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Nata

Client:

LumCAT: 2-2183-M

Luminaire: BJB 47.360.5080

Report No: nt0100

Voltage(V): 35.0200

Test No: GC2020031902

Current(A): 0.5040

LampCAT: LUMILEDS LUXEON 1205

Power (W): 17.6500

Lamp flux(lm): 2448.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1952.70, Efficiency(%): 79.77% , Luminous Efficacy(lm/W): 110.63

Central intensity(cd): 16664.060, Maximum intensity(cd): 16664.060

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.8

[C90/270]Total=15.8

Field angle(10%Imax): [C0/180]Total=36.2

[C90/270]Total=36.2

Maximum s/h(1/2): C0_180=0.27 C90_270=0.27

Maximum s/h(1/4): C0_180=0.30 C90_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.77%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.250%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/3/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16664.063	0.000	0	.000%	.000%
1.0	16514.297	15.875	15.875	.648%	.813%
2.0	16033.359	46.715	62.591	1.908%	3.205%
3.0	15091.875	74.441	137.032	3.041%	7.018%
4.0	13893.750	97.024	234.056	3.963%	11.986%
5.0	12360.445	112.944	347	4.614%	17.770%
6.0	10786.078	121.641	468.642	4.969%	24.000%
7.0	9487.055	125.835	594.477	5.140%	30.444%
8.0	8229.375	126.793	721.27	5.179%	36.937%
9.0	7030.969	123.677	844.946	5.052%	43.271%
10.0	5981.414	117.757	962.704	4.810%	49.301%
11.0	5170.711	111.433	1074.136	4.552%	55.008%
12.0	4421.461	104.856	1178.993	4.283%	60.378%
13.0	3764.602	97.148	1276.14	3.968%	65.353%
14.0	3242.109	89.685	1365.826	3.664%	69.946%
15.0	2812.359	83.118	1448.944	3.395%	74.202%
16.0	2409.680	76.517	1525.462	3.126%	78.121%
17.0	2033.859	69.198	1594.659	2.827%	81.664%
18.0	1698.328	61.536	1656.195	2.514%	84.816%
19.0	1392.103	53.767	1709.962	2.196%	87.569%
20.0	1132.748	46.212	1756.174	1.888%	89.936%
21.0	900.823	39.049	1795.223	1.595%	91.936%
22.0	676.997	31.707	1826.93	1.295%	93.559%
23.0	467.227	24.009	1850.939	.981%	94.789%
24.0	312.427	17.046	1867.985	.696%	95.662%
25.0	183.101	11.267	1879.252	.460%	96.239%
26.0	83.798	6.300	1885.552	.257%	96.561%
27.0	38.187	2.984	1888.536	.122%	96.714%
28.0	24.012	1.575	1890.111	.064%	96.795%
29.0	20.827	1.173	1891.284	.048%	96.855%
30.0	18.865	1.072	1892.356	.044%	96.910%
31.0	17.198	1.004	1893.36	.041%	96.961%
32.0	15.863	0.947	1894.307	.039%	97.010%
33.0	14.878	0.906	1895.212	.037%	97.056%
34.0	14.027	0.875	1896.087	.036%	97.101%
35.0	13.310	0.849	1896.936	.035%	97.144%
36.0	12.755	0.830	1897.766	.034%	97.187%
37.0	12.326	0.818	1898.584	.033%	97.229%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	11.946	0.810	1899.394	.033%	97.270%
39.0	11.616	0.804	1900.198	.033%	97.311%
40.0	11.384	0.802	1901.001	.033%	97.353%
41.0	11.173	0.803	1901.804	.033%	97.394%
42.0	11.018	0.806	1902.61	.033%	97.435%
43.0	10.877	0.811	1903.421	.033%	97.476%
44.0	10.765	0.817	1904.238	.033%	97.518%
45.0	10.673	0.824	1905.062	.034%	97.561%
46.0	10.603	0.832	1905.894	.034%	97.603%
47.0	10.547	0.841	1906.735	.034%	97.646%
48.0	10.512	0.851	1907.586	.035%	97.690%
49.0	10.448	0.861	1908.447	.035%	97.734%
50.0	10.392	0.869	1909.316	.035%	97.778%
51.0	10.378	0.879	1910.195	.036%	97.823%
52.0	10.343	0.889	1911.084	.036%	97.869%
53.0	10.308	0.898	1911.982	.037%	97.915%
54.0	10.287	0.908	1912.89	.037%	97.961%
55.0	10.245	0.916	1913.806	.037%	98.008%
56.0	10.223	0.925	1914.731	.038%	98.056%
57.0	10.209	0.934	1915.666	.038%	98.104%
58.0	10.195	0.944	1916.609	.039%	98.152%
59.0	10.153	0.951	1917.56	.039%	98.201%
60.0	10.139	0.959	1918.519	.039%	98.250%
61.0	10.146	0.968	1919.487	.040%	98.299%
62.0	10.146	0.978	1920.465	.040%	98.349%
63.0	10.153	0.987	1921.452	.040%	98.400%
64.0	10.181	0.998	1922.45	.041%	98.451%
65.0	10.364	1.017	1923.467	.042%	98.503%
66.0	10.744	1.053	1924.52	.043%	98.557%
67.0	11.292	1.108	1925.628	.045%	98.614%
68.0	11.876	1.174	1926.802	.048%	98.674%
69.0	12.628	1.250	1928.052	.051%	98.738%
70.0	13.549	1.344	1929.396	.055%	98.807%
71.0	14.646	1.457	1930.853	.060%	98.881%
72.0	15.588	1.572	1932.425	.064%	98.962%
73.0	16.102	1.657	1934.083	.068%	99.047%
74.0	15.785	1.676	1935.759	.068%	99.133%
75.0	14.857	1.619	1937.378	.066%	99.215%

