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NT

Client:

LumCAT: 2-2678-L

Luminaire: 92.70.411.00

Report No: 2024423-B008

Ballast type: AC

Test No: 2024423-C008

Voltage(V): 36.270

LampCAT: NICHIA NFCWJ130B-V3

Current(A): 0.576

Lamp flux(lm): 2920.0

Power (W): 20.891

Number of Lamps: 1

PF: 0.000

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2468.70, Efficiency(%): 84.54% , Luminous Efficacy(lm/W): 118.17

Central intensity(cd): 10275.880, Maximum intensity(cd): 10275.880

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=21.0

[C90/270]Total=21.0

Field angle(10%Imax): [C0/180]Total=54.8

[C90/270]Total=54.8

Maximum s/h(1/2): C0_180=0.36 C90_270=0.36

Maximum s/h(1/4): C0_180=0.39 C90_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.54%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.817%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/23
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10275.878	0.000	0	0.00%	0.00%
1.0	10224.963	9.809	9.809	0.34%	0.40%
2.0	10061.027	29.116	38.926	1.00%	1.58%
3.0	9790.653	47.479	86.404	1.63%	3.50%
4.0	9432.276	64.345	150.75	2.20%	6.11%
5.0	8920.058	78.951	229.7	2.70%	9.30%
6.0	8289.478	90.441	320.141	3.10%	12.97%
7.0	7607.910	98.675	418.816	3.38%	16.97%
8.0	6887.498	103.741	522.557	3.55%	21.17%
9.0	6164.380	105.778	628.335	3.62%	25.45%
10.0	5438.262	105.000	733.335	3.60%	29.71%
11.0	4787.053	102.172	835.507	3.50%	33.84%
12.0	4195.317	98.190	933.697	3.36%	37.82%
13.0	3704.021	93.745	1027.442	3.21%	41.62%
14.0	3279.806	89.392	1116.835	3.06%	45.24%
15.0	2932.548	85.286	1202.12	2.92%	48.69%
16.0	2626.987	81.463	1283.583	2.79%	51.99%
17.0	2377.242	77.929	1361.513	2.67%	55.15%
18.0	2155.076	74.728	1436.241	2.56%	58.18%
19.0	1963.708	71.658	1507.899	2.45%	61.08%
20.0	1790.774	68.717	1576.616	2.35%	63.86%
21.0	1652.880	66.125	1642.742	2.26%	66.54%
22.0	1517.766	63.715	1706.457	2.18%	69.12%
23.0	1391.936	61.053	1767.511	2.09%	71.60%
24.0	1283.216	58.488	1825.999	2.00%	73.97%
25.0	1203.230	56.536	1882.535	1.94%	76.26%
26.0	1148.833	55.521	1938.056	1.90%	78.51%
27.0	1060.867	54.061	1992.117	1.85%	80.70%
28.0	966.638	51.332	2043.449	1.76%	82.77%
29.0	862.870	47.865	2091.314	1.64%	84.71%
30.0	768.942	44.059	2135.373	1.51%	86.50%
31.0	664.479	39.890	2175.263	1.37%	88.11%
32.0	571.582	35.412	2210.674	1.21%	89.55%
33.0	472.840	30.769	2241.443	1.05%	90.79%
34.0	386.007	25.991	2267.435	0.89%	91.85%
35.0	306.453	21.505	2288.94	0.74%	92.72%
36.0	259.628	18.024	2306.964	0.62%	93.45%
37.0	188.647	14.620	2321.584	0.50%	94.04%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	134.258	10.778	2332.362	0.37%	94.48%
39.0	90.300	7.665	2340.027	0.26%	94.79%
40.0	74.448	5.746	2345.773	0.20%	95.02%
41.0	66.606	5.023	2350.796	0.17%	95.22%
42.0	61.105	4.640	2355.436	0.16%	95.41%
43.0	56.818	4.368	2359.804	0.15%	95.59%
44.0	53.241	4.154	2363.958	0.14%	95.76%
45.0	49.847	3.962	2367.92	0.14%	95.92%
46.0	46.686	3.775	2371.695	0.13%	96.07%
47.0	44.002	3.607	2375.302	0.12%	96.22%
48.0	41.456	3.455	2378.756	0.12%	96.36%
49.0	39.327	3.317	2382.074	0.11%	96.49%
50.0	37.513	3.204	2385.278	0.11%	96.62%
51.0	36.050	3.112	2388.39	0.11%	96.75%
52.0	34.828	3.041	2391.431	0.10%	96.87%
53.0	33.855	2.988	2394.419	0.10%	96.99%
54.0	33.131	2.952	2397.372	0.10%	97.11%
55.0	32.604	2.934	2400.306	0.10%	97.23%
56.0	32.114	2.924	2403.23	0.10%	97.35%
57.0	31.719	2.919	2406.149	0.10%	97.47%
58.0	31.229	2.911	2409.06	0.10%	97.58%
59.0	30.622	2.892	2411.951	0.10%	97.70%
60.0	29.759	2.853	2414.804	0.10%	97.82%
61.0	28.705	2.790	2417.594	0.10%	97.93%
62.0	27.352	2.701	2420.295	0.09%	98.04%
63.0	25.911	2.590	2422.886	0.09%	98.14%
64.0	24.133	2.456	2425.341	0.08%	98.24%
65.0	22.378	2.302	2427.643	0.08%	98.34%
66.0	20.644	2.146	2429.79	0.07%	98.42%
67.0	19.312	2.009	2431.799	0.07%	98.51%
68.0	18.442	1.913	2433.711	0.07%	98.58%
69.0	17.849	1.851	2435.563	0.06%	98.66%
70.0	17.498	1.815	2437.378	0.06%	98.73%
71.0	17.440	1.806	2439.184	0.06%	98.80%
72.0	17.659	1.825	2441.009	0.06%	98.88%
73.0	17.952	1.862	2442.871	0.06%	98.95%
74.0	18.193	1.900	2444.771	0.07%	99.03%
75.0	18.208	1.923	2446.695	0.07%	99.11%

