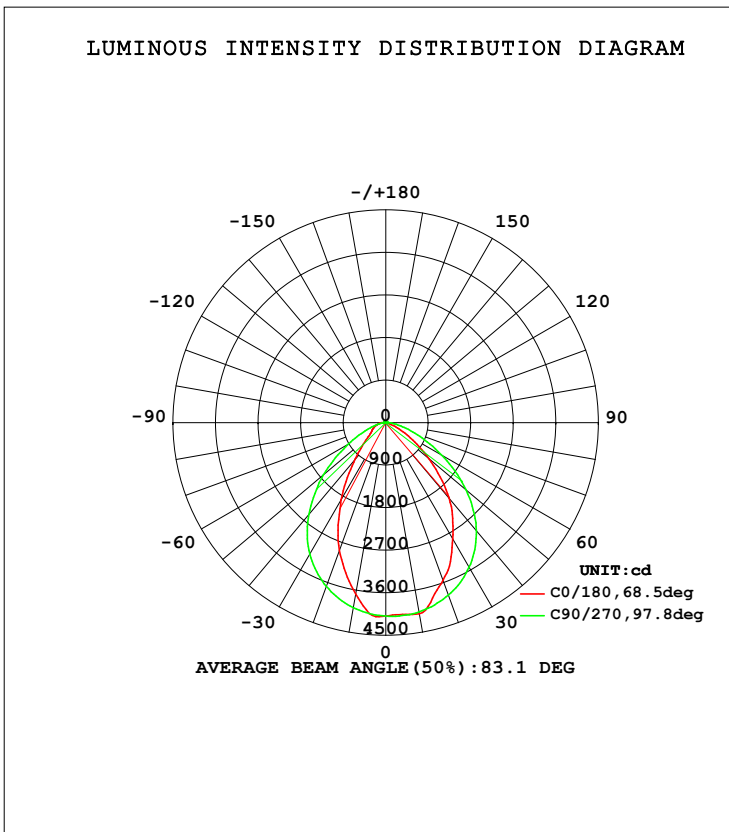


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.30 lm/W			
MODEL	4432-10B-60-4K	I <sub>max</sub> (cd)	4110	S/MH (C0/180)	0.84
NOMINAL POWER (W)	60	LOR (%)	100.0	S/MH (C90/270)	1.18
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	7411.3	η UP, DN (C0-180)	0.3, 54.0
NOMINAL FLUX (lm)	7411.27	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.5, 45.2
LAMPS INSIDE	1	η up (%)	0.8	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	220	η down (%)	99.2	CIBSE SHR MAX	1.10



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.250m [K=1.0000]  
 Remarks:

**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	4104	4063	4064	3698	3682	3639	3974	4003	0- 10	381.3	381.3	5.15,5.15
20	3550	3934	3881	3042	2880	2915	3685	3825	10- 20	1042	1423	19.2,19.2
30	2838	3351	3530	2180	1896	1978	3216	3206	20- 30	1438	2861	38.6,38.6
40	2085	2735	2985	1315	1013	1086	2535	2563	30- 40	1505	4366	58.9,58.9
50	1194	1936	2221	678.1	512.3	550.7	1725	1720	40- 50	1283	5649	76.2,76.2
60	508.4	1132	1359	378.8	337.6	337.5	919.1	916.3	50- 60	903.3	6552	88.4,88.4
70	94.41	471.8	660.4	266.7	247.4	237.3	394.1	327.2	60- 70	518.2	7071	95.4,95.4
80	1.835	33.91	228.0	166.7	153.6	132.4	104.5	3.606	70- 80	216.8	7287	98.3,98.3
90	1.498	2.834	12.15	63.66	74.19	39.12	4.966	2.471	80- 90	62.40	7350	99.2,99.2
100	2.782	2.840	5.602	4.411	5.270	7.784	11.07	4.385	90-100	13.13	7363	99.3,99.3
110	4.997	5.239	12.44	11.38	8.583	17.16	21.31	8.264	100-110	8.398	7371	99.5,99.5
120	8.790	9.837	23.06	22.47	18.90	30.28	34.51	14.69	110-120	15.32	7387	99.7,99.7
130	15.60	17.79	35.70	36.15	33.05	45.00	48.05	24.74	120-130	23.22	7410	100,100
140	0	0	0	0	0	0	0	0	130-140	1.335	7411	100,100
150	0	0	0	0	0	0	0	0	140-150	0	7411	100,100
160	0	0	0	0	0	0	0	0	150-160	0	7411	100,100
170	0	0	0	0	0	0	0	0	160-170	0	7411	100,100
180	0	0	0	0	0	0	0	0	170-180	0	7411	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