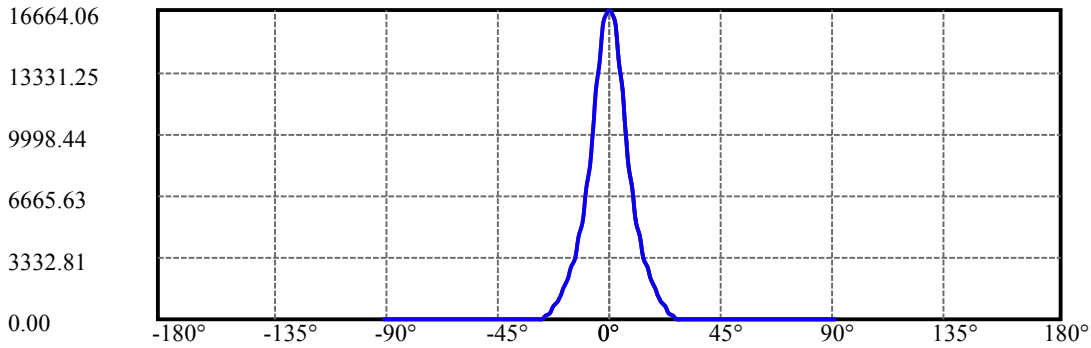
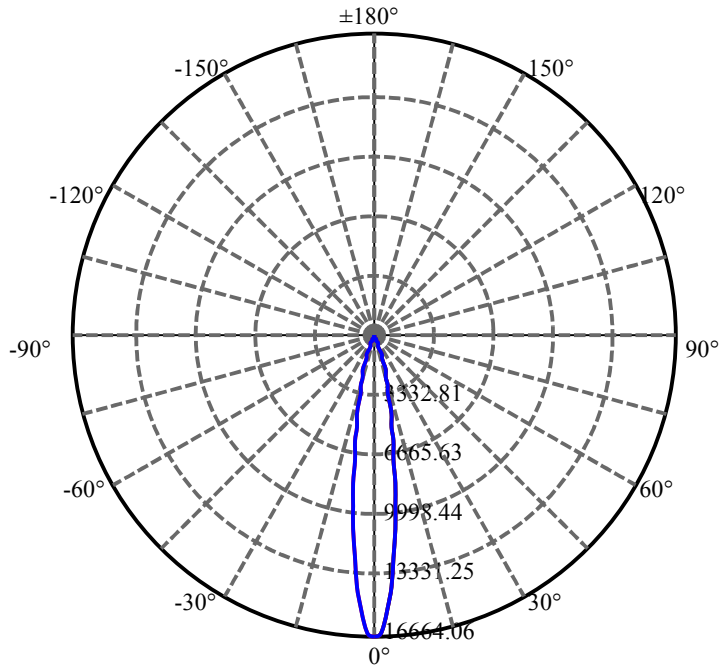
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.247	1.492	1938.87	.061%	99.292%
77.0	11.447	1.317	1940.186	.054%	99.359%
78.0	9.865	1.141	1941.327	.047%	99.418%
79.0	9.387	1.034	1942.362	.042%	99.471%
80.0	9.197	1.002	1943.363	.041%	99.522%
81.0	8.993	0.984	1944.347	.040%	99.572%
82.0	8.761	0.963	1945.31	.039%	99.622%
83.0	8.599	0.944	1946.254	.039%	99.670%
84.0	8.487	0.931	1947.184	.038%	99.718%
85.0	8.438	0.924	1948.108	.038%	99.765%
86.0	8.423	0.922	1949.03	.038%	99.812%
87.0	8.466	0.924	1949.954	.038%	99.860%
88.0	8.480	0.928	1950.882	.038%	99.907%
89.0	8.276	0.918	1951.801	.038%	99.954%
90.0	8.079	0.897	1952.697	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1892.36	77.30%	96.91%
0-40	1901.00	77.66%	97.35%
0-60	1918.52	78.37%	98.25%
0-90	1951.80	79.73%	99.95%
0-120	1951.80	79.73%	99.95%
0-180	1952.70	79.77%	100.00%
60-90	34.24	1.40%	1.75%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.53	1562.16	63.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	962.70
10-20	793.47
20-30	136.18
30-40	8.64
40-50	8.32
50-60	9.20
60-70	10.88
70-80	13.97
80-90	8.44
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



