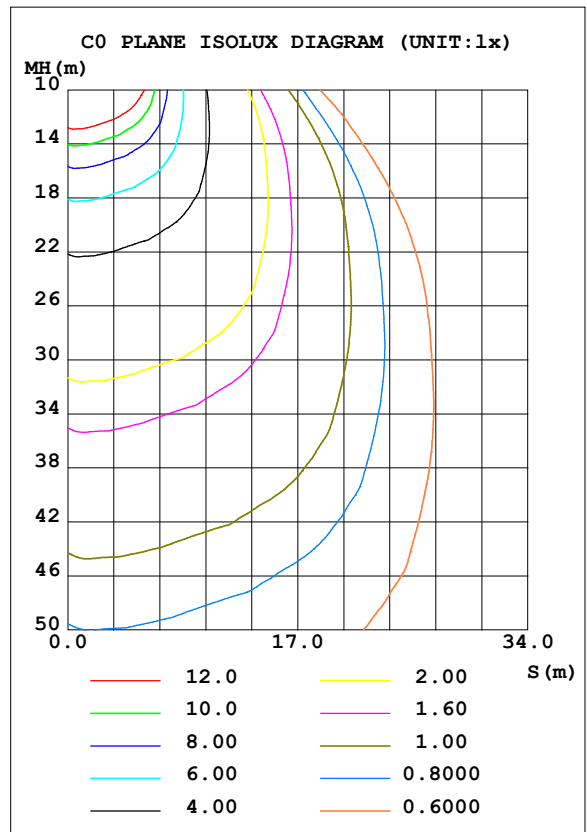
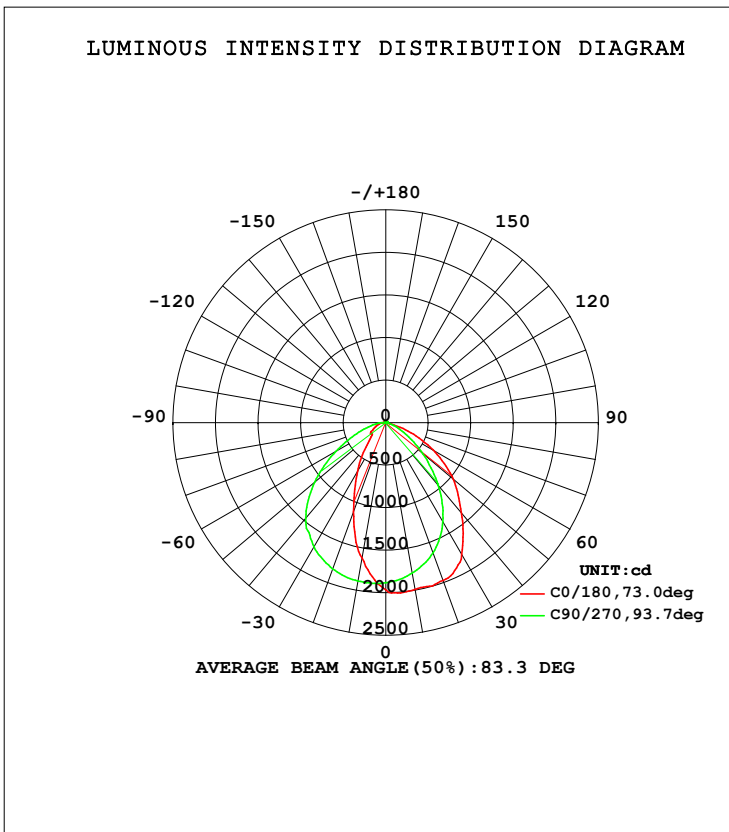


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.60 lm/W			
MODEL	4432-10B-30-4K	I <sub>max</sub> (cd)	2009	S/MH (C0/180)	0.69
NOMINAL POWER (W)	30	LOR (%)	100.0	S/MH (C90/270)	1.32
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	3856.3	η UP, DN (C0-180)	0.4, 47.8
NOMINAL FLUX (lm)	3856.35	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.4, 51.4
LAMPS INSIDE	1	η up (%)	0.8	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	220	η down (%)	99.2	CIBSE SHR MAX	1.15



