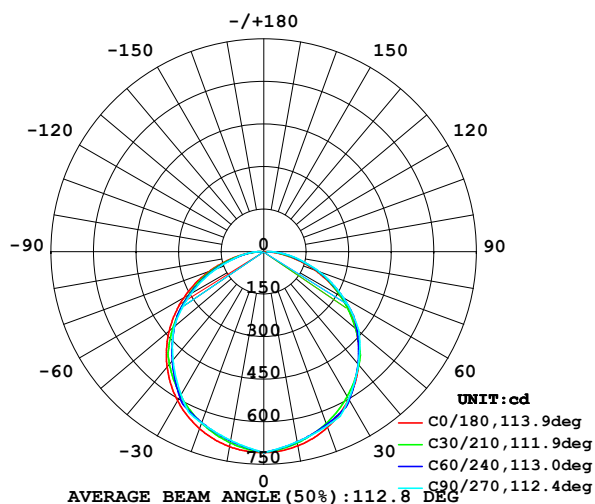


# LUMINAIRE PHOTOMETRIC TEST REPORT

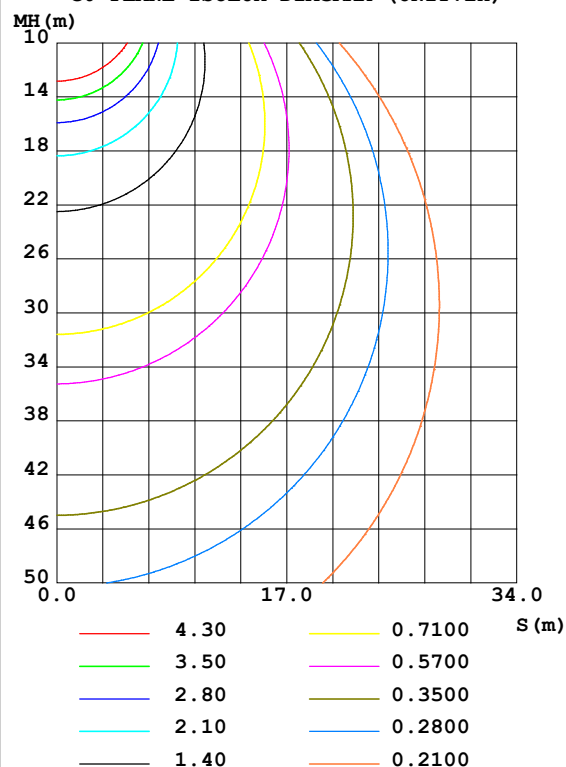
Test:U:120.0V I:0.1247A P:14.87W PF:0.9931 Lamp Flux:626.022x6 lm		
NAME: BPLED-22-15-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.50 lm/W			
MODEL		I <sub>max</sub> (cd)	708.5	S/MH (C0/180)	1.27
NOMINAL POWER(W)	15	LOR(%)	54.0	S/MH (C90/270)	1.23
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	2029.1	η UP,DN(C0-180)	0.0,27.5
NOMINAL FLUX(lm)	626.022	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,26.5
LAMPS INSIDE	6	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	η down (%)	54.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-08-26

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:50%  
Test Distance:8.600m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