C0(Max): ———

C0/C180: ———

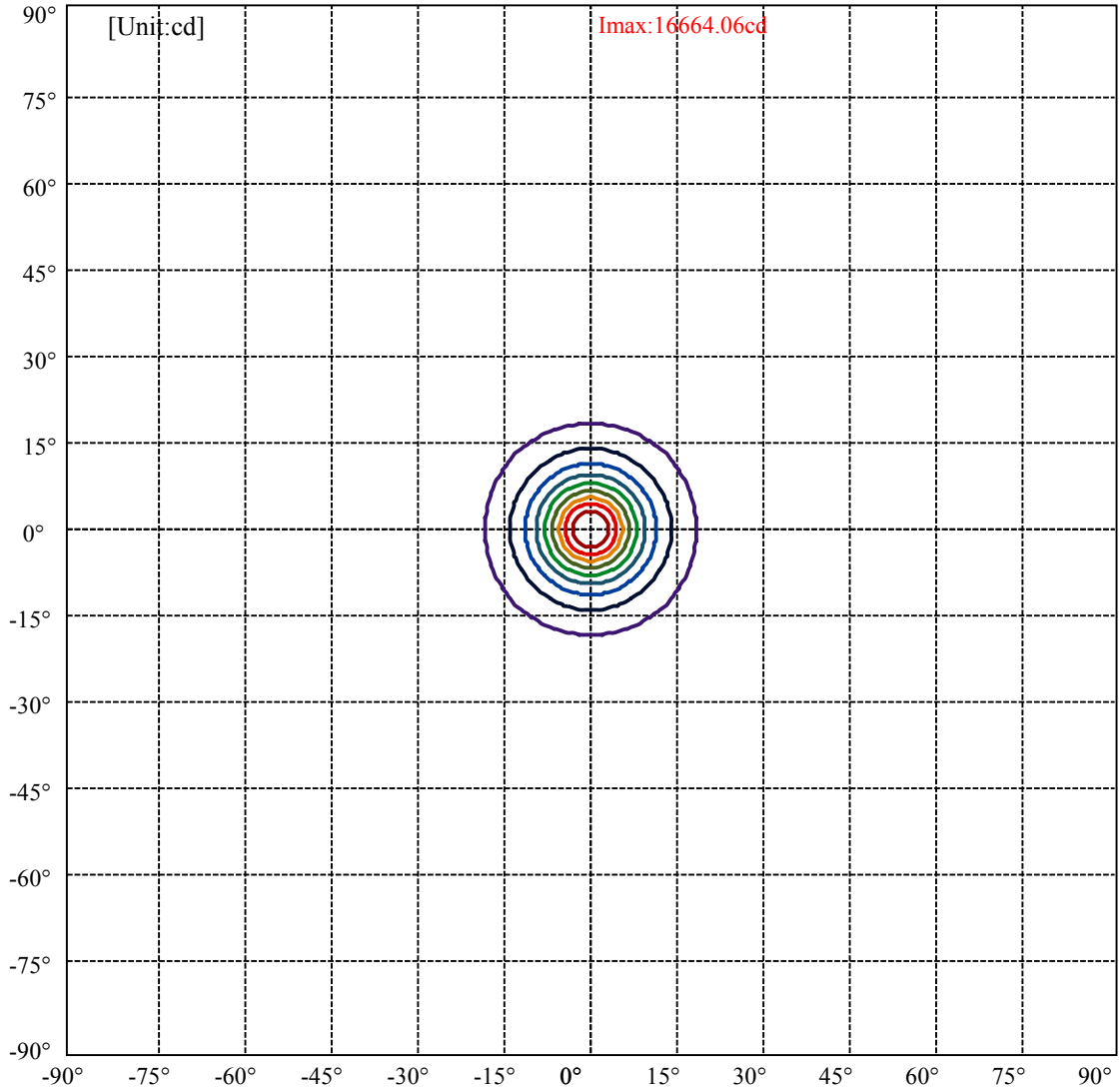
C90/C270: ———

Field angle(10%Imax):C0/180Left:18.1 Right:18.1

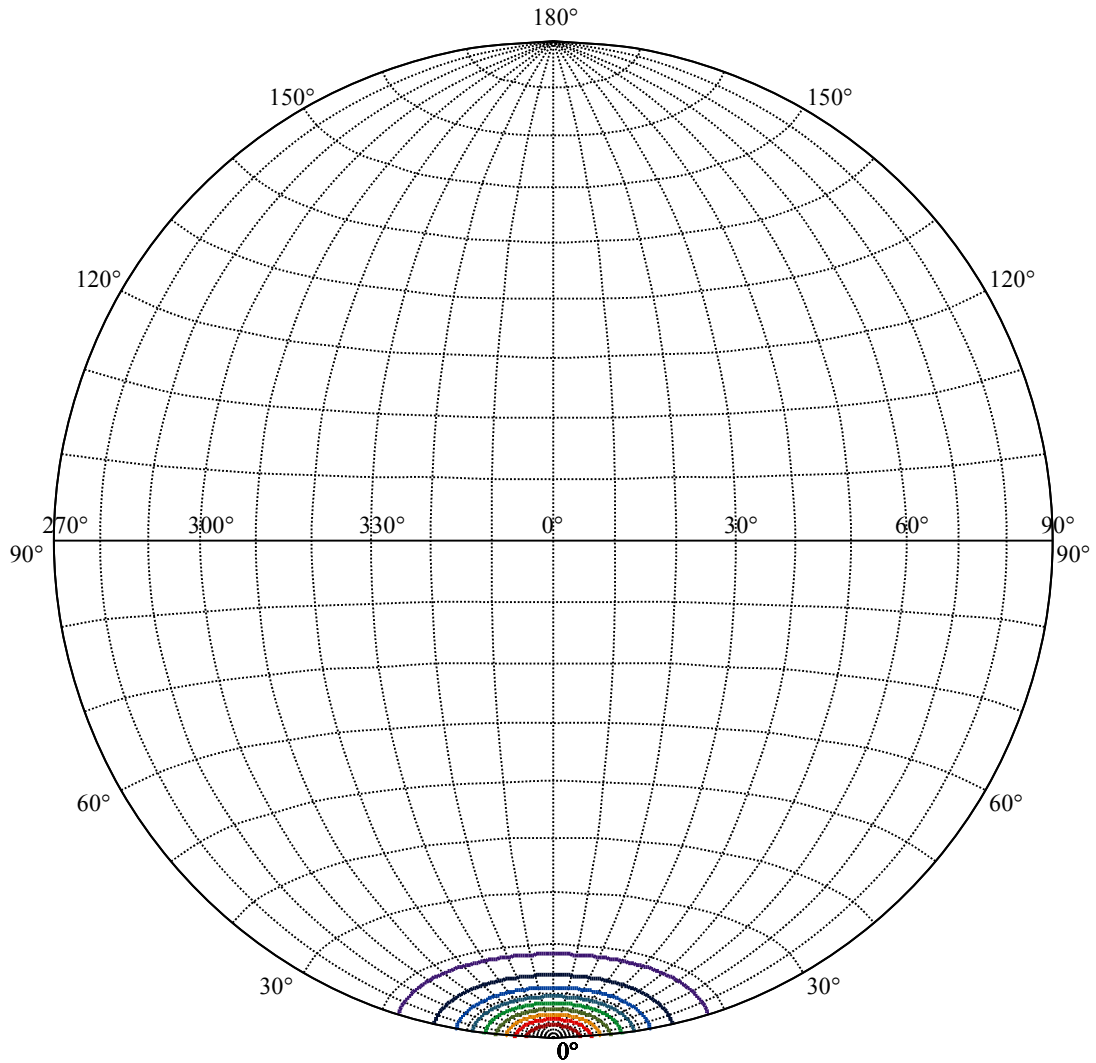
:C90/270Left:18.1 Right:18.1

Beam Angle(50%Imax):C0/180Left:7.9 Right:7.9

:C90/270Left:7.9 Right:7.9



(10%Imax) 1666.41	—
(20%Imax) 3332.81	—
(30%Imax) 4999.22	—
(40%Imax) 6665.63	—
(50%Imax) 8332.03	—
(60%Imax) 9998.44	—
(70%Imax) 11664.8	—
(80%Imax) 13331.3	—
(90%Imax) 14997.7	—