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	1989	1942	1796	1594	1615	1657	1891	1999	0- 10	177.5	177.5	4.6,4.6
20	1974	1848	1628	1148	1115	1280	1831	1967	10- 20	482.7	660.2	17.1,17.1
30	1786	1704	1343	684.4	662.6	860.4	1686	1893	20- 30	675.8	1336	34.6,34.6
40	1383	1487	959.0	359.0	348.5	532.8	1465	1737	30- 40	738.5	2074	53.8,53.8
50	1036	1080	573.9	195.4	208.9	282.2	1092	1421	40- 50	680.4	2755	71.4,71.4
60	644.0	646.9	271.8	142.9	181.7	181.0	676.0	1017	50- 60	537.9	3293	85.4,85.4
70	246.1	251.7	99.91	87.72	116.7	140.7	340.5	611.0	60- 70	344.9	3638	94.3,94.3
80	0.9333	0.9473	8.893	33.05	74.85	82.65	143.0	226.2	70- 80	150.2	3788	98.2,98.2
90	0	0.1531	1.469	2.404	20.27	28.86	32.47	1.443	80- 90	38.29	3826	99.2,99.2
100	0.4714	0.7923	4.609	6.670	3.239	3.119	1.294	0.5190	90-100	4.511	3831	99.3,99.3
110	1.454	2.191	9.544	13.30	8.918	8.402	4.209	1.381	100-110	4.481	3835	99.4,99.4
120	2.836	4.439	15.59	20.72	16.52	15.62	9.046	3.282	110-120	8.414	3843	99.7,99.7
130	5.087	8.099	21.55	27.46	24.22	23.14	15.09	6.463	120-130	12.22	3856	100,100
140	0	0	0	0	0	0	0	0	130-140	0.6833	3856	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3856	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3856	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3856	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3856	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

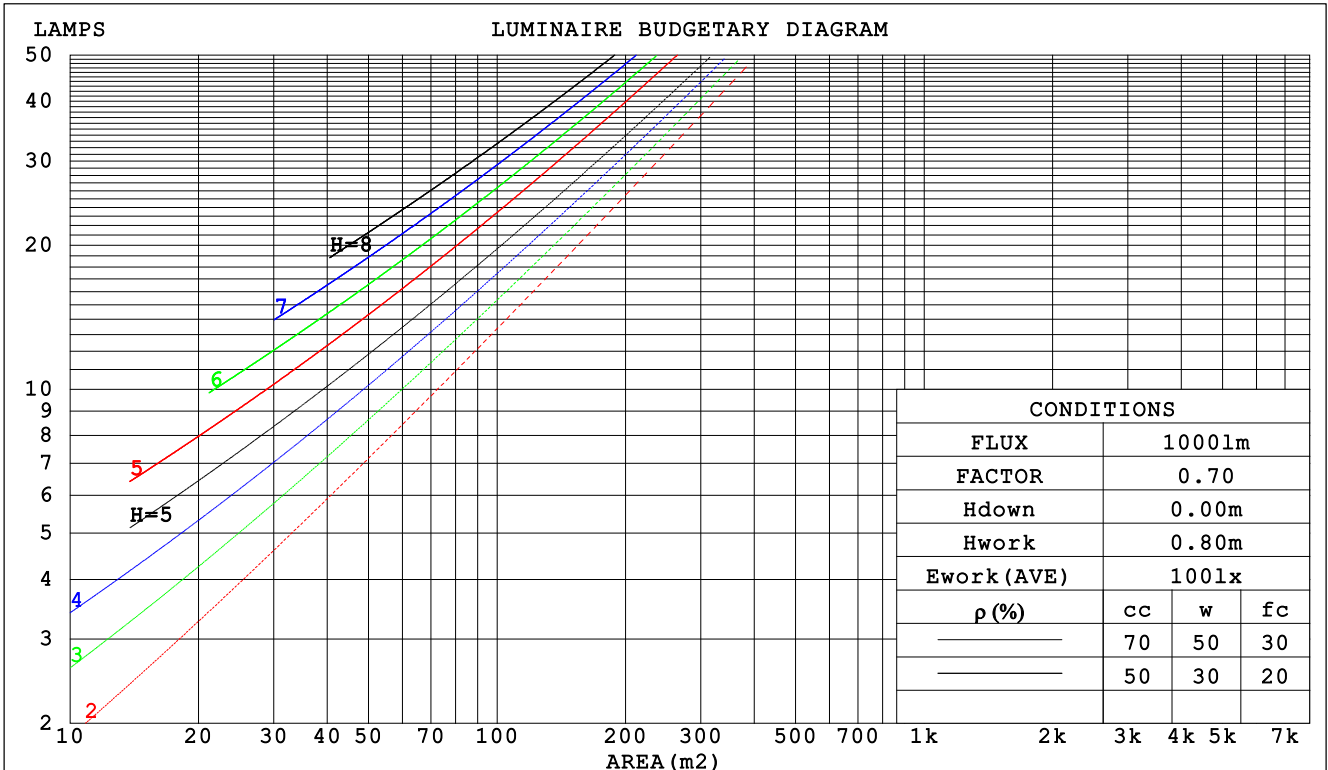
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

