



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:

LumCAT: 2-2162-M

Luminaire: BJB 47.360.5080

Report No: nt0100

Test No: GC2020031332

LampCAT: NICHIA NFCWJ108B-V3

Lamp flux(lm): 2445.6

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.1080

Power (W): 22.8800

PF: 0.9570

Ballast type: AC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 1851.16, Efficiency(%): 75.69% , Luminous Efficacy(lm/W): 80.91

Central intensity(cd): 11977.300, Maximum intensity(cd): 11977.300

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.4

[C90/270]Total=18.4

Field angle(10%Imax): [C0/180]Total=42.2

[C90/270]Total=42.2

Maximum s/h(1/2): C0_180=0.31 C90_270=0.31

Maximum s/h(1/4): C0_180=0.35 C90_270=0.35

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 75.69%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.989%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11977.306	0.000	0	.000%	.000%
1.0	11824.175	11.389	11.389	.466%	.615%
2.0	11316.975	33.214	44.603	1.358%	2.409%
3.0	10827.014	52.961	97.564	2.166%	5.270%
4.0	9969.283	69.612	167.176	2.846%	9.031%
5.0	9259.358	82.721	249.897	3.382%	13.499%
6.0	8633.667	94.033	343.929	3.845%	18.579%
7.0	7711.168	101.452	445.381	4.148%	24.060%
8.0	6900.444	104.573	549.954	4.276%	29.709%
9.0	6103.293	105.388	655.342	4.309%	35.402%
10.0	5380.851	103.927	759.269	4.250%	41.016%
11.0	4749.127	101.219	860.488	4.139%	46.484%
12.0	4165.431	97.449	957.937	3.985%	51.748%
13.0	3673.730	93.031	1050.968	3.804%	56.774%
14.0	3231.448	88.386	1139.354	3.614%	61.548%
15.0	2842.066	83.380	1222.734	3.409%	66.052%
16.0	2505.003	78.350	1301.083	3.204%	70.285%
17.0	2265.910	74.296	1375.379	3.038%	74.298%
18.0	2085.169	71.740	1447.119	2.933%	78.174%
19.0	1726.320	66.312	1513.431	2.711%	81.756%
20.0	1465.203	58.414	1571.845	2.389%	84.912%
21.0	1231.516	51.782	1623.628	2.117%	87.709%
22.0	978.966	44.421	1668.048	1.816%	90.108%
23.0	850.655	38.390	1706.438	1.570%	92.182%
24.0	667.982	33.203	1739.641	1.358%	93.976%
25.0	494.103	26.423	1766.065	1.080%	95.403%
26.0	346.546	19.844	1785.908	.811%	96.475%
27.0	237.440	14.287	1800.196	.584%	97.247%
28.0	153.259	9.892	1810.087	.404%	97.781%
29.0	68.080	5.791	1815.878	.237%	98.094%
30.0	19.124	2.354	1818.233	.096%	98.222%
31.0	12.042	0.867	1819.1	.035%	98.268%
32.0	8.695	0.594	1819.694	.024%	98.300%
33.0	8.010	0.492	1820.186	.020%	98.327%
34.0	7.645	0.474	1820.66	.019%	98.353%
35.0	7.314	0.465	1821.124	.019%	98.378%
36.0	7.088	0.459	1821.583	.019%	98.403%
37.0	6.844	0.454	1822.037	.019%	98.427%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.659	0.451	1822.488	.018%	98.451%
39.0	6.502	0.449	1822.937	.018%	98.476%
40.0	6.351	0.448	1823.386	.018%	98.500%
41.0	6.212	0.447	1823.833	.018%	98.524%
42.0	6.073	0.446	1824.279	.018%	98.548%
43.0	5.969	0.446	1824.725	.018%	98.572%
44.0	5.864	0.447	1825.172	.018%	98.596%
45.0	5.766	0.447	1825.619	.018%	98.621%
46.0	5.661	0.447	1826.066	.018%	98.645%
47.0	5.597	0.448	1826.514	.018%	98.669%
48.0	5.499	0.449	1826.962	.018%	98.693%
49.0	5.412	0.448	1827.41	.018%	98.717%
50.0	5.331	0.448	1827.858	.018%	98.741%
51.0	5.278	0.449	1828.307	.018%	98.766%
52.0	5.232	0.451	1828.758	.018%	98.790%
53.0	5.168	0.452	1829.21	.018%	98.815%
54.0	5.151	0.455	1829.665	.019%	98.839%
55.0	5.104	0.458	1830.123	.019%	98.864%
56.0	5.081	0.460	1830.583	.019%	98.889%
57.0	5.052	0.463	1831.047	.019%	98.914%
58.0	5.006	0.465	1831.512	.019%	98.939%
59.0	4.948	0.465	1831.977	.019%	98.964%
60.0	4.925	0.466	1832.443	.019%	98.989%
61.0	4.925	0.470	1832.913	.019%	99.015%
62.0	4.936	0.475	1833.389	.019%	99.040%
63.0	4.988	0.483	1833.871	.020%	99.066%
64.0	5.099	0.495	1834.366	.020%	99.093%
65.0	5.319	0.516	1834.882	.021%	99.121%
66.0	5.574	0.543	1835.425	.022%	99.150%
67.0	5.864	0.575	1836	.024%	99.181%
68.0	6.433	0.623	1836.623	.025%	99.215%
69.0	7.158	0.693	1837.317	.028%	99.252%
70.0	7.929	0.775	1838.091	.032%	99.294%
71.0	8.811	0.865	1838.957	.035%	99.341%
72.0	9.727	0.964	1839.921	.039%	99.393%
73.0	10.412	1.053	1840.974	.043%	99.450%
74.0	11.015	1.126	1842.1	.046%	99.511%
75.0	11.253	1.177	1843.277	.048%	99.574%