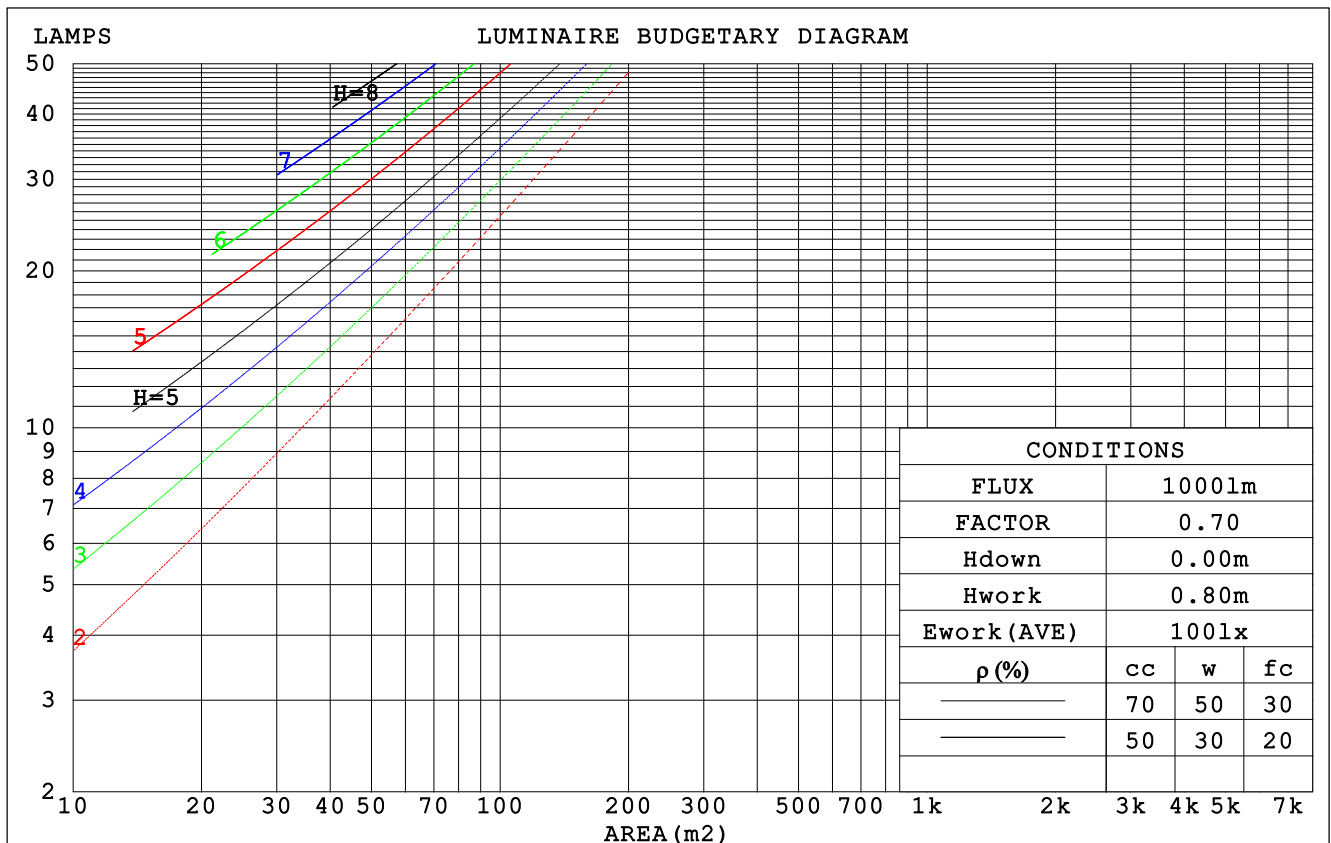
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	704.7	696.7	694.7	697.6	706.1	695.7	692.0	694.8	0- 5	16.77	16.77	0.83,0.45
10	695.2	682.3	681.0	684.0	697.9	680.1	675.4	678.4	5- 10	49.35	66.12	3.26,1.76
15	679.8	665.1	667.2	667.5	683.8	661.6	658.9	659.2	10- 15	80.02	146.1	7.2,3.89
20	658.6	645.3	653.5	648.4	663.9	640.6	642.4	637.5	15- 20	108.2	254.3	12.5,6.77
25	631.9	623.3	639.8	626.8	638.3	617.1	625.9	613.7	20- 25	133.3	387.7	19.1,10.3
30	599.7	599.3	599.5	603.1	607.5	591.7	583.4	587.8	25- 30	154.2	541.9	26.7,14.4
35	562.5	567.0	559.3	571.2	571.4	558.1	540.9	554.0	30- 35	169.1	711.0	35,18.9
40	520.4	519.4	519.1	524.1	530.7	509.6	498.4	505.0	35- 40	178.2	889.2	43.8,23.7
45	474.1	471.0	478.9	476.1	485.2	460.4	455.9	455.2	40- 45	181.7	1071	52.8,28.5
50	423.5	422.1	438.7	427.6	435.6	410.6	413.3	405.0	45- 50	179.7	1251	61.6,33.3
55	369.6	373.4	381.2	379.2	382.2	360.9	354.7	355.1	50- 55	171.8	1422	70.1,37.9
60	312.4	323.3	323.6	329.1	325.5	309.8	296.0	303.9	55- 60	157.4	1580	77.9,42.1
65	253.1	262.7	266.0	267.8	266.3	248.9	237.4	243.7	60- 65	137.6	1717	84.6,45.7
70	193.0	203.8	208.4	208.0	204.8	189.5	178.7	185.2	65- 70	113.7	1831	90.2,48.8