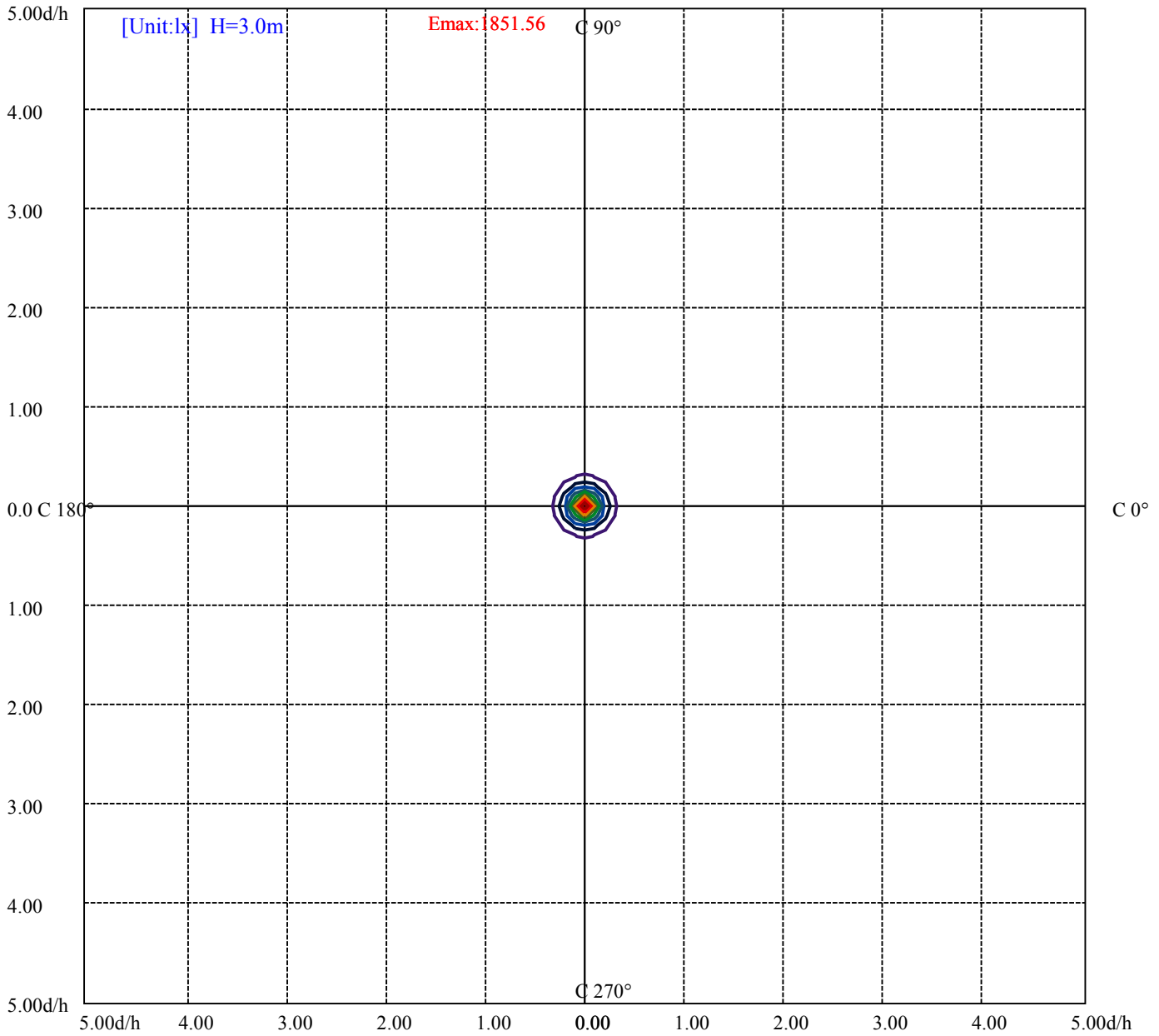
House

[Unit:cd]