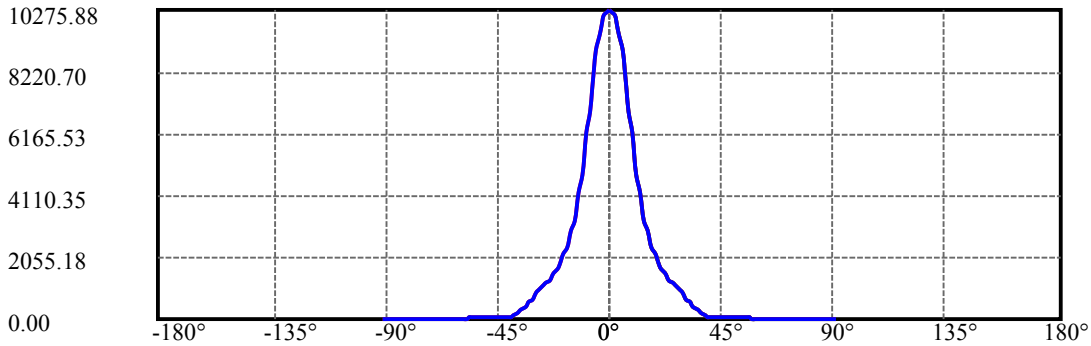
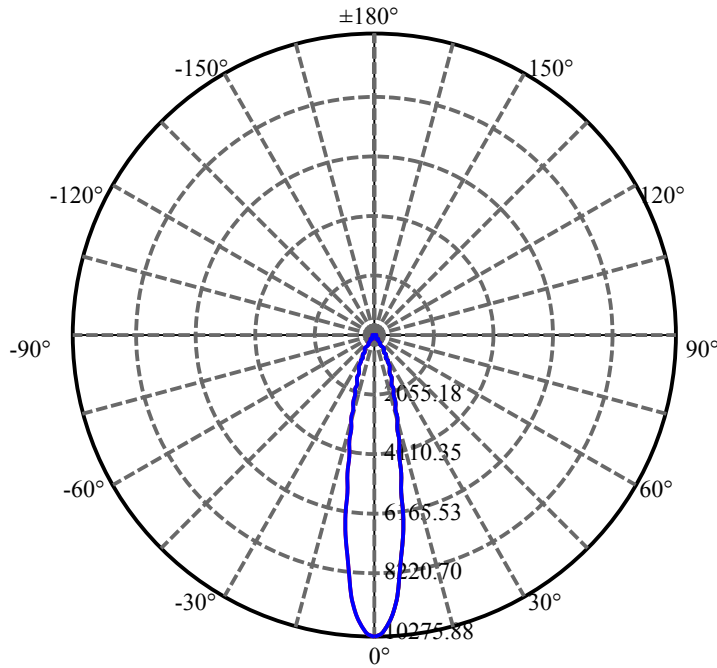
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	18.083	1.926	2448.621	0.07%	99.19%
77.0	17.710	1.908	2450.529	0.07%	99.26%
78.0	17.081	1.862	2452.392	0.06%	99.34%
79.0	16.123	1.784	2454.176	0.06%	99.41%
80.0	14.901	1.673	2455.848	0.06%	99.48%
81.0	13.519	1.537	2457.385	0.05%	99.54%
82.0	12.780	1.426	2458.811	0.05%	99.60%
83.0	12.356	1.366	2460.178	0.05%	99.65%
84.0	12.048	1.329	2461.507	0.05%	99.71%
85.0	11.573	1.289	2462.797	0.04%	99.76%
86.0	11.097	1.239	2464.036	0.04%	99.81%
87.0	10.805	1.199	2465.234	0.04%	99.86%
88.0	10.607	1.173	2466.407	0.04%	99.91%
89.0	10.402	1.152	2467.559	0.04%	99.95%
90.0	10.329	1.137	2468.696	0.04%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2135.37	73.13%	86.50%
0-40	2345.77	80.33%	95.02%
0-60	2414.80	82.70%	97.82%
0-90	2467.56	84.51%	99.95%
0-120	2467.56	84.51%	99.95%
0-180	2468.70	84.54%	100.00%
60-90	52.75	1.81%	2.14%
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%
0-26.68	1974.96	67.64%	80.00%

ZONAL LUMEN SUMMARY

0-10	733.33
10-20	843.28
20-30	558.76
30-40	210.40
40-50	39.50
50-60	29.53
60-70	22.57
70-80	18.47
80-90	11.71
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