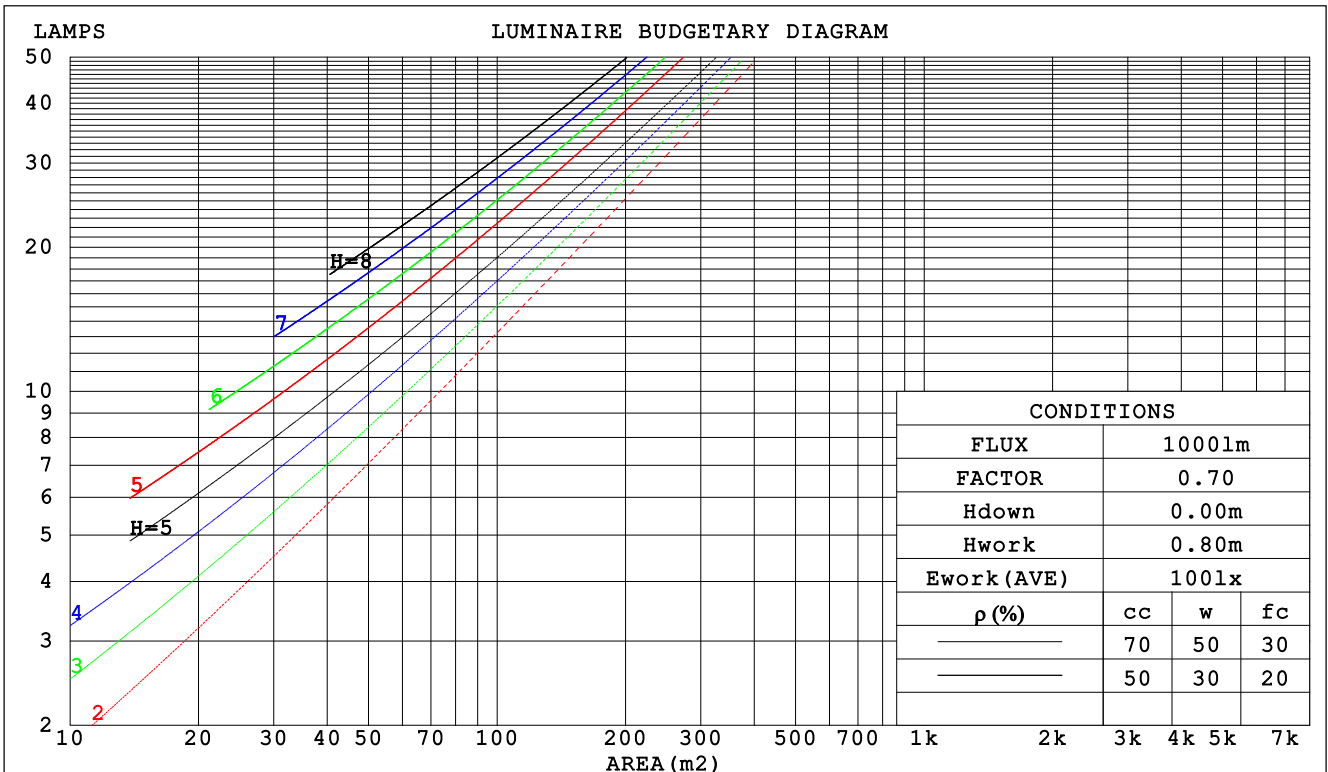
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.07	1.03	.90	1.04	1.01	.98	.90	.97	.95	.96	.94	.92	.92	.91	.89	.87
2.0	.95	.89	.85	.93	.88	.84	.90	.85	.82	.86	.83	.80	.83	.80	.78	.76
3.0	.85	.78	.73	.84	.77	.72	.81	.75	.71	.78	.73	.69	.76	.72	.68	.66
4.0	.77	.69	.63	.76	.69	.63	.73	.67	.62	.71	.66	.61	.69	.64	.60	.58
5.0	.70	.62	.56	.69	.61	.56	.67	.60	.55	.65	.59	.54	.63	.58	.54	.52
6.0	.64	.56	.50	.63	.55	.50	.61	.54	.49	.59	.53	.49	.58	.52	.48	.46
7.0	.58	.50	.45	.58	.50	.45	.56	.49	.44	.55	.48	.44	.53	.48	.44	.42
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.40	.50	.44	.40	.49	.44	.40	.38
9.0	.50	.42	.37	.49	.42	.37	.48	.41	.37	.47	.41	.37	.46	.40	.36	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.37	.33	.32