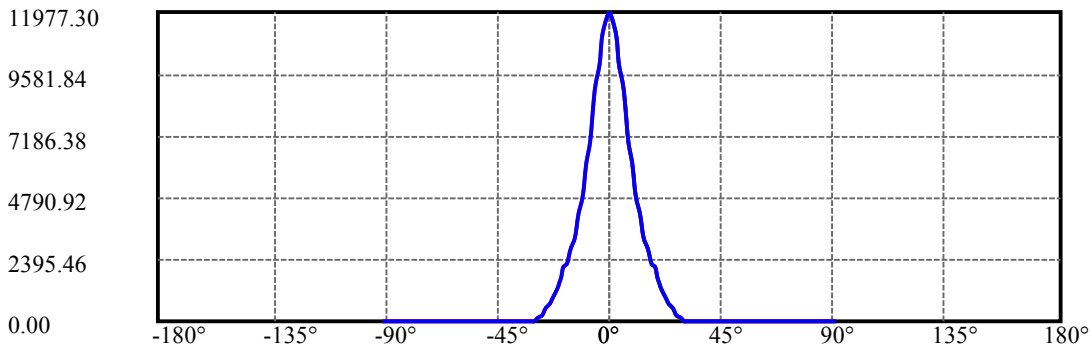
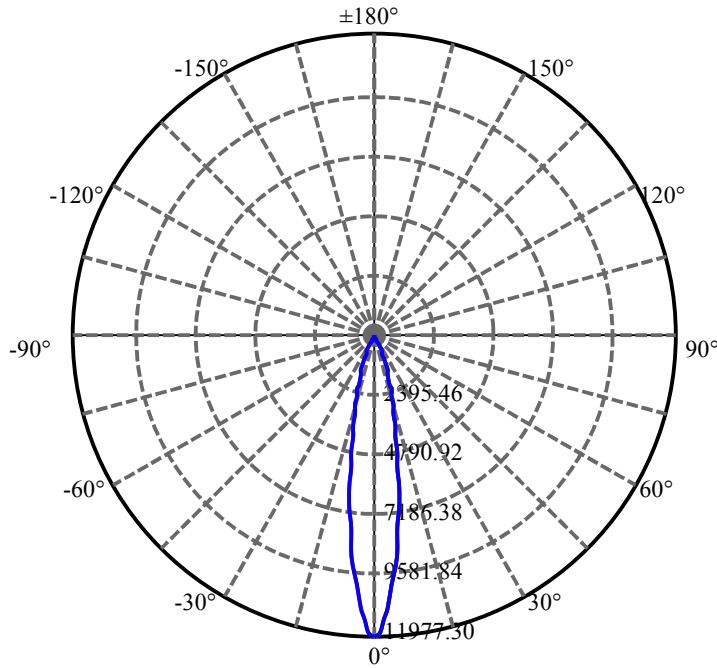
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.218	1.193	1844.47	.049%	99.639%
77.0	10.806	1.174	1845.644	.048%	99.702%
78.0	9.820	1.104	1846.748	.045%	99.762%
79.0	8.167	0.966	1847.714	.040%	99.814%
80.0	6.322	0.781	1848.496	.032%	99.856%
81.0	3.898	0.553	1849.048	.023%	99.886%
82.0	2.686	0.357	1849.405	.015%	99.905%
83.0	2.169	0.264	1849.669	.011%	99.920%
84.0	1.990	0.227	1849.896	.009%	99.932%
85.0	1.926	0.214	1850.109	.009%	99.944%
86.0	1.839	0.206	1850.315	.008%	99.955%
87.0	1.833	0.201	1850.516	.008%	99.965%
88.0	1.862	0.202	1850.719	.008%	99.976%
89.0	1.972	0.210	1850.929	.009%	99.988%
90.0	2.158	0.226	1851.155	.009%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1818.23	74.35%	98.22%
0-40	1823.39	74.56%	98.50%
0-60	1832.44	74.93%	98.99%
0-90	1850.93	75.68%	99.99%
0-120	1850.93	75.68%	99.99%
0-180	1851.16	75.69%	100.00%
60-90	18.95	0.77%	1.02%
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%
0-18.51	1480.92	60.55%	80.00%

ZONAL LUMEN SUMMARY

0-10	759.27
10-20	812.58
20-30	246.39
30-40	5.15
40-50	4.47
50-60	4.59
60-70	5.65
70-80	10.40
80-90	2.43
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



