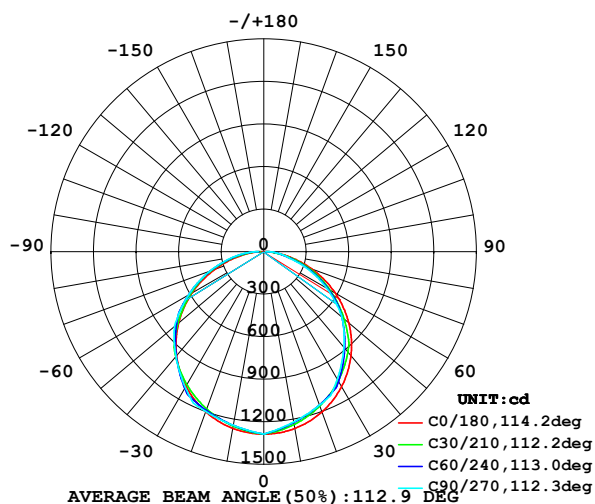


LUMINAIRE PHOTOMETRIC TEST REPORT

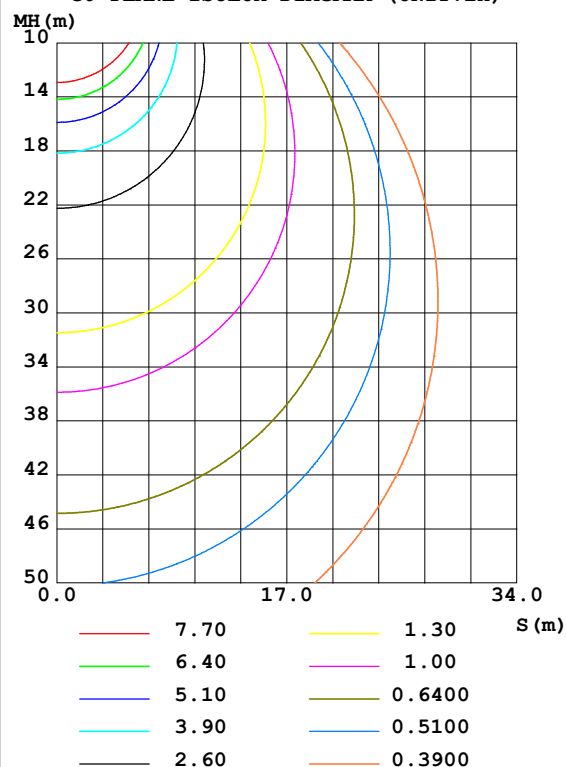
Test:U:120.0V I:0.2435A P:29.17W PF:0.9983 Lamp Flux:1025.69x3 lm		
NAME: BPLED-14-29/D10/U/50/HL	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 126.72 lm/W			
MODEL		Imax(cd)	1287	S/MH(C0/180)	1.27
NOMINAL POWER(W)	29	LOR(%)	120.1	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	3696.1	η UP,DN(C0-180)	0.0,57.3
NOMINAL FLUX(lm)	1025.69	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,62.8
LAMPS INSIDE	3	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	η down(%)	120.1	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

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:

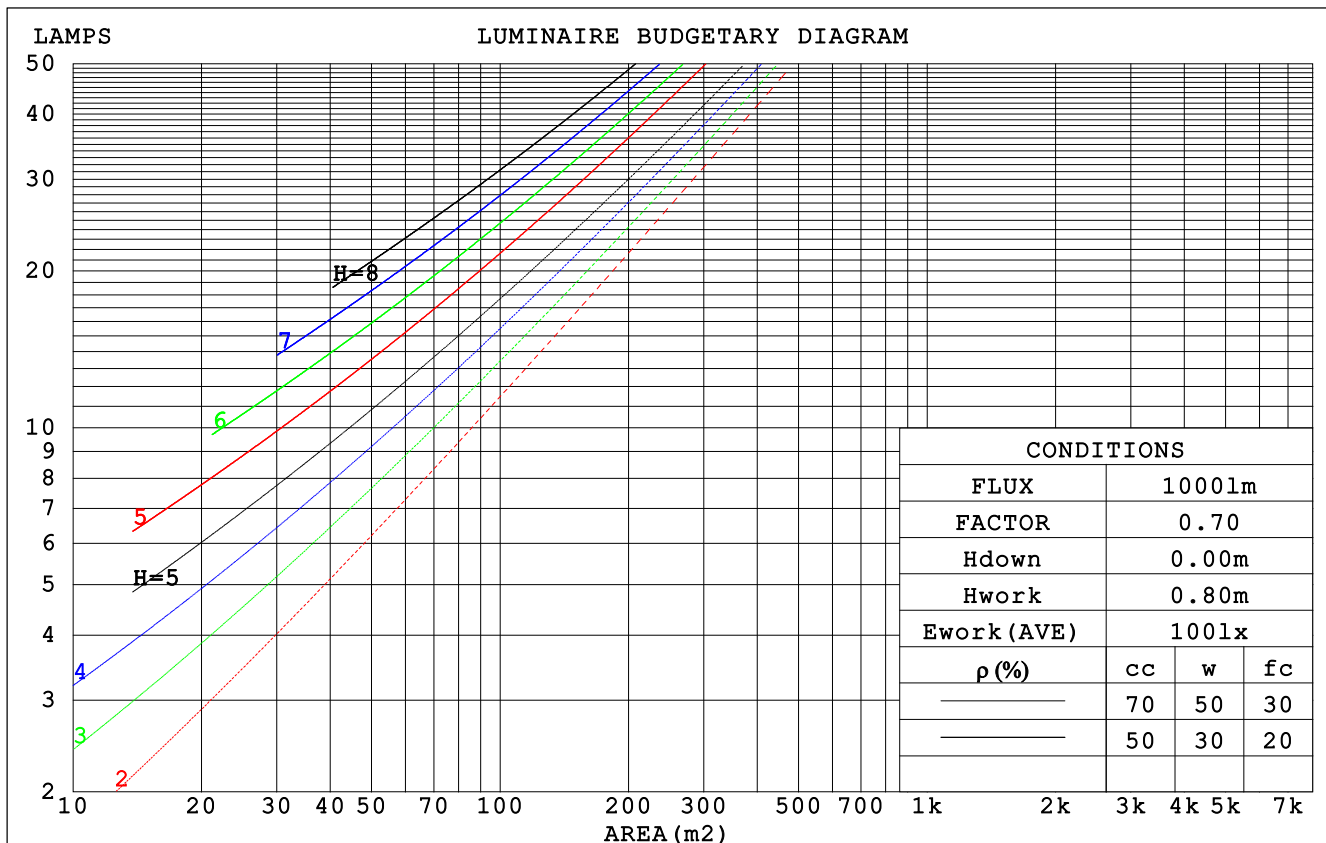
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1282	1261	1253	1260	1281	1269	1265	1269	0- 5	30.46	30.46	0.82,0.99
10	1266	1229	1219	1228	1265	1245	1243	1246	5- 10	89.63	120.1	3.25,3.9
15	1239	1193	1186	1191	1238	1217	1221	1218	10- 15	145.3	265.4	7.18,8.63
20	1203	1151	1152	1150	1201	1183	1200	1185	15- 20	196.5	461.9	12.5,15
25	1155	1106	1118	1104	1154	1146	1178	1148	20- 25	242.1	704.0	19,22.9
30	1099	1057	1039	1055	1097	1105	1107	1107	25- 30	280.1	984.1	26.6,32
35	1033	994.0	959.5	992.1	1032	1049	1036	1051	30- 35	307.1	1291	34.9,42
40	957.6	904.7	880.1	902.7	957.3	964.5	964.5	966.1	35- 40	323.7	1615	43.7,52.5
45	874.4	813.7	800.7	811.6	874.8	878.9	893.4	879.9	40- 45	330.1	1945	52.6,63.2
50	783.4	722.1	721.4	719.8	784.8	792.5	822.3	792.8	45- 50	326.5	2272	61.5,73.8
55	685.3	630.5	616.2	627.9	687.4	706.1	718.0	705.7	50- 55	312.4	2584	69.9,84
60	581.1	537.2	511.1	534.2	584.1	616.9	613.8	615.6	55- 60	286.3	2870	77.7,93.3
65	472.5	428.9	406.0	425.7	476.6	505.8	509.6	504.4	60- 65	250.7	3121	84.4,101
70	362.2	323.7	300.9	320.2	367.0	397.5	405.4	396.3	65- 70	207.6	3329	90.1,108
75	253.9	221.2	195.8	217.6	259.9	292.0	301.2	291.3	70- 75	159.4	3488	94.4,113
80	153.6	127.4	135.7	123.8	159.4	192.1	213.9	191.7	75- 80	110.6	3599	97.4,117
85	66.28	71.25	75.61	69.16	73.60	110.7	126.7	111.2	80- 85	67.73	3666	99.2,119
90	9.799	15.86	15.54	15.35	16.07	30.56	39.43	31.84	85- 90	29.66	3696	100,120
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