$\gamma$  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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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	1.06	1.02	.99	1.03	1.00	.97	.99	.96	.94	.95	.93	.91	.91	.90	.88	.86
2.0	.94	.88	.83	.92	.86	.81	.88	.84	.79	.85	.81	.78	.82	.79	.76	.74
3.0	.83	.76	.70	.82	.75	.70	.79	.73	.68	.76	.71	.67	.73	.69	.66	.64
4.0	.75	.67	.61	.73	.66	.60	.71	.64	.59	.69	.63	.58	.66	.62	.58	.56
5.0	.67	.59	.53	.66	.59	.53	.64	.57	.52	.62	.56	.51	.60	.55	.51	.49
6.0	.61	.53	.47	.60	.52	.47	.58	.51	.46	.57	.51	.46	.55	.50	.45	.43
7.0	.56	.48	.42	.55	.47	.42	.54	.47	.41	.52	.46	.41	.51	.45	.41	.39
8.0	.51	.43	.38	.51	.43	.38	.49	.42	.37	.48	.42	.37	.47	.41	.37	.35
9.0	.47	.40	.34	.47	.39	.34	.46	.39	.34	.44	.38	.34	.43	.38	.34	.32
10.0	.44	.36	.31	.43	.36	.31	.42	.36	.31	.41	.35	.31	.40	.35	.31	.29



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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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	.270	.153	.049	.263	.150	.048	.249	.143	.046	.237	.137	.044	.225	.131	.042	
2.0	.258	.142	.043	.252	.139	.043	.240	.134	.042	.229	.129	.040	.219	.124	.039	
3.0	.243	.129	.039	.237	.127	.038	.227	.123	.037	.217	.119	.036	.208	.115	.036	
4.0	.226	.118	.035	.222	.116	.034	.212	.113	.034	.204	.109	.033	.196	.106	.032	
5.0	.211	.108	.031	.207	.106	.031	.199	.104	.030	.191	.101	.030	.184	.098	.030	
6.0	.198	.099	.028	.194	.098	.028	.187	.096	.028	.180	.093	.027	.173	.091	.027	
7.0	.185	.092	.026	.182	.091	.026	.175	.089	.026	.169	.087	.025	.163	.085	.025	
8.0	.174	.085	.024	.171	.084	.024	.165	.082	.024	.160	.081	.023	.154	.079	.023	
9.0	.164	.079	.022	.161	.079	.022	.156	.077	.022	.151	.076	.022	.146	.074	.021	
10.0	.155	.074	.021	.152	.074	.021	.147	.072	.020	.143	.071	.020	.139	.070	.020	