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
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	.254	.145	.046	.247	.141	.045	.234	.134	.043	.221	.128	.041	.210	.122	.039	
2.0	.244	.134	.041	.238	.131	.040	.226	.126	.039	.215	.121	.038	.205	.116	.037	
3.0	.230	.123	.037	.225	.120	.036	.214	.116	.035	.205	.112	.034	.196	.109	.034	
4.0	.216	.112	.033	.211	.110	.033	.202	.107	.032	.194	.104	.031	.186	.101	.031	
5.0	.202	.103	.030	.198	.102	.030	.190	.099	.029	.183	.096	.029	.176	.094	.028	
6.0	.190	.095	.027	.186	.094	.027	.179	.092	.027	.172	.089	.026	.166	.087	.026	
7.0	.179	.088	.025	.175	.087	.025	.169	.085	.025	.163	.083	.024	.157	.082	.024	
8.0	.168	.082	.023	.165	.081	.023	.159	.080	.023	.154	.078	.023	.149	.076	.022	
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.146	.073	.021	.141	.072	.021	
10.0	.150	.072	.020	.148	.071	.020	.143	.070	.020	.139	.069	.020	.135	.068	.019	

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	.197	.197	.197	.168	.168	.168	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.183	.163	.145	.156	.140	.125	.107	.096	.086	.062	.056	.050	.020	.018	.016	
2.0	.172	.139	.110	.148	.119	.095	.101	.083	.066	.058	.048	.039	.019	.016	.013	
3.0	.163	.120	.086	.140	.104	.075	.096	.072	.053	.055	.042	.031	.018	.014	.010	
4.0	.155	.107	.070	.133	.092	.061	.092	.064	.043	.053	.038	.025	.017	.012	.008	
5.0	.148	.096	.058	.127	.083	.050	.087	.058	.036	.051	.034	.021	.016	.011	.007	
6.0	.141	.087	.049	.121	.076	.043	.083	.053	.030	.048	.031	.018	.016	.010	.006	
7.0	.134	.080	.042	.116	.070	.037	.080	.049	.026	.046	.029	.016	.015	.009	.005	
8.0	.128	.074	.037	.110	.065	.033	.076	.045	.023	.044	.027	.014	.014	.009	.005	
9.0	.123	.069	.034	.106	.060	.029	.073	.042	.021	.043	.025	.012	.014	.008	.004	
10.0	.117	.065	.030	.101	.057	.027	.070	.040	.019	.041	.024	.011	.013	.008	.004	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm										
NAME:					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:1		
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	22.8	24.2	23.1	24.4	24.6	25.3	26.7	25.6	26.9	27.1
3H	23.0	24.2	23.3	24.4	24.7	26.2	27.4	26.5	27.6	27.9
4H	22.9	24.0	23.2	24.3	24.6	26.4	27.6	26.8	27.9	28.1
6H	22.8	23.9	23.1	24.1	24.4	26.6	27.7	26.9	27.9	28.2
8H	22.7	23.8	23.1	24.1	24.4	26.6	27.7	27.0	28.0	28.2
12H	22.7	23.7	23.0	24.0	24.3	26.6	27.6	27.0	27.9	28.2
4H 2H	23.5	24.6	23.8	24.9	25.2	25.5	26.7	25.8	26.9	27.2
3H	23.8	24.8	24.1	25.1	25.4	26.5	27.5	26.9	27.8	28.1
4H	23.7	24.6	24.1	25.0	25.3	26.8	27.7	27.2	28.1	28.4
6H	23.6	24.4	24.0	24.8	25.2	27.0	27.8	27.4	28.2	28.6
8H	23.6	24.3	24.0	24.7	25.1	27.1	27.8	27.5	28.2	28.6
12H	23.5	24.2	24.0	24.6	25.0	27.1	27.8	27.6	28.2	28.6
8H 4H	23.8	24.6	24.2	24.9	25.3	26.8	27.5	27.2	27.9	28.3
6H	23.7	24.4	24.2	24.8	25.2	27.0	27.6	27.5	28.0	28.5
8H	23.7	24.2	24.2	24.7	25.1	27.1	27.6	27.6	28.1	28.5
12H	23.7	24.1	24.1	24.6	25.1	27.2	27.6	27.6	28.1	28.6
12H 4H	23.8	24.5	24.2	24.9	25.3	26.7	27.4	27.2	27.8	28.2
6H	23.7	24.3	24.2	24.7	25.2	27.0	27.5	27.4	27.9	28.4
8H	23.7	24.1	24.2	24.6	25.1	27.0	27.5	27.5	28.0	28.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.9 / - 1.2					+ 0.3 / - 0.4				
1.5H	+ 0.6 / - 1.2					+ 0.3 / - 0.4				
2.0H	+ 0.9 / - 2.9					+ 0.9 / - 0.9				

CIE Pub.117 Corrected 7411 lm Total Lamp Luminous Flux. (8log(F/F0) = 7.0)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
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	66	56	50	65	55	49	64	55	49	44
0.80	76	66	59	75	65	59	73	65	59	53
1.00	83	74	68	82	74	68	80	74	67	61
1.25	90	81	75	88	80	75	86	79	74	68
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	88	98	92	87	95	89	85	78
2.50	103	97	92	101	95	91	97	93	89	81
3.00	106	100	96	104	99	94	100	96	92	84
4.00	109	104	100	107	102	99	102	99	96	88
5.00	111	107	104	108	105	102	104	101	99	90
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