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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			Coefficients of Utilization(CU)												
0.0	1.43	1.43	1.43	1.40	1.40	1.40	1.33	1.33	1.33	1.28	1.28	1.28	1.23	1.23	1.23	1.20
1.0	1.24	1.19	1.14	1.21	1.17	1.12	1.16	1.12	1.09	1.12	1.08	1.05	1.07	1.05	1.02	.00
2.0	1.08	.99	.92	1.06	.98	.91	1.01	.95	.89	.97	.92	.87	.94	.89	.85	.82
3.0	.95	.85	.77	.93	.83	.76	.89	.81	.74	.86	.79	.73	.83	.77	.72	.69
4.0	.84	.73	.65	.82	.72	.64	.79	.70	.63	.76	.69	.62	.74	.67	.62	.59
5.0	.75	.64	.56	.73	.63	.55	.71	.62	.55	.68	.60	.54	.66	.59	.53	.51
6.0	.67	.56	.48	.66	.56	.48	.64	.55	.48	.62	.54	.47	.60	.53	.47	.44
7.0	.61	.50	.43	.60	.50	.43	.58	.49	.42	.56	.48	.42	.55	.47	.42	.39
8.0	.55	.45	.38	.55	.45	.38	.53	.44	.38	.52	.43	.37	.50	.43	.37	.35
9.0	.51	.41	.34	.50	.41	.34	.49	.40	.34	.47	.39	.34	.46	.39	.34	.31
10.0	.47	.37	.31	.46	.37	.31	.45	.37	.31	.44	.36	.31	.43	.36	.30	.28



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:

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	.384	.218	.069	.375	.214	.068	.359	.206	.066	.345	.199	.064	.331	.192	.062		
2.0	.357	.196	.060	.350	.193	.059	.336	.187	.058	.323	.181	.057	.311	.176	.055		
3.0	.329	.175	.052	.322	.173	.052	.310	.168	.051	.298	.164	.050	.288	.159	.049		
4.0	.303	.157	.046	.297	.155	.046	.286	.152	.045	.276	.148	.045	.266	.145	.044		
5.0	.279	.142	.041	.274	.141	.041	.264	.138	.041	.255	.135	.040	.247	.132	.040		
6.0	.259	.130	.037	.254	.128	.037	.245	.126	.037	.237	.123	.036	.230	.121	.036		
7.0	.241	.119	.034	.236	.118	.034	.229	.116	.033	.221	.113	.033	.214	.111	.033		
8.0	.224	.110	.031	.221	.109	.031	.214	.107	.031	.207	.105	.030	.201	.103	.030		
9.0	.210	.102	.028	.207	.101	.028	.201	.099	.028	.195	.098	.028	.189	.096	.028		
10.0	.198	.095	.026	.195	.094	.026	.189	.093	.026	.184	.091	.026	.179	.090	.026		