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	.196	.196	.196	.168	.168	.168	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.184	.163	.144	.157	.139	.124	.107	.096	.085	.062	.056	.050	.020	.018	.016	
2.0	.174	.138	.108	.149	.119	.093	.102	.082	.065	.059	.048	.038	.019	.015	.012	
3.0	.165	.120	.084	.142	.104	.073	.097	.072	.051	.056	.042	.030	.018	.014	.010	
4.0	.157	.107	.068	.135	.092	.059	.093	.064	.041	.054	.038	.025	.017	.012	.008	
5.0	.150	.096	.056	.129	.083	.049	.089	.058	.034	.051	.034	.020	.017	.011	.007	
6.0	.143	.087	.048	.123	.076	.041	.085	.053	.029	.049	.031	.017	.016	.010	.006	
7.0	.136	.080	.041	.117	.070	.036	.081	.049	.025	.047	.029	.015	.015	.009	.005	
8.0	.130	.075	.036	.112	.065	.032	.078	.045	.023	.045	.027	.013	.015	.009	.004	
9.0	.125	.070	.033	.107	.060	.028	.074	.043	.020	.043	.025	.012	.014	.008	.004	
10.0	.119	.065	.030	.103	.057	.026	.071	.040	.018	.042	.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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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	20.7	22.1	21.0	22.3	22.5
3H	23.4	24.7	23.7	25.0	25.2	21.0	22.3	21.3	22.5	22.7
4H	23.4	24.6	23.7	24.9	25.1	21.0	22.2	21.3	22.4	22.7
6H	23.3	24.4	23.6	24.7	25.0	20.9	22.0	21.2	22.3	22.6
8H	23.3	24.3	23.6	24.6	24.9	20.8	21.9	21.2	22.2	22.5
12H	23.2	24.3	23.6	24.6	24.9	20.8	21.8	21.1	22.1	22.4
4H 2H	23.1	24.3	23.4	24.6	24.8	21.4	22.6	21.8	22.9	23.2
3H	23.8	24.9	24.2	25.2	25.5	21.8	22.9	22.2	23.2	23.5
4H	23.8	24.8	24.2	25.1	25.4	21.8	22.8	22.2	23.1	23.5
6H	23.7	24.5	24.1	24.9	25.3	21.8	22.6	22.2	23.0	23.3
8H	23.7	24.4	24.1	24.8	25.2	21.7	22.5	22.1	22.9	23.3
12H	23.6	24.3	24.0	24.7	25.1	21.7	22.4	22.1	22.8	23.2
8H 4H	23.7	24.5	24.1	24.9	25.3	21.8	22.6	22.2	23.0	23.4
6H	23.6	24.3	24.1	24.7	25.1	21.7	22.4	22.2	22.8	23.2
8H	23.6	24.2	24.1	24.6	25.1	21.7	22.3	22.2	22.7	23.2
12H	23.5	24.0	24.0	24.5	25.0	21.7	22.1	22.1	22.6	23.1
12H 4H	23.7	24.4	24.1	24.8	25.2	21.8	22.5	22.2	22.9	23.3
6H	23.6	24.2	24.1	24.6	25.1	21.7	22.3	22.2	22.7	23.2
8H	23.5	24.0	24.0	24.5	25.0	21.7	22.1	22.1	22.6	23.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.6					+ 0.9 / - 1.1				
1.5H	+ 0.4 / - 0.7					+ 0.8 / - 1.4				
2.0H	+ 0.8 / - 0.8					+ 1.1 / - 3.2				

CIE Pub.117 Corrected 3856 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.7)

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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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	63	52	46	62	52	46	61	51	45	39
0.80	73	62	56	72	62	55	70	61	55	49
1.00	81	71	64	80	70	64	77	71	63	57
1.25	88	78	72	86	78	71	84	76	71	64
1.50	92	83	77	91	83	77	88	81	76	69
2.00	98	91	85	96	90	84	93	87	83	75
2.50	102	95	90	100	93	89	96	91	87	79
3.00	105	99	94	102	97	93	98	94	90	82
4.00	108	103	99	106	101	98	101	98	95	86
5.00	110	106	102	108	104	101	103	100	98	89
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**