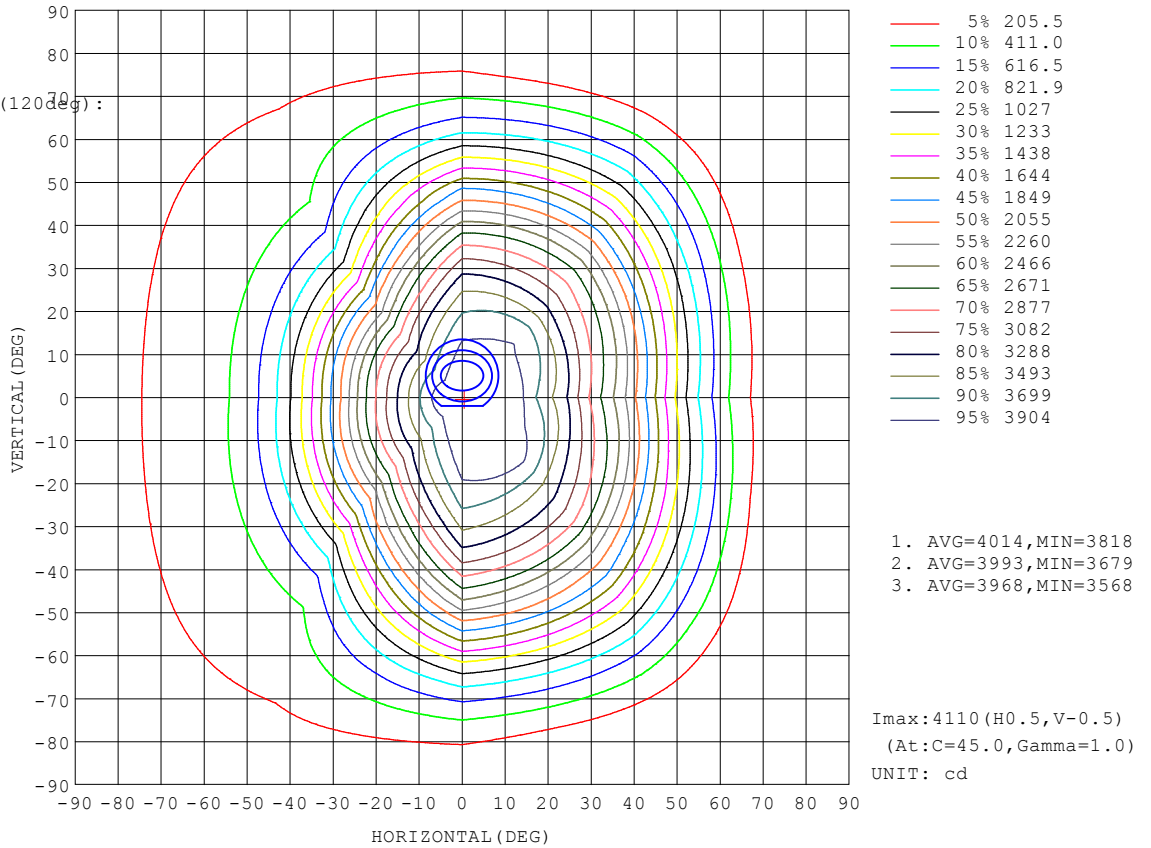
Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

Conical surface Flux(90deg):

5049.9 lm  
 %lum = 68.1%  
 %lamp = 68.1%

Conical surface Flux(120deg):