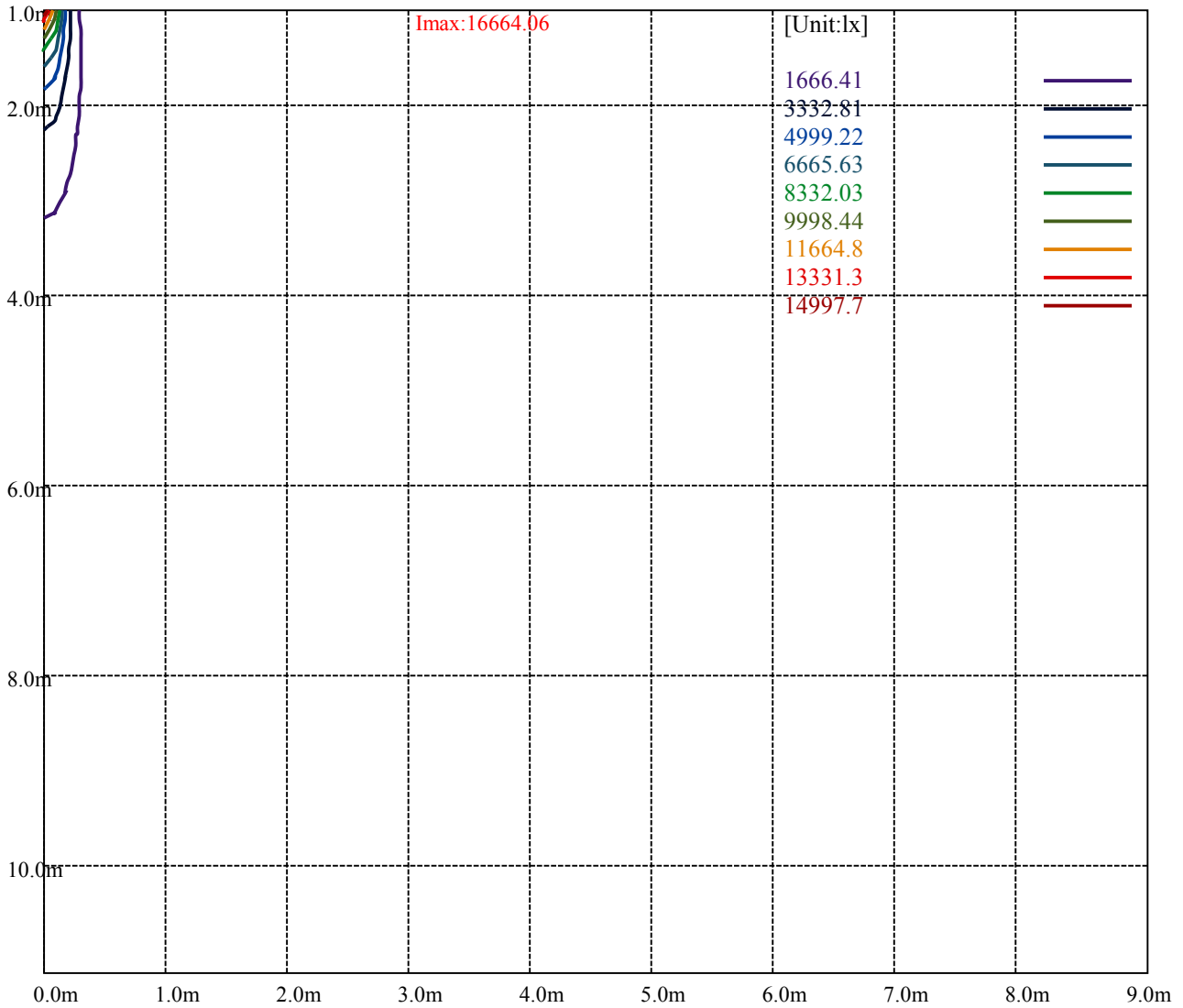
Road

Imax:16664.06

(10%Imax)	1666.41	—
(20%Imax)	3332.81	—
(30%Imax)	4999.22	—
(40%Imax)	6665.63	—
(50%Imax)	8332.03	—
(60%Imax)	9998.44	—
(70%Imax)	11664.8	—
(80%Imax)	13331.3	—
(90%Imax)	14997.7	—



- (10%Emax) 185.1556
- (20%Emax) 370.3122
- (30%Emax) 555.4678
- (40%Emax) 740.6245
- (50%Emax) 925.78
- (60%Emax) 1110.936
- (70%Emax) 1296.089
- (80%Emax) 1481.245
- (90%Emax) 1666.4



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

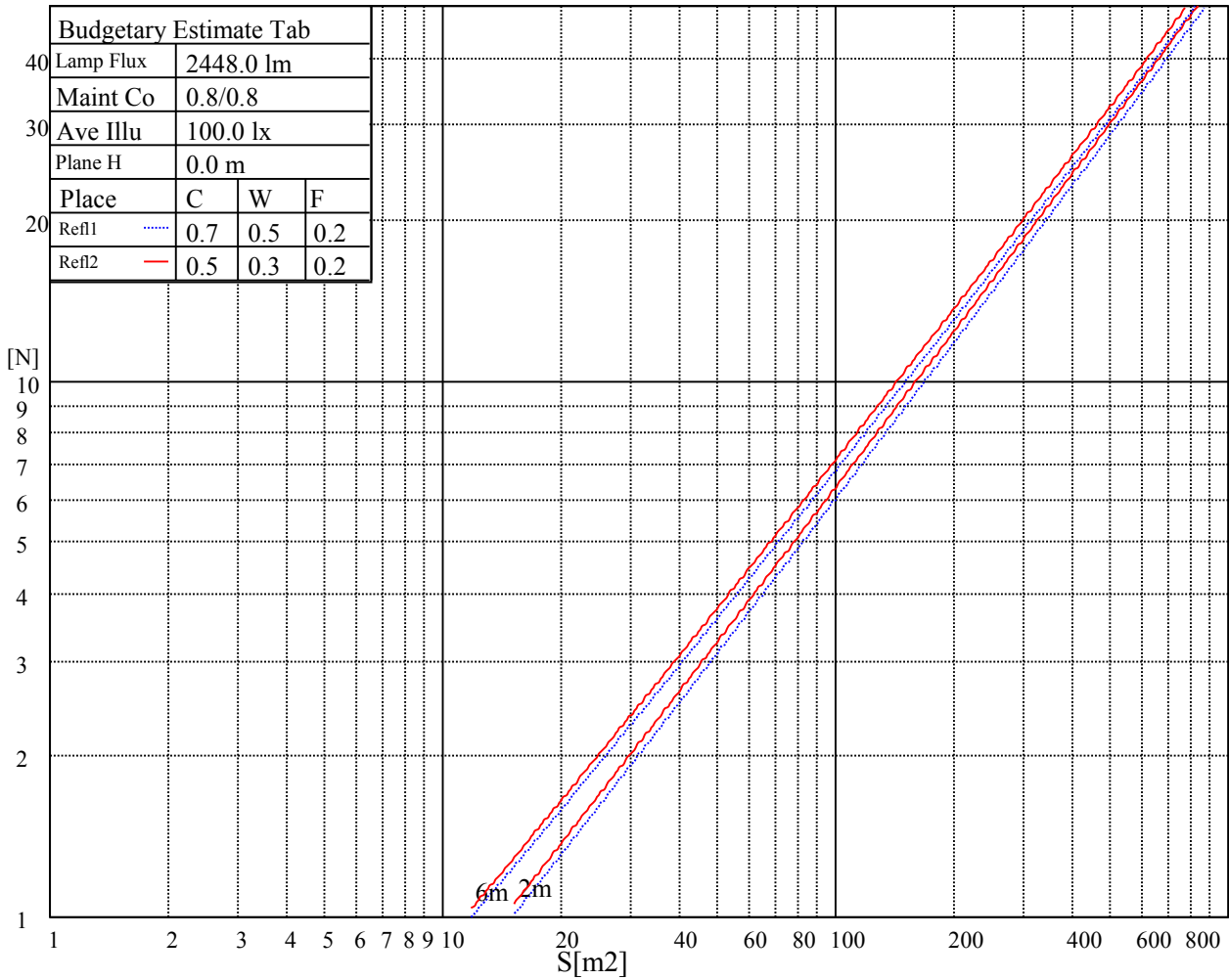
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