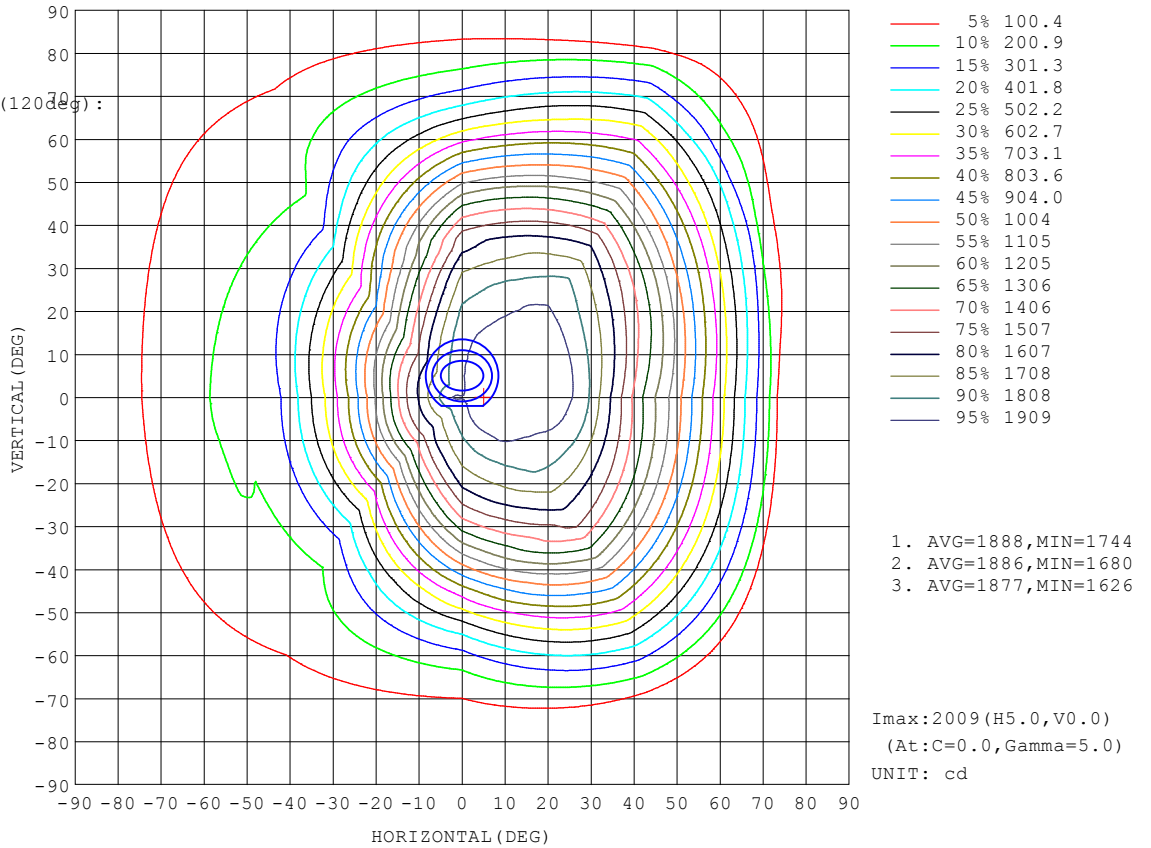
Test:U:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

Conical surface Flux(90deg):

2428.5 lm  
 %lum = 63.0%  
 %lamp = 63.0%

Conical surface Flux(120deg):