75	134.6	146.7	150.8	149.8	145.6	131.7	120.1	128.4	70- 75	87.02	1918	94.5,51.1
80	80.24	93.06	104.6	94.98	90.20	78.20	82.78	76.10	75- 80	60.05	1978	97.5,52.7
85	34.25	51.34	58.36	52.36	42.06	43.02	45.49	42.01	80- 85	36.09	2014	99.3,53.6
90	5.539	10.24	12.13	10.36	8.857	8.259	8.197	8.356	85- 90	14.79	2029	100,54
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	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	.64	.64	.64	.63	.63	.63	.60	.60	.60	.57	.57	.57	.55	.55	.55	.54
1.0	.56	.53	.51	.55	.52	.51	.52	.51	.49	.50	.49	.47	.48	.47	.46	.45
2.0	.49	.45	.42	.48	.44	.41	.46	.43	.40	.44	.41	.39	.42	.40	.38	.37
3.0	.43	.38	.35	.42	.38	.34	.40	.37	.34	.39	.36	.33	.37	.35	.32	.31
4.0	.38	.33	.29	.37	.32	.29	.36	.32	.29	.34	.31	.28	.33	.30	.28	.27
5.0	.34	.29	.25	.33	.28	.25	.32	.28	.25	.31	.27	.24	.30	.27	.24	.23
6.0	.30	.25	.22	.30	.25	.22	.29	.25	.22	.28	.24	.21	.27	.24	.21	.20
7.0	.27	.23	.19	.27	.22	.19	.26	.22	.19	.25	.22	.19	.25	.21	.19	.18
8.0	.25	.20	.17	.25	.20	.17	.24	.20	.17	.23	.20	.17	.23	.19	.17	.16
9.0	.23	.18	.15	.23	.18	.15	.22	.18	.15	.21	.18	.15	.21	.18	.15	.14
10.0	.21	.17	.14	.21	.17	.14	.20	.17	.14	.20	.16	.14	.19	.16	.14	.13



