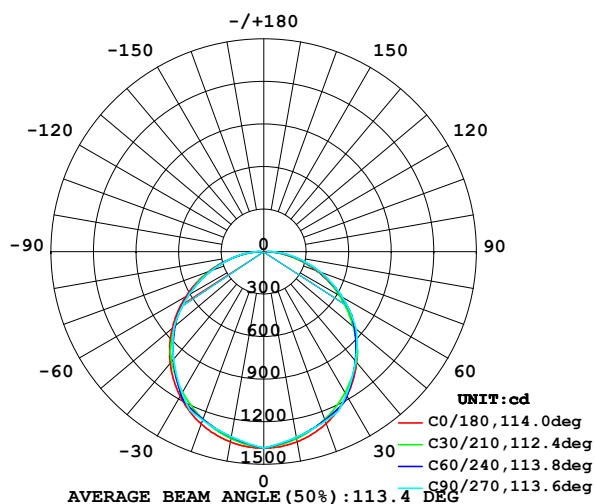


LUMINAIRE PHOTOMETRIC TEST REPORT

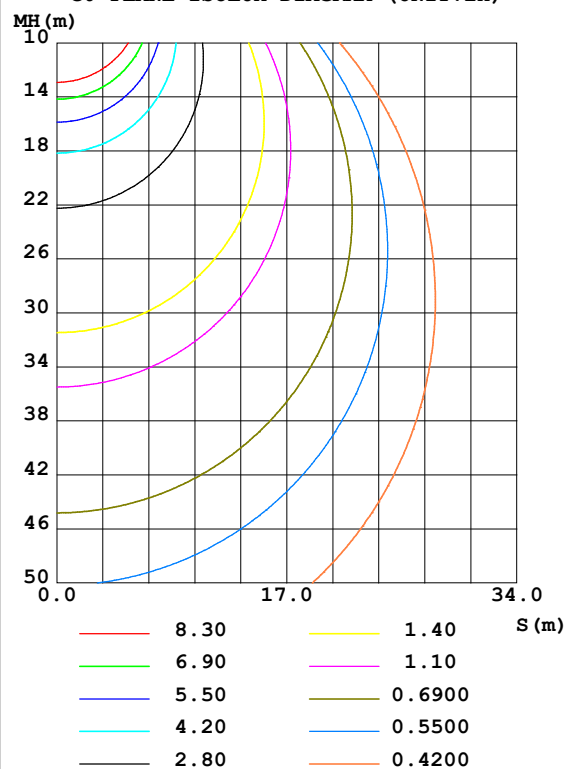
Test:U:120.1V I:0.2384A P:28.45W PF:0.9943 Lamp Flux:624.45x6 lm		
NAME: BPLED-24-29-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 141.75 lm/W			
MODEL		Imax(cd)	1385	S/MH(C0/180)	1.27
NOMINAL POWER(W)	29	LOR(%)	107.6	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	4033.1	η UP,DN(C0-180)	0.0,54.3
NOMINAL FLUX(lm)	624.45	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,53.3
LAMPS INSIDE	6	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	η down(%)	107.6	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:

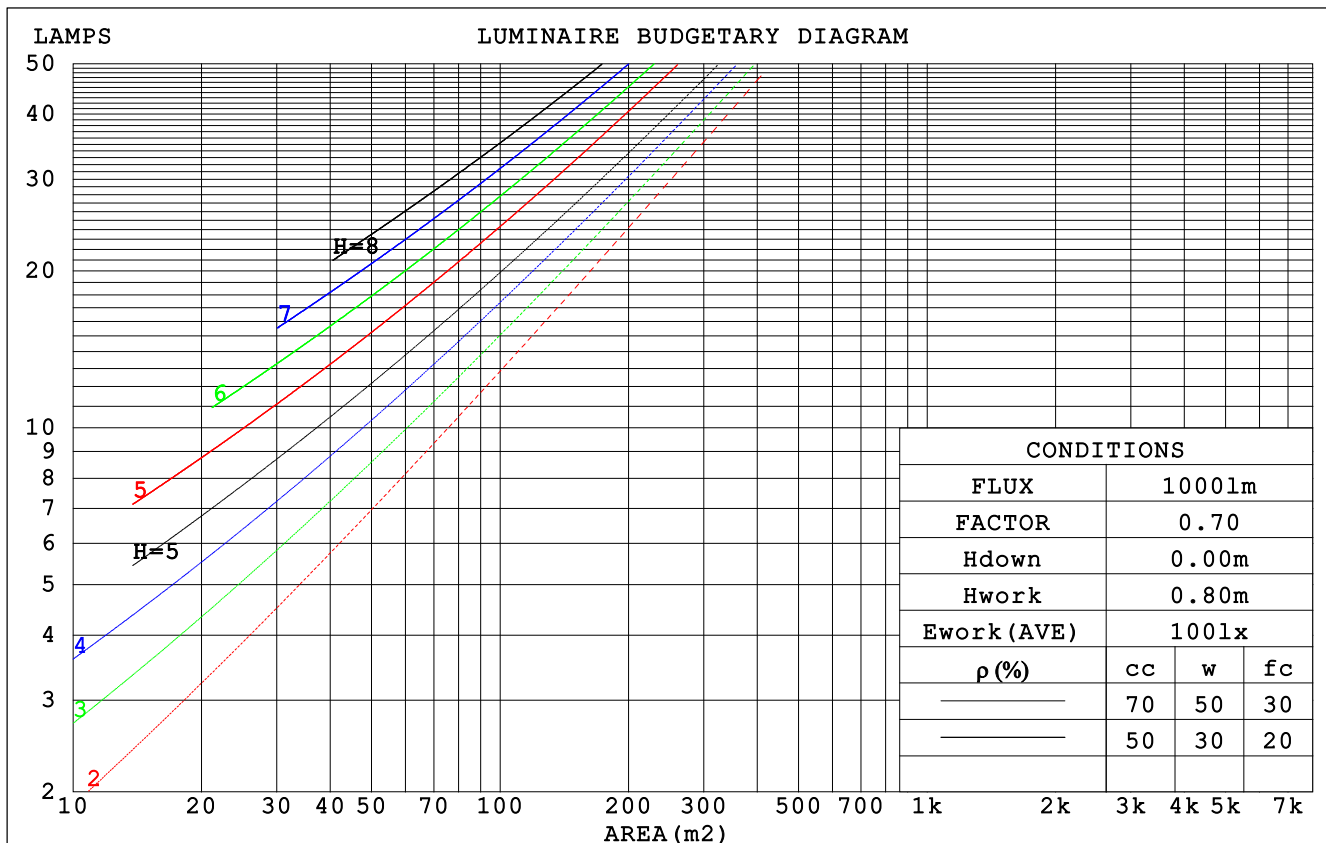
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1379	1362	1357	1363	1380	1361	1355	1361	0- 5	32.79	32.79	0.81,0.88
10	1361	1333	1328	1334	1362	1331	1325	1330	5- 10	96.51	129.3	3.21,3.45
15	1331	1298	1300	1299	1333	1296	1294	1295	10- 15	156.5	285.8	7.09,7.63
20	1289	1259	1271	1260	1293	1255	1264	1254	15- 20	211.5	497.3	12.3,13.3
25	1237	1214	1243	1216	1241	1209	1234	1208	20- 25	260.5	757.8	18.8,20.2
30	1173	1166	1164	1167	1179	1160	1152	1159	25- 30	301.3	1059	26.3,28.3
35	1100	1102	1086	1104	1107	1095	1071	1093	30- 35	330.4	1389	34.5,37.1
40	1018	1010	1008	1012	1027	1001	989.3	999.3	35- 40	348.2	1738	43.1,46.4
45	928.5	916.8	929.3	919.4	938.6	906.8	907.8	904.2	40- 45	355.2	2093	51.9,55.9
50	831.2	823.2	851.0	826.3	843.0	811.8	826.3	808.7	45- 50	351.9	2445	60.6,65.3
55	728.1	730.1	744.6	733.9	741.2	717.5	718.1	714.0	50- 55	337.7	2783	69,74.3
60	620.5	635.4	638.3	639.7	635.0	621.7	609.9	617.7	55- 60	311.6	3094	76.7,82.6
65	509.8	523.4	531.9	527.1	525.4	508.5	501.7	505.0	60- 65	276.0	3370	83.6,89.9
70	398.2	414.1	425.6	417.2	414.2	398.0	393.5	395.3	65- 70	232.7	3603	89.3,96.2
75	288.6	308.0	319.2	310.3	304.3	290.3	285.3	288.4	70- 75	183.8	3787	93.9,101
80	183.0	206.2	221.3	207.0	196.9	187.6	195.6	186.7	75- 80	132.1	3919	97.2,105
85	83.83	113.7	123.3	112.9	96.84	101.6	105.9	101.3	80- 85	81.36	4000	99.2,107
90	11.14	22.49	25.37	19.76	17.48	16.49	16.16	16.75	85- 90	32.97	4033	100,108
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

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	1.28	1.28	1.28	1.25	1.25	1.25	1.20	1.20	1.20	1.15	1.15	1.15	1.10	1.10	1.10	1.08
1.0	1.11	1.06	1.02	1.09	1.04	1.00	1.04	1.00	.97	.00	.97	.94	.96	.93	.91	.89
2.0	.96	.89	.82	.94	.87	.81	.90	.84	.79	.87	.82	.77	.84	.79	.76	.73
3.0	.84	.75	.68	.83	.74	.67	.79	.72	.66	.76	.70	.65	.74	.68	.64	.61
4.0	.75	.65	.57	.73	.64	.57	.70	.62	.56	.68	.61	.55	.65	.60	.55	.52
5.0	.66	.57	.49	.65	.56	.49	.63	.55	.48	.61	.54	.48	.59	.52	.47	.45
6.0	.60	.50	.43	.59	.49	.43	.57	.48	.42	.55	.48	.42	.53	.47	.42	.39
7.0	.54	.45	.38	.53	.44	.38	.52	.43	.37	.50	.43	.37	.49	.42	.37	.35
8.0	.49	.40	.34	.49	.40	.34	.47	.39	.33	.46	.39	.33	.45	.38	.33	.31
9.0	.45	.36	.30	.45	.36	.30	.43	.36	.30	.42	.35	.30	.41	.35	.30	.28
10.0	.42	.33	.27	.41	.33	.27	.40	.32	.27	.39	.32	.27	.38	.32	.27	.25



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:

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	.350	.199	.063	.342	.195	.062	.328	.188	.060	.314	.181	.058	.302	.175	.056		
2.0	.324	.178	.055	.317	.175	.054	.305	.169	.053	.293	.164	.051	.282	.160	.050		
3.0	.298	.159	.047	.292	.156	.047	.281	.152	.046	.270	.148	.045	.261	.144	.045		
4.0	.274	.142	.042	.268	.140	.041	.258	.137	.041	.249	.134	.040	.240	.131	.040		
5.0	.252	.128	.037	.247	.127	.037	.239	.124	.037	.230	.122	.036	.223	.119	.036		
6.0	.233	.117	.033	.229	.116	.033	.221	.113	.033	.214	.111	.033	.207	.109	.032		
7.0	.217	.107	.030	.213	.106	.030	.206	.104	.030	.199	.102	.030	.193	.100	.029		
8.0	.202	.099	.028	.199	.098	.028	.192	.096	.027	.187	.094	.027	.181	.093	.027		
9.0	.189	.091	.026	.186	.091	.025	.180	.089	.025	.175	.088	.025	.170	.086	.025		
10.0	.178	.085	.024	.175	.085	.024	.170	.083	.023	.165	.082	.023	.161	.081	.023		

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	.205	.205	.205	.175	.175	.175	.120	.120	.120	.069	.069	.069	.022	.022	.022	
1.0	.195	.168	.143	.167	.144	.123	.114	.099	.085	.066	.057	.050	.021	.018	.016	
2.0	.187	.142	.104	.160	.122	.090	.110	.085	.063	.063	.049	.037	.020	.016	.012	
3.0	.178	.123	.079	.153	.106	.068	.105	.074	.048	.061	.043	.028	.019	.014	.009	
4.0	.170	.109	.062	.146	.094	.054	.100	.066	.038	.058	.038	.022	.019	.012	.007	
5.0	.162	.098	.050	.139	.085	.044	.096	.059	.031	.056	.035	.018	.018	.011	.006	
6.0	.154	.089	.042	.133	.077	.036	.091	.054	.026	.053	.032	.015	.017	.010	.005	
7.0	.147	.081	.035	.126	.070	.031	.087	.049	.022	.051	.029	.013	.016	.010	.004	
8.0	.140	.075	.031	.120	.065	.027	.083	.046	.019	.048	.027	.011	.016	.009	.004	
9.0	.133	.070	.027	.115	.060	.023	.079	.043	.017	.046	.025	.010	.015	.008	.003	
10.0	.127	.065	.024	.109	.057	.021	.076	.040	.015	.044	.024	.009	.014	.008	.003	

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	19.5	21.1	19.8	21.3	21.5	19.7	21.3	20.0	21.5	21.7
3H	21.1	22.5	21.4	22.8	23.0	21.4	22.9	21.7	23.1	23.3
4H	21.8	23.1	22.1	23.4	23.7	22.2	23.5	22.5	23.8	24.1
6H	22.3	23.6	22.6	23.8	24.1	22.8	24.1	23.2	24.4	24.7
8H	22.4	23.7	22.8	24.0	24.3	23.1	24.3	23.4	24.6	24.9
12H	22.5	23.7	22.9	24.0	24.3	23.3	24.5	23.7	24.8	25.1
4H 2H	20.2	21.6	20.5	21.8	22.1	20.4	21.7	20.7	22.0	22.2
3H	22.0	23.2	22.4	23.5	23.8	22.3	23.5	22.6	23.8	24.1
4H	22.8	23.9	23.2	24.2	24.6	23.2	24.3	23.5	24.6	24.9
6H	23.4	24.4	23.8	24.8	25.1	24.0	24.9	24.4	25.3	25.7
8H	23.7	24.6	24.1	24.9	25.3	24.3	25.2	24.7	25.6	26.0
12H	23.8	24.6	24.2	25.0	25.4	24.6	25.5	25.0	25.8	26.2
8H 4H	23.2	24.1	23.6	24.4	24.8	23.5	24.4	23.9	24.8	25.1
6H	24.0	24.8	24.4	25.2	25.6	24.5	25.2	24.9	25.6	26.1
8H	24.3	25.0	24.8	25.4	25.9	24.9	25.6	25.4	26.1	26.5
12H	24.5	25.1	25.0	25.6	26.1	25.4	26.0	25.9	26.4	26.9
12H 4H	23.2	24.0	23.6	24.4	24.8	23.5	24.3	23.9	24.7	25.1
6H	24.1	24.8	24.6	25.2	25.7	24.6	25.2	25.0	25.7	26.1
8H	24.5	25.1	25.0	25.5	26.0	25.1	25.7	25.6	26.1	26.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 3747 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) $k(RI) \times RCR = 5$									
$k = 0.60$	61	48	41	60	48	41	59	48	40	33
0.80	72	59	51	71	59	51	69	58	50	43
1.00	81	69	60	79	68	60	77	69	60	52
1.25	88	77	69	87	76	68	84	74	68	60
1.50	94	83	75	92	82	75	89	80	73	65
2.00	101	92	85	99	90	84	95	88	82	73
2.50	106	97	90	103	95	89	99	92	87	78
3.00	109	102	95	107	100	94	102	97	92	83
4.00	114	107	102	111	105	100	106	102	98	88
5.00	116	111	106	114	109	105	109	105	101	91
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

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):

2092.9 lm

%lum = 51.9%

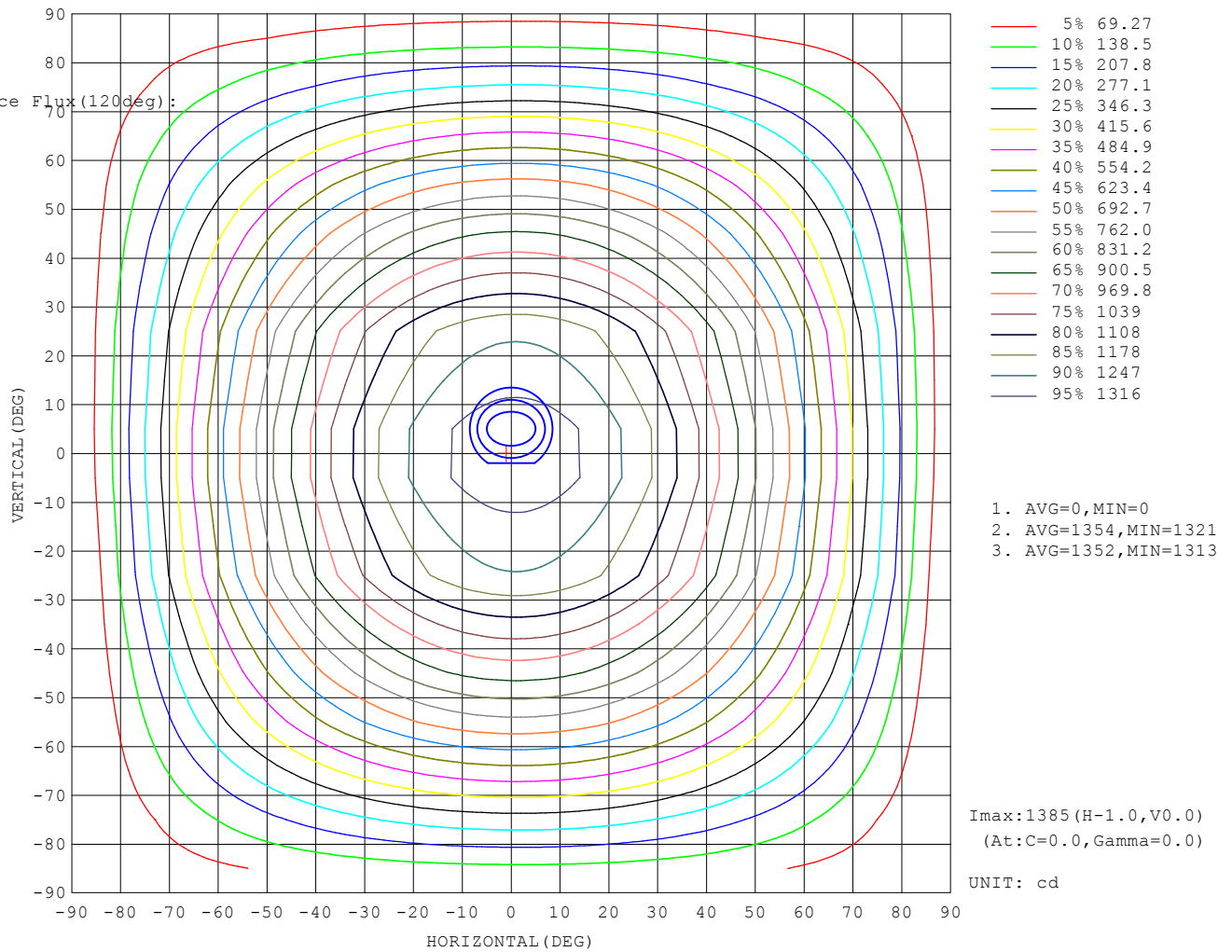
%lamp = 55.9%

Conical surface Flux(120deg):

3094.1 lm

%lum = 76.7%

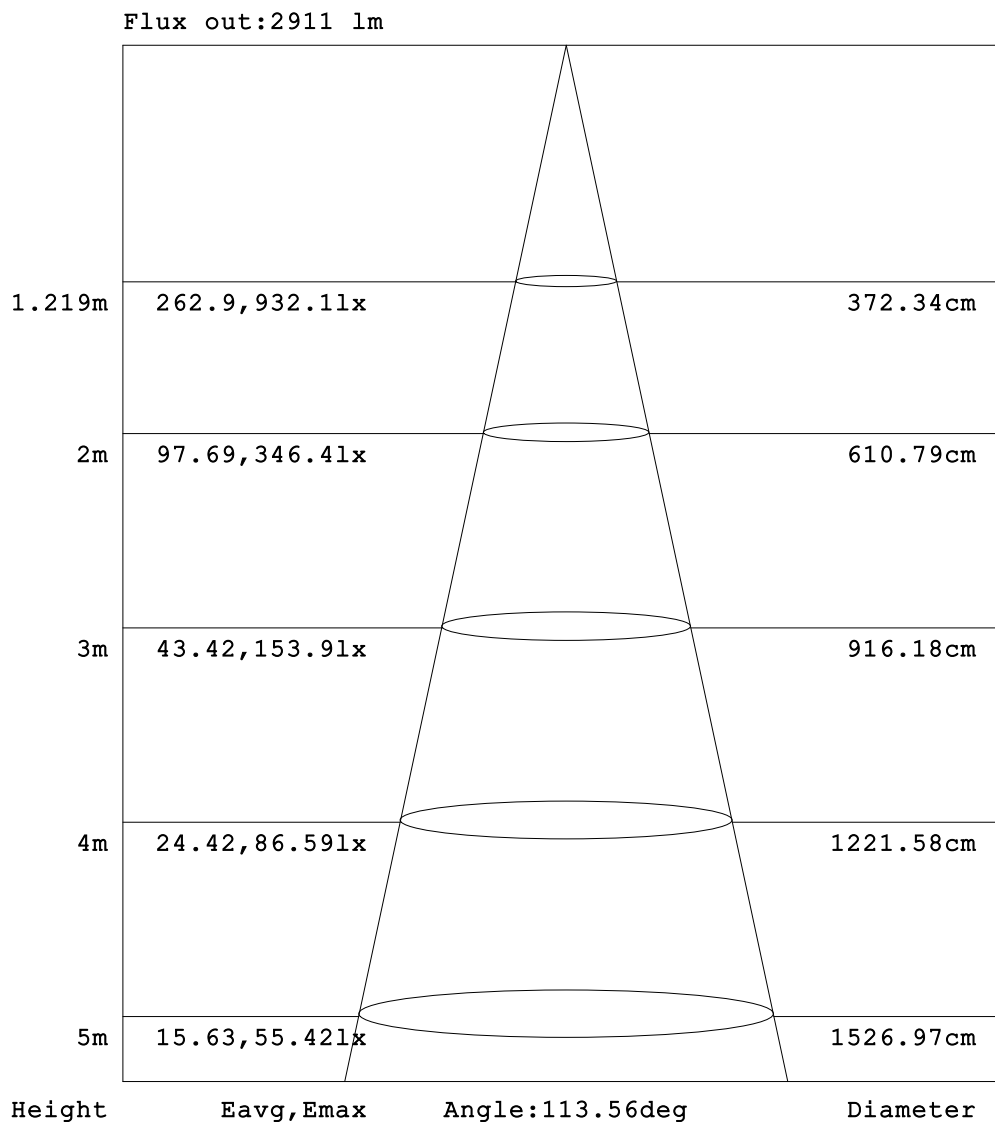
%lamp = 82.6%



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:

AAI Figure

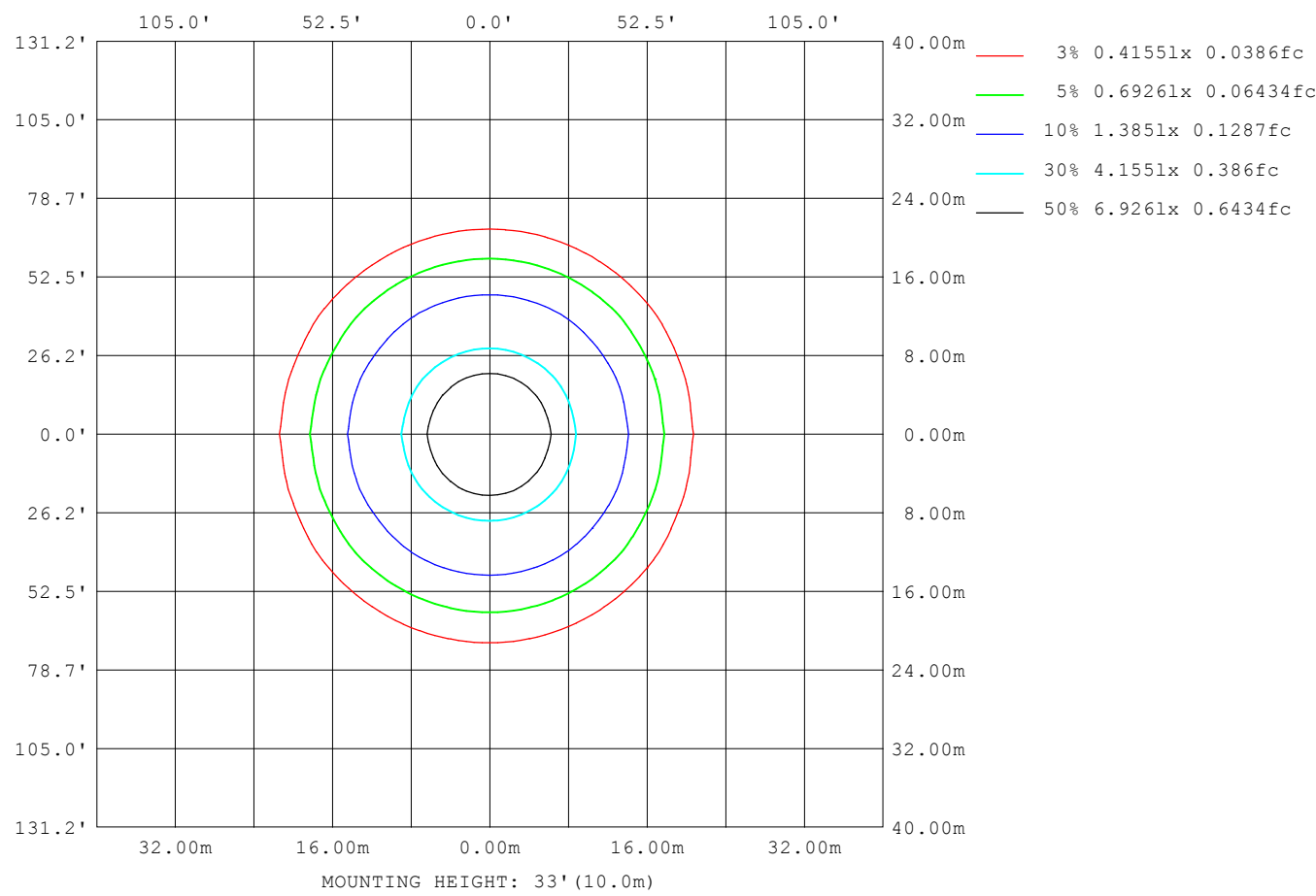


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:2019-08-26	Remarks:

LED Avg.L Report

Test:U:120.1V I:0.2384A P:28.45W PF:0.9943 Lamp Flux:624.45x6 lm		
NAME: BPLED-24-29-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

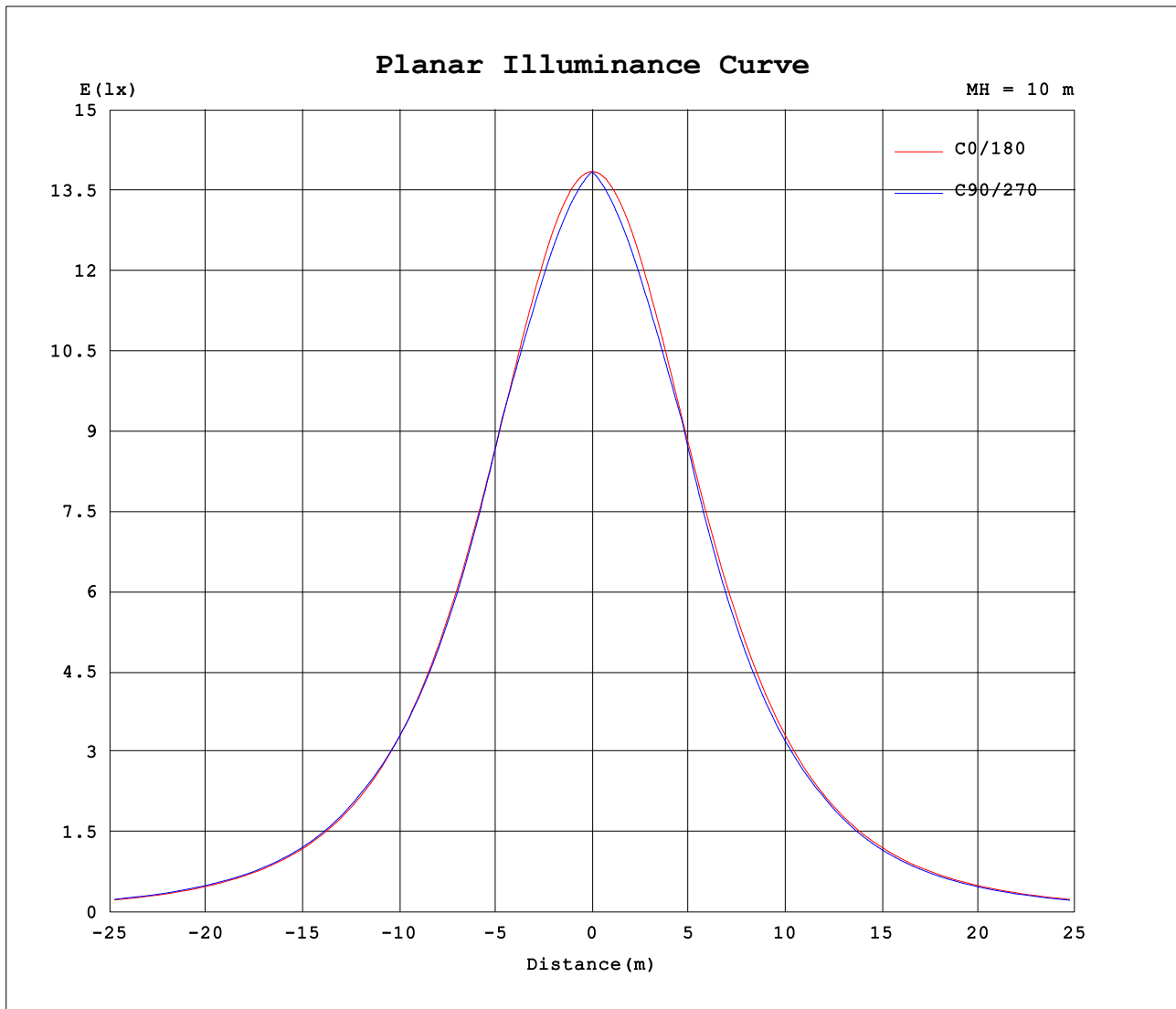
AvgL	cd/m2
L_0~180 (65) av	6681
L_0~180 (75) av	6248
L_0~180 (85) av	5654
L_90~270 (65) av	6671
L_90~270 (75) av	6371
L_90~270 (85) av	7173
L_45 (65) av	6661
L_45 (75) av	6308
L_45 (85) av	6721

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

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: 2019-08-26

```

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:

```