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	.229	.229	.229	.196	.196	.196	.133	.133	.133	.077	.077	.077	.025	.025	.025	
1.0	.217	.187	.160	.186	.161	.138	.127	.111	.096	.073	.064	.056	.023	.021	.018	
2.0	.208	.158	.117	.178	.136	.101	.122	.094	.070	.070	.055	.041	.023	.018	.013	
3.0	.198	.137	.089	.170	.118	.077	.117	.082	.054	.067	.048	.032	.022	.016	.010	
4.0	.189	.121	.070	.162	.105	.060	.112	.073	.043	.065	.043	.025	.021	.014	.008	
5.0	.180	.109	.056	.155	.094	.049	.107	.066	.035	.062	.039	.020	.020	.013	.007	
6.0	.172	.099	.047	.147	.086	.041	.102	.060	.029	.059	.035	.017	.019	.012	.006	
7.0	.163	.091	.040	.140	.079	.035	.097	.055	.024	.056	.032	.015	.018	.011	.005	
8.0	.155	.084	.034	.134	.073	.030	.093	.051	.021	.054	.030	.013	.017	.010	.004	
9.0	.148	.078	.030	.128	.067	.026	.088	.047	.019	.052	.028	.011	.017	.009	.004	
10.0	.141	.073	.027	.122	.063	.023	.084	.044	.017	.049	.026	.010	.016	.009	.003	

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	14.7	16.3	15.0	16.5	16.7	14.3	15.9	14.6	16.1	16.3
3H	16.2	17.7	16.5	17.9	18.1	15.7	17.1	16.0	17.4	17.6
4H	16.8	18.2	17.2	18.5	18.7	16.2	17.5	16.5	17.8	18.0
6H	17.3	18.6	17.6	18.8	19.1	16.6	17.9	16.9	18.1	18.4
8H	17.4	18.7	17.8	18.9	19.2	16.8	18.0	17.1	18.3	18.6
12H	17.5	18.7	17.8	19.0	19.3	16.9	18.1	17.3	18.4	18.7
4H 2H	15.3	16.6	15.6	16.9	17.1	15.0	16.3	15.3	16.6	16.8
3H	17.0	18.2	17.3	18.5	18.8	16.5	17.7	16.9	18.0	18.3
4H	17.7	18.8	18.1	19.1	19.4	17.1	18.2	17.5	18.5	18.8
6H	18.3	19.2	18.7	19.6	19.9	17.6	18.6	18.0	18.9	19.3
8H	18.4	19.3	18.9	19.7	20.1	17.9	18.8	18.3	19.1	19.5
12H	18.6	19.4	19.0	19.8	20.2	18.1	18.9	18.5	19.3	19.7
8H 4H	17.9	18.8	18.3	19.2	19.6	17.4	18.3	17.8	18.6	19.0
6H	18.6	19.4	19.0	19.8	20.2	18.0	18.8	18.5	19.2	19.6
8H	18.9	19.5	19.3	20.0	20.4	18.4	19.1	18.8	19.5	19.9
12H	19.1	19.6	19.5	20.1	20.6	18.7	19.3	19.2	19.7	20.2
12H 4H	17.9	18.7	18.3	19.1	19.5	17.4	18.2	17.8	18.6	19.0
6H	18.7	19.3	19.1	19.7	20.2	18.1	18.8	18.6	19.2	19.7
8H	19.0	19.5	19.4	20.0	20.5	18.5	19.1	19.0	19.5	20.0
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 3077 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.9)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	68	54	46	68	54	46	66	54	46	38
0.80	80	66	57	79	66	57	77	65	57	48
1.00	91	77	68	89	76	68	86	78	67	58
1.25	99	86	78	97	85	77	94	84	76	67
1.50	105	93	84	103	92	84	99	90	83	73
2.00	113	103	95	111	101	94	107	99	92	83
2.50	118	109	101	116	107	100	111	104	98	88
3.00	122	114	107	120	112	106	115	108	103	93
4.00	127	120	114	124	118	113	119	114	109	99
5.00	130	124	119	127	122	117	122	117	113	102
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

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:

ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

1945 lm

%lum = 52.6%

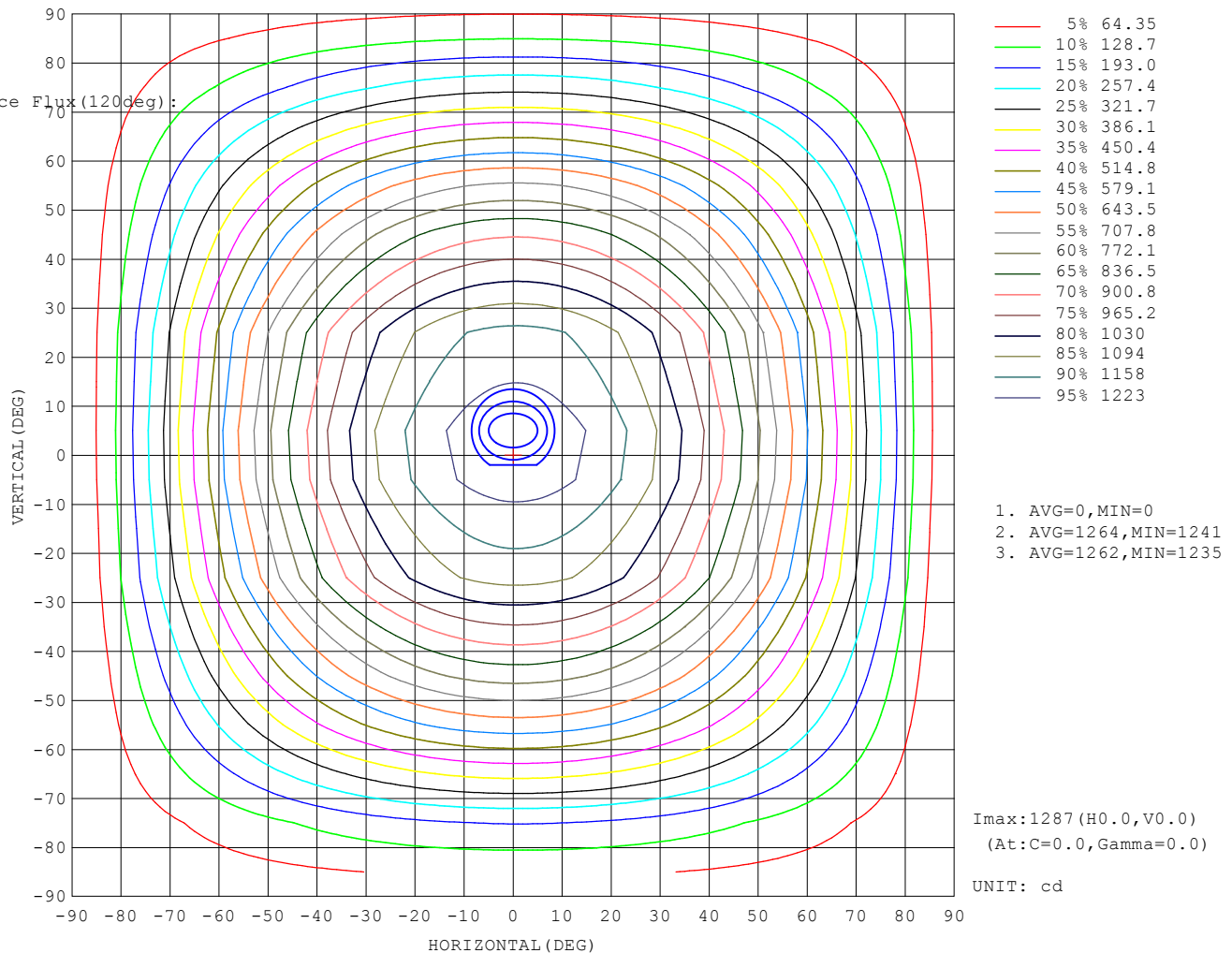
%lamp = 63.2%

Conical surface Flux(120deg):

2870.3 lm

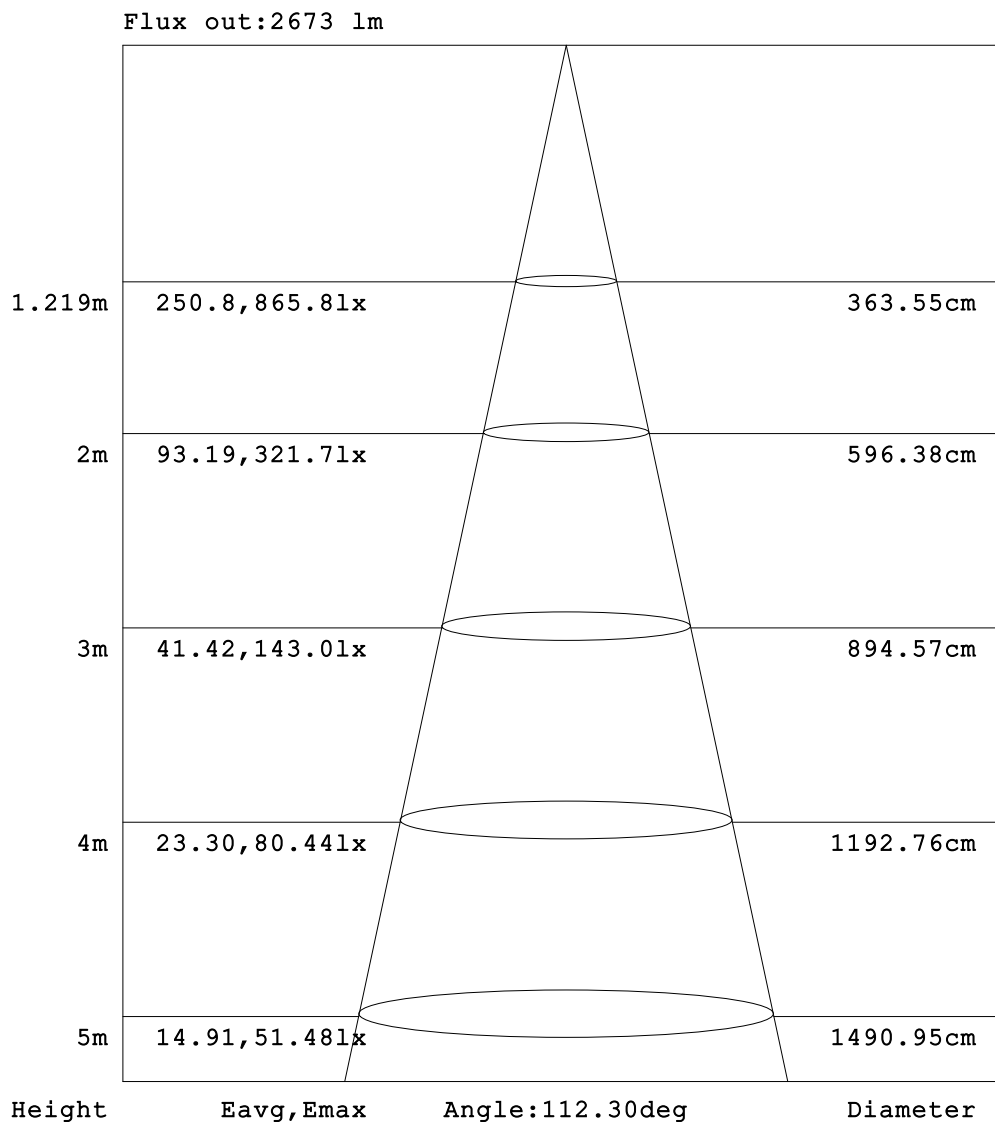
%lum = 77.7%

%lamp = 93.3%



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:

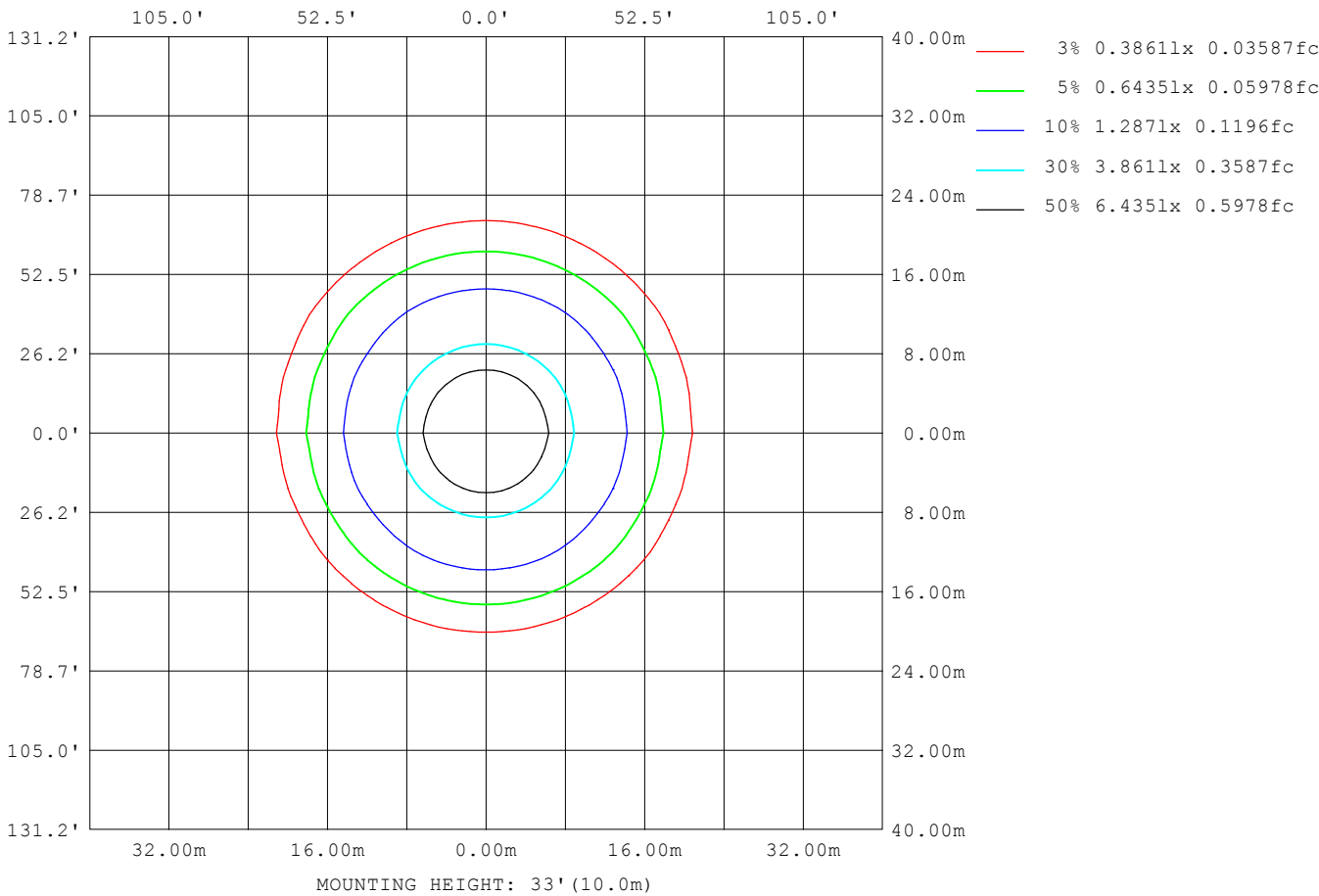
AAI Figure

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
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:

LED Avg.L Report

Test:U:120.0V I:0.2435A P:29.17W PF:0.9983 Lamp Flux:1025.69x3 lm		
NAME: BPLED14-29W-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

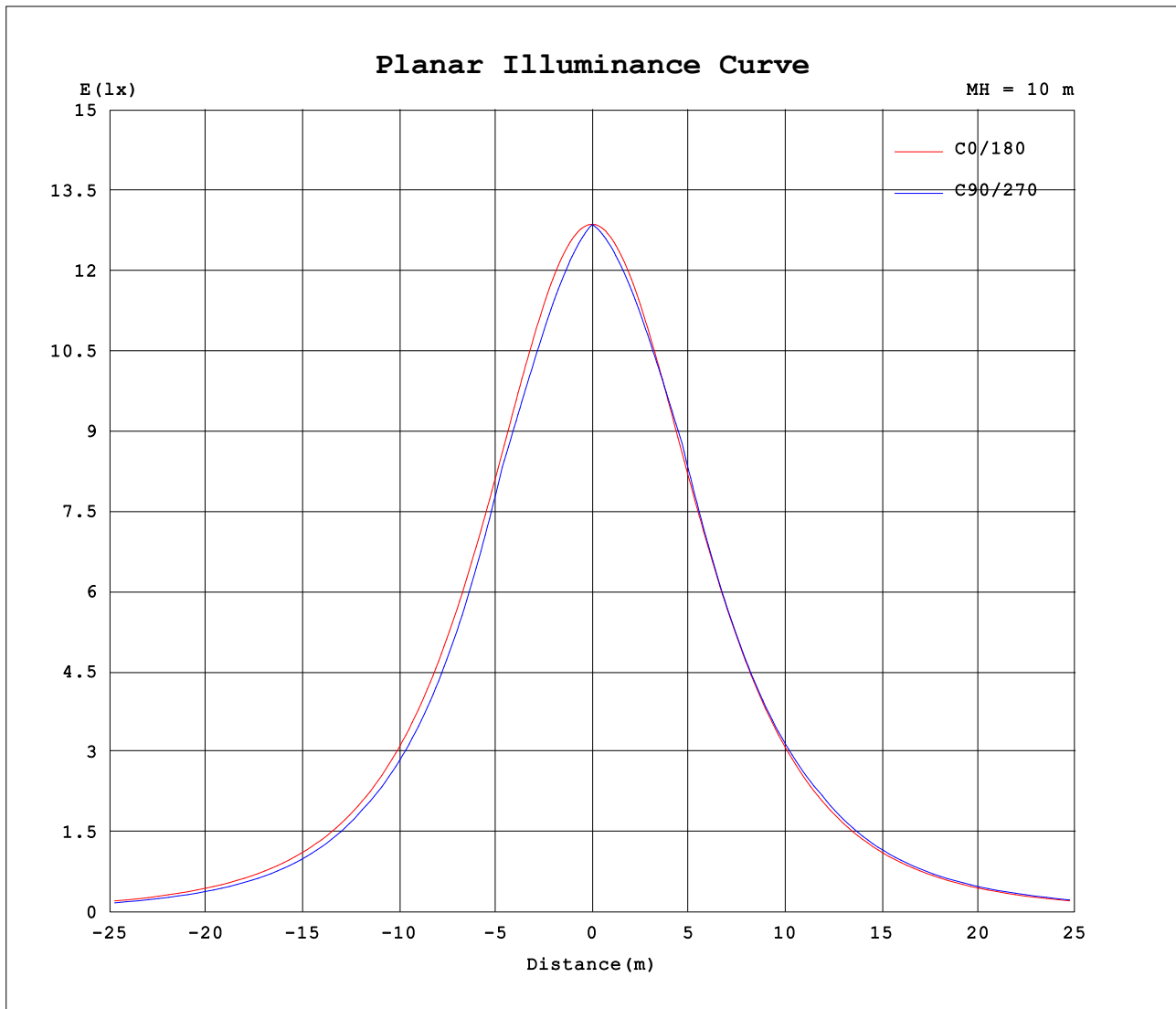
AvgL	cd/m2
L_0~180 (65) av	1728
L_0~180 (75) av	1527
L_0~180 (85) av	1235
L_90~270 (65) av	1667
L_90~270 (75) av	1477
L_90~270 (85) av	1785
L_45 (65) av	1697
L_45 (75) av	1519
L_45 (85) av	1599

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

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--1

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:

```

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:

```

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: 2019-12-31

```

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--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:

```