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## WEC AND CCEC

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						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.172	.098	.031	.168	.096	.030	.161	.092	.029	.154	.089	.029	.148	.086	.028		
2.0	.160	.088	.027	.157	.086	.027	.150	.084	.026	.145	.081	.025	.139	.079	.025		
3.0	.148	.079	.024	.145	.077	.023	.139	.075	.023	.134	.073	.022	.129	.071	.022		
4.0	.136	.071	.021	.133	.070	.021	.128	.068	.020	.124	.066	.020	.119	.065	.020		
5.0	.125	.064	.019	.123	.063	.018	.119	.062	.018	.115	.060	.018	.111	.059	.018		
6.0	.116	.058	.017	.114	.058	.017	.110	.056	.016	.107	.055	.016	.103	.054	.016		
7.0	.108	.053	.015	.106	.053	.015	.103	.052	.015	.099	.051	.015	.096	.050	.015		
8.0	.101	.049	.014	.099	.049	.014	.096	.048	.014	.093	.047	.014	.090	.046	.014		
9.0	.094	.046	.013	.093	.045	.013	.090	.045	.013	.088	.044	.013	.085	.043	.012		
10.0	.089	.043	.012	.087	.042	.012	.085	.042	.012	.083	.041	.012	.080	.040	.012		

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.103	.103	.103	.088	.088	.088	.060	.060	.060	.034	.034	.034	.011	.011	.011	
1.0	.098	.084	.072	.084	.072	.062	.057	.050	.043	.033	.029	.025	.011	.009	.008	
2.0	.093	.071	.053	.080	.061	.045	.055	.042	.032	.032	.025	.019	.010	.008	.006	
3.0	.089	.062	.040	.076	.053	.035	.053	.037	.024	.030	.022	.014	.010	.007	.005	
4.0	.085	.055	.031	.073	.047	.027	.050	.033	.019	.029	.019	.011	.009	.006	.004	
5.0	.081	.049	.025	.070	.042	.022	.048	.030	.016	.028	.017	.009	.009	.006	.003	
6.0	.077	.044	.021	.066	.039	.018	.046	.027	.013	.027	.016	.008	.009	.005	.003	
7.0	.073	.041	.018	.063	.035	.016	.044	.025	.011	.025	.015	.007	.008	.005	.002	
8.0	.070	.038	.015	.060	.033	.013	.042	.023	.010	.024	.014	.006	.008	.004	.002	
9.0	.067	.035	.014	.057	.030	.012	.040	.021	.008	.023	.013	.005	.007	.004	.002	
10.0	.063	.033	.012	.055	.028	.011	.038	.020	.007	.022	.012	.004	.007	.004	.001	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-08-26

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

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		17.2	18.7	17.5	18.9	19.1	17.4	19.0	17.7	19.2	19.4
	3H	18.7	20.1	19.0	20.4	20.6	19.0	20.5	19.3	20.7	20.9
	4H	19.3	20.6	19.6	20.9	21.2	19.7	21.1	20.0	21.3	21.6
	6H	19.7	21.0	20.0	21.3	21.5	20.3	21.6	20.6	21.8	22.1
	8H	19.8	21.1	20.2	21.4	21.7	20.5	21.8	20.9	22.1	22.3
	12H	19.9	21.1	20.3	21.4	21.7	20.7	21.9	21.1	22.2	22.5
	4H	2H	17.9	19.2	18.2	19.5	19.7	18.0	19.4	18.4	19.6
		3H	19.6	20.8	19.9	21.1	21.4	19.8	21.0	20.2	21.3
		4H	20.3	21.4	20.7	21.7	22.0	20.6	21.7	21.0	22.1
		6H	20.9	21.8	21.3	22.2	22.5	21.4	22.3	21.8	22.7
		8H	21.0	21.9	21.5	22.3	22.7	21.7	22.6	22.1	23.0
		12H	21.1	22.0	21.6	22.4	22.8	22.0	22.8	22.4	23.2
	8H	4H	20.6	21.5	21.0	21.9	22.3	20.9	21.8	21.3	22.2
		6H	21.4	22.1	21.8	22.5	22.9	21.8	22.6	22.3	23.0
		8H	21.6	22.3	22.1	22.7	23.2	22.3	23.0	22.7	23.4
		12H	21.8	22.4	22.3	22.9	23.3	22.7	23.3	23.2	23.7
	12H	4H	20.7	21.5	21.1	21.9	22.3	20.9	21.8	21.4	22.2
		6H	21.4	22.1	21.9	22.5	23.0	21.9	22.6	22.4	23.0
		8H	21.8	22.4	22.3	22.8	23.3	22.4	23.0	22.9	23.4
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					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 3756 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.6)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-08-26

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	31	25	21	30	24	21	30	24	21	17
0.80	36	30	26	36	30	26	35	29	26	22
1.00	41	35	31	40	34	31	39	35	30	26
1.25	45	39	35	44	38	35	42	38	34	30
1.50	47	42	38	46	41	38	45	40	37	33
2.00	51	46	43	50	46	42	48	44	42	37
2.50	53	49	46	52	48	45	50	47	44	40
3.00	55	51	48	54	50	48	52	49	46	42
4.00	57	54	51	56	53	51	54	51	49	44
5.00	59	56	54	57	55	53	55	53	51	46
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