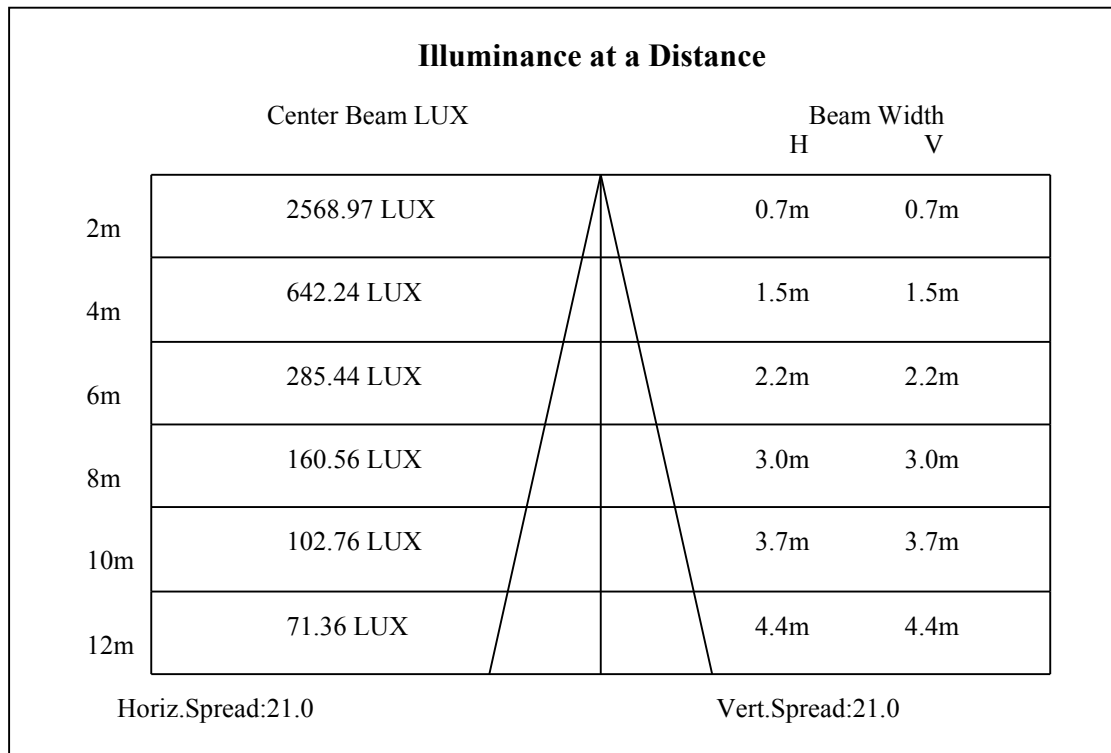
C0(Max): —————

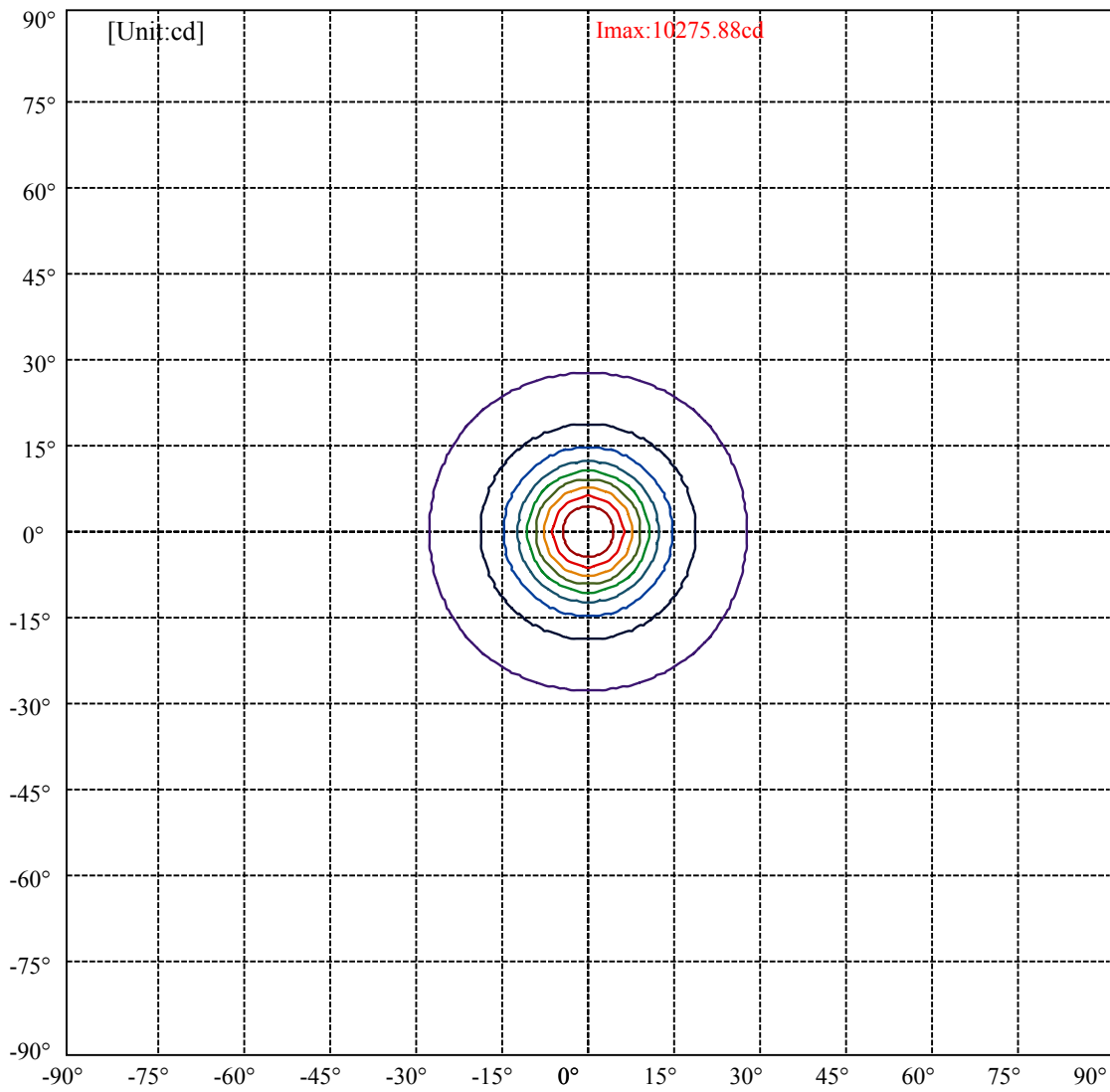
C0/C180: —————

C90/C270: —————

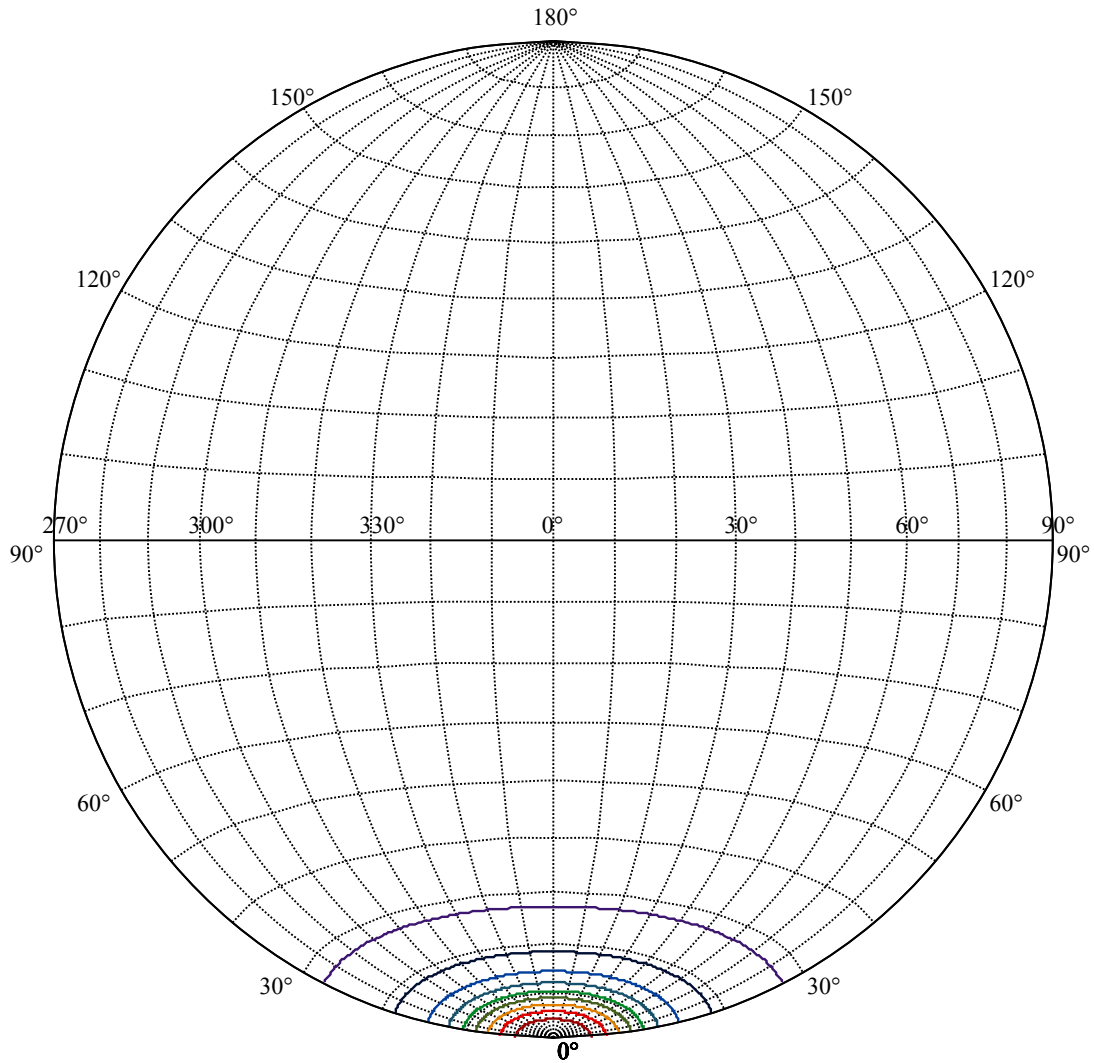
Field angle(10%Imax):C0/180Left:27.4 Right:27.4
:C90/270Left:27.4 Right:27.4

Beam Angle(50%Imax):C0/180Left:10.5 Right:10.5
:C90/270Left:10.5 Right:10.5





(10%Imax) 1027.59	—
(20%Imax) 2055.18	—
(30%Imax) 3082.76	—
(40%Imax) 4110.35	—
(50%Imax) 5137.94	—
(60%Imax) 6165.53	—
(70%Imax) 7193.11	—
(80%Imax) 8220.7	—
(90%Imax) 9248.29	—



