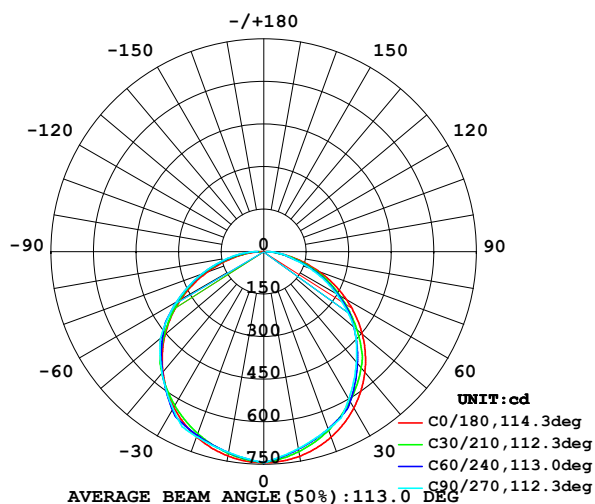


## LUMINAIRE PHOTOMETRIC TEST REPORT

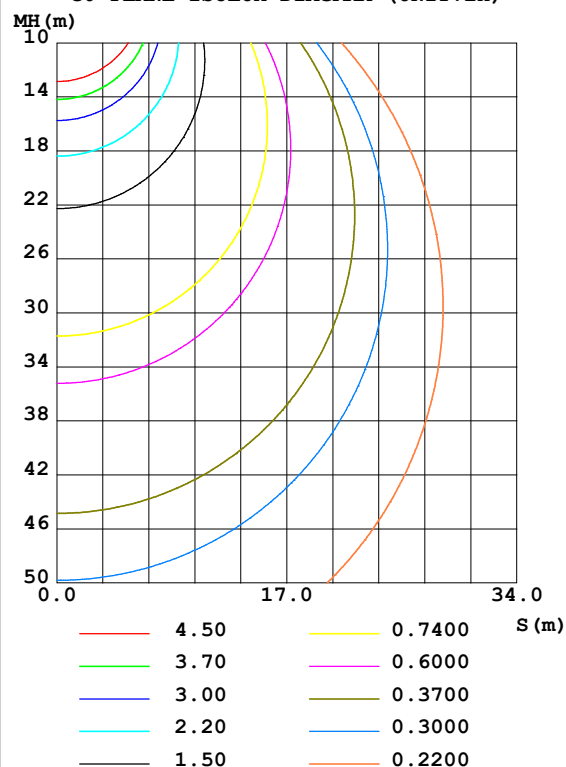
Test:U:120.0V I:0.1326A P:15.84W PF:0.9950 Lamp Flux:1340.9x3 lm		
NAME: BPLED-14-15/D10/U/50/HL	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 134.92 lm/W			
MODEL		Imax(cd)	744.1	S/MH(C0/180)	1.27
NOMINAL POWER(W)	15	LOR(%)	53.1	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	2137.2	$\eta$ UP,DN(C0-180)	0.0,25.3
NOMINAL FLUX(lm)	1340.9	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,27.8
LAMPS INSIDE	3	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	$\eta$ down(%)	53.1	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:2019-12-31

$\gamma$  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:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

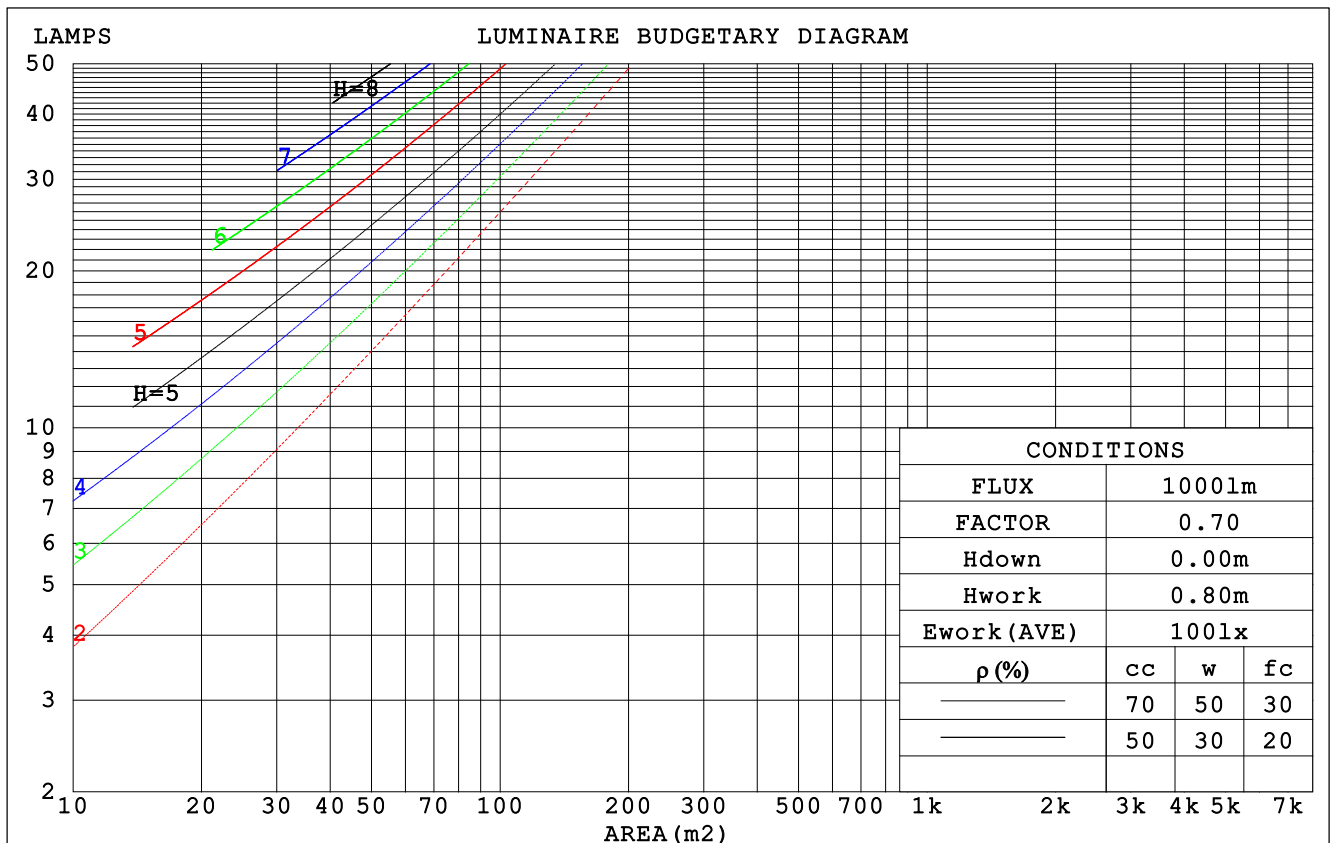
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	741.2	728.9	724.5	728.6	740.8	733.5	731.5	733.9	0- 5	17.61	17.61	0.82,0.44
10	732.1	710.7	704.9	710.0	731.3	720.0	719.0	720.6	5- 10	51.82	69.43	3.25,1.73
15	716.9	689.6	685.3	688.5	715.8	703.4	706.4	704.3	10- 15	84.03	153.5	7.18,3.81
20	695.7	665.9	665.6	664.6	694.4	684.3	693.9	685.5	15- 20	113.6	267.1	12.5,6.64
25	668.8	639.8	646.0	638.1	667.1	662.7	681.3	664.1	20- 25	140.0	407.1	19,10.1
30	636.0	611.6	600.2	609.5	634.5	639.1	640.2	640.7	25- 30	162.0	569.0	26.6,14.1
35	597.9	575.2	554.4	572.9	596.4	606.6	599.2	608.3	30- 35	177.6	746.7	34.9,18.6
40	554.7	523.6	508.5	521.2	553.7	557.8	558.1	559.6	35- 40	187.2	933.9	43.7,23.2
45	506.5	470.8	462.7	468.6	506.2	508.5	517.1	509.8	40- 45	191.0	1125	52.6,28
50	453.7	417.6	416.9	415.6	454.4	458.6	476.0	459.6	45- 50	188.9	1314	61.5,32.7
55	396.4	364.3	356.0	362.6	398.1	408.8	415.6	409.2	50- 55	180.8	1495	69.9,37.2
60	335.9	310.0	295.2	308.5	338.3	357.4	355.2	357.2	55- 60	165.7	1660	77.7,41.3
65	272.8	247.4	234.4	245.7	276.1	292.9	294.8	292.5	60- 65	145.0	1805	84.5,44.9
70	208.8	186.6	173.6	184.6	211.8	230.1	234.4	229.8	65- 70	120.0	1925	90.1,47.9
75	146.4	127.5	112.8	125.2	149.7	168.9	174.0	168.7	70- 75	92.00	2017	94.4,50.1
80	88.13	73.27	78.17	70.98	92.20	110.9	123.5	110.9	75- 80	63.81	2081	97.4,51.7
85	38.26	40.99	43.58	39.69	42.52	63.77	73.00	64.20	80- 85	39.04	2120	99.2,52.7
90	5.655	9.117	8.984	8.855	9.284	17.34	22.50	18.20	85- 90	17.07	2137	100,53.1
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:2019-12-31

$\gamma$  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	.63	.63	.63	.62	.62	.62	.59	.59	.59	.57	.57	.57	.54	.54	.54	.53
1.0	.55	.53	.50	.54	.52	.50	.51	.50	.48	.49	.48	.47	.47	.46	.45	.44
2.0	.48	.44	.41	.47	.43	.40	.45	.42	.39	.43	.41	.39	.41	.39	.38	.36
3.0	.42	.37	.34	.41	.37	.34	.39	.36	.33	.38	.35	.32	.37	.34	.32	.31
4.0	.37	.32	.29	.36	.32	.28	.35	.31	.28	.34	.30	.28	.33	.30	.27	.26
5.0	.33	.28	.25	.32	.28	.24	.31	.27	.24	.30	.27	.24	.29	.26	.24	.22
6.0	.30	.25	.21	.29	.25	.21	.28	.24	.21	.27	.24	.21	.26	.23	.21	.20
7.0	.27	.22	.19	.26	.22	.19	.26	.22	.19	.25	.21	.19	.24	.21	.18	.17
8.0	.25	.20	.17	.24	.20	.17	.23	.19	.17	.23	.19	.17	.22	.19	.16	.15
9.0	.23	.18	.15	.22	.18	.15	.22	.18	.15	.21	.17	.15	.20	.17	.15	.14
10.0	.21	.17	.14	.20	.16	.14	.20	.16	.14	.19	.16	.14	.19	.16	.13	.13



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-12-31

$\gamma$  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	.170	.097	.031	.166	.095	.030	.159	.091	.029	.152	.088	.028	.146	.085	.027		
2.0	.158	.087	.027	.155	.085	.026	.148	.083	.026	.143	.080	.025	.137	.078	.024		
3.0	.146	.077	.023	.143	.076	.023	.137	.074	.023	.132	.072	.022	.127	.070	.022		
4.0	.134	.070	.020	.131	.069	.020	.126	.067	.020	.122	.065	.020	.118	.064	.019		
5.0	.124	.063	.018	.121	.062	.018	.117	.061	.018	.113	.060	.018	.109	.058	.018		
6.0	.114	.057	.016	.112	.057	.016	.109	.056	.016	.105	.055	.016	.102	.053	.016		
7.0	.106	.053	.015	.105	.052	.015	.101	.051	.015	.098	.050	.015	.095	.049	.014		
8.0	.099	.049	.014	.098	.048	.014	.095	.047	.013	.092	.046	.013	.089	.046	.013		
9.0	.093	.045	.013	.092	.045	.013	.089	.044	.012	.086	.043	.012	.084	.042	.012		
10.0	.087	.042	.012	.086	.042	.012	.084	.041	.012	.081	.040	.011	.079	.040	.011		

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	.101	.101	.101	.086	.086	.086	.059	.059	.059	.034	.034	.034	.011	.011	.011	
1.0	.096	.083	.071	.082	.071	.061	.056	.049	.042	.032	.028	.025	.010	.009	.008	
2.0	.092	.070	.052	.079	.060	.045	.054	.042	.031	.031	.024	.018	.010	.008	.006	
3.0	.088	.061	.039	.075	.052	.034	.052	.036	.024	.030	.021	.014	.010	.007	.005	
4.0	.084	.054	.031	.072	.046	.027	.049	.032	.019	.029	.019	.011	.009	.006	.004	
5.0	.080	.048	.025	.068	.042	.022	.047	.029	.015	.027	.017	.009	.009	.006	.003	
6.0	.076	.044	.021	.065	.038	.018	.045	.027	.013	.026	.016	.008	.008	.005	.002	
7.0	.072	.040	.018	.062	.035	.015	.043	.024	.011	.025	.014	.006	.008	.005	.002	
8.0	.069	.037	.015	.059	.032	.013	.041	.023	.009	.024	.013	.006	.008	.004	.002	
9.0	.066	.034	.013	.056	.030	.012	.039	.021	.008	.023	.012	.005	.007	.004	.002	
10.0	.062	.032	.012	.054	.028	.010	.037	.020	.007	.022	.012	.004	.007	.004	.001	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-12-31

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	12.8	14.4	13.1	14.6	14.8	12.4	14.0	12.7	14.2	14.4
3H	14.3	15.8	14.6	16.0	16.2	13.8	15.2	14.1	15.4	15.7
4H	14.9	16.3	15.3	16.5	16.8	14.3	15.6	14.6	15.9	16.1
6H	15.4	16.7	15.7	16.9	17.2	14.7	15.9	15.0	16.2	16.5
8H	15.5	16.7	15.9	17.0	17.3	14.8	16.1	15.2	16.4	16.7
12H	15.6	16.8	15.9	17.1	17.4	15.0	16.2	15.3	16.5	16.8
4H 2H	13.4	14.7	13.7	15.0	15.2	13.1	14.4	13.4	14.7	14.9
3H	15.1	16.3	15.4	16.5	16.9	14.6	15.8	14.9	16.1	16.4
4H	15.8	16.9	16.2	17.2	17.5	15.2	16.3	15.6	16.6	16.9
6H	16.3	17.3	16.7	17.7	18.0	15.7	16.7	16.1	17.0	17.4
8H	16.5	17.4	17.0	17.8	18.2	15.9	16.8	16.4	17.2	17.6
12H	16.7	17.5	17.1	17.9	18.3	16.2	17.0	16.6	17.4	17.8
8H 4H	16.0	16.9	16.4	17.3	17.6	15.4	16.3	15.9	16.7	17.1
6H	16.7	17.4	17.1	17.8	18.3	16.1	16.9	16.6	17.3	17.7
8H	17.0	17.6	17.4	18.1	18.5	16.5	17.1	16.9	17.6	18.0
12H	17.2	17.7	17.6	18.2	18.7	16.8	17.4	17.3	17.8	18.3
12H 4H	16.0	16.8	16.4	17.2	17.6	15.5	16.3	15.9	16.7	17.1
6H	16.7	17.4	17.2	17.8	18.3	16.2	16.9	16.6	17.3	17.7
8H	17.0	17.6	17.5	18.1	18.6	16.6	17.2	17.1	17.6	18.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.4				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 4023 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.8)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-12-31

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) $k(RI) \times RCR = 5$									
$k = 0.60$	30	24	20	30	24	20	29	24	20	17
0.80	36	29	25	35	29	25	34	29	25	21
1.00	40	34	30	39	34	30	38	35	30	26
1.25	44	38	34	43	38	34	42	37	34	30
1.50	46	41	37	46	41	37	44	40	37	32
2.00	50	46	42	49	45	42	47	44	41	37
2.50	52	48	45	51	47	44	49	46	43	39
3.00	54	50	47	53	49	47	51	48	46	41
4.00	56	53	51	55	52	50	53	50	48	44
5.00	58	55	53	56	54	52	54	52	50	45
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: 2019-12-31

$\gamma$  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):

1124.9 lm

%lum = 52.6%

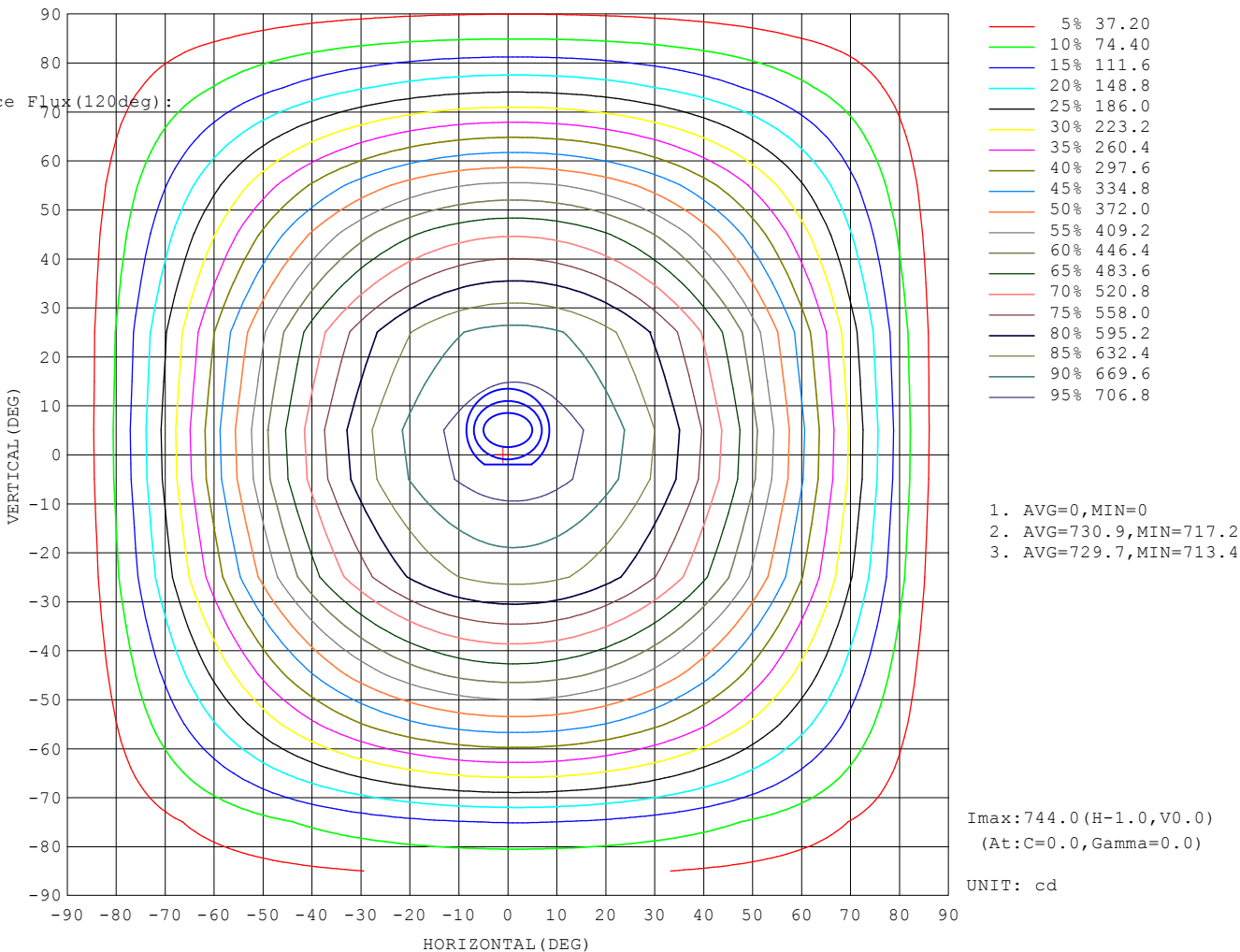
%lamp = 28.0%

Conical surface Flux(120deg):

1660.3 lm

%lum = 77.7%

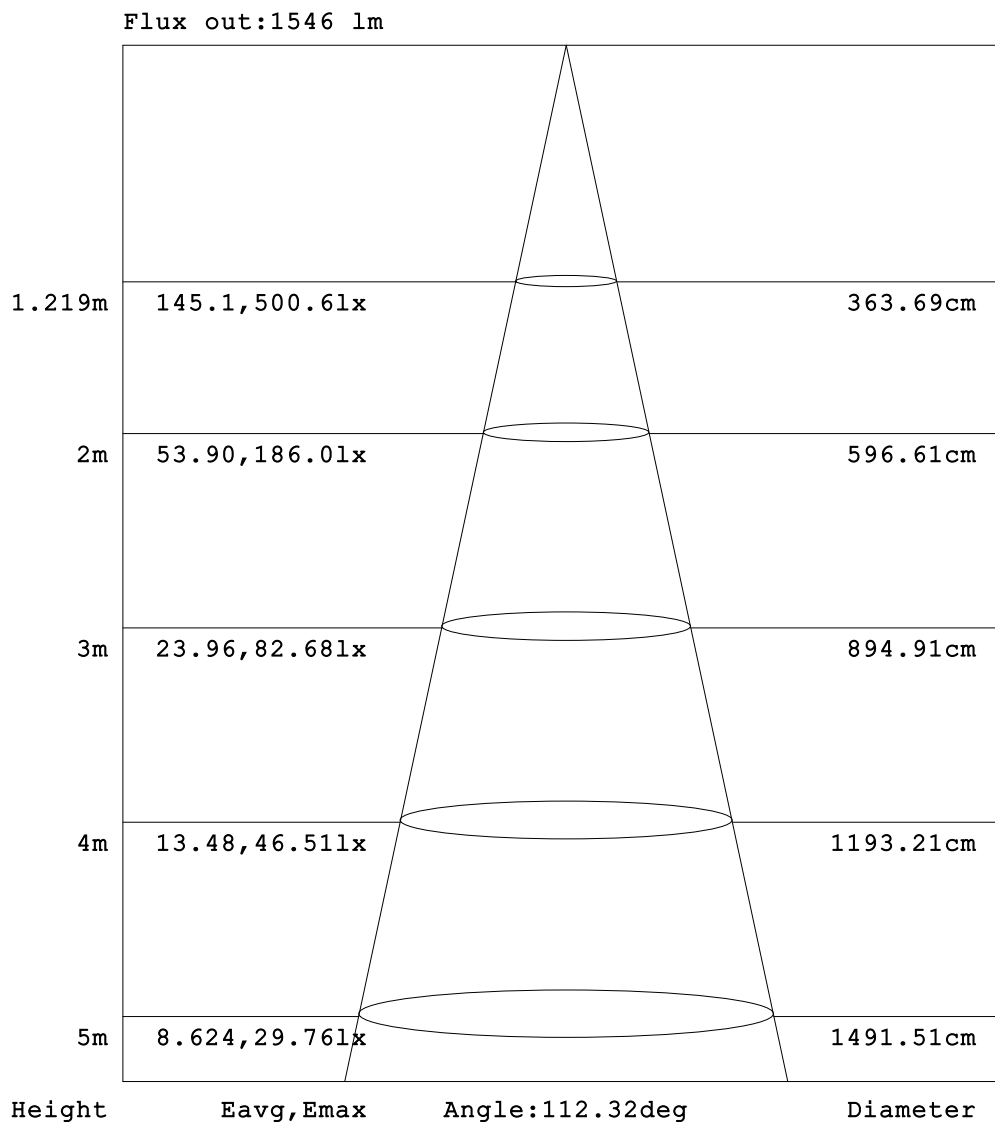
%lamp = 41.3%



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-12-31

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



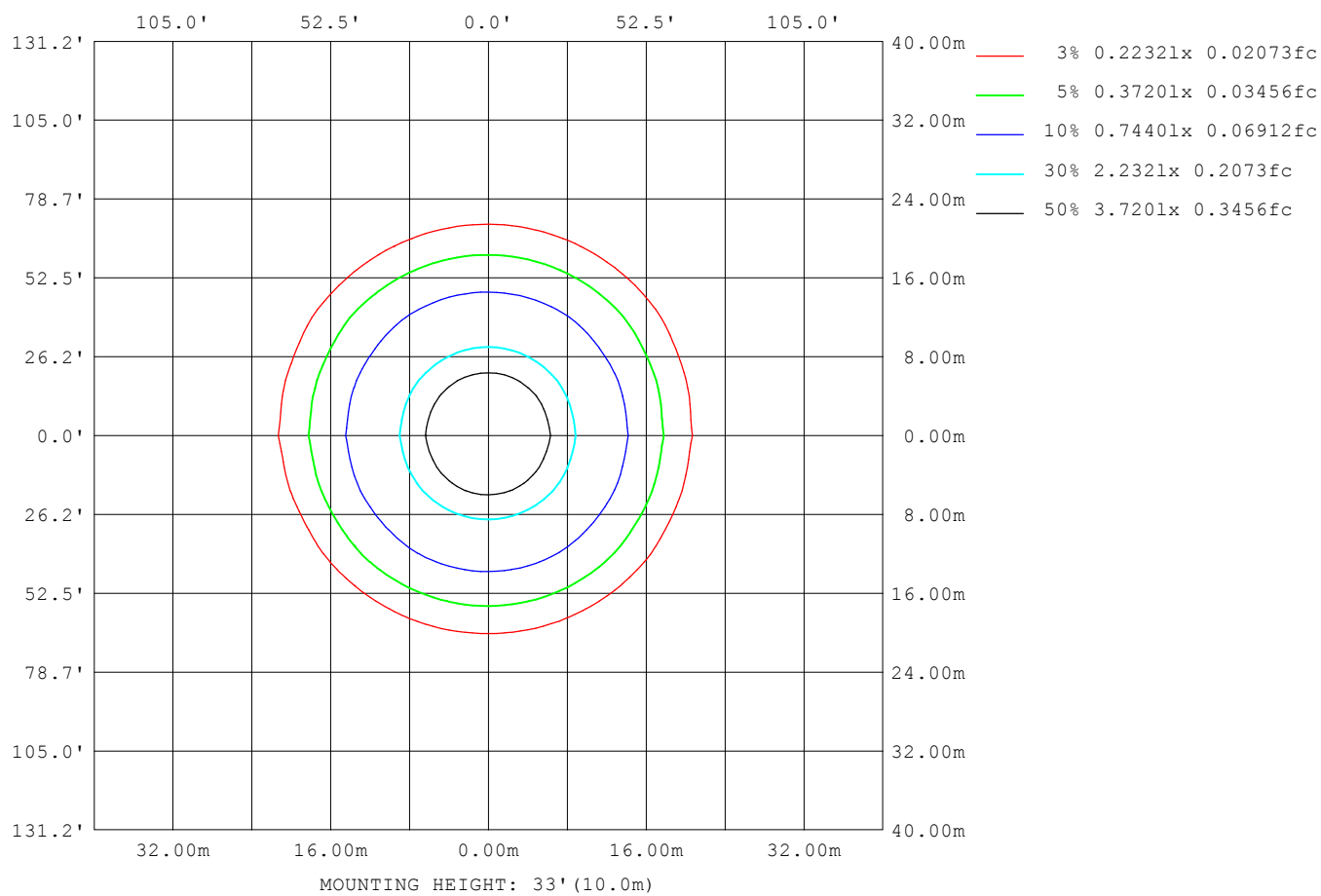
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-12-31

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:



ISOLUX DIAGRAM



C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 5.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Temperature:25DEG	Humidity:50%
Operators:	Test Distance:8.600m [K=1.0000]
Test Date:2019-12-31	Remarks:

## LED Avg.L Report

Test:U:120.0V I:0.1326A P:15.84W PF:0.9950 Lamp Flux:1340.9x3 lm		
NAME: BPLED14-15W-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

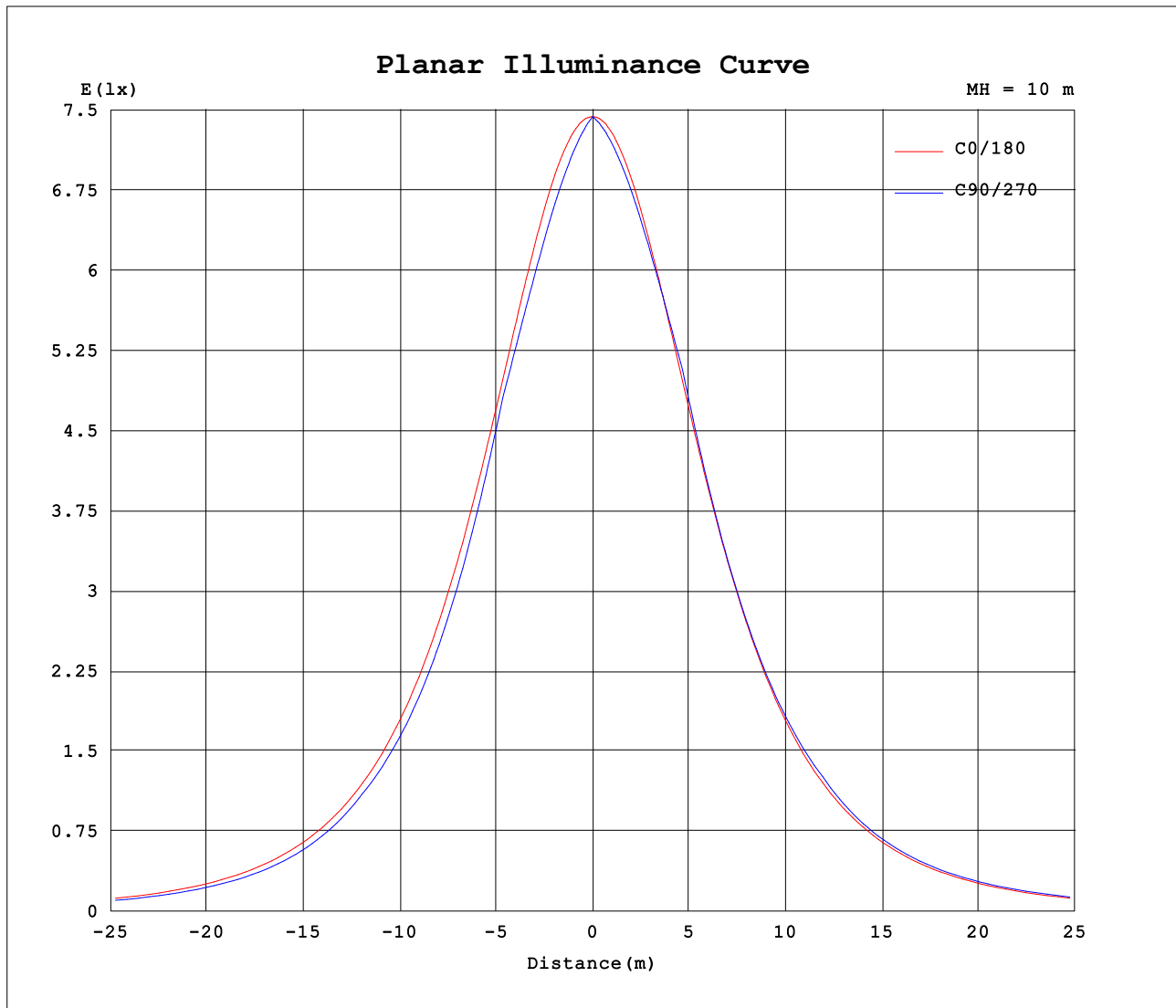
AvgL	cd/m2
L_0~180 (65) av	999
L_0~180 (75) av	880
L_0~180 (85) av	713
L_90~270 (65) av	963
L_90~270 (75) av	852
L_90~270 (85) av	1029
L_45 (65) av	982
L_45 (75) av	877
L_45 (85) av	921

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-12-31

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: 2019-12-31

$\gamma$  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: 2019-12-31

```

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: 2019-12-31

```

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:

```

UNIT: cd

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 5.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Temperature:25DEG	Humidity:50%
Operators:	Test Distance:8.600m [K=1.0000]
Test Date:2019-12-31	Remarks:

```

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:2019-12-31

```

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

```