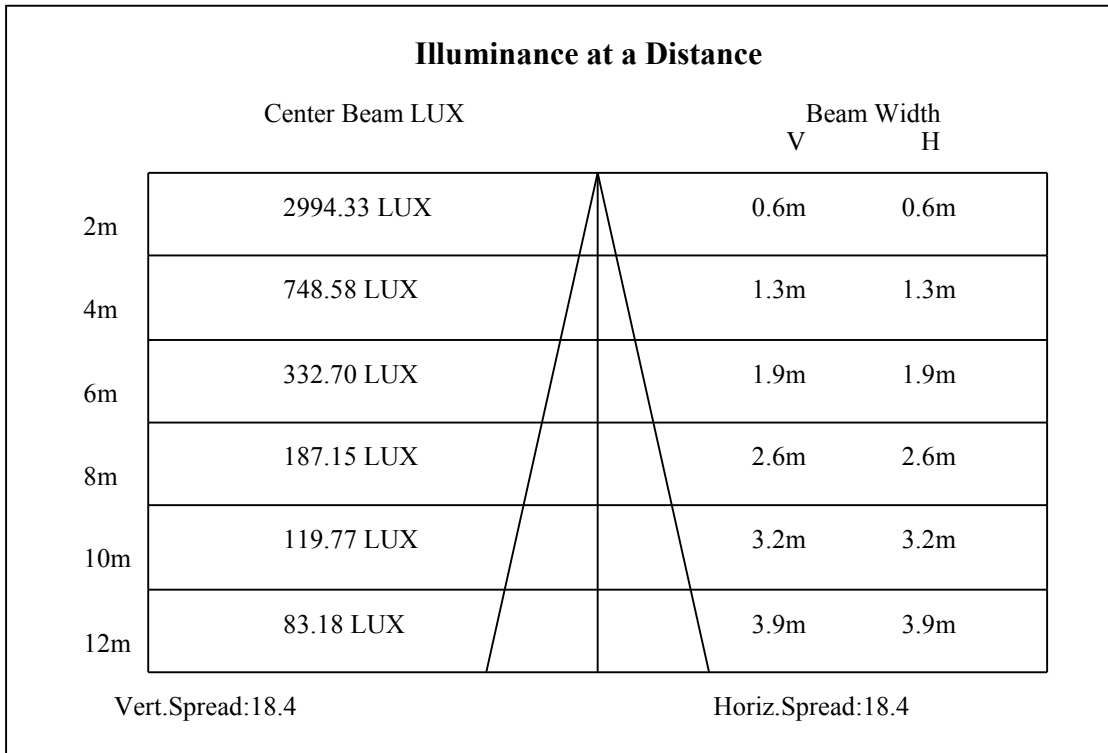
C0(Max): —————

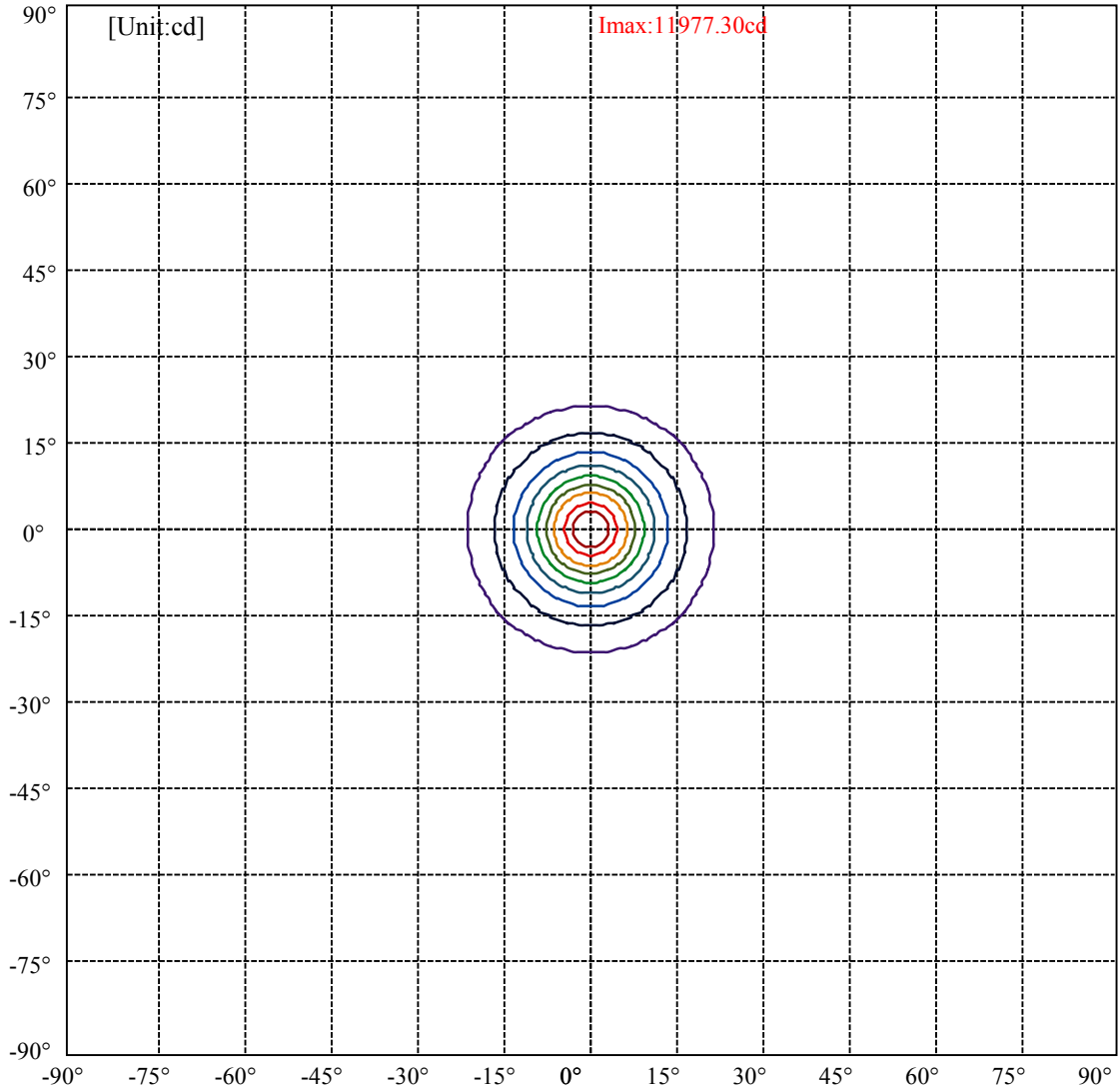
C0/C180: —————

C90/C270: —————

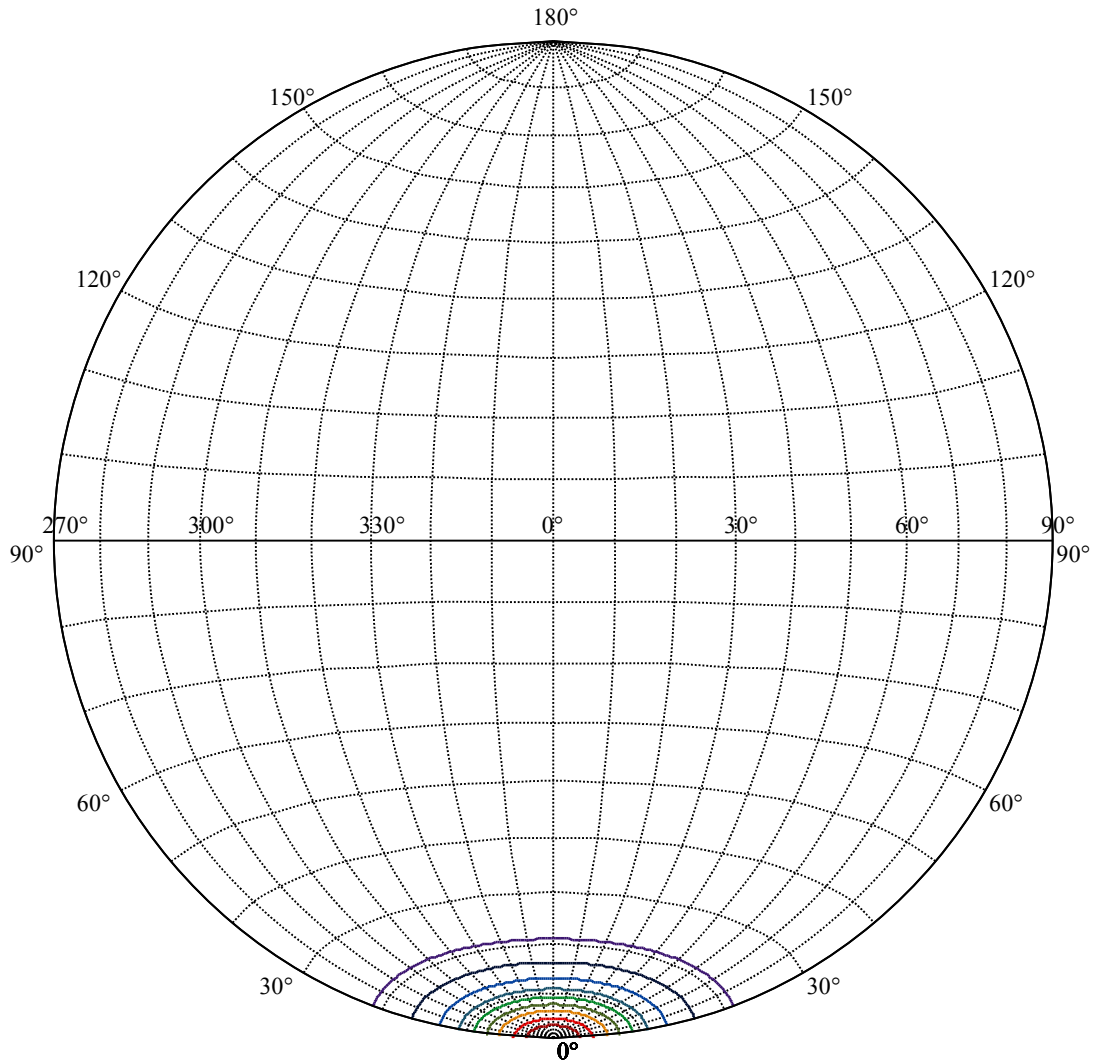
Field angle(10%Imax):C0/180Left:21.1 Right:21.1
:C90/270Left:21.1 Right:21.1