6552.5 lm  
 %lum = 88.4%  
 %lamp = 88.4%

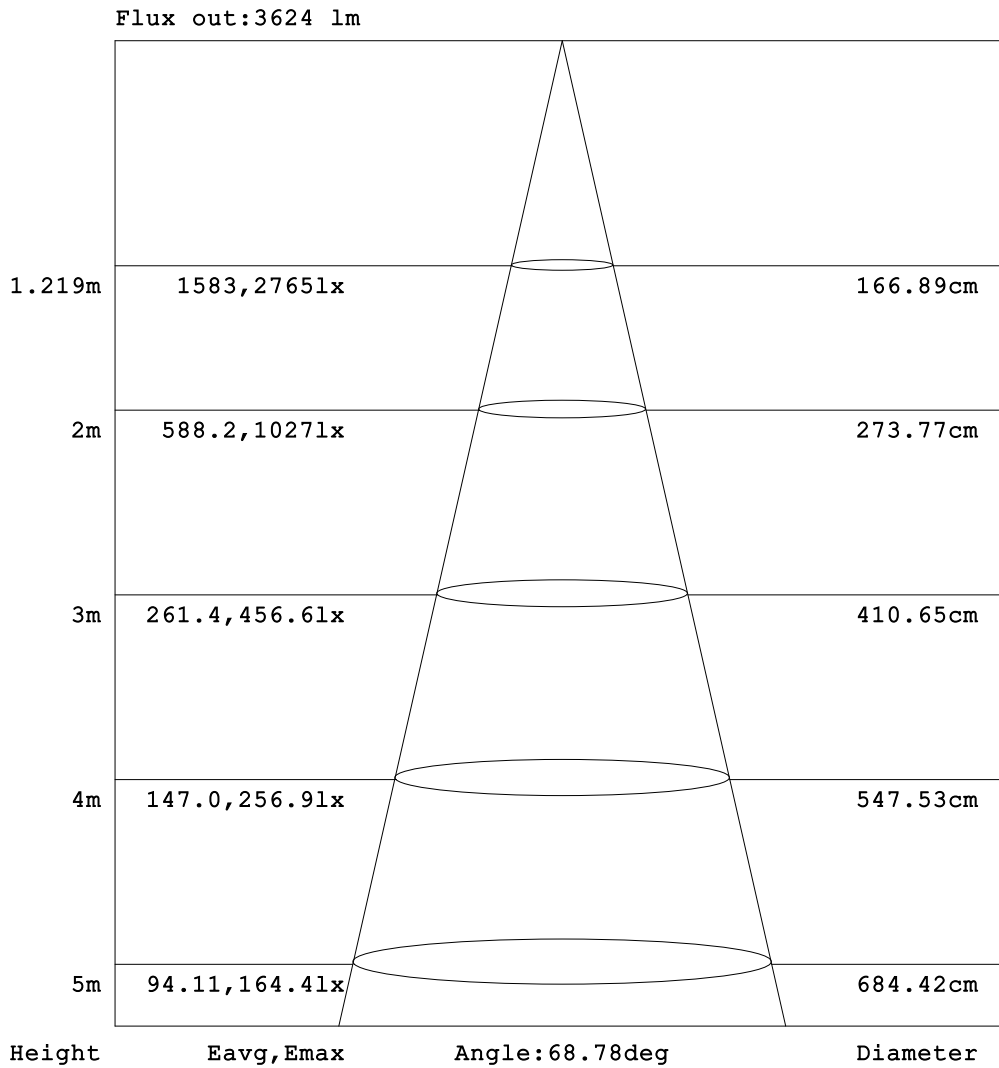


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**AAI Figure**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:



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

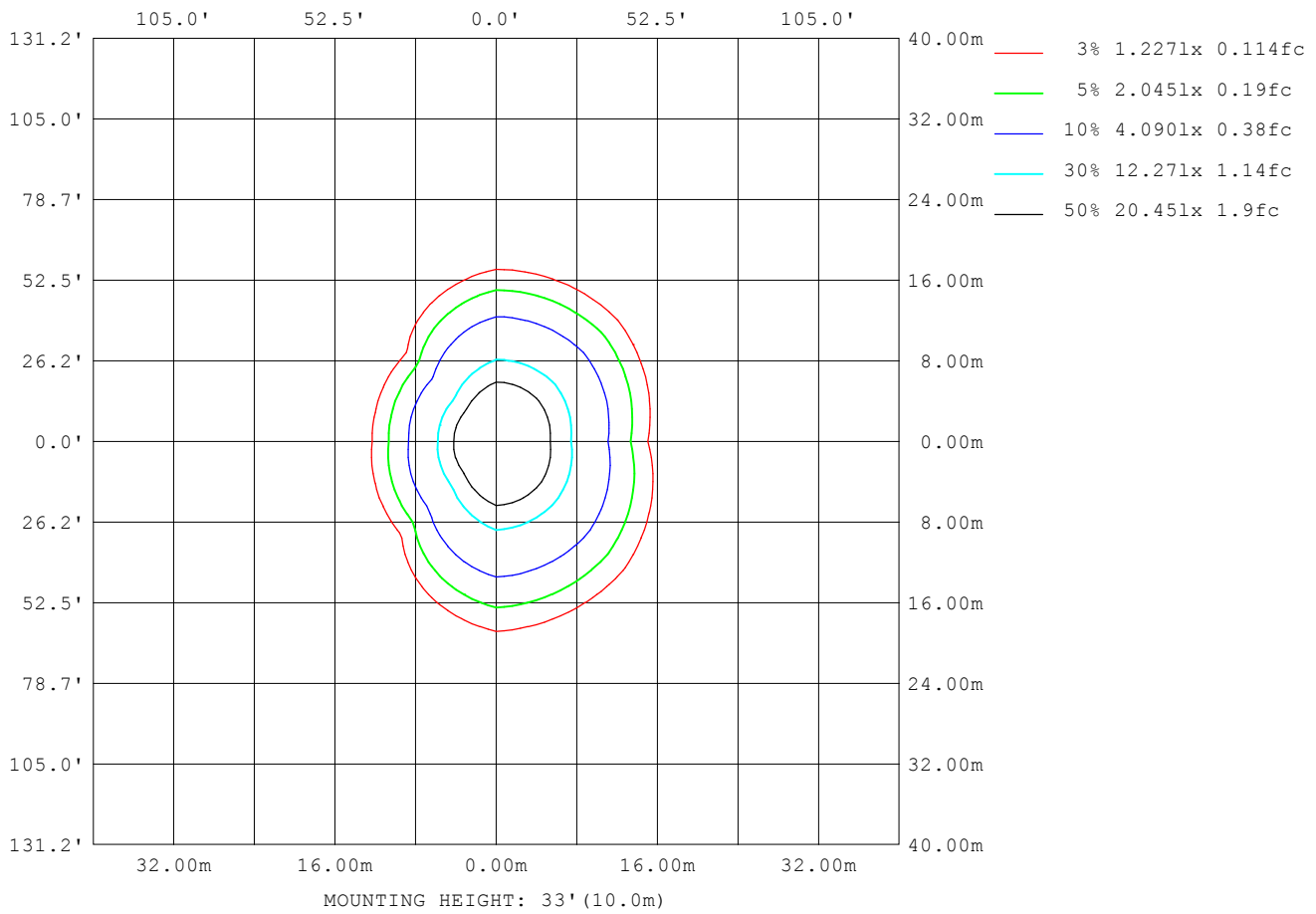
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**LED Avg.L Report**