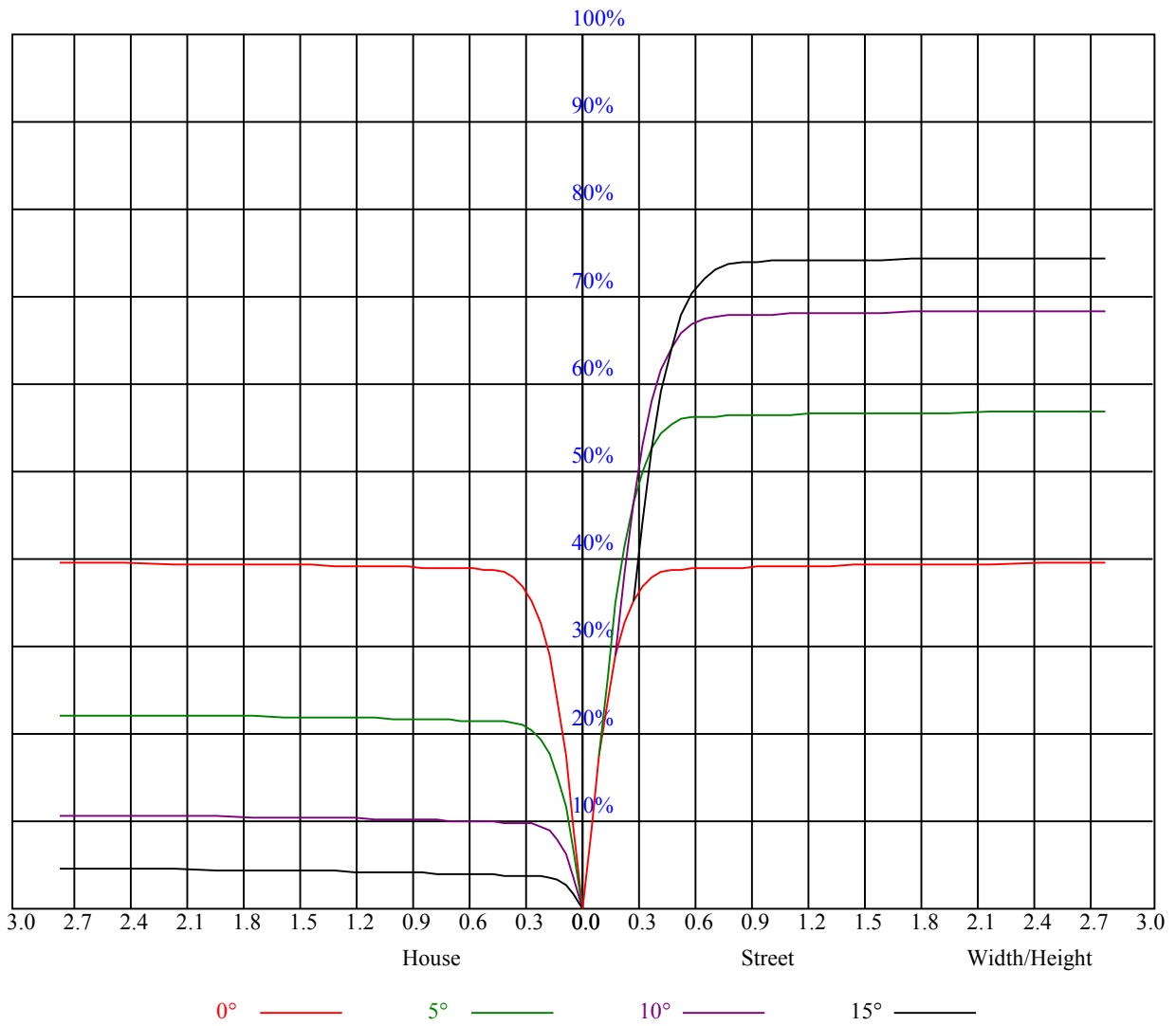
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