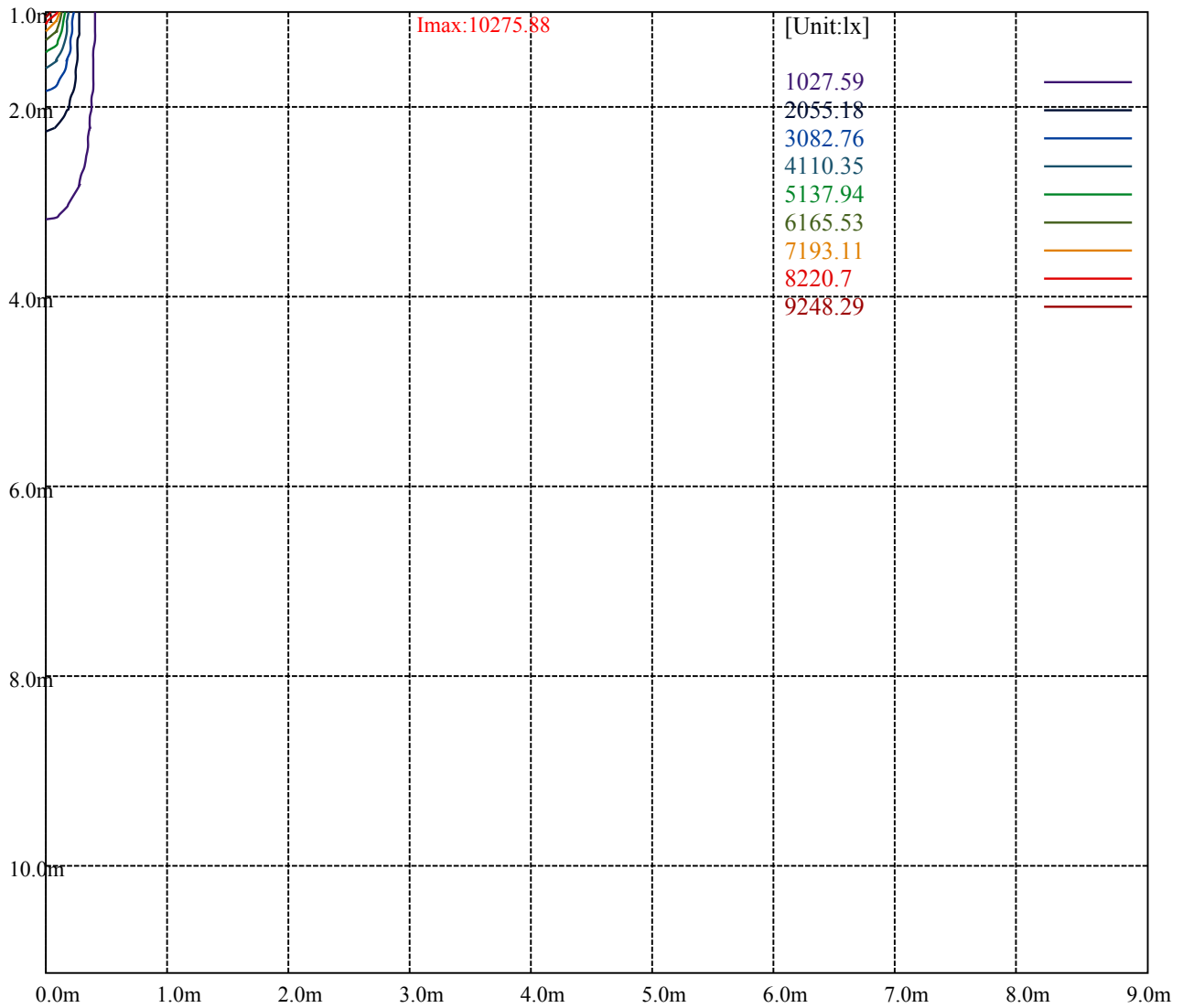
House

[Unit:cd]

Road

Imax:10275.88

(10%Imax) 1027.59	—
(20%Imax) 2055.18	—
(30%Imax) 3082.76	—
(40%Imax) 4110.35	—
(50%Imax) 5137.94	—
(60%Imax) 6165.53	—
(70%Imax) 7193.11	—
(80%Imax) 8220.7	—
(90%Imax) 9248.29	—



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

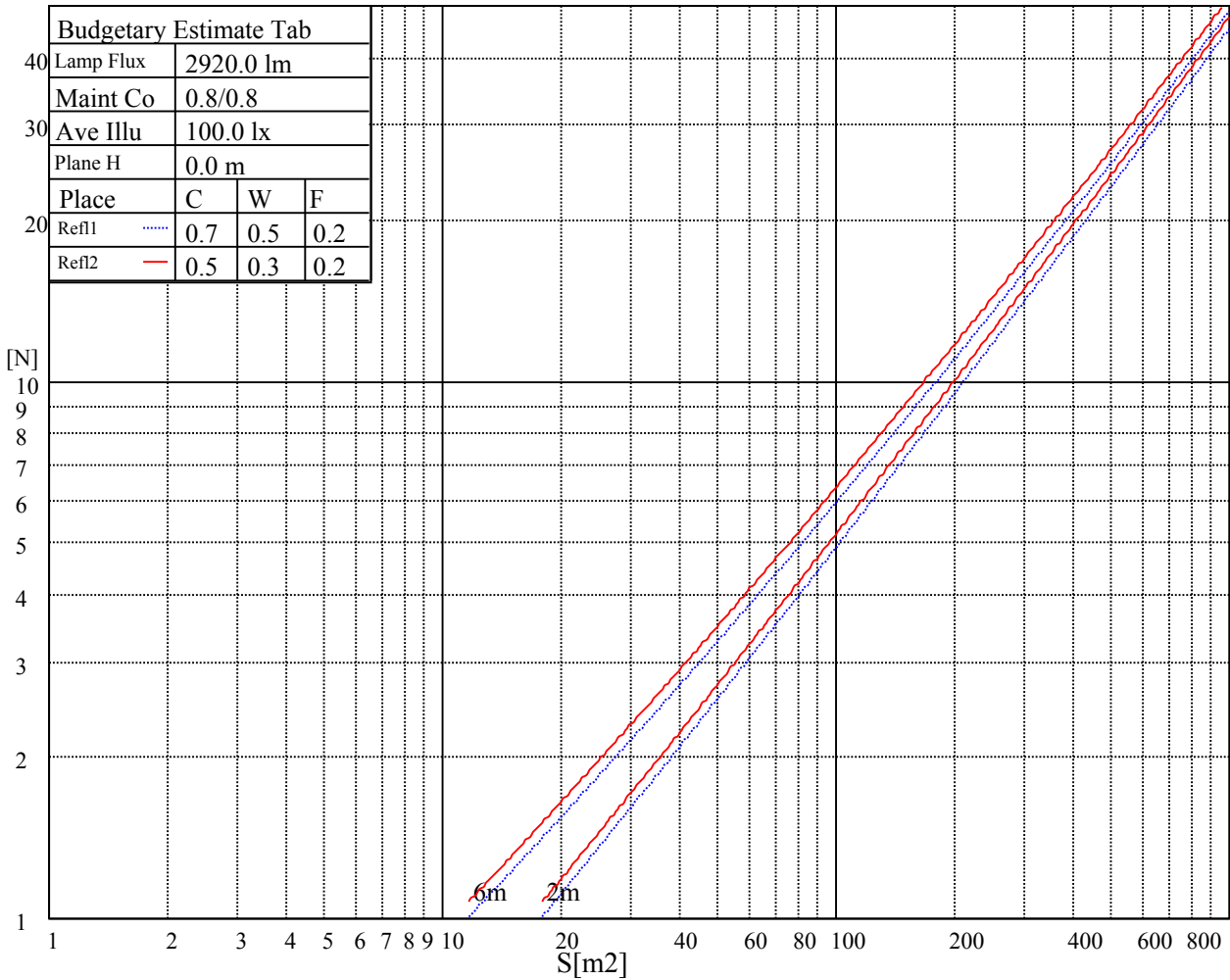
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