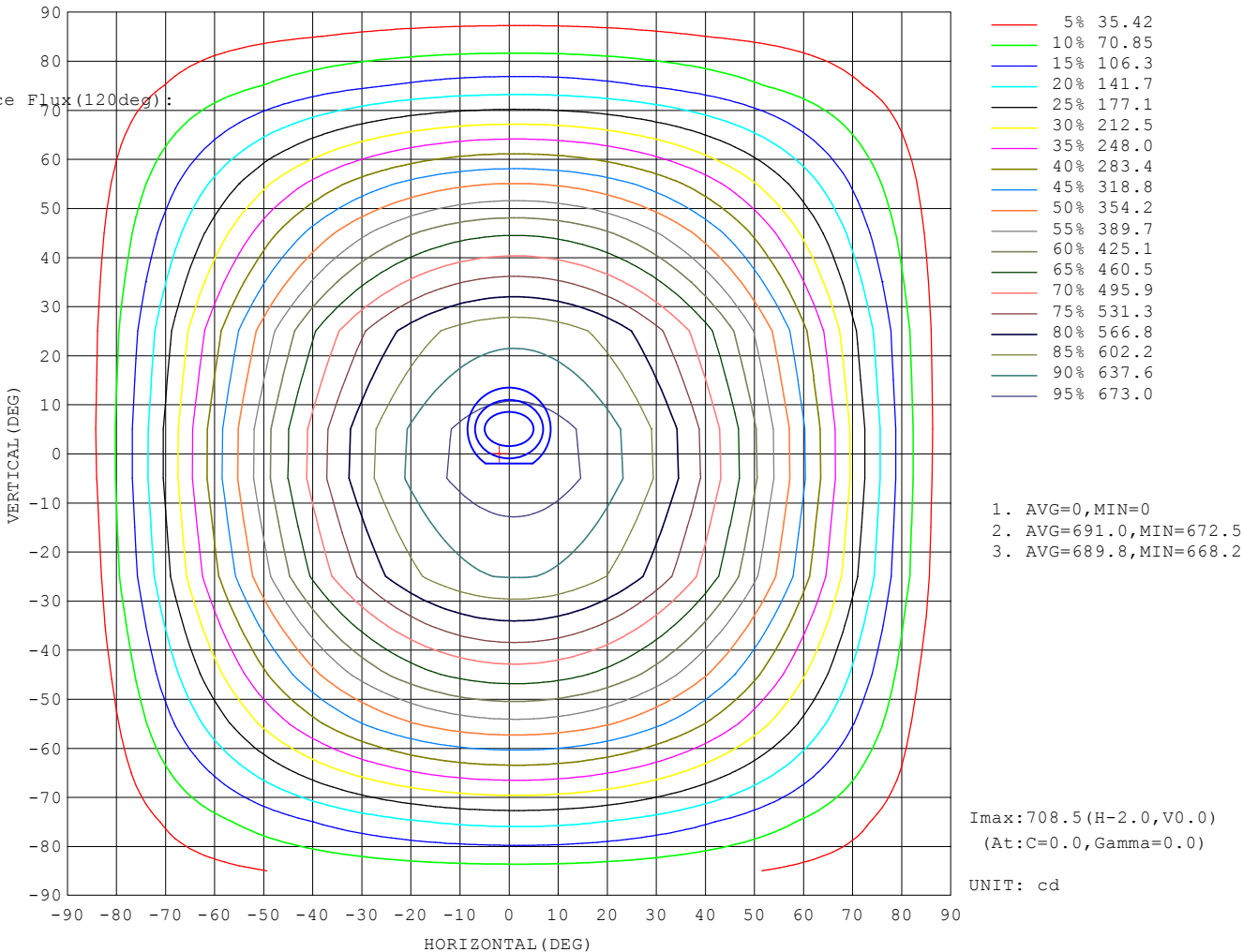
ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

1070.9 lm  
%lum = 52.8%  
%lamp = 28.5%

Conical surface Flux(120deg):