Beam Angle(50%Imax):C0/180Left:9.2 Right:9.2
:C90/270Left:9.2 Right:9.2





(10%Imax) 1197.73	—
(20%Imax) 2395.46	—
(30%Imax) 3593.19	—
(40%Imax) 4790.92	—
(50%Imax) 5988.65	—
(60%Imax) 7186.38	—
(70%Imax) 8384.11	—
(80%Imax) 9581.84	—
(90%Imax) 10779.6	—



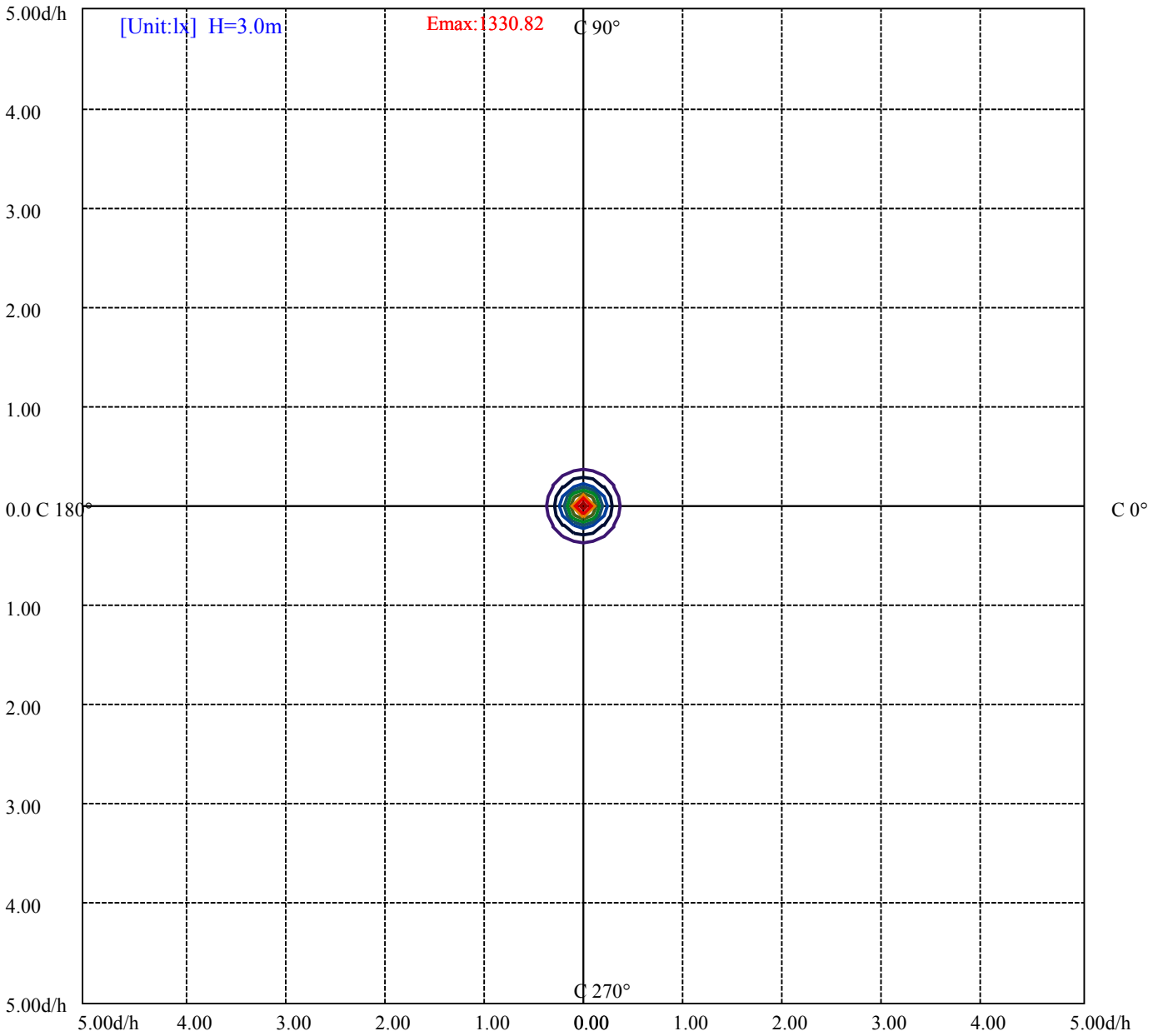
House

[Unit:cd]