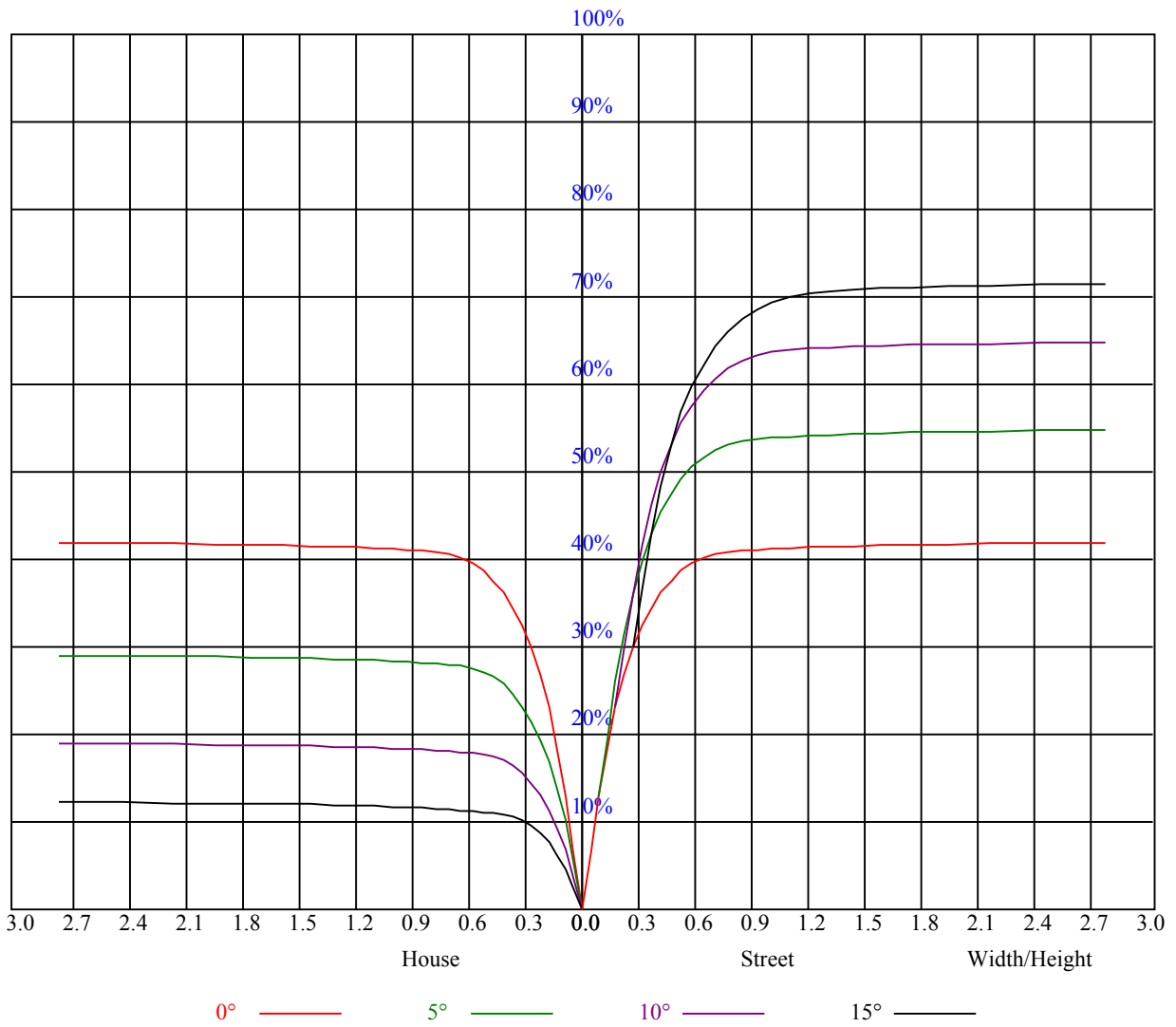
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