3292.7 lm  
 %lum = 85.4%  
 %lamp = 85.4%

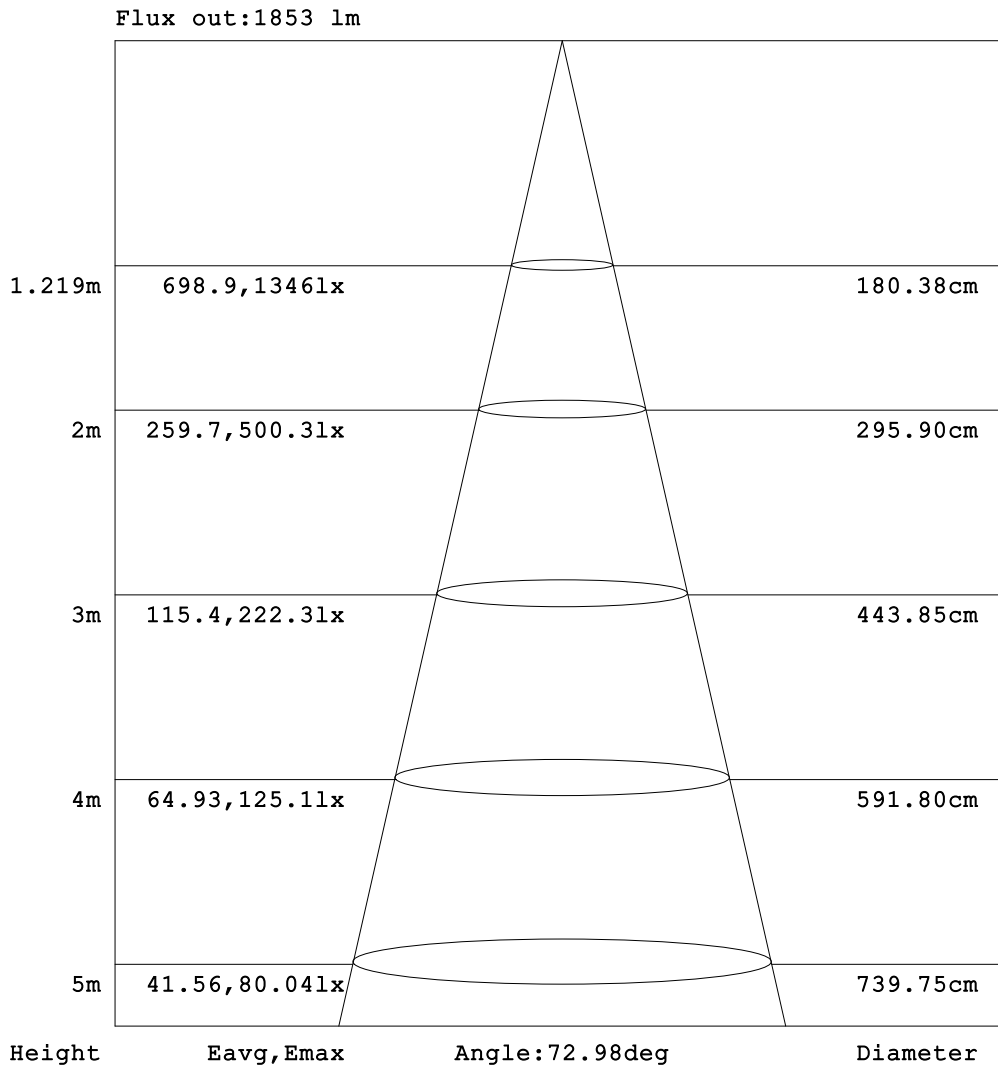


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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.