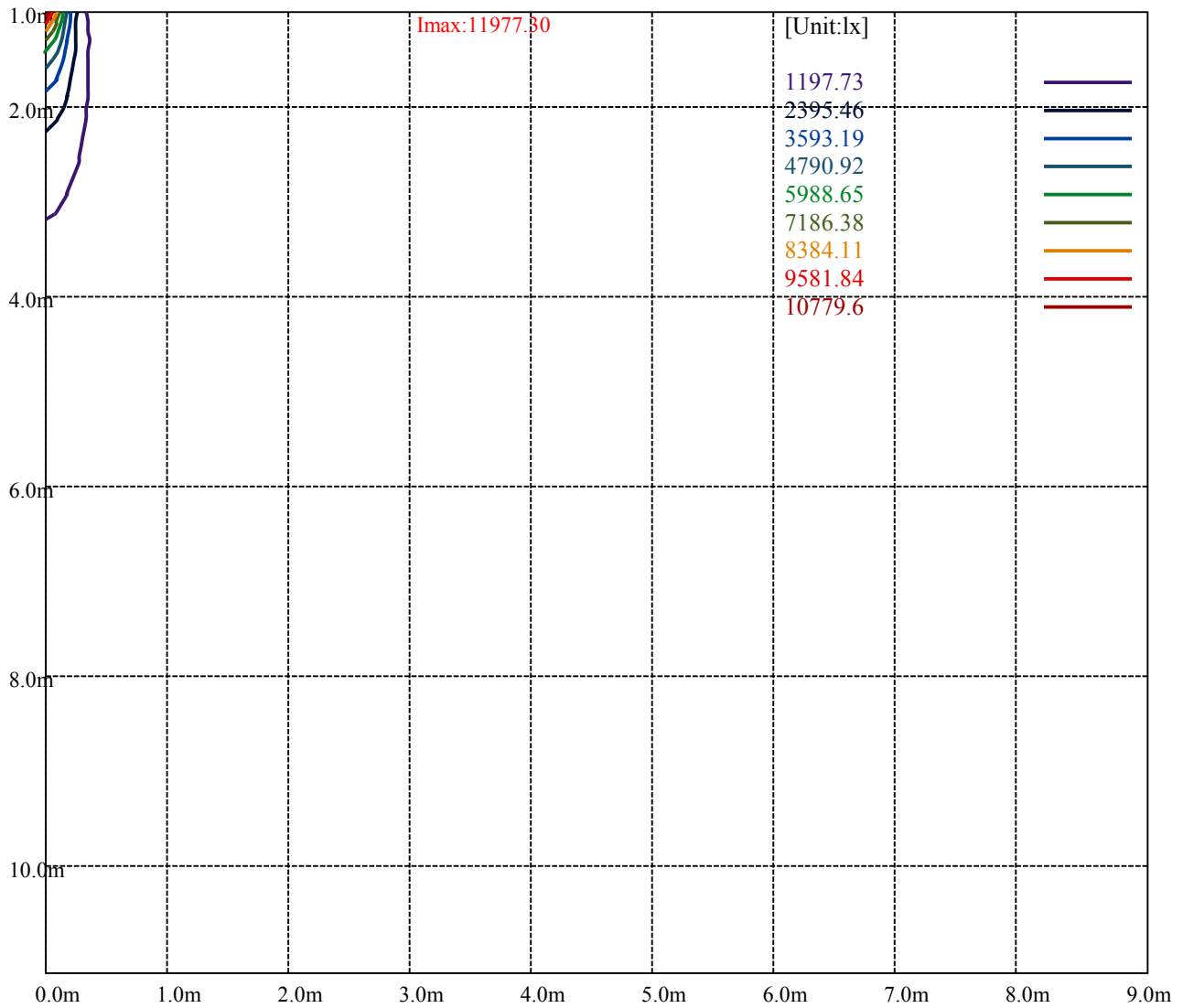
Road

Imax:11977.30

(10%Imax)	1197.73	—
(20%Imax)	2395.46	—
(30%Imax)	3593.19	—
(40%Imax)	4790.92	—
(50%Imax)	5988.65	—
(60%Imax)	7186.38	—
(70%Imax)	8384.11	—
(80%Imax)	9581.84	—
(90%Imax)	10779.6	—



- (10%Emax) 133.0811
- (20%Emax) 266.1622
- (30%Emax) 399.2422
- (40%Emax) 532.3234
- (50%Emax) 665.4045
- (60%Emax) 798.4856
- (70%Emax) 931.5667
- (80%Emax) 1064.647
- (90%Emax) 1197.733



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

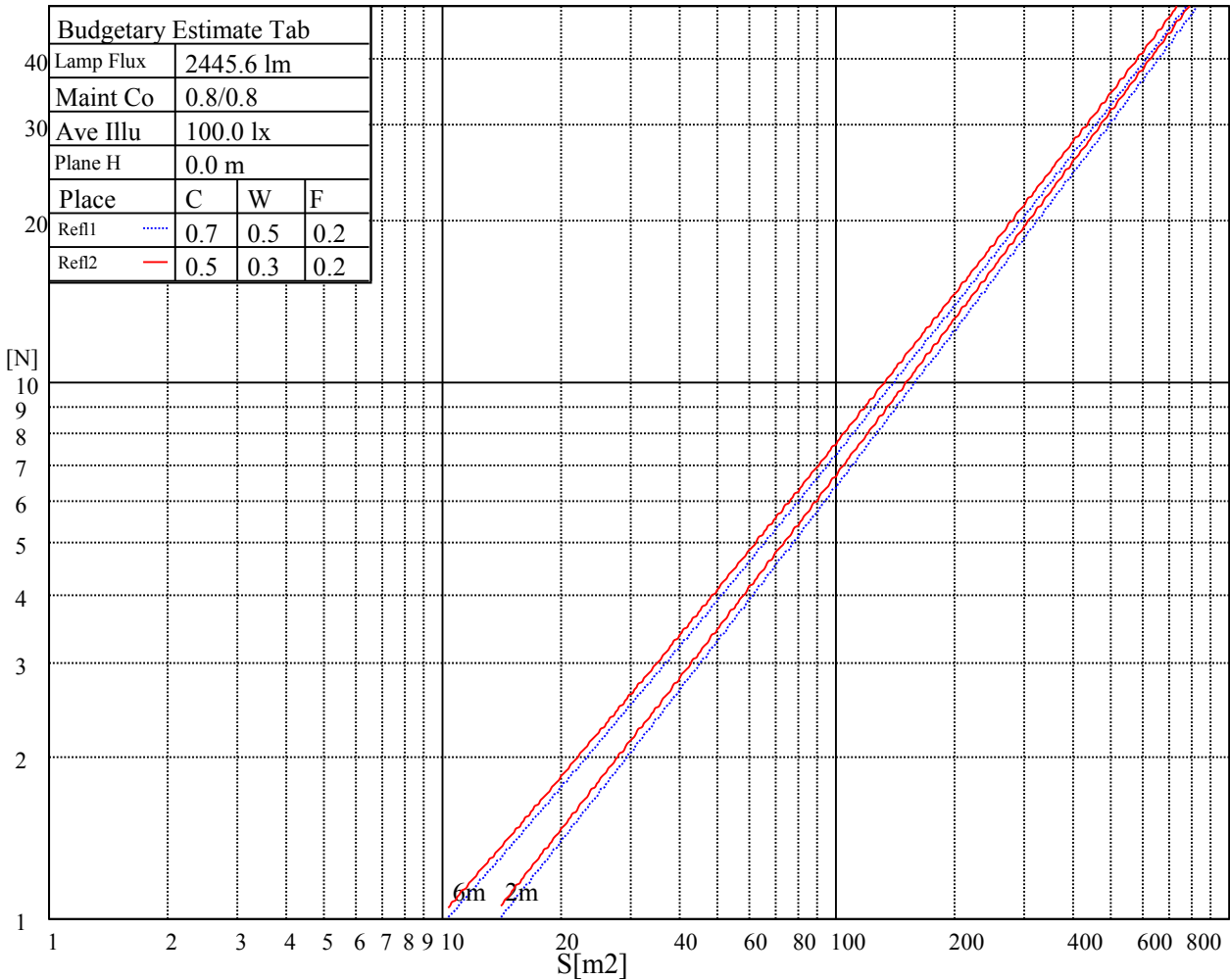
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