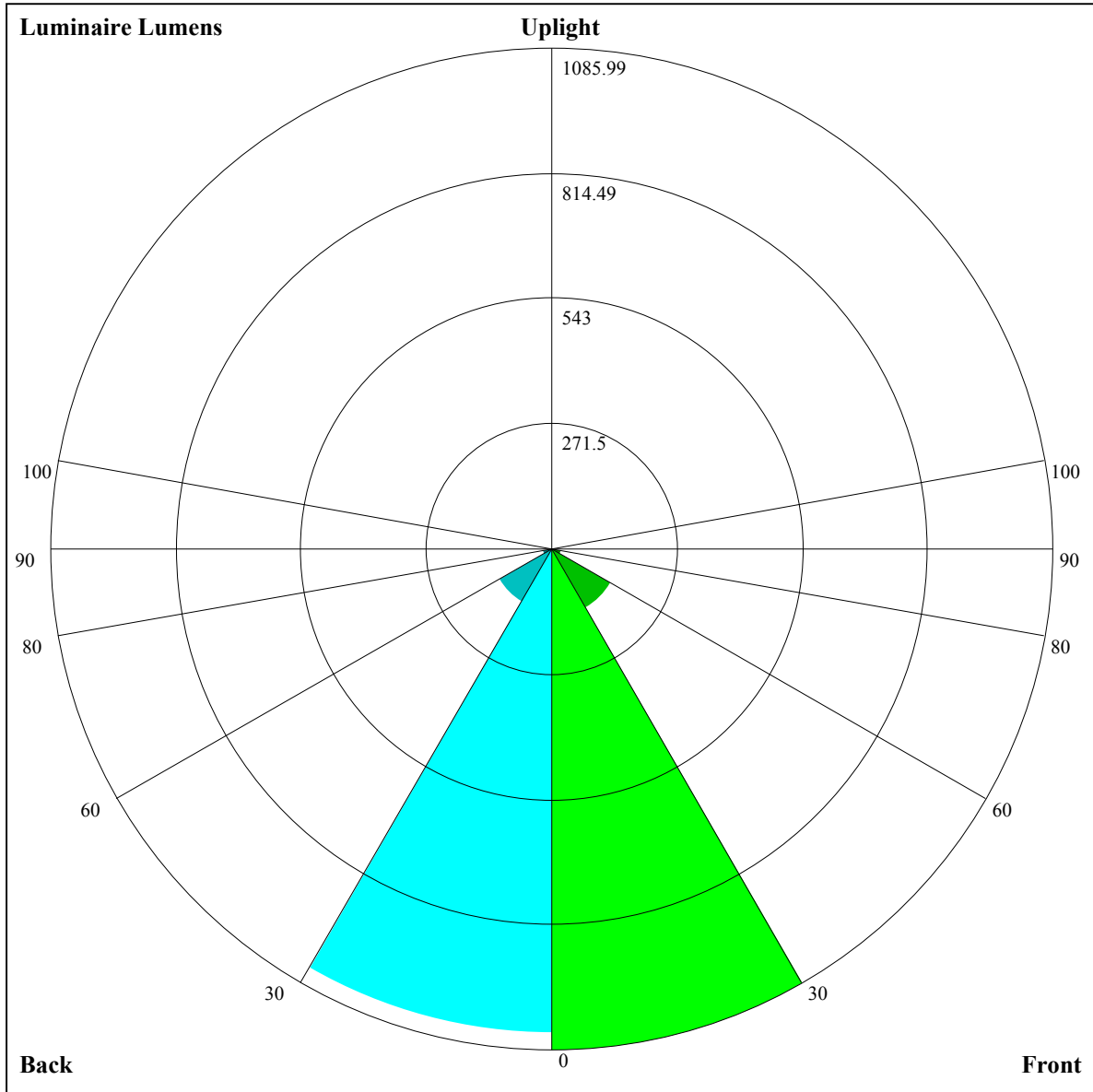
Luminance Limiting Curve





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 RHOF=20 CU															
0	1.01	1.01	1.01	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.85
1	0.94	0.93	0.91	0.93	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82	0.80
2	0.89	0.86	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.79	0.78	0.76
3	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.76	0.74	0.73
4	0.80	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.71	0.75	0.73	0.71	0.70
5	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.71	0.69	0.73	0.71	0.68	0.72	0.70	0.68	0.67
6	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
7	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.62
8	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59
9	0.66	0.62	0.59	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
10	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.58	0.56	0.56





Luminaire Lumens:

FL=1085.99,FM=146.72,FH=20.35,FVH=6.45

BL=1048.7,BM=133.5,BH=20.75,BVH=6.49

UL=0,UH=0

BUG Rating:B3-U0-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	10307.04	10256.13	10058.91	9795.55	9435.06	8835.79	8268.12	7635.49	6967.75
45.0	10254.37	10304.70	10254.96	10073.54	9818.38	9460.81	9001.99	8293.87	7672.94
90.0	10265.49	10143.76	9928.99	9625.25	9216.77	8706.45	7951.51	7297.23	6614.86
135.0	10276.61	10233.89	10103.38	9810.77	9454.37	8995.55	8431.40	7644.85	6980.62
180.0	10307.04	10250.27	10098.12	9854.66	9510.55	8927.08	8352.97	7693.43	7002.28
225.0	10254.37	10125.62	9831.84	9474.85	9005.50	8433.74	7607.40	6898.69	6020.27
270.0	10265.49	10283.05	10164.25	9964.10	9666.81	9149.47	8604.62	7963.80	7108.20
315.0	10276.61	10202.29	10047.79	9726.50	9350.78	8851.59	8097.82	7435.93	6733.07
360.0	10307.04	10256.13	10058.91	9795.55	9435.06	8835.79	8268.12	7635.49	6967.75
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6115.07	5446.16	4825.82	4272.79	3679.95	3289.61	2957.79	2604.31	2370.80
45.0	7006.96	6170.67	5508.20	4746.82	4199.05	3728.53	3331.16	2913.31	2635.91
90.0	5941.85	5124.87	4531.46	4022.90	3483.32	3125.75	2754.71	2503.65	2288.87
135.0	6304.10	5632.26	4852.16	4303.22	3825.67	3327.06	2989.39	2702.63	2397.73
180.0	6144.92	5464.89	4831.09	4151.06	3691.07	3298.39	2889.90	2620.70	2386.61
225.0	5343.75	4725.75	4070.30	3629.62	3248.64	2854.79	2590.26	2359.10	2154.86
270.0	6415.29	5727.66	5067.52	4347.11	3864.30	3445.86	3091.80	2727.21	2482.58
315.0	6043.09	5213.83	4609.88	4089.03	3640.16	3168.47	2855.37	2585.00	2300.58
360.0	6115.07	5446.16	4825.82	4272.79	3679.95	3289.61	2957.79	2604.31	2370.80
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2166.56	1946.52	1793.77	1658.00	1507.60	1406.35	1319.74	1152.19	1152.19
45.0	2399.48	2194.65	1975.19	1820.11	1681.41	1558.51	1429.18	1338.47	1241.91
90.0	2054.78	1889.75	1745.20	1612.94	1497.65	1376.51	1163.37	1163.37	1145.34
135.0	2194.07	2014.40	1817.18	1676.14	1554.42	1444.98	1332.62	1253.61	1175.78
180.0	2128.52	1939.49	1770.95	1631.67	1478.92	1375.34	1288.14	1199.18	1116.67
225.0	1928.37	1770.36	1628.15	1504.67	1375.34	1159.33	1159.33	1120.41	1036.84
270.0	2267.81	2026.11	1853.47	1708.33	1550.90	1436.20	1323.84	1247.17	1170.51
315.0	2101.02	1928.37	1742.27	1611.18	1495.89	1378.26	1249.51	1151.43	1151.43
360.0	2166.56	1946.52	1793.77	1658.00	1507.60	1406.35	1319.74	1152.19	1152.19
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1075.18	991.43	880.35	787.83	697.59	607.81	496.10	412.64	316.20
45.0	1170.51	1091.50	982.65	890.19	798.31	705.84	593.48	505.11	420.84
90.0	1040.41	946.84	831.55	736.39	642.81	526.47	438.45	355.58	263.53
135.0	1089.75	975.04	880.24	788.36	670.73	582.36	472.34	389.23	313.15
180.0	1035.32	942.27	824.06	732.76	617.47	530.86	445.41	349.44	295.60
225.0	924.19	832.01	736.92	642.99	530.86	446.18	365.53	292.73	211.79
270.0	1096.18	986.75	893.70	795.96	698.82	605.77	491.06	405.62	327.78
315.0	1055.39	967.26	873.51	777.06	659.26	567.38	480.35	377.70	302.74
360.0	1075.18	991.43	880.35	787.83	697.59	607.81	496.10	412.64	316.20
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	245.56	184.99	123.89	90.53	72.92	66.19	59.11	55.48	52.26
45.0	340.66	303.21	303.21	129.51	87.96	72.51	66.13	59.11	55.48
90.0	198.27	145.14	96.68	77.95	69.76	63.61	58.99	54.31	50.86
135.0	295.01	213.02	117.86	89.07	76.31	68.59	63.32	59.28	55.83
180.0	295.60	158.42	108.50	84.86	75.26	69.17	62.85	59.17	55.71
225.0	156.72	113.94	86.79	73.39	67.59	61.27	57.59	53.90	50.04
270.0	309.64	227.89	120.67	90.89	75.73	67.53	61.92	57.94	54.37
315.0	235.55	162.58	116.46	86.20	70.05	63.97	58.93	55.36	51.38
360.0	245.56	184.99	123.89	90.53	72.92	66.19	59.11	55.48	52.26

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	49.22	45.59	43.13	40.97	38.62	37.04	35.76	34.53	33.71
45.0	51.32	48.22	45.30	42.66	39.97	37.98	36.34	35.00	33.77
90.0	47.64	44.18	41.67	39.03	37.22	35.70	34.53	33.24	32.60
135.0	51.79	48.69	45.24	42.78	40.67	38.45	36.93	35.76	34.65
180.0	52.49	48.69	46.00	43.07	41.02	39.27	37.45	36.23	35.29
225.0	47.29	44.59	42.25	39.74	38.16	36.58	35.35	34.24	33.36
270.0	50.56	47.64	44.89	42.60	39.97	38.04	36.40	34.94	33.83
315.0	48.46	45.88	43.54	40.79	38.98	37.04	35.64	34.70	33.65
360.0	49.22	45.59	43.13	40.97	38.62	37.04	35.76	34.53	33.71
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	33.01	32.54	32.13	31.78	31.31	30.61	29.79	28.79	27.56
45.0	33.01	32.30	31.89	31.43	31.19	30.67	30.08	29.44	27.97
90.0	32.01	31.54	31.13	30.72	30.37	29.79	28.85	27.74	26.34
135.0	33.88	33.42	32.83	32.42	31.95	31.43	30.67	29.44	28.21
180.0	34.47	33.71	33.24	32.71	32.19	31.25	30.49	29.03	27.86
225.0	32.89	32.36	31.84	31.43	30.55	29.90	28.44	27.33	25.69
270.0	32.77	32.30	31.78	31.43	30.84	30.37	29.73	28.91	27.39
315.0	33.01	32.66	32.07	31.84	31.43	30.96	30.02	28.97	27.80
360.0	33.01	32.54	32.13	31.78	31.31	30.61	29.79	28.79	27.56
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	25.93	24.29	22.59	20.54	19.25	18.14	17.44	17.03	17.21
45.0	26.98	25.52	23.94	21.83	20.31	18.90	18.02	17.15	16.68
90.0	24.76	23.35	21.13	19.78	18.55	17.85	17.15	16.80	17.15
135.0	26.74	24.81	22.94	21.01	19.61	18.79	18.14	17.67	17.56
180.0	26.10	24.23	22.36	21.01	19.78	19.66	19.90	20.48	21.19
225.0	24.35	22.00	20.60	19.20	18.38	17.56	17.03	16.56	16.21
270.0	26.16	24.52	23.06	20.95	19.55	18.32	17.62	17.15	16.74
315.0	26.28	24.35	22.41	20.83	19.08	18.32	17.50	17.15	16.80
360.0	25.93	24.29	22.59	20.54	19.25	18.14	17.44	17.03	17.21
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	17.32	17.21	16.80	16.04	15.51	14.98	14.46	13.93	13.46
45.0	16.21	15.74	15.39	14.98	14.63	14.34	14.10	13.69	13.46
90.0	17.85	18.84	19.49	19.84	19.66	19.31	18.38	15.98	13.75
135.0	17.85	18.61	19.55	20.19	20.72	20.48	19.55	18.38	16.56
180.0	22.12	22.18	21.83	21.01	20.13	19.02	18.14	17.32	16.50
225.0	15.74	15.39	14.98	14.69	14.40	14.05	13.81	13.58	13.34
270.0	17.15	17.73	18.79	19.55	19.78	19.78	19.20	18.20	15.98
315.0	17.03	17.91	18.73	19.37	19.84	19.72	19.02	17.91	16.15
360.0	17.32	17.21	16.80	16.04	15.51	14.98	14.46	13.93	13.46
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.99	12.52	12.11	11.82	11.53	11.18	10.83	10.65	10.48
45.0	13.17	12.76	12.41	12.11	11.82	11.53	11.00	10.83	10.59
90.0	12.52	12.23	12.00	11.76	11.24	10.94	10.71	10.53	10.36
135.0	14.69	13.28	12.29	11.88	11.47	11.06	10.77	10.59	10.36
180.0	14.34	12.93	12.29	11.88	11.47	11.00	10.77	10.59	10.36
225.0	13.11	12.99	12.93	12.52	11.12	10.83	10.65	10.42	10.30
270.0	13.87	13.05	12.70	12.58	12.35	11.18	10.89	10.65	10.42
315.0	13.46	12.47	12.11	11.82	11.59	11.06	10.83	10.59	10.36
360.0	12.99	12.52	12.11	11.82	11.53	11.18	10.83	10.65	10.48

Intensity data(cd)

C/ γ (°)	90.0
0.0	10.36
45.0	10.36
90.0	10.36
135.0	10.30
180.0	10.30
225.0	10.30
270.0	10.30
315.0	10.36
360.0	10.36