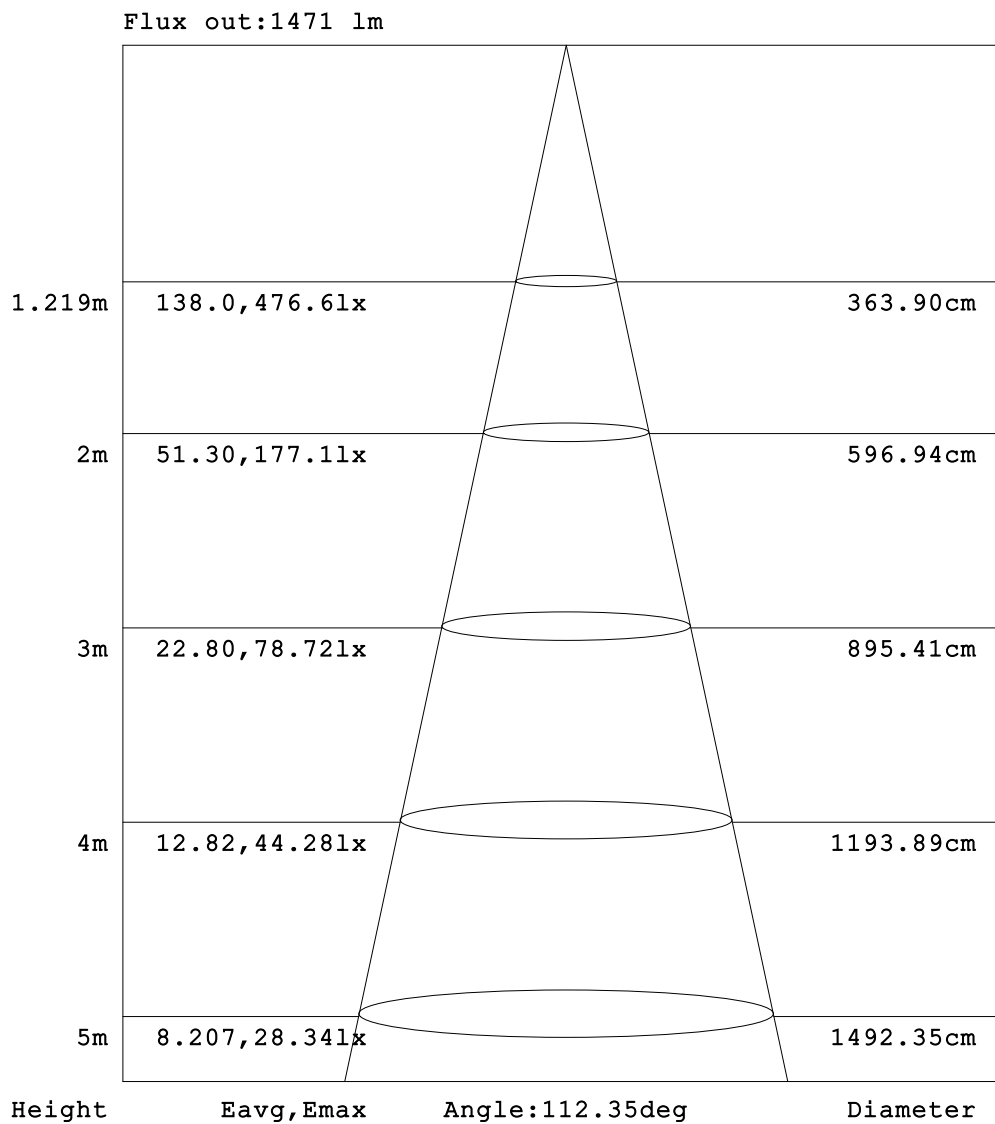
1579.8 lm  
%lum = 77.9%  
%lamp = 42.1%



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-08-26

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:50%  
Test Distance:8.600m [K=1.0000]  
Remarks:

## AAI Figure



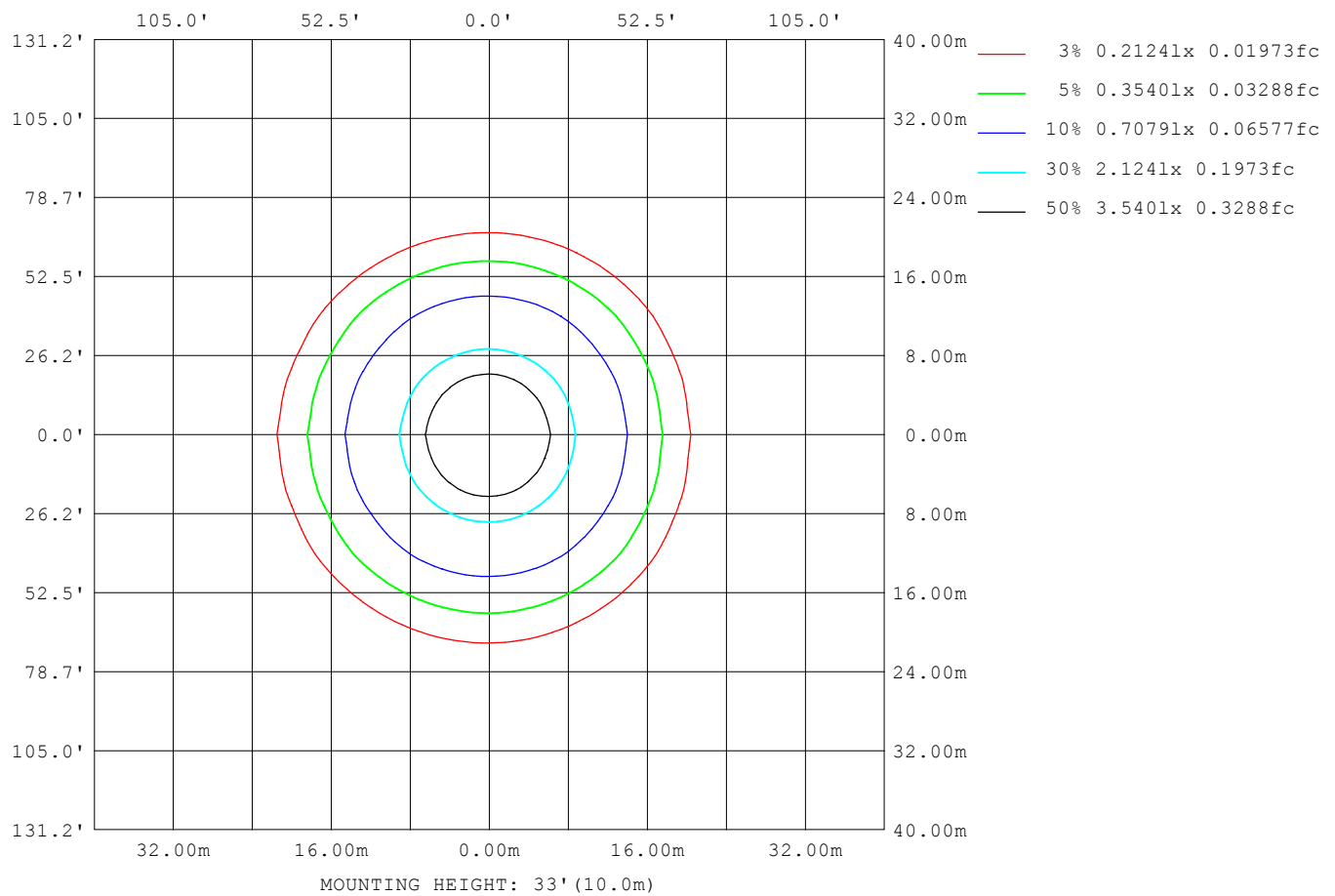
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:50%  
Test Distance:8.600m [K=1.0000]  
Remarks:



## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:120.0V I:0.1247A P:14.87W PF:0.9931 Lamp Flux:626.022x6 lm		
NAME: BPLED-22-15-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

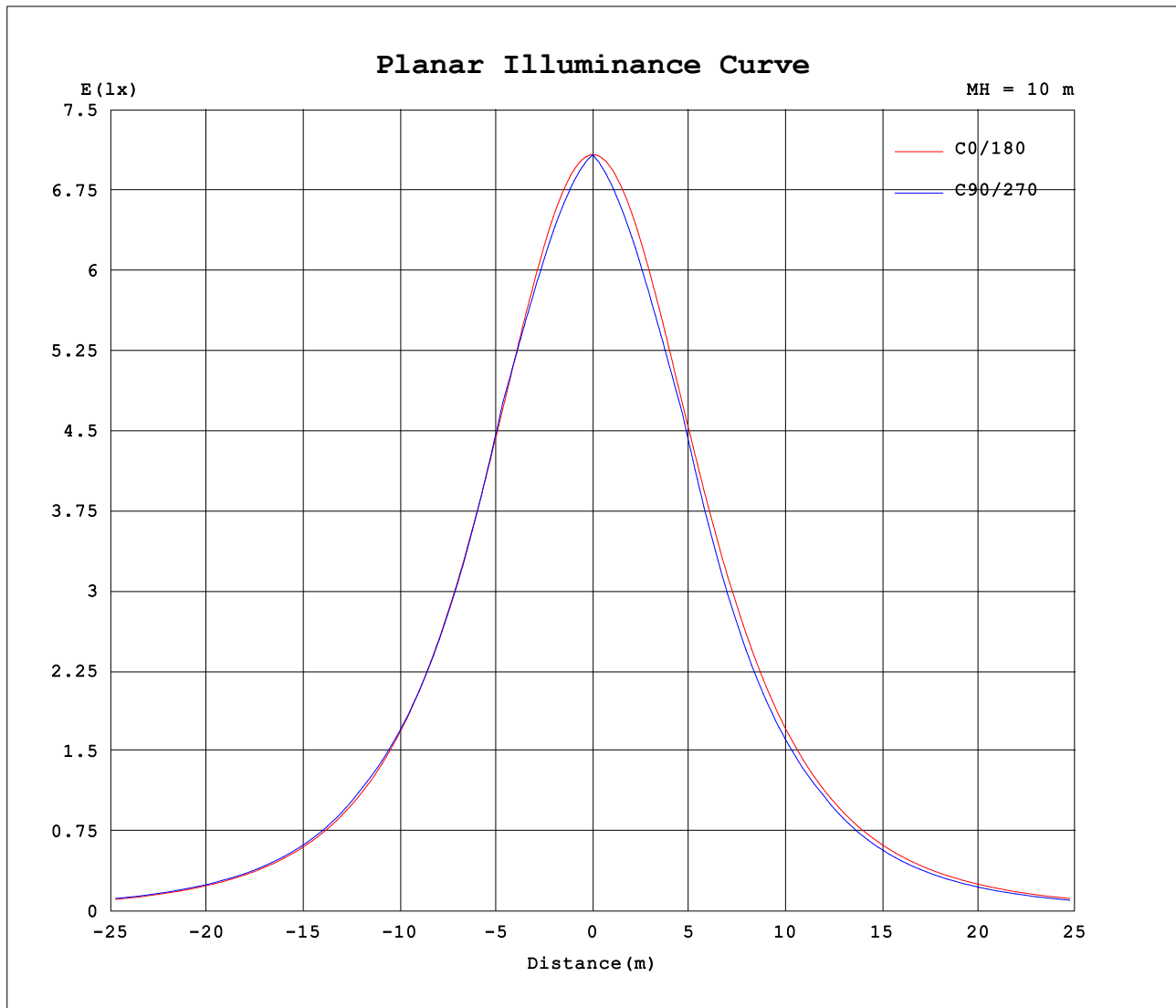
AvgL	cd/m2
L_0~180 (65) av	3353
L_0~180 (75) av	2953
L_0~180 (85) av	2388
L_90~270 (65) av	3249
L_90~270 (75) av	2855
L_90~270 (85) av	3250
L_45 (65) av	3302
L_45 (75) av	2934
L_45 (85) av	2953

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-08-26

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2019-08-26

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity: 50%  
Test Distance: 8.600m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2019-08-26

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2019-08-26

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--3

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2019-08-26

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

### LUMINOUS DISTRIBUTION INTENSITY DATA

Table--4

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2019-08-26

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```