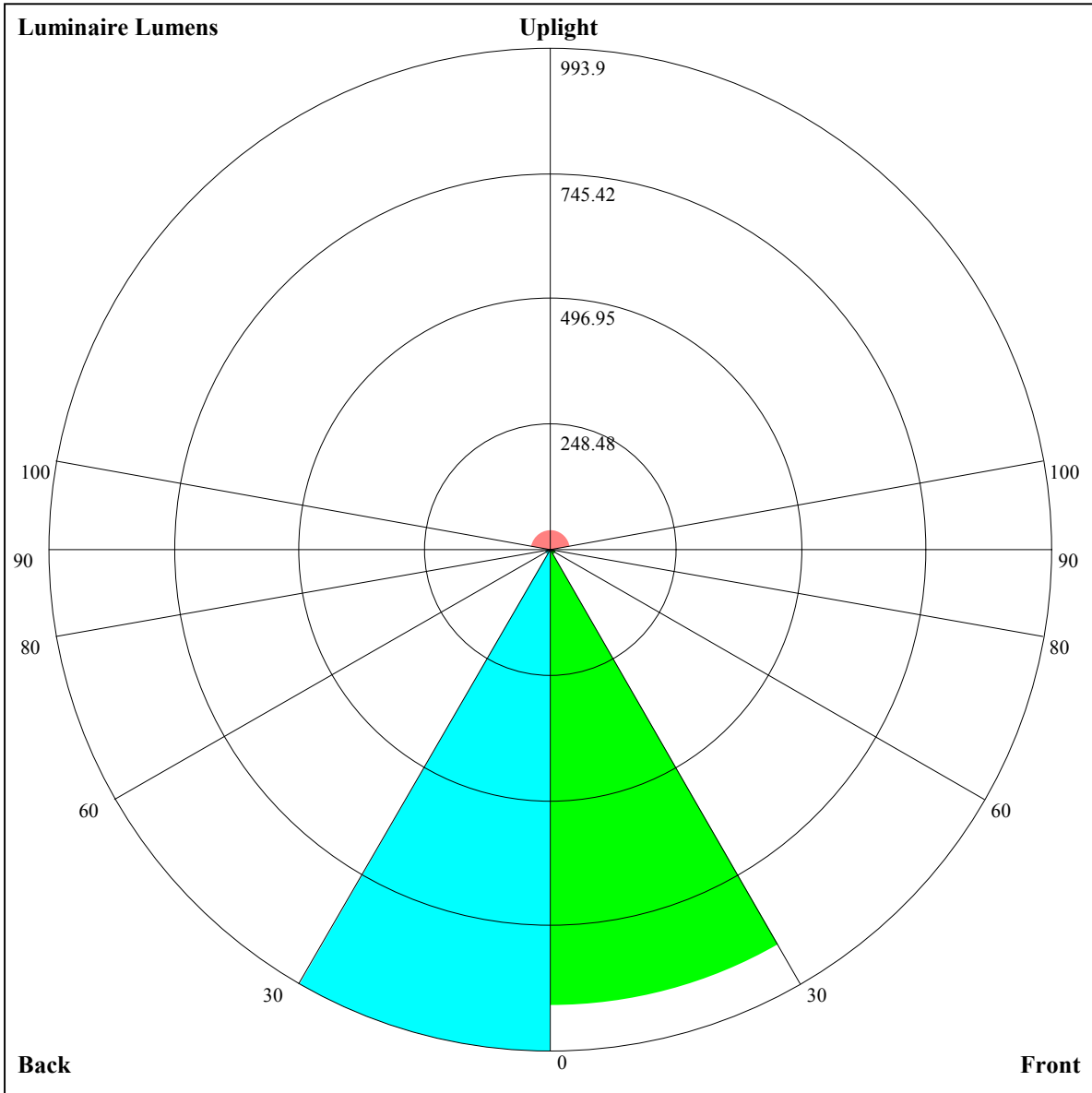
Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.80
1	0.90	0.89	0.87	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82	0.81	0.80	0.79	0.79	0.77
2	0.86	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.80	0.79	0.78	0.78	0.77	0.76	0.75
3	0.83	0.81	0.78	0.82	0.80	0.78	0.80	0.78	0.77	0.78	0.77	0.75	0.77	0.75	0.74	0.73
4	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.77	0.75	0.73	0.75	0.74	0.73	0.72
5	0.78	0.75	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.75	0.73	0.72	0.74	0.72	0.71	0.70
6	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.73	0.71	0.70	0.69
7	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.71	0.70	0.68	0.67
8	0.73	0.70	0.68	0.72	0.70	0.68	0.72	0.69	0.67	0.71	0.69	0.67	0.70	0.68	0.67	0.66
9	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.70	0.67	0.66	0.69	0.67	0.66	0.65
10	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.66	0.65	0.68	0.66	0.65	0.68	0.66	0.65	0.64





Luminaire Lumens:

FL=902.81,FM=12.74,FH=11.49,FVH=4.58

BL=993.9,BM=13.28,BH=12.27,BVH=4.72

UL=8.81,UH=41.95

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	16728.75	16458.75	15811.88	14793.75	13381.88	11818.13	10378.13	8853.75	7695.00
45.0	16717.50	16346.25	15519.38	14400.00	12920.63	11531.25	9916.88	8426.25	7306.88
90.0	16576.88	16256.25	15491.25	14130.00	12813.75	11085.75	9662.63	8364.38	7245.56
135.0	16633.13	16593.75	16273.13	15547.50	14360.63	12943.13	11565.00	9973.13	8673.75
180.0	16728.75	16706.25	16368.75	15536.25	14478.75	13224.38	11120.63	10049.06	8717.63
225.0	16717.50	16717.50	16560.00	15879.38	14985.00	13741.88	11158.31	10623.94	9256.50
270.0	16576.88	16655.63	16441.88	15879.38	14861.25	13455.00	12105.00	10704.38	9185.63
315.0	16633.13	16380.00	15800.63	14568.75	13348.13	11084.06	10382.06	8901.56	7754.06
360.0	16728.75	16458.75	15811.88	14793.75	13381.88	11818.13	10378.13	8853.75	7695.00
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6581.25	5596.88	4831.88	4173.75	3555.00	3037.50	2874.38	2246.06	1886.06
45.0	6226.88	5265.00	4533.75	3915.00	3268.13	2885.63	2459.81	2079.00	1741.50
90.0	6044.06	5205.38	4493.81	3820.50	3306.94	2808.56	2387.81	2058.19	1721.25
135.0	7436.25	6333.75	5461.88	4629.38	3920.63	3386.25	2930.63	2467.69	2129.63
180.0	7437.38	6348.38	5488.31	4667.06	4037.63	3435.19	2936.81	2553.75	2204.44
225.0	8054.44	6760.69	5867.44	4983.75	4231.13	3669.75	3146.06	2736.00	2323.69
270.0	7858.13	6721.88	5833.13	5056.88	4224.38	3661.88	3195.00	2874.38	2327.63
315.0	6609.38	5619.38	4855.50	4125.38	3573.00	3052.13	2568.38	2262.38	1936.69
360.0	6581.25	5596.88	4831.88	4173.75	3555.00	3037.50	2874.38	2246.06	1886.06
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1600.88	1377.00	1044.00	820.13	638.44	385.31	291.38	132.64	51.36
45.0	1465.88	1159.31	916.88	696.94	471.94	304.31	212.51	75.26	31.05
90.0	1414.13	1095.47	926.61	687.09	466.76	304.14	170.89	79.76	32.23
135.0	1811.25	1519.31	1200.94	967.50	749.25	493.31	331.31	293.06	93.09
180.0	1797.75	1516.50	1108.24	961.99	745.54	547.20	370.01	203.51	109.97
225.0	1953.56	1658.81	1403.44	1118.98	853.88	639.39	423.96	254.14	148.05
270.0	1994.63	1695.94	1377.00	1125.56	896.06	655.31	439.88	300.38	150.02
315.0	1548.56	1114.48	1084.89	828.39	594.11	408.83	259.48	126.06	54.62
360.0	1600.88	1377.00	1044.00	820.13	638.44	385.31	291.38	132.64	51.36
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	26.61	22.73	20.19	18.39	16.76	15.58	14.63	13.84	13.11
45.0	23.12	19.97	18.17	16.71	15.30	14.40	13.73	13.11	12.54
90.0	23.57	20.48	18.56	17.10	15.75	14.74	13.95	13.28	12.66
135.0	35.38	25.20	22.05	20.08	18.34	16.99	15.98	15.02	14.29
180.0	41.57	25.93	22.73	20.31	18.62	17.10	16.03	15.02	14.34
225.0	68.51	26.44	22.78	20.36	18.28	16.59	15.41	14.34	13.44
270.0	58.84	28.58	21.94	19.58	17.78	15.98	14.85	13.89	12.99
315.0	27.90	22.78	20.19	18.39	16.76	15.53	14.46	13.73	13.11
360.0	26.61	22.73	20.19	18.39	16.76	15.58	14.63	13.84	13.11
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	12.60	12.21	11.76	11.48	11.31	11.03	10.91	10.80	10.69
45.0	12.15	11.76	11.53	11.25	11.08	10.91	10.80	10.69	10.58
90.0	12.26	11.93	11.64	11.42	11.25	11.08	10.91	10.86	10.74
135.0	13.73	13.33	12.88	12.54	12.32	12.09	11.93	11.76	11.64
180.0	13.61	13.16	12.77	12.32	12.09	11.87	11.70	11.53	11.42
225.0	12.83	12.26	11.87	11.48	11.14	10.97	10.80	10.58	10.46
270.0	12.38	11.93	11.42	11.03	10.74	10.52	10.35	10.24	10.07
315.0	12.49	12.04	11.70	11.42	11.14	10.91	10.74	10.58	10.52
360.0	12.60	12.21	11.76	11.48	11.31	11.03	10.91	10.80	10.69