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

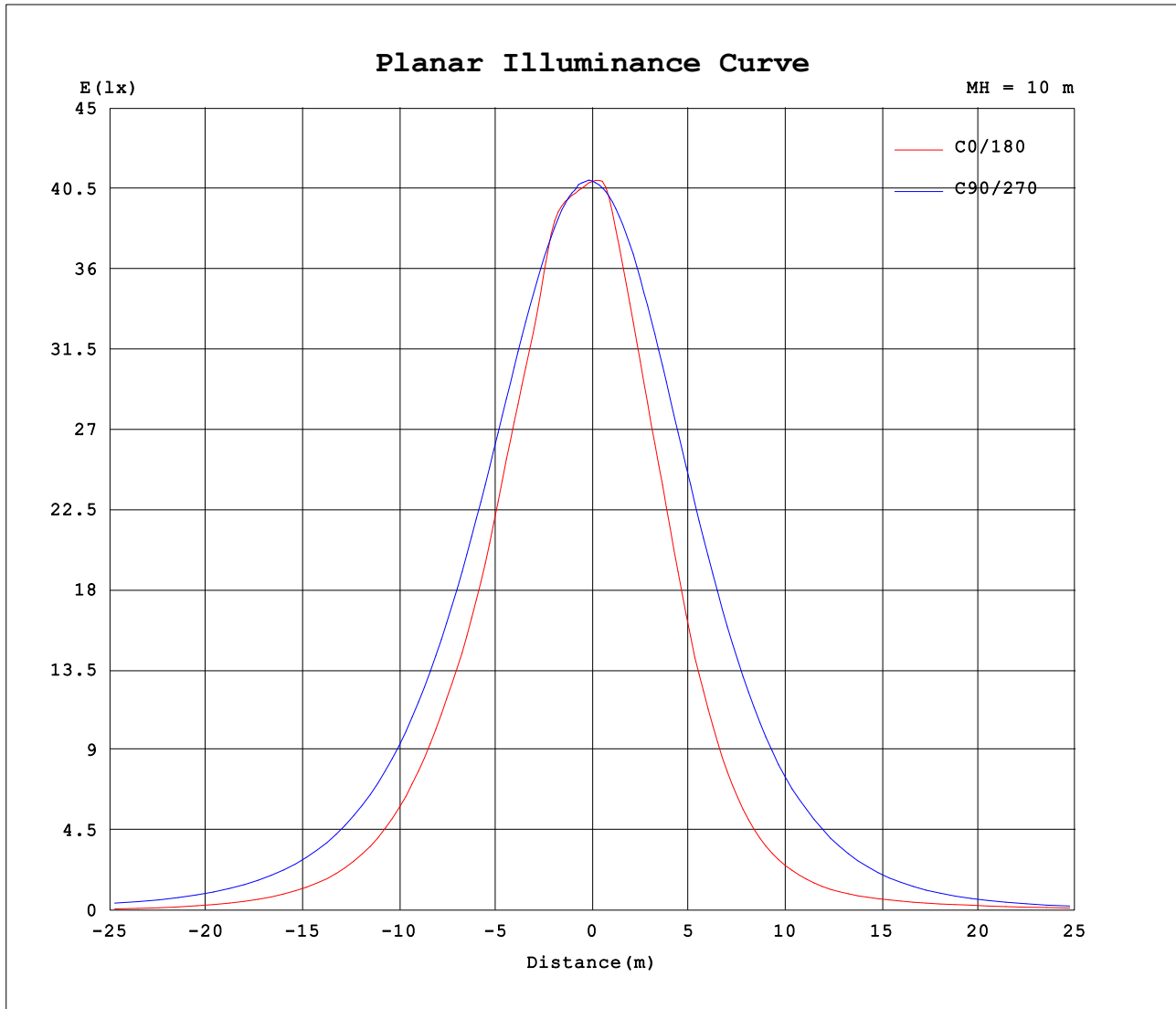
AvgL	cd/m2
L_0~180 (65) av	6838
L_0~180 (75) av	3929
L_0~180 (85) av	6513
L_90~270 (65) av	18797
L_90~270 (75) av	12324
L_90~270 (85) av	6595
L_45 (65) av	11672
L_45 (75) av	7106
L_45 (85) av	5884