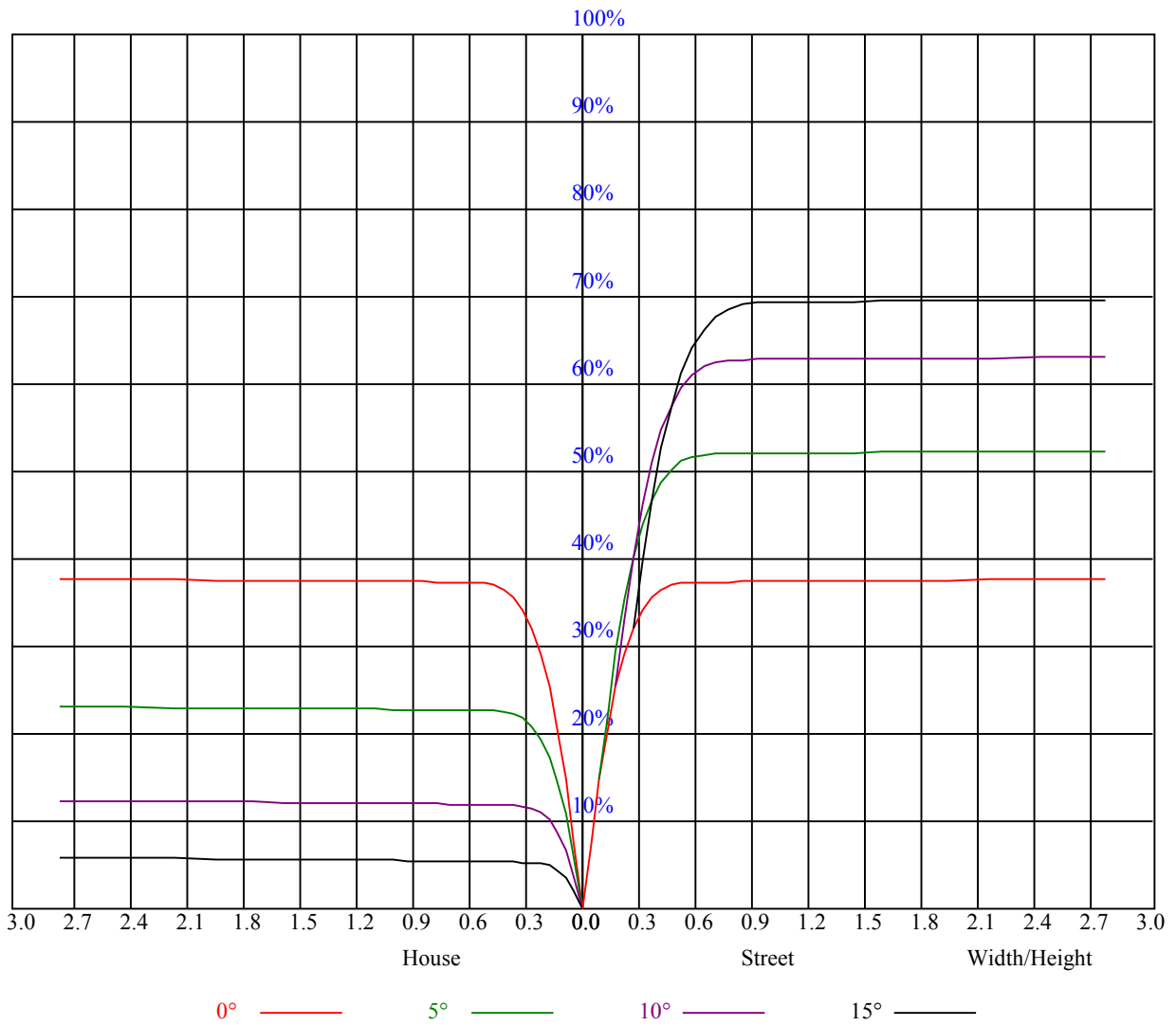
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

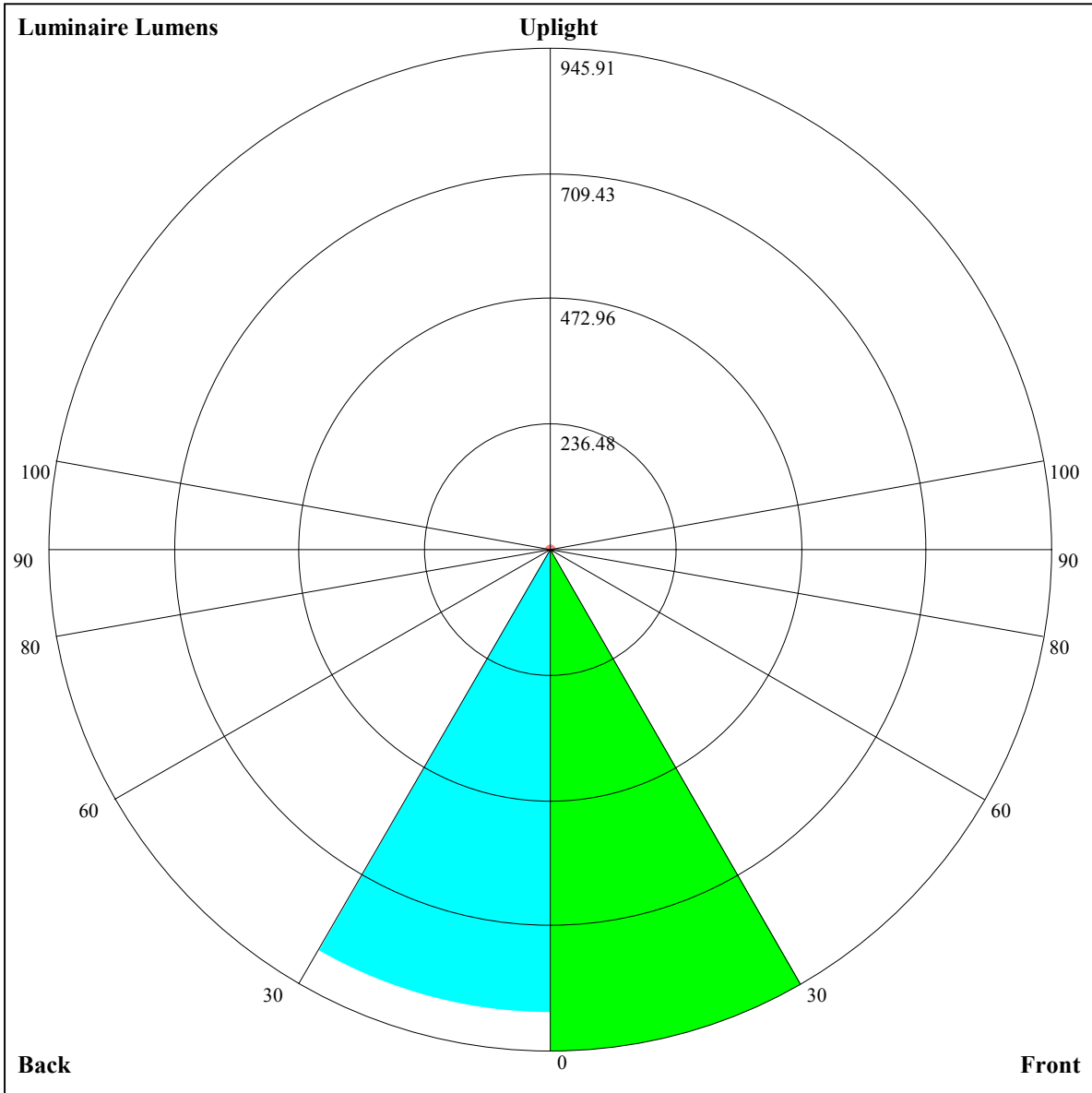
Luminance Limiting Curve





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	0.90	0.90	0.90	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.77	0.77	0.77	0.76
1	0.86	0.84	0.83	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.77	0.77	0.76	0.75	0.75	0.73
2	0.82	0.80	0.78	0.80	0.79	0.77	0.78	0.77	0.75	0.76	0.75	0.74	0.74	0.73	0.72	0.71
3	0.79	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.72	0.71	0.70	0.69
4	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.70	0.72	0.70	0.69	0.71	0.69	0.68	0.67
5	0.73	0.70	0.68	0.73	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.69	0.68	0.66	0.65
6	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.65	0.64
7	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.62
8	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.63	0.62	0.65	0.63	0.62	0.61
9	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.62	0.60	0.59
10	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.61	0.59	0.62	0.60	0.59	0.58





Luminaire Lumens:

FL=945.91,FM=7.8,FH=8.35,FVH=1.5

BL=872.54,BM=6.46,BH=7.22,BVH=1.33

UL=2.35,UH=11.2

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	12111.88	12079.39	11865.94	11397.26	10371.75	9028.75	9028.75	8109.03	7207.88
45.0	11838.10	12032.99	12153.64	12005.15	11615.36	11016.76	10241.82	9383.36	8483.13
90.0	11991.23	11912.34	11401.90	10794.02	9184.66	8833.85	8657.05	7762.86	6895.58
135.0	11968.03	11889.14	11568.96	11044.60	10357.83	9559.69	9044.61	7819.57	7299.85
180.0	12111.88	11879.86	11425.11	10775.46	9991.24	9137.42	8251.12	7374.09	6534.19
225.0	11838.10	11095.64	9149.39	8788.84	8788.84	7875.16	6998.60	6184.68	5455.22
270.0	11991.23	11921.62	11601.44	11058.52	10343.91	9522.57	8645.55	7745.32	6868.30
315.0	11968.03	11782.41	11369.42	10752.26	9100.67	9100.67	8201.84	7310.43	6459.39
360.0	12111.88	12079.39	11865.94	11397.26	10371.75	9028.75	9028.75	8109.03	7207.88
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6361.02	5593.97	4908.13	4302.10	3774.49	3313.71	2912.32	2558.73	2242.72
45.0	7578.27	6710.53	5898.47	5179.22	4543.49	3982.01	3494.78	3058.58	2831.21
90.0	6092.34	5368.91	4727.62	4150.36	3650.13	3213.48	2831.58	2558.73	2187.96
135.0	6478.51	5731.42	5053.93	4459.96	3926.33	3462.29	3049.30	2682.72	2357.89
180.0	5777.82	5100.33	4501.73	3972.73	3499.42	3086.43	2719.84	2390.38	2390.38
225.0	4799.08	4221.82	3719.27	3279.37	2890.05	2542.95	2232.98	1956.88	1699.34
270.0	6056.24	5327.71	4682.70	4121.22	3624.70	3188.51	2803.37	2469.26	2343.97
315.0	5683.06	4992.12	4501.17	3858.48	3481.23	3062.20	2692.37	2364.76	2073.81
360.0	6361.02	5593.97	4908.13	4302.10	3774.49	3313.71	2912.32	2558.73	2242.72
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1961.05	1705.83	1562.45	1339.71	858.00	858.00	708.58	528.77	366.31
45.0	2357.89	2357.89	2046.43	1611.17	1380.08	1175.91	971.73	778.69	593.55
90.0	1966.16	1710.94	1428.34	1258.04	857.26	857.26	669.37	492.53	334.43
135.0	2357.89	1759.66	1514.65	1379.15	1082.17	958.74	763.38	580.09	411.18
180.0	2330.05	1681.70	1441.33	1229.27	1016.28	813.50	622.32	447.37	294.24
225.0	1553.63	1329.50	922.31	922.31	727.33	542.46	375.26	235.36	123.85
270.0	2343.97	1698.87	1462.68	1249.22	1047.37	848.30	661.76	486.35	330.90
315.0	1810.70	1566.16	1343.42	863.24	863.24	751.08	571.46	403.66	317.91
360.0	1961.05	1705.83	1562.45	1339.71	858.00	858.00	708.58	528.77	366.31
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	230.49	123.94	50.53	15.92	10.26	9.74	9.37	8.96	8.63
45.0	426.96	278.93	278.93	67.93	34.52	11.42	8.58	7.98	7.47
90.0	205.38	103.53	38.00	10.81	7.89	7.33	6.96	6.77	6.40
135.0	269.65	269.65	66.68	19.81	9.33	8.68	8.17	7.75	7.42
180.0	294.24	64.08	33.09	9.10	8.58	8.07	7.61	7.19	6.82
225.0	45.99	13.78	8.12	7.52	7.05	6.68	6.45	6.17	5.94
270.0	275.22	275.22	34.71	10.39	8.63	8.07	7.80	7.52	7.24
315.0	151.60	96.94	34.57	11.51	10.07	9.56	9.14	8.82	8.58
360.0	230.49	123.94	50.53	15.92	10.26	9.74	9.37	8.96	8.63
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	8.49	8.12	7.89	7.80	7.56	7.38	7.24	7.10	6.96
45.0	7.01	6.68	6.45	6.17	5.94	5.85	5.71	5.52	5.38
90.0	6.26	6.08	5.89	5.71	5.61	5.52	5.38	5.29	5.24
135.0	7.19	6.87	6.64	6.50	6.31	6.17	5.99	5.85	5.75
180.0	6.59	6.31	6.13	5.94	5.85	5.61	5.43	5.38	5.24
225.0	5.75	5.61	5.48	5.34	5.15	5.01	4.92	4.87	4.73
270.0	7.10	6.96	6.77	6.68	6.68	6.54	6.40	6.36	6.31
315.0	8.31	8.12	8.03	7.89	7.70	7.61	7.52	7.38	7.29
360.0	8.49	8.12	7.89	7.80	7.56	7.38	7.24	7.10	6.96