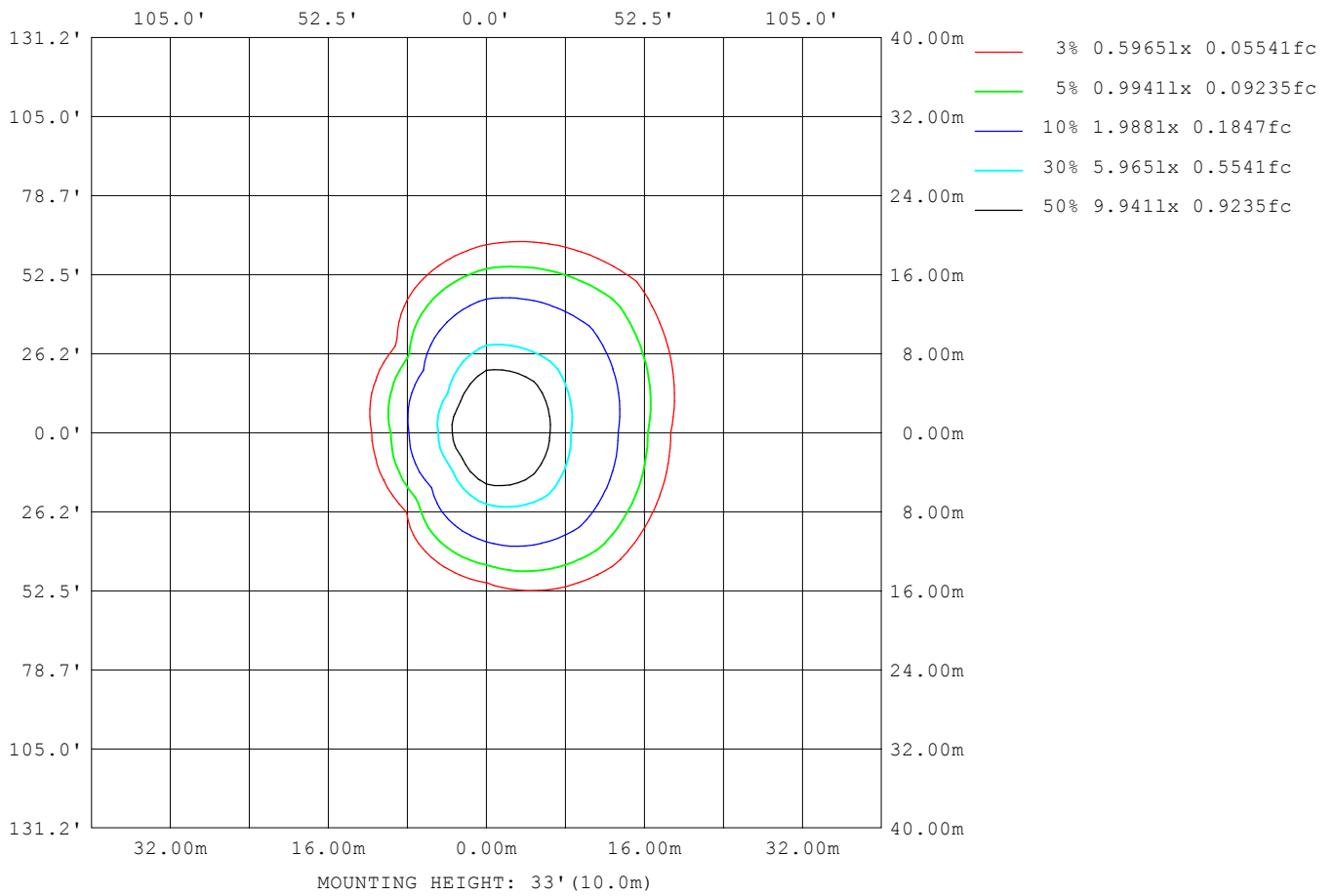
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:24 August 2019

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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	Shielding Angle:

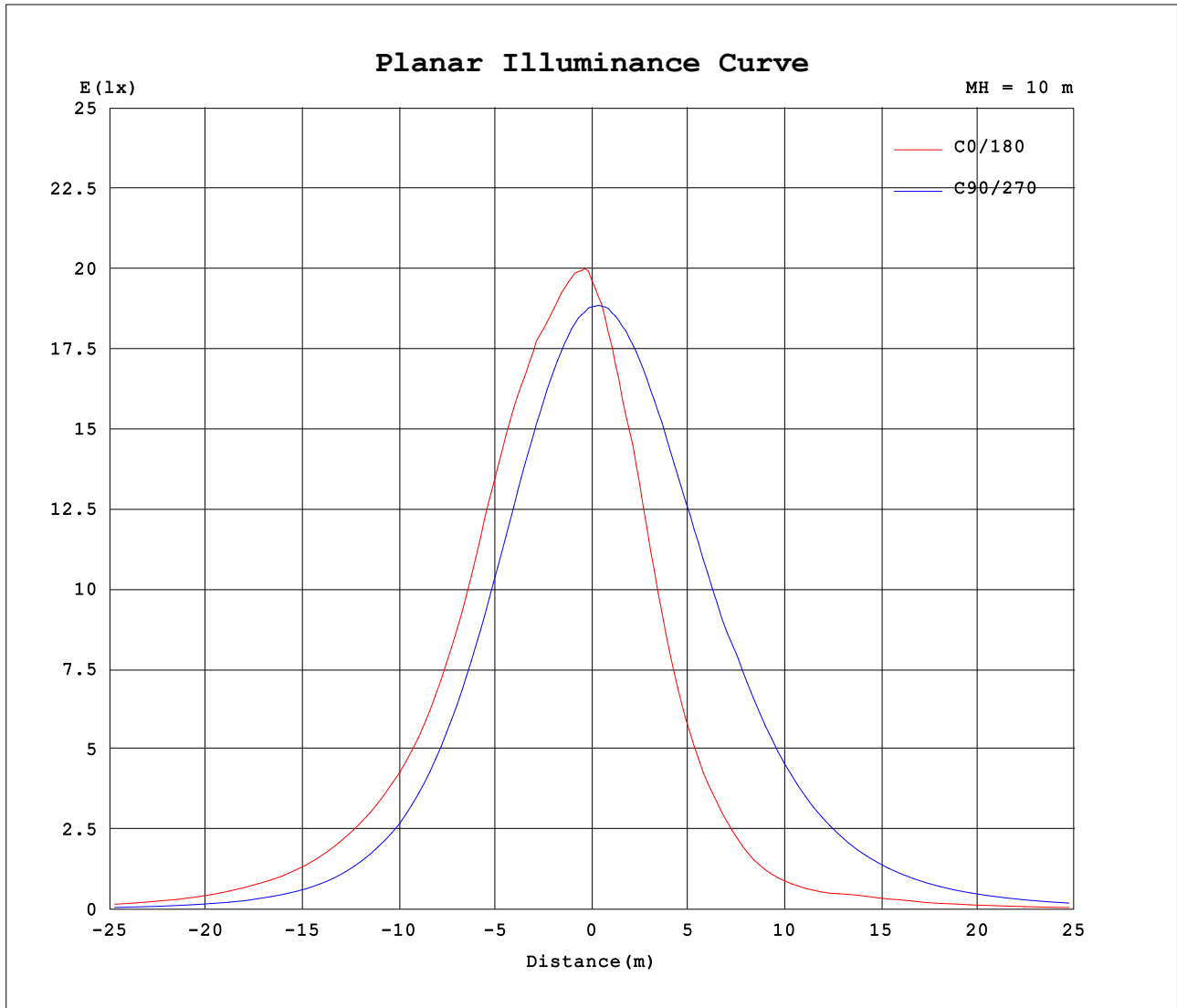
AvgL	cd/m2
L_0~180 (65) av	6853
L_0~180 (75) av	3120
L_0~180 (85) av	2835
L_90~270 (65) av	7869
L_90~270 (75) av	5255
L_90~270 (85) av	4634
L_45 (65) av	9018
L_45 (75) av	6300
L_45 (85) av	3612

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

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.1V I:0.1420A P:31.20W PF:0.9630 Lamp Flux:3856.35x1 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	1963	1902	1881	1905	1963	1902	1881	1905											
5	2009	1966	1850	1769	1818	1793	1896	1991											
10	1989	1942	1796	1594	1615	1657	1891	1999											
15	1991	1904	1722	1397	1392	1489	1871	1995											
20	1974	1848	1628	1148	1115	1280	1831	1967											
25	1920	1794	1501	903	863	1066	1766	1949											
30	1786	1704	1343	684	663	860	1686	1893											
35	1588	1597	1159	500	503	683	1579	1835											
40	1383	1487	959	359	349	533	1465	1737											
45	1202	1289	753	255	254	398	1290	1604											
50	1036	1080	574	195	209	282	1092	1421											
55	841	864	404	166	222	215	882	1221											
60	644	647	272	143	182	181	676	1017											
65	433	437	172	116	146	164	493	808											
70	246	252	99.9	87.7	117	141	340	611											
75	63.1	70.1	46.9	60.3	98.4	111	225	411											
80	0.93	0.95	8.89	33.1	74.9	82.6	143	226											
85	0.14	0.32	0.61	9.86	49.3	57.0	80.2	58.7											
90	0.00	0.15	1.47	2.40	20.3	28.9	32.5	1.44											
95	0.13	0.33	2.80	4.16	2.50	6.67	3.08	0.75											
100	0.47	0.79	4.61	6.67	3.24	3.12	1.29	0.52											
105	0.91	1.42	6.86	9.77	5.77	5.45	2.50	0.79											
110	1.45	2.19	9.54	13.3	8.92	8.40	4.21	1.38											
115	2.08	3.17	12.5	17.0	12.5	11.8	6.40	2.21											
120	2.84	4.44	15.6	20.7	16.5	15.6	9.05	3.28											
125	3.79	6.07	18.7	24.3	20.5	19.5	12.0	4.67											
130	5.09	8.10	21.6	27.5	24.2	23.1	15.1	6.46											
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: