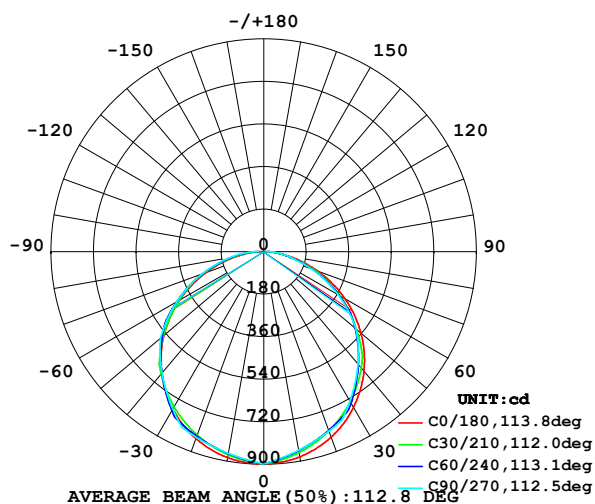


LUMINAIRE PHOTOMETRIC TEST REPORT

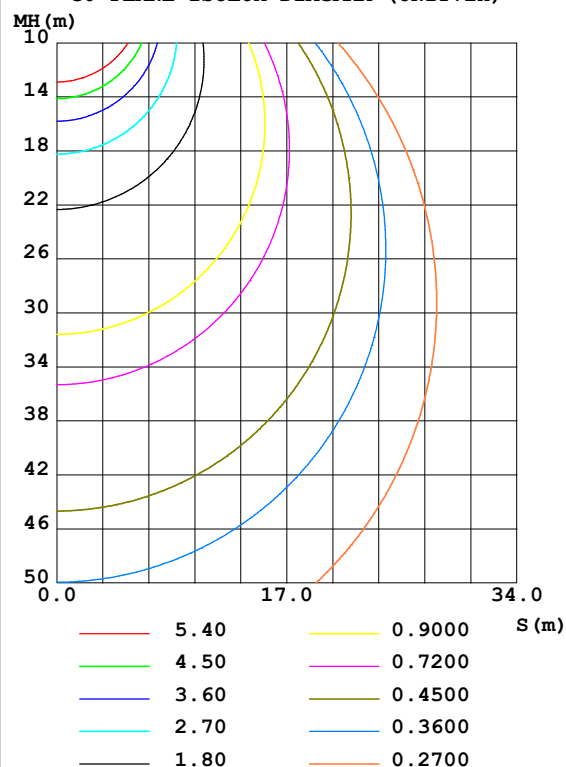
Test:U:120.0V I:0.1603A P:19.15W PF:0.9953 Lamp Flux:338.182x6 lm		
NAME: BPLED-22-19-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 134.55 lm/W			
MODEL		Imax(cd)	898.2	S/MH(C0/180)	1.27
NOMINAL POWER(W)	19	LOR(%)	127.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	2576.2	η UP,DN(C0-180)	0.0,60.9
NOMINAL FLUX(lm)	338.182	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,66.0
LAMPS INSIDE	6	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	η down(%)	127.0	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:

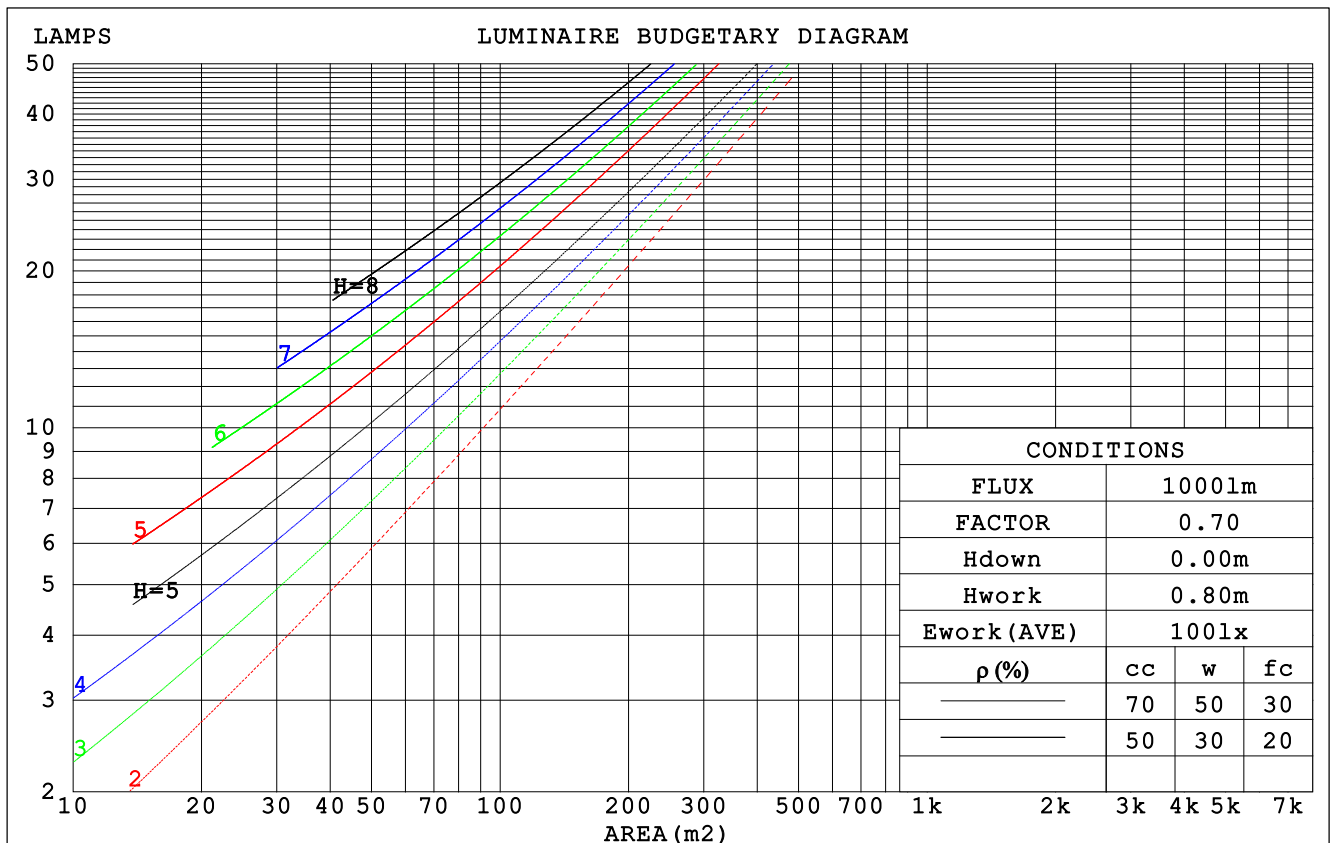
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	893.6	879.7	875.6	880.8	895.1	885.7	882.5	884.6	0- 5	21.26	21.26	0.83,1.05
10	881.3	857.7	852.9	859.7	884.6	869.6	866.8	867.5	5- 10	62.57	83.82	3.25,4.13
15	861.8	832.2	830.3	835.1	866.6	849.8	851.2	846.8	10- 15	101.5	185.3	7.19,9.13
20	835.0	803.7	807.7	807.3	841.3	826.8	835.5	823.0	15- 20	137.2	322.4	12.5,15.9
25	801.1	772.3	785.1	776.4	809.0	800.6	819.8	796.2	20- 25	169.0	491.5	19.1,24.2
30	760.4	738.5	730.1	742.9	769.8	771.8	770.0	767.0	25- 30	195.6	687.0	26.7,33.9
35	713.0	694.5	675.2	699.3	724.2	732.5	720.2	727.1	30- 35	214.4	901.5	35,44.4
40	659.8	631.9	620.3	637.1	672.5	673.6	670.3	667.6	35- 40	226.0	1127	43.8,55.6
45	601.0	568.0	565.3	573.8	614.8	613.5	620.5	607.0	40- 45	230.4	1358	52.7,66.9
50	537.0	503.7	510.4	509.9	551.9	552.9	570.7	545.8	45- 50	227.9	1586	61.6,78.1
55	468.6	439.6	436.6	446.0	484.2	492.3	497.5	484.8	50- 55	218.0	1804	70,88.9
60	396.1	374.2	362.8	380.6	412.0	429.6	424.4	421.9	55- 60	199.7	2003	77.8,98.7
65	320.7	298.7	289.0	304.0	337.0	351.5	351.2	344.6	60- 65	174.7	2178	84.5,107
70	244.6	225.3	215.2	229.5	260.4	275.3	278.1	269.5	65- 70	144.5	2323	90.2,114
75	170.5	154.0	141.4	156.9	184.1	201.2	205.0	196.7	70- 75	110.7	2433	94.4,120
80	101.7	88.90	97.86	90.33	113.9	131.1	144.2	128.0	75- 80	76.61	2510	97.4,124
85	43.38	49.63	54.34	50.29	53.00	74.42	83.42	72.73	80- 85	46.49	2556	99.2,126
90	6.977	10.93	10.82	10.81	11.28	18.56	22.65	18.32	85- 90	19.90	2576	100,127
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	1.51	1.51	1.51	1.48	1.48	1.48	1.41	1.41	1.41	1.35	1.35	1.35	1.30	1.30	1.30	1.27
1.0	1.31	1.26	1.21	1.28	1.23	1.19	1.23	1.19	1.15	1.18	1.15	1.11	1.13	1.11	1.08	1.05
2.0	1.14	1.05	.98	1.12	1.04	.97	1.07	1.00	.94	1.03	.97	.92	.99	.94	.90	.87
3.0	1.00	.89	.81	.98	.88	.80	.94	.86	.79	.91	.83	.77	.87	.81	.76	.73
4.0	.89	.77	.68	.87	.76	.68	.84	.74	.67	.81	.73	.66	.78	.71	.65	.62
5.0	.79	.67	.59	.78	.67	.58	.75	.65	.58	.72	.64	.57	.70	.63	.57	.54
6.0	.71	.60	.51	.70	.59	.51	.68	.58	.51	.65	.57	.50	.63	.56	.50	.47
7.0	.64	.53	.45	.63	.53	.45	.61	.52	.45	.59	.51	.44	.58	.50	.44	.41
8.0	.59	.48	.40	.58	.47	.40	.56	.47	.40	.55	.46	.40	.53	.45	.39	.37
9.0	.54	.43	.36	.53	.43	.36	.52	.42	.36	.50	.42	.36	.49	.41	.36	.33
10.0	.50	.40	.33	.49	.39	.33	.48	.39	.33	.47	.38	.32	.45	.38	.32	.30



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	.405	.230	.073	.396	.226	.072	.379	.217	.069	.363	.210	.067	.349	.202	.065		
2.0	.377	.207	.063	.369	.203	.063	.354	.197	.061	.340	.191	.060	.328	.185	.058		
3.0	.347	.185	.055	.340	.182	.055	.327	.177	.054	.315	.173	.053	.304	.168	.052		
4.0	.320	.166	.049	.314	.164	.049	.302	.160	.048	.291	.156	.047	.281	.153	.046		
5.0	.295	.150	.044	.290	.149	.043	.279	.145	.043	.270	.142	.042	.261	.139	.042		
6.0	.273	.137	.039	.268	.136	.039	.259	.133	.039	.251	.130	.038	.242	.128	.038		
7.0	.254	.126	.036	.250	.124	.035	.242	.122	.035	.234	.120	.035	.227	.118	.035		
8.0	.237	.116	.033	.233	.115	.032	.226	.113	.032	.219	.111	.032	.212	.109	.032		
9.0	.222	.107	.030	.219	.107	.030	.212	.105	.030	.206	.103	.030	.200	.102	.029		
10.0	.209	.100	.028	.206	.099	.028	.200	.098	.028	.194	.096	.027	.189	.095	.027		

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	.242	.242	.242	.207	.207	.207	.141	.141	.141	.081	.081	.081	.026	.026	.026	
1.0	.230	.198	.170	.197	.170	.146	.134	.117	.101	.077	.068	.059	.025	.022	.019	
2.0	.220	.167	.124	.188	.144	.107	.129	.100	.075	.074	.058	.044	.024	.019	.014	
3.0	.210	.145	.094	.180	.125	.081	.123	.087	.057	.071	.051	.034	.023	.016	.011	
4.0	.200	.128	.074	.172	.111	.064	.118	.077	.045	.068	.045	.027	.022	.015	.009	
5.0	.190	.115	.059	.164	.100	.052	.113	.070	.037	.065	.041	.022	.021	.013	.007	
6.0	.181	.105	.049	.156	.091	.043	.108	.063	.030	.062	.037	.018	.020	.012	.006	
7.0	.173	.096	.042	.148	.083	.037	.103	.058	.026	.060	.034	.015	.019	.011	.005	
8.0	.164	.088	.036	.141	.077	.032	.098	.054	.022	.057	.032	.013	.018	.010	.004	
9.0	.157	.082	.032	.135	.071	.028	.093	.050	.020	.054	.030	.012	.018	.010	.004	
10.0	.149	.077	.028	.129	.067	.025	.089	.047	.018	.052	.028	.010	.017	.009	.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	17.8	19.3	18.1	19.5	19.7	17.6	19.1	17.8	19.3	19.5
3H	19.3	20.7	19.6	20.9	21.2	19.0	20.4	19.2	20.6	20.8
4H	19.9	21.2	20.2	21.5	21.7	19.4	20.8	19.8	21.1	21.3
6H	20.3	21.6	20.6	21.8	22.1	19.9	21.1	20.2	21.4	21.7
8H	20.4	21.7	20.8	21.9	22.2	20.0	21.3	20.4	21.6	21.9
12H	20.5	21.7	20.8	22.0	22.3	20.2	21.4	20.6	21.7	22.0
4H 2H	18.3	19.7	18.7	20.0	20.2	18.2	19.5	18.5	19.8	20.0
3H	20.0	21.2	20.4	21.5	21.8	19.7	20.9	20.1	21.2	21.5
4H	20.7	21.8	21.1	22.1	22.5	20.3	21.4	20.7	21.7	22.1
6H	21.3	22.2	21.7	22.6	23.0	20.9	21.9	21.3	22.2	22.6
8H	21.5	22.4	21.9	22.7	23.1	21.1	22.0	21.6	22.4	22.8
12H	21.6	22.4	22.0	22.8	23.2	21.4	22.2	21.8	22.6	23.0
8H 4H	20.9	21.9	21.4	22.2	22.6	20.6	21.5	21.0	21.9	22.3
6H	21.6	22.4	22.1	22.8	23.2	21.3	22.1	21.7	22.5	22.9
8H	21.9	22.6	22.4	23.0	23.4	21.7	22.3	22.1	22.7	23.2
12H	22.1	22.6	22.5	23.1	23.6	22.0	22.6	22.5	23.0	23.5
12H 4H	21.0	21.8	21.4	22.2	22.6	20.6	21.4	21.0	21.8	22.2
6H	21.7	22.4	22.1	22.8	23.2	21.4	22.0	21.8	22.5	22.9
8H	22.0	22.6	22.5	23.0	23.5	21.8	22.3	22.2	22.8	23.3
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 2029 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.5)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	72	58	49	71	57	48	70	57	48	40
0.80	85	70	61	84	70	61	82	69	60	51
1.00	96	82	72	94	81	72	91	83	71	62
1.25	105	91	82	103	90	82	99	89	81	71
1.50	111	98	89	109	97	89	105	95	87	78
2.00	120	109	100	118	107	100	113	104	98	88
2.50	125	115	107	122	113	106	117	110	103	93
3.00	129	120	113	126	118	112	121	115	109	98
4.00	134	127	121	131	125	119	126	120	116	104
5.00	137	131	126	134	129	124	129	124	120	108
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

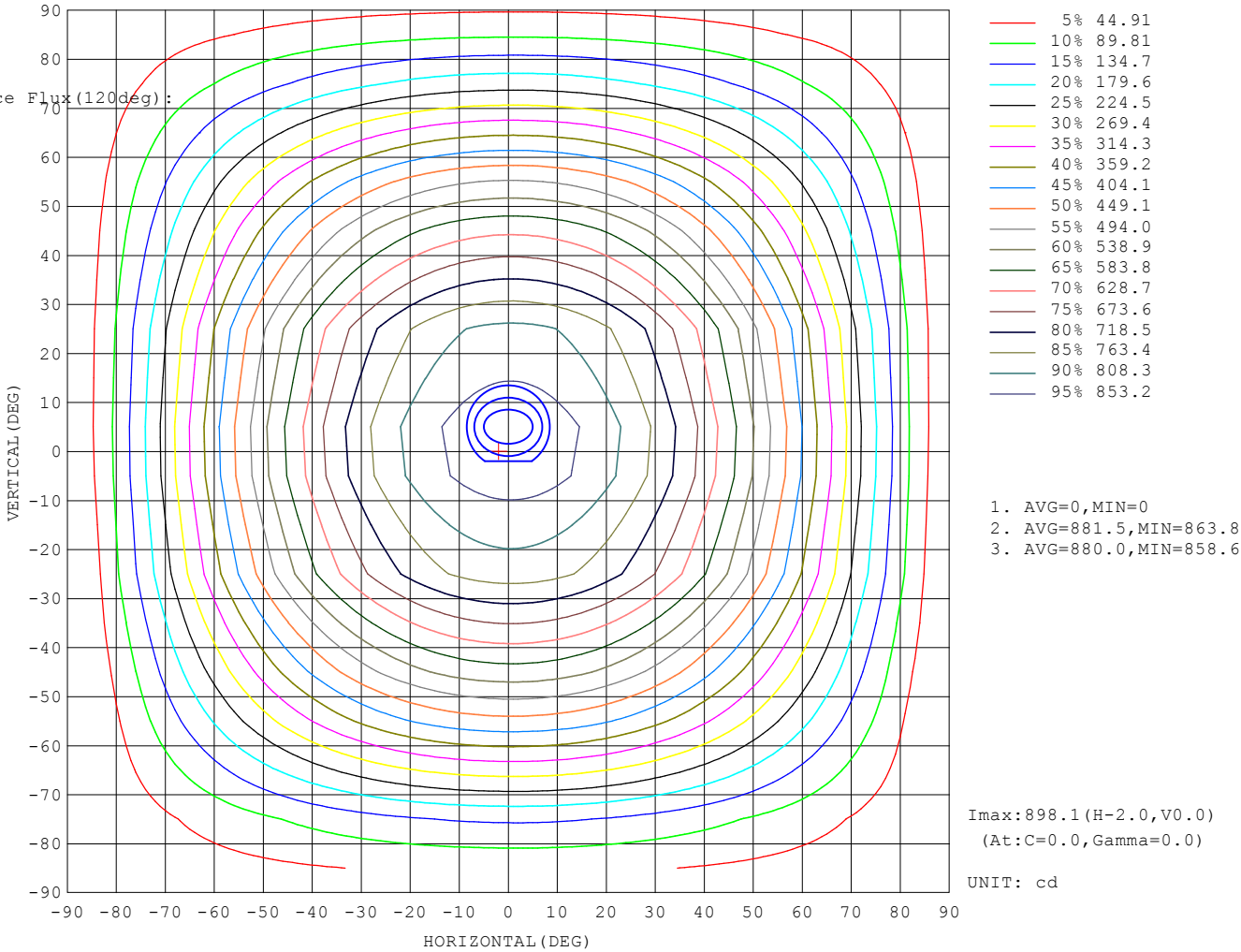
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2019-08-26

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):
1357.8 lm
%lum = 52.7%
%lamp = 66.9%

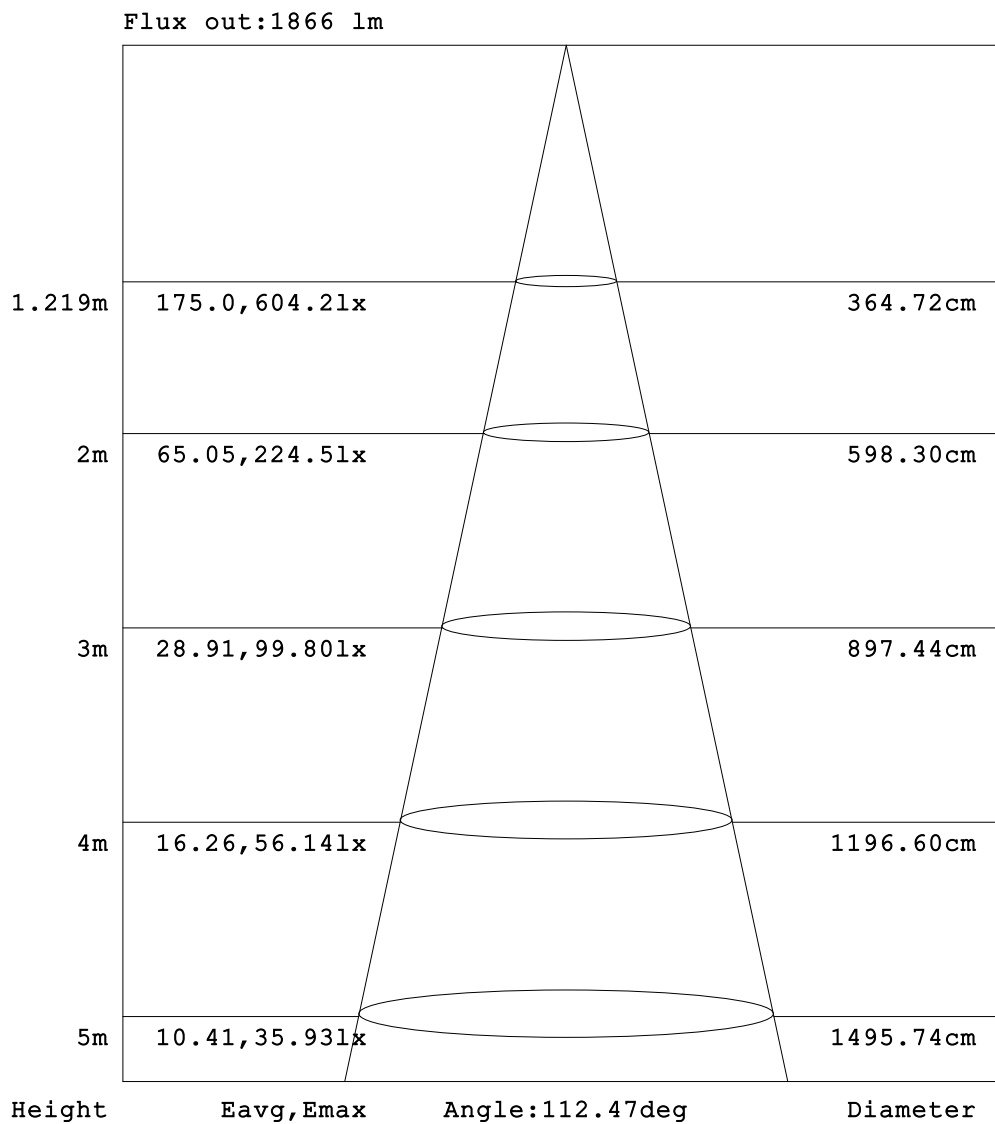
Conical surface Flux(120deg):
2003.3 lm
%lum = 77.8%
%lamp = 98.7%



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

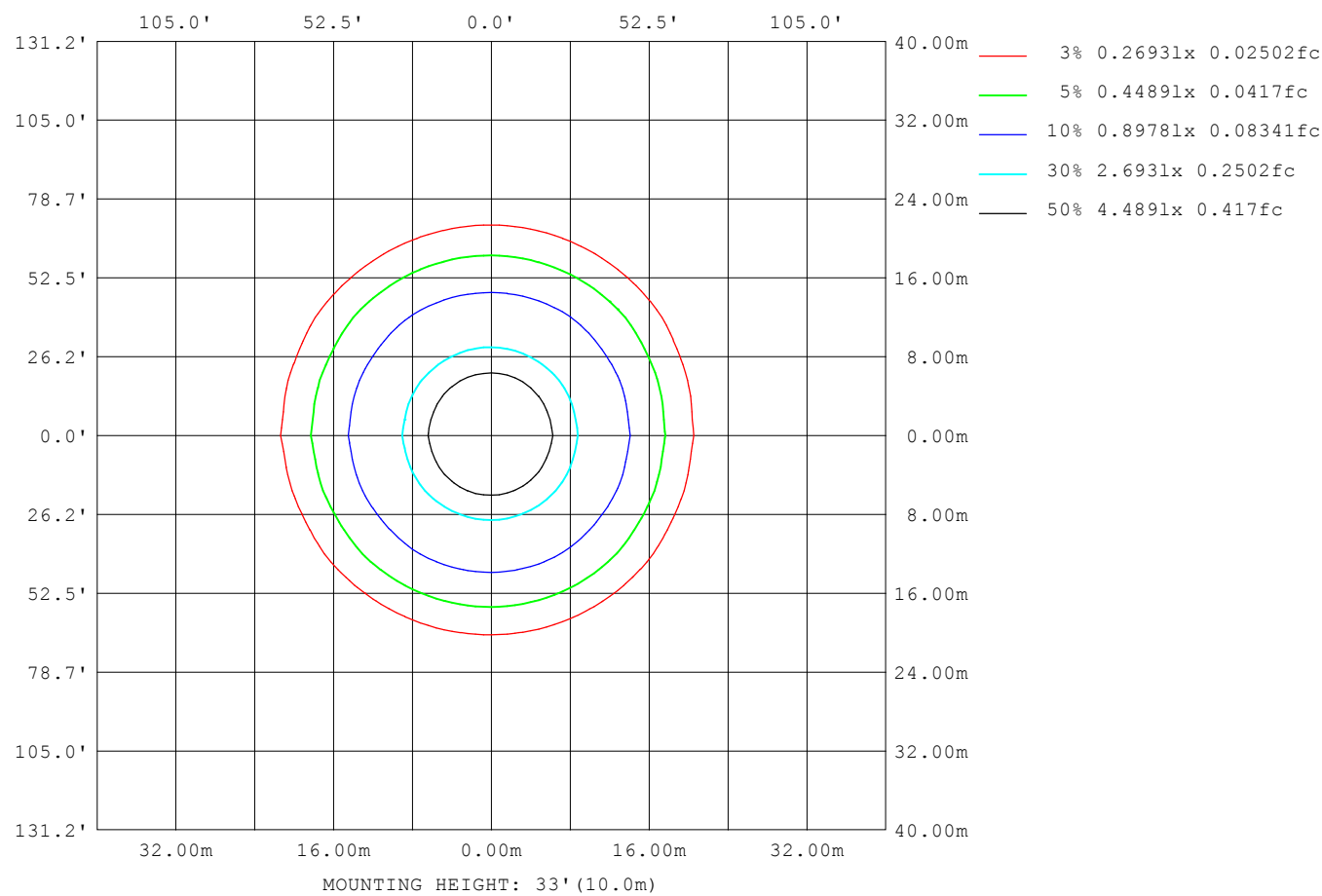


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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
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:

LED Avg.L Report

Test:U:120.0V I:0.1603A P:19.15W PF:0.9953 Lamp Flux:338.182x6 lm		
NAME: BPLED-22-19-D10-U-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

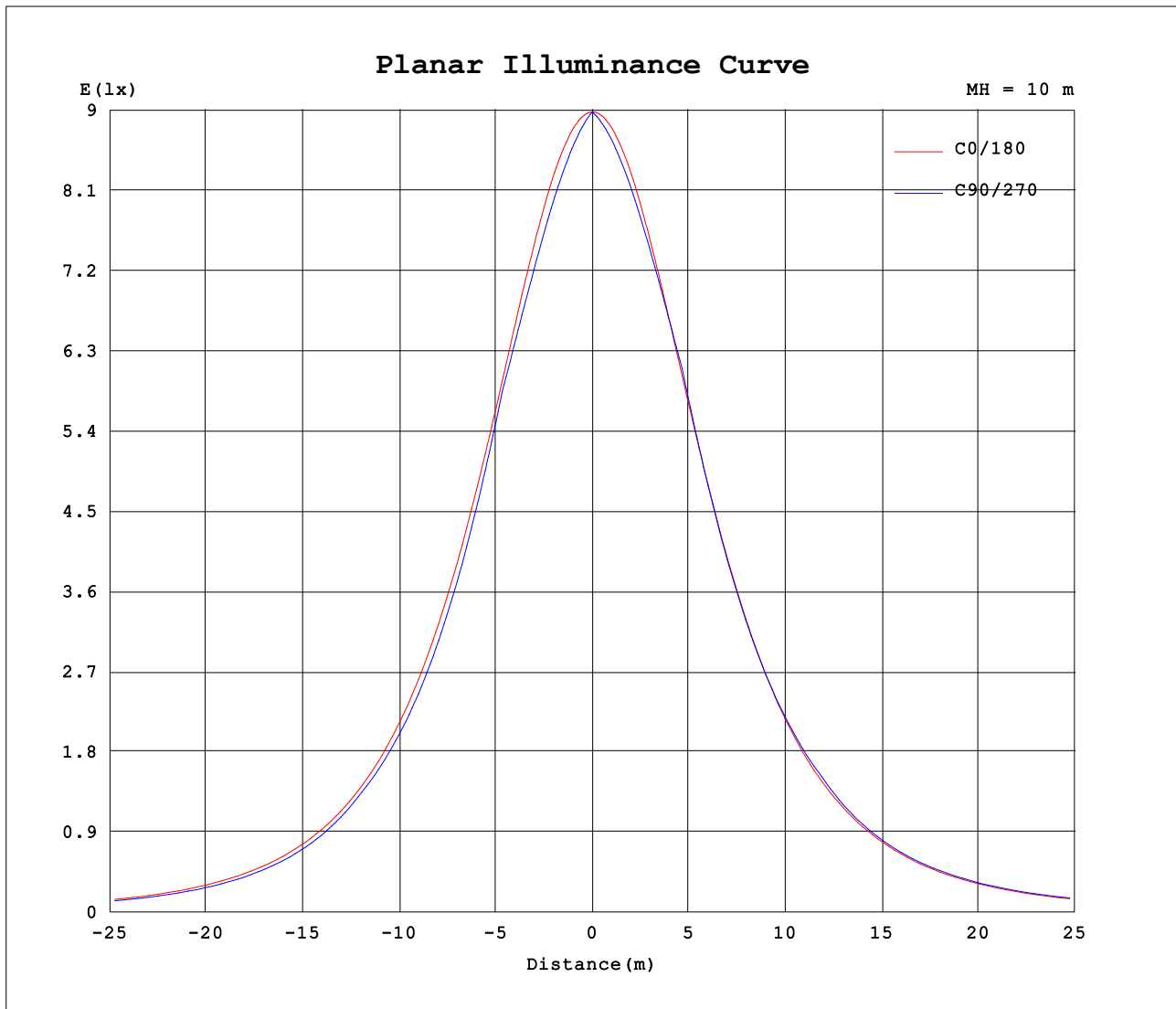
AvgL	cd/m2
L_0~180 (65) av	4245
L_0~180 (75) av	3737
L_0~180 (85) av	3016
L_90~270 (65) av	4132
L_90~270 (75) av	3650
L_90~270 (85) av	4312
L_45 (65) av	4191
L_45 (75) av	3736
L_45 (85) av	3866

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:

```