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	10.58	10.46	10.41	10.41	10.35	10.35	10.41	10.41	10.46
45.0	10.46	10.41	10.35	10.29	10.24	10.18	10.13	10.07	10.07
90.0	10.69	10.63	10.63	10.58	10.46	10.35	10.35	10.29	10.24
135.0	11.48	11.42	11.36	11.31	11.25	11.14	11.08	11.03	10.91
180.0	11.36	11.36	11.36	11.36	11.36	11.42	11.42	11.36	11.36
225.0	10.41	10.29	10.24	10.18	10.13	10.07	10.01	10.01	9.96
270.0	10.01	9.90	9.84	9.79	9.73	9.62	9.62	9.62	9.56
315.0	10.41	10.35	10.18	10.18	10.07	10.01	10.01	9.96	9.90
360.0	10.58	10.46	10.41	10.41	10.35	10.35	10.41	10.41	10.46
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.52	10.58	10.58	10.58	10.58	10.52	10.52	10.58	10.58
45.0	10.01	9.96	9.96	9.96	9.96	9.90	9.90	9.84	9.84
90.0	10.18	10.13	10.07	10.07	10.01	9.96	9.90	9.90	9.90
135.0	10.91	10.91	10.86	10.86	10.91	10.97	11.03	11.08	11.08
180.0	11.25	11.14	11.14	11.03	10.97	10.86	10.80	10.86	10.80
225.0	9.96	9.96	9.96	9.96	9.96	9.90	9.84	9.79	9.79
270.0	9.56	9.45	9.45	9.45	9.39	9.34	9.34	9.28	9.28
315.0	9.90	9.84	9.79	9.79	9.79	9.79	9.79	9.84	9.90
360.0	10.52	10.58	10.58	10.58	10.58	10.52	10.52	10.58	10.58
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.63	10.69	11.19	12.43	14.68	17.33	19.97	22.16	23.79
45.0	9.79	9.73	9.68	9.68	9.62	9.56	9.56	9.62	9.62
90.0	9.84	9.84	9.79	9.73	9.73	9.73	9.68	9.73	9.84
135.0	11.14	11.14	11.19	11.25	11.36	12.04	13.67	16.31	20.19
180.0	10.86	11.14	12.15	13.84	15.98	17.33	18.90	20.14	20.87
225.0	9.73	9.68	9.62	9.62	9.56	9.56	9.51	9.56	9.62
270.0	9.28	9.23	9.23	9.23	9.17	9.17	9.17	9.17	9.11
315.0	9.96	10.01	10.07	10.18	10.24	10.29	10.58	11.70	14.12
360.0	10.63	10.69	11.19	12.43	14.68	17.33	19.97	22.16	23.79
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	24.13	23.29	21.04	18.11	15.75	12.60	10.18	9.51	9.28
45.0	9.68	9.68	9.68	9.68	9.62	9.56	9.45	9.34	9.11
90.0	9.96	10.07	10.18	10.18	10.07	9.79	9.34	9.00	8.83
135.0	23.06	25.31	25.14	23.74	20.53	16.31	11.70	9.96	9.68
180.0	21.77	22.61	23.01	22.05	18.00	14.06	10.18	9.62	9.45
225.0	9.68	9.68	9.73	9.68	9.68	9.62	9.56	9.39	9.28
270.0	9.11	9.11	9.11	9.23	9.23	9.17	9.06	9.00	8.89
315.0	17.33	19.07	18.39	16.20	13.11	10.46	9.45	9.28	9.06
360.0	24.13	23.29	21.04	18.11	15.75	12.60	10.18	9.51	9.28
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.00	8.61	8.38	8.27	8.27	8.21	8.16	8.16	8.04
45.0	8.89	8.72	8.49	8.33	8.21	8.16	8.16	8.04	8.04
90.0	8.72	8.55	8.55	8.55	8.55	8.61	8.38	8.21	8.16
135.0	9.51	9.34	9.28	9.17	9.11	9.23	9.62	9.84	9.51
180.0	9.17	8.89	8.61	8.49	8.49	8.49	8.78	9.00	8.16
225.0	9.06	8.78	8.55	8.38	8.27	8.21	8.21	8.21	8.10
270.0	8.78	8.61	8.38	8.27	8.21	8.16	8.16	8.16	8.10
315.0	8.83	8.61	8.55	8.44	8.38	8.33	8.27	8.21	8.10
360.0	9.00	8.61	8.38	8.27	8.27	8.21	8.16	8.16	8.04

Intensity data(cd)

C/γ(°)	90.0
0.0	7.93
45.0	7.99
90.0	8.10
135.0	8.32
180.0	8.16
225.0	7.99
270.0	8.04
315.0	8.10
360.0	7.93