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	6.87	6.77	6.68	6.50	6.40	6.36	6.26	6.13	5.99
45.0	5.34	5.20	5.06	4.97	4.92	4.87	4.73	4.64	4.59
90.0	5.15	4.97	4.92	4.87	4.78	4.64	4.59	4.55	4.50
135.0	5.61	5.52	5.43	5.34	5.29	5.15	5.06	5.10	5.10
180.0	5.15	5.06	5.01	4.87	4.73	4.64	4.59	4.50	4.41
225.0	4.59	4.55	4.50	4.41	4.32	4.22	4.18	4.08	3.99
270.0	6.22	6.08	6.03	5.99	5.85	5.75	5.80	5.80	5.75
315.0	7.19	7.15	7.15	7.05	7.01	7.01	7.01	7.05	7.01
360.0	6.87	6.77	6.68	6.50	6.40	6.36	6.26	6.13	5.99
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.99	5.89	5.80	5.75	5.71	5.71	5.75	5.80	5.89
45.0	4.55	4.41	4.32	4.32	4.27	4.13	4.04	4.04	3.94
90.0	4.45	4.45	4.45	4.50	4.45	4.45	4.41	4.41	4.41
135.0	5.10	5.10	5.20	5.15	5.15	5.10	5.06	5.01	5.06
180.0	4.41	4.32	4.32	4.32	4.22	4.18	4.27	4.32	4.36
225.0	3.94	3.90	3.85	3.81	3.76	3.67	3.57	3.57	3.53
270.0	5.75	5.75	5.80	5.75	5.71	5.61	5.57	5.52	5.48
315.0	7.01	7.01	6.91	6.82	6.77	6.73	6.73	6.73	6.82
360.0	5.99	5.89	5.80	5.75	5.71	5.71	5.75	5.80	5.89
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.13	6.45	6.68	6.96	7.38	8.12	9.14	10.30	11.65
45.0	3.90	3.81	3.85	3.76	3.62	3.62	3.57	3.53	3.43
90.0	4.27	4.18	4.22	4.22	4.27	4.41	4.83	5.48	6.22
135.0	4.97	5.01	5.20	5.61	6.26	7.38	8.82	10.53	12.25
180.0	4.55	4.83	5.15	5.38	5.66	6.08	6.96	8.17	9.56
225.0	3.43	3.34	3.34	3.29	3.25	3.16	3.11	3.11	3.06
270.0	5.38	5.34	5.48	5.75	6.13	6.50	7.19	7.75	8.26
315.0	7.29	7.84	8.63	9.61	10.35	12.20	13.64	14.57	16.06
360.0	6.13	6.45	6.68	6.96	7.38	8.12	9.14	10.30	11.65
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.04	14.20	14.94	15.27	15.41	15.03	13.92	11.74	9.10
45.0	3.43	3.34	3.29	3.29	3.20	3.16	3.11	3.11	3.02
90.0	6.96	7.75	8.40	8.72	8.82	8.86	8.35	7.05	6.22
135.0	13.83	15.36	16.52	17.12	16.98	16.01	14.25	11.42	9.51
180.0	10.90	11.83	12.81	12.99	12.67	11.83	10.58	8.26	4.64
225.0	2.97	2.88	2.88	2.88	2.78	2.74	2.60	2.32	2.18
270.0	8.86	9.51	10.02	10.21	10.35	10.30	9.93	8.86	7.01
315.0	17.82	18.42	19.26	19.54	19.54	18.51	15.82	12.58	8.91
360.0	13.04	14.20	14.94	15.27	15.41	15.03	13.92	11.74	9.10
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.38	2.64	1.95	2.13	2.32	2.27	2.13	2.13	2.23
45.0	2.88	2.78	2.41	2.18	1.95	1.81	1.72	1.62	1.53
90.0	3.76	2.60	2.18	1.81	1.72	1.62	1.62	1.62	1.58
135.0	4.73	2.92	2.13	1.95	1.86	1.81	1.86	1.81	2.00
180.0	2.37	2.09	2.00	1.90	1.86	1.81	1.90	2.04	2.32
225.0	1.86	1.81	1.72	1.58	1.53	1.44	1.58	1.76	1.76
270.0	4.87	3.34	2.41	1.95	1.86	1.72	1.67	1.58	1.62
315.0	5.34	3.29	2.55	2.41	2.32	2.23	2.18	2.32	2.74
360.0	5.38	2.64	1.95	2.13	2.32	2.27	2.13	2.13	2.23

Intensity data(cd)

C/γ(°)	90.0
0.0	2.60
45.0	1.53
90.0	1.58
135.0	2.27
180.0	2.51
225.0	1.76
270.0	2.04
315.0	2.97
360.0	2.60