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks:

**Planar Illuminance Curve**



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 24 August 2019

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.250m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.2V I:0.2860A P:61.10W PF:0.9670 Lamp Flux:7411.27x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	45	90	135	180	225	270	315										
0	4090	4109	4093	4110	4090	4109	4093	4110										
5	4070	4092	4093	3974	4048	3938	4054	4073										
10	4104	4063	4064	3698	3682	3639	3974	4003										
15	3839	4035	3994	3397	3288	3283	3848	3946										
20	3550	3934	3881	3042	2880	2915	3685	3825										
25	3241	3626	3731	2633	2391	2447	3474	3530										
30	2838	3351	3530	2180	1896	1978	3216	3206										
35	2477	3078	3283	1747	1419	1495	2902	2908										
40	2085	2735	2985	1315	1013	1086	2535	2563										
45	1635	2320	2621	948	718	781	2124	2138										
50	1194	1936	2221	678	512	551	1725	1720										
55	814	1537	1787	489	395	414	1297	1305										
60	508	1132	1359	379	338	337	919	916										
65	280	772	968	317	298	283	620	601										
70	94.4	472	660	267	247	237	394	327										
75	3.61	230	411	219	200	187	227	98.8										
80	1.83	33.9	228	167	154	132	105	3.61										
85	1.39	3.93	92.9	114	112	85.1	22.1	2.59										
90	1.50	2.83	12.1	63.7	74.2	39.1	4.97	2.47										
95	2.02	2.48	3.69	20.2	38.5	5.79	7.47	3.15										
100	2.78	2.84	5.60	4.41	5.27	7.78	11.1	4.39										
105	3.77	3.81	8.50	7.31	5.19	12.0	15.7	6.08										
110	5.00	5.24	12.4	11.4	8.58	17.2	21.3	8.26										
115	6.59	7.20	17.3	16.4	13.1	23.3	27.7	11.1										
120	8.79	9.84	23.1	22.5	18.9	30.3	34.5	14.7										
125	11.7	13.3	29.3	29.1	25.7	37.6	41.4	19.3										
130	15.6	17.8	35.7	36.2	33.1	45.0	48.1	24.7										
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.250m [K=1.0000]  
 Remarks: