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Nata

LumCAT: 3-2546-M	
Luminaire: 92.70.135.00	
Report No: 200919-B036	Voltage(V): 230.5000
Test No: 200919-C036	Current(A): 0.0860
LampCAT: NICHIA NFCWJ108B-V3	Power (W): 18.9600
Lamp flux(lm): 1962.3	PF: 0.9510
Number of Lamps: 1	Ballast type: AC
Length(feet)(ft.):0.000	Width(feet)(ft.):0.000
Phm Type: C	Height(feet)(ft.):0.000

Photometric Results

Lumens(lm): 1893.18
Efficiency(%): 96.48%
Lumens(lm)/Power(W): 99.85
Central intensity(cd): 8884.151
Maximum intensity(cd): 8884.151
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.0
 [C90/270]Total=23.0
Field angle(10%Imax): [C0/180]Total=42.6
 [C90/270]Total=42.6
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 96.58%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.773%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8884.152	2.125	2.125	.108%	.112%
1.0	8864.257	16.965	19.09	.865%	1.008%
2.0	8796.624	33.666	52.756	1.716%	2.787%
3.0	8659.618	49.699	102.455	2.533%	5.412%
4.0	8436.128	64.533	166.988	3.289%	8.820%
5.0	8140.887	77.807	244.795	3.965%	12.930%
6.0	7734.567	88.659	333.454	4.518%	17.613%
7.0	7216.996	96.450	429.904	4.915%	22.708%
8.0	6715.318	102.488	532.392	5.223%	28.122%
9.0	6052.562	103.830	636.222	5.291%	33.606%
10.0	5376.871	102.389	738.611	5.218%	39.014%
11.0	4803.152	100.503	839.113	5.122%	44.323%
12.0	4102.404	93.534	932.647	4.767%	49.263%
13.0	3440.634	84.875	1017.522	4.325%	53.747%
14.0	2875.441	76.284	1093.806	3.887%	57.776%
15.0	2335.886	66.298	1160.104	3.379%	61.278%
16.0	1905.669	57.602	1217.706	2.935%	64.320%
17.0	1541.519	49.424	1267.129	2.519%	66.931%
18.0	1306.011	44.257	1311.386	2.255%	69.269%
19.0	1122.799	40.086	1351.472	2.043%	71.386%
20.0	1014.041	38.033	1389.505	1.938%	73.395%
21.0	908.641	35.709	1425.214	1.820%	75.281%
22.0	844.355	34.686	1459.9	1.768%	77.113%
23.0	794.843	34.057	1493.957	1.736%	78.912%
24.0	747.169	33.326	1527.283	1.698%	80.673%
25.0	714.797	33.127	1560.41	1.688%	82.423%
26.0	687.280	33.039	1593.449	1.684%	84.168%
27.0	661.775	32.946	1626.396	1.679%	85.908%
28.0	637.918	32.842	1659.238	1.674%	87.643%
29.0	610.749	32.470	1691.708	1.655%	89.358%
30.0	574.694	31.511	1723.218	1.606%	91.022%
31.0	533.418	30.127	1753.346	1.535%	92.614%
32.0	483.679	28.107	1781.453	1.432%	94.098%
33.0	417.694	24.947	1806.4	1.271%	95.416%
34.0	350.844	21.514	1827.914	1.096%	96.552%
35.0	291.146	18.313	1846.227	.933%	97.520%
36.0	212.092	13.671	1859.898	.697%	98.242%
37.0	163.612	10.798	1870.696	.550%	98.812%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	110.266	7.444	1878.14	.379%	99.205%
39.0	67.859	4.683	1882.823	.239%	99.453%
40.0	32.291	2.276	1885.099	.116%	99.573%
41.0	16.520	1.188	1886.288	.061%	99.636%
42.0	8.956	0.657	1886.945	.033%	99.670%
43.0	6.235	0.466	1887.411	.024%	99.695%
44.0	5.041	0.384	1887.795	.020%	99.715%
45.0	4.014	0.311	1888.107	.016%	99.732%
46.0	3.469	0.274	1888.38	.014%	99.746%
47.0	3.126	0.251	1888.631	.013%	99.759%
48.0	2.778	0.226	1888.857	.012%	99.771%
49.0	2.575	0.213	1889.07	.011%	99.783%
50.0	2.367	0.199	1889.269	.010%	99.793%
51.0	2.210	0.188	1889.458	.010%	99.803%
52.0	2.152	0.186	1889.644	.009%	99.813%
53.0	2.048	0.179	1889.823	.009%	99.822%
54.0	1.972	0.175	1889.998	.009%	99.832%
55.0	1.908	0.171	1890.169	.009%	99.841%
56.0	1.810	0.165	1890.334	.008%	99.849%
57.0	1.723	0.158	1890.492	.008%	99.858%
58.0	1.642	0.153	1890.645	.008%	99.866%
59.0	1.589	0.149	1890.794	.008%	99.874%
60.0	1.560	0.148	1890.942	.008%	99.882%
61.0	1.543	0.148	1891.09	.008%	99.889%
62.0	1.514	0.147	1891.237	.007%	99.897%
63.0	1.485	0.145	1891.382	.007%	99.905%
64.0	1.450	0.143	1891.525	.007%	99.912%
65.0	1.386	0.138	1891.663	.007%	99.920%
66.0	1.288	0.129	1891.792	.007%	99.926%
67.0	1.189	0.120	1891.912	.006%	99.933%
68.0	1.073	0.109	1892.021	.006%	99.939%
69.0	0.940	0.096	1892.117	.005%	99.944%
70.0	0.841	0.087	1892.204	.004%	99.948%
71.0	0.760	0.079	1892.283	.004%	99.952%
72.0	0.690	0.072	1892.355	.004%	99.956%
73.0	0.609	0.064	1892.418	.003%	99.960%
74.0	0.574	0.061	1892.479	.003%	99.963%
75.0	0.539	0.057	1892.536	.003%	99.966%

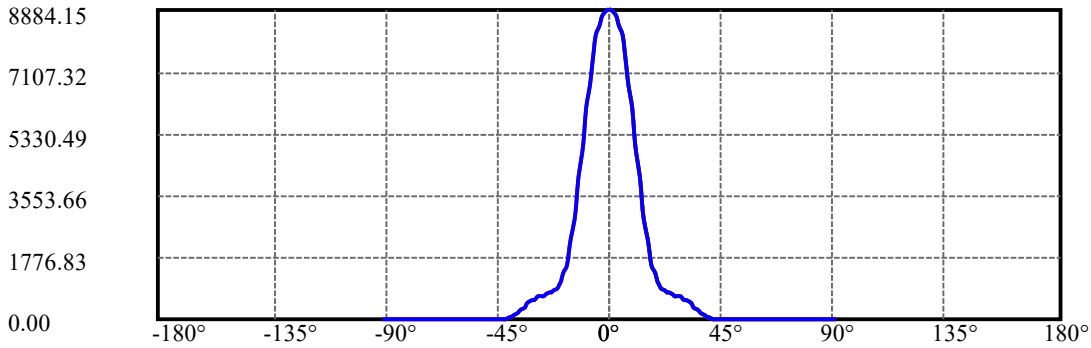
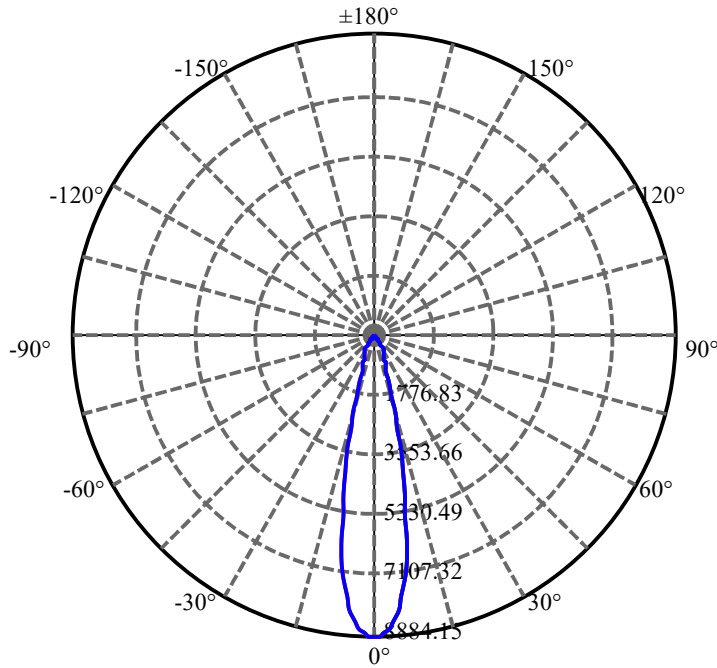
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	0.505	0.054	1892.59	.003%	99.969%
77.0	0.458	0.049	1892.639	.002%	99.971%
78.0	0.458	0.049	1892.688	.003%	99.974%
79.0	0.452	0.049	1892.737	.002%	99.976%
80.0	0.441	0.048	1892.784	.002%	99.979%
81.0	0.400	0.043	1892.828	.002%	99.981%
82.0	0.406	0.044	1892.872	.002%	99.983%
83.0	0.406	0.044	1892.916	.002%	99.986%
84.0	0.394	0.043	1892.959	.002%	99.988%
85.0	0.377	0.041	1893	.002%	99.990%
86.0	0.383	0.042	1893.042	.002%	99.992%
87.0	0.371	0.041	1893.083	.002%	99.995%
88.0	0.400	0.044	1893.127	.002%	99.997%
89.0	0.360	0.039	1893.166	.002%	99.999%
90.0	0.336	0.018	1893.184	.001%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1723.22	87.82%	91.02%
0-40	1885.10	96.07%	99.57%
0-60	1890.94	96.36%	99.88%
0-90	1893.17	96.48%	100.00%
0-120	1893.17	96.48%	100.00%
0-180	1893.18	96.48%	100.00%
60-90	2.37	0.12%	0.13%
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%
0-23.62	1514.55	77.18%	80.00%

ZONAL LUMEN SUMMARY

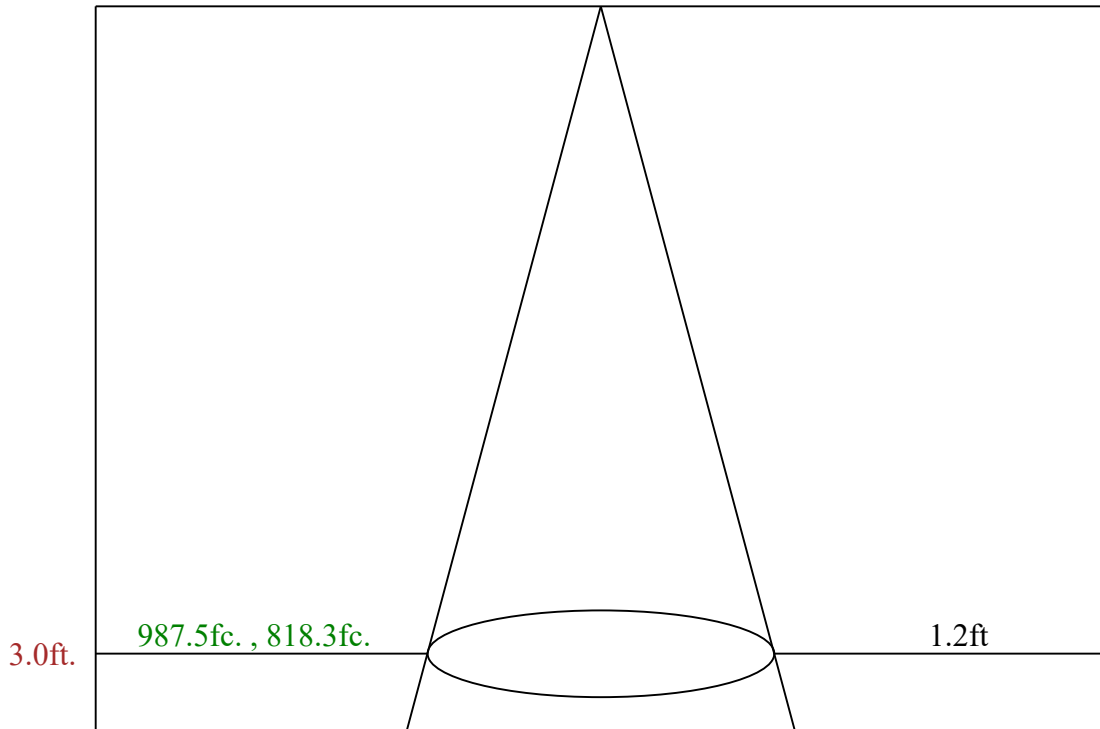
0-10	738.61
10-20	650.89
20-30	333.71
30-40	161.88
40-50	4.17
50-60	1.67
60-70	1.26
70-80	0.58
80-90	0.38
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



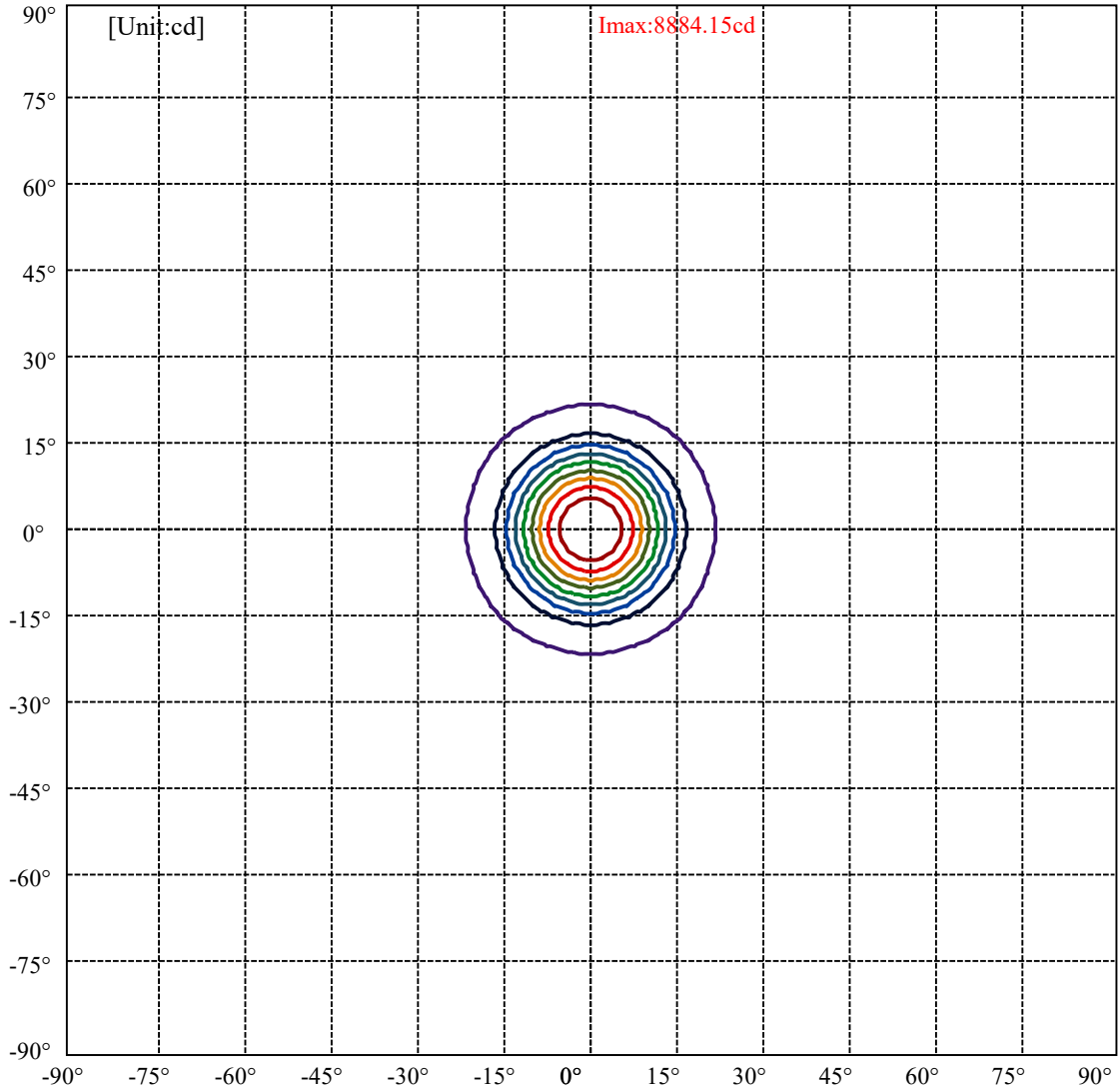
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:21.3 Right:21.3
:C90/270Left:21.3 Right:21.3

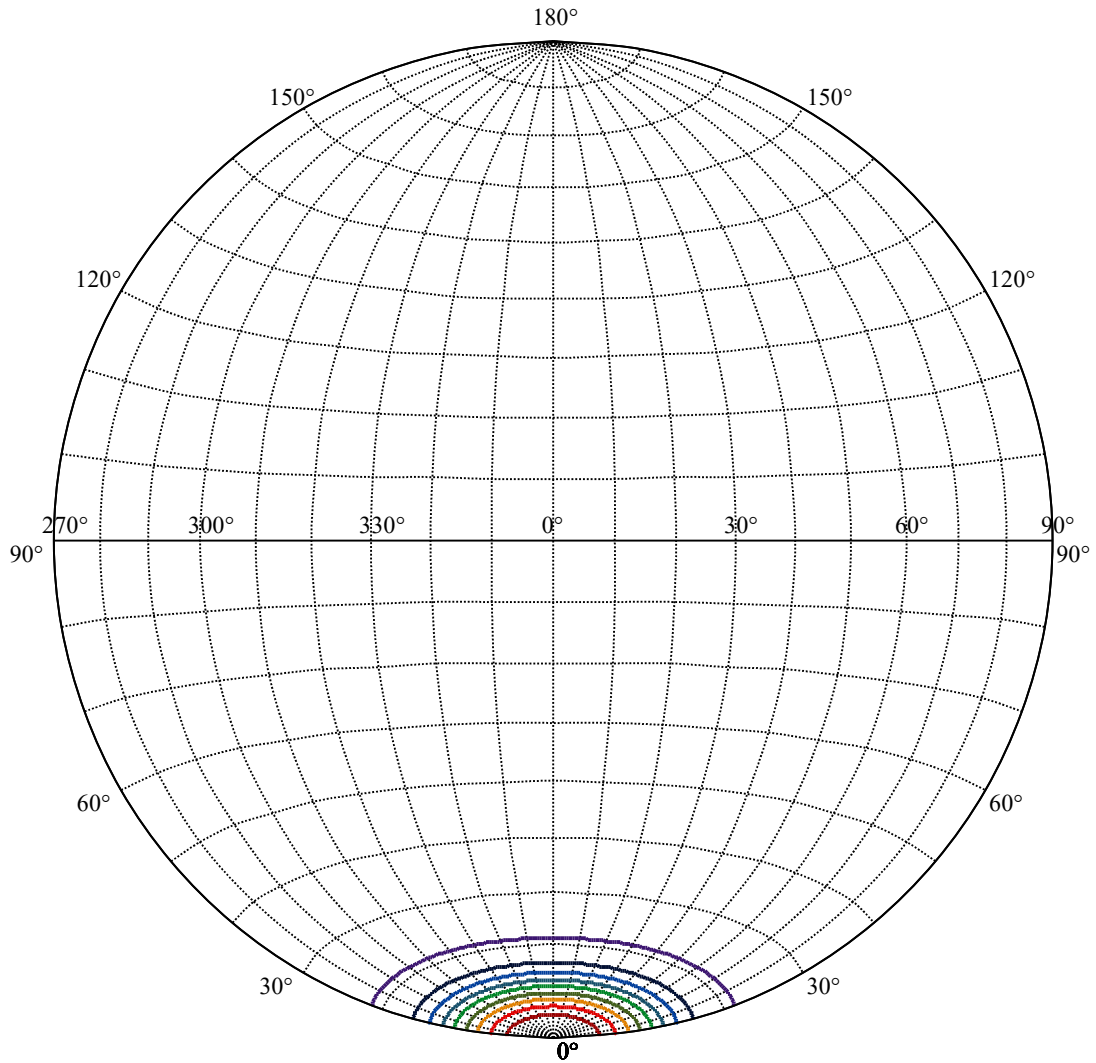
Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5



Max , Ave Beam angle of C0 plane 23.06



(10%Imax) 888.415	—
(20%Imax) 1776.83	—
(30%Imax) 2665.25	—
(40%Imax) 3553.66	—
(50%Imax) 4442.08	—
(60%Imax) 5330.49	—
(70%Imax) 6218.91	—
(80%Imax) 7107.32	—
(90%Imax) 7995.74	—



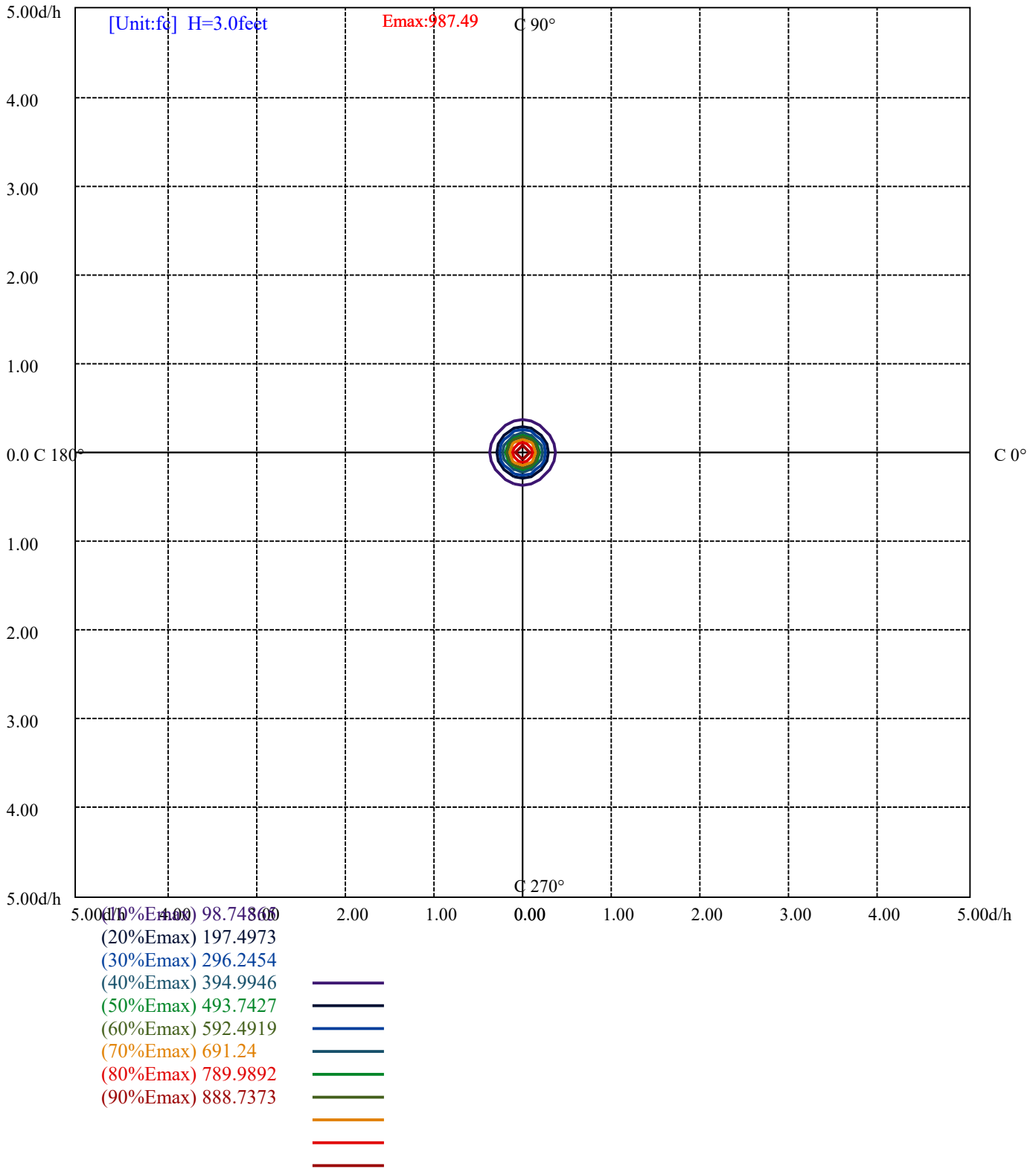
House

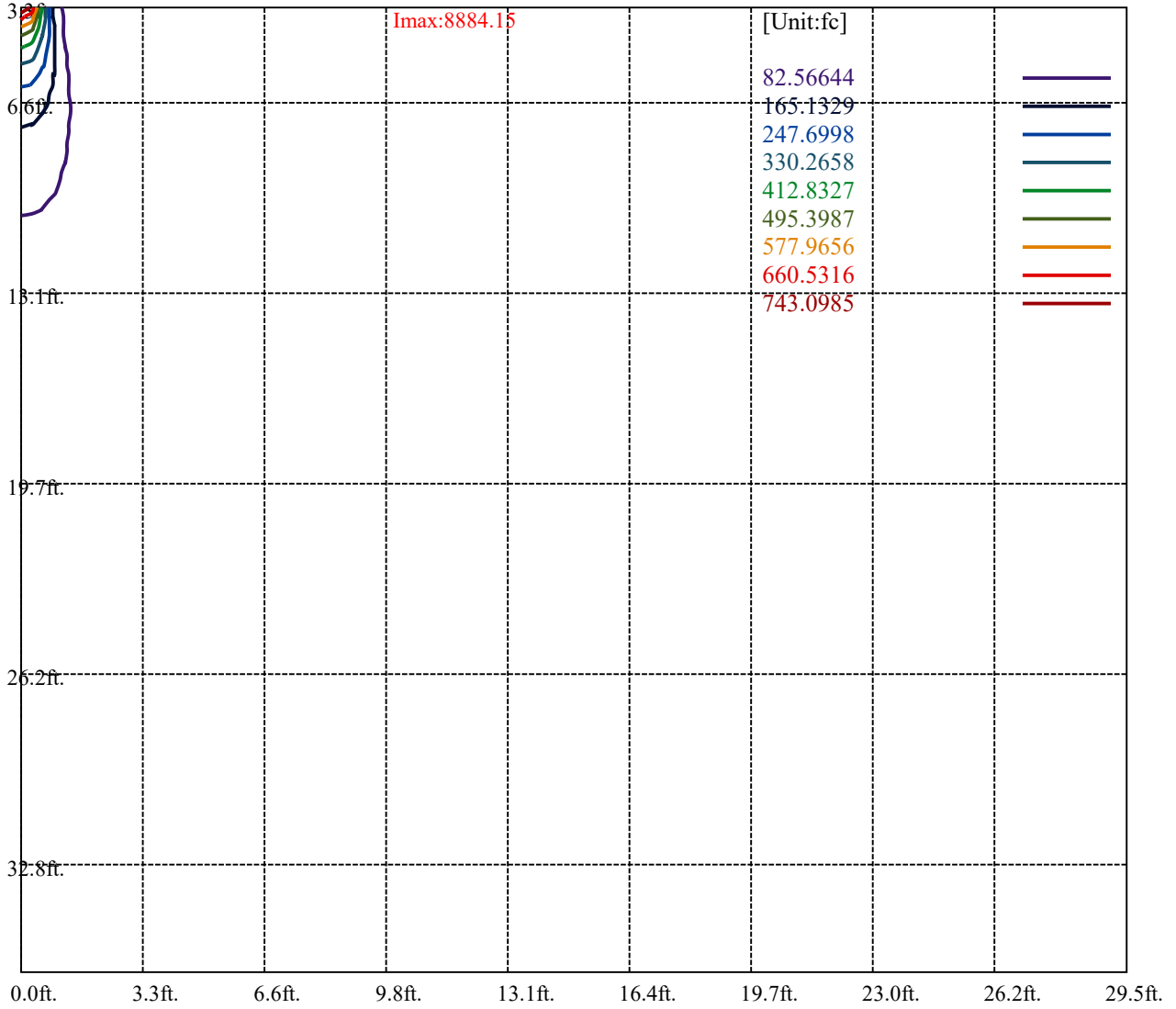
[Unit:cd]

Road

Imax:8884.15

(10%Imax)	888.415	—
(20%Imax)	1776.83	—
(30%Imax)	2665.25	—
(40%Imax)	3553.66	—
(50%Imax)	4442.08	—
(60%Imax)	5330.49	—
(70%Imax)	6218.91	—
(80%Imax)	7107.32	—
(90%Imax)	7995.74	—





Luminance Table

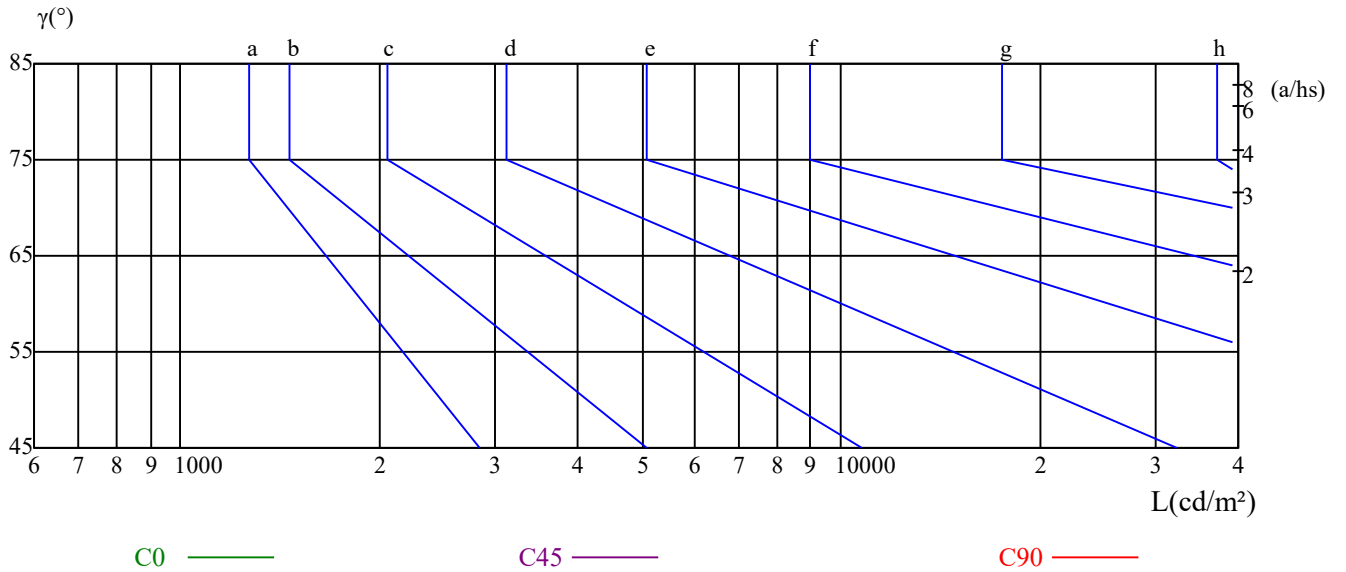
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

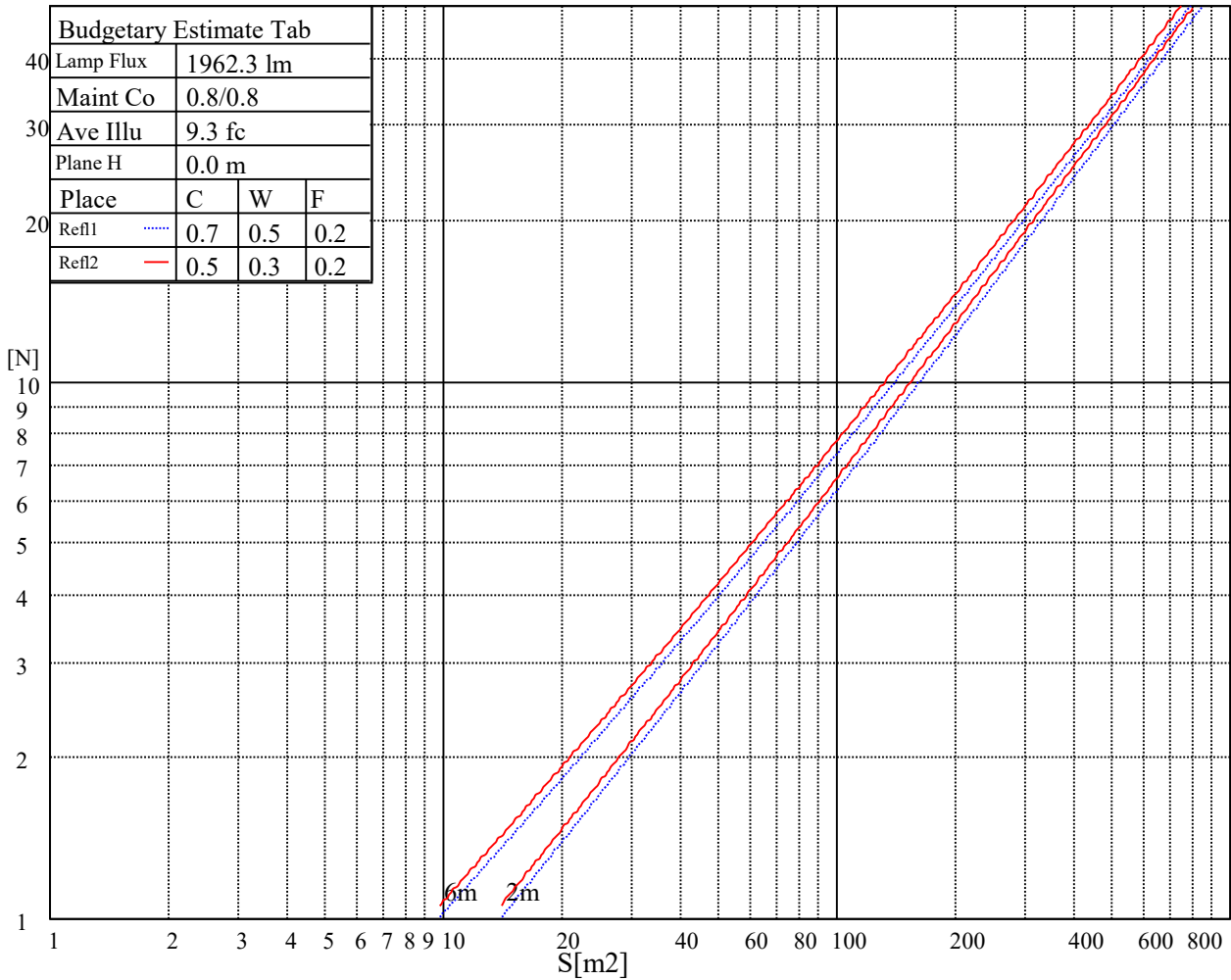
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

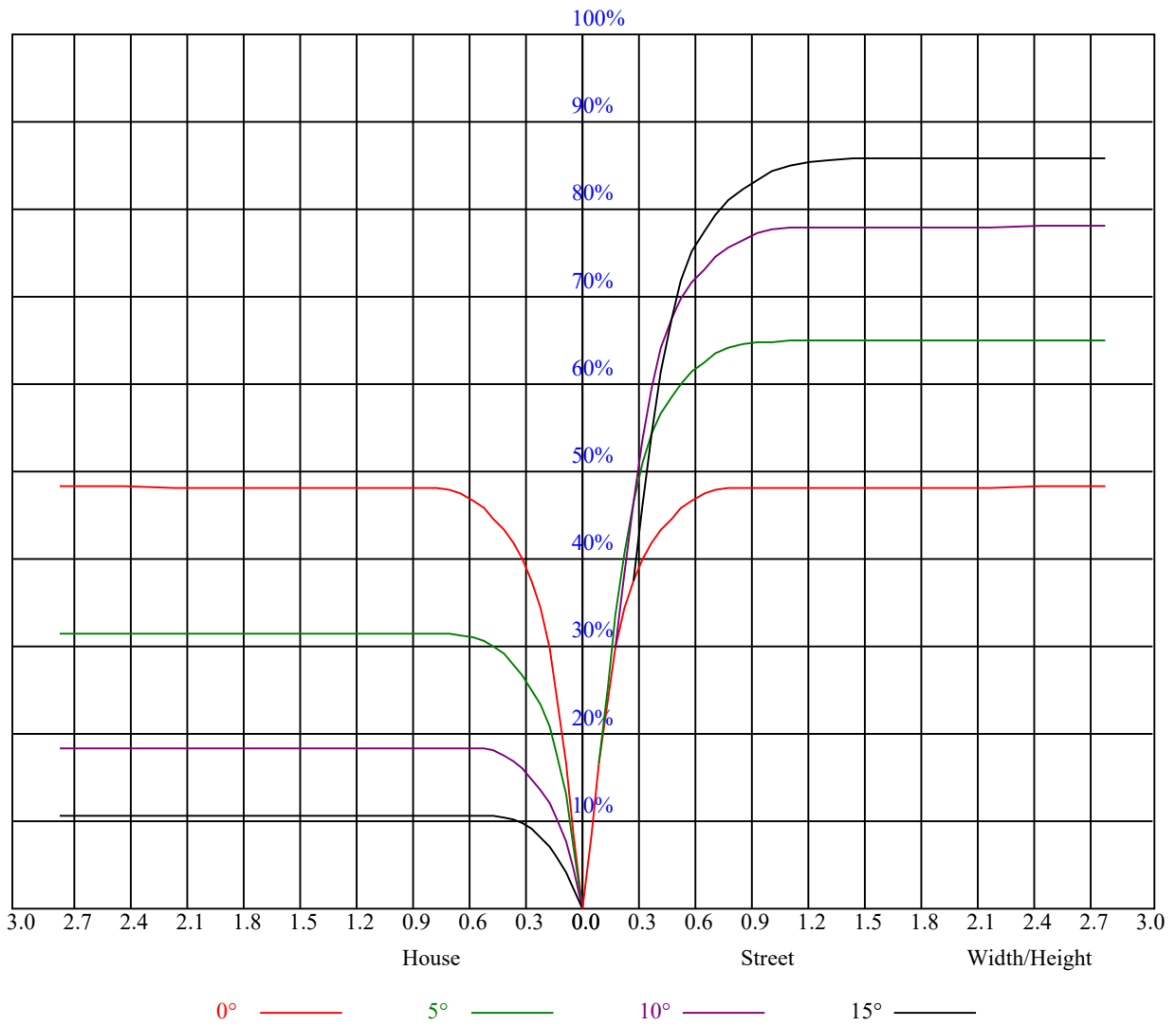
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.15	1.15	1.15	1.12	1.12	1.12	1.07	1.07	1.07	1.03	1.03	1.03	0.99	0.99	0.99	0.97
1	1.09	1.07	1.05	1.07	1.05	1.04	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.93
2	1.04	1.01	0.98	1.02	0.99	0.97	0.99	0.97	0.95	0.96	0.95	0.93	0.94	0.92	0.91	0.90
3	0.99	0.96	0.93	0.98	0.95	0.92	0.95	0.93	0.91	0.93	0.91	0.89	0.91	0.89	0.88	0.87
4	0.95	0.91	0.88	0.94	0.91	0.88	0.92	0.89	0.87	0.90	0.88	0.86	0.89	0.87	0.85	0.84
5	0.92	0.87	0.85	0.91	0.87	0.84	0.89	0.86	0.83	0.88	0.85	0.83	0.86	0.84	0.82	0.81
6	0.88	0.84	0.81	0.88	0.84	0.81	0.86	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.78
7	0.85	0.81	0.78	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.76
8	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.80	0.77	0.75	0.74
9	0.80	0.76	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.78	0.75	0.73	0.72
10	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.70



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	8892.04	8876.73	8799.23	8633.11	8348.66	7936.13	7410.85	6805.75	6163.99
45.0	8807.12	8892.97	8946.33	8965.36	8943.55	8871.16	8714.32	8437.29	8031.26
90.0	8911.53	8952.83	8962.11	8940.30	8886.94	8833.57	8667.45	8200.63	7921.28
135.0	8925.92	8934.73	8913.85	8857.70	8763.97	8607.12	8350.05	7953.30	7421.98
180.0	8892.04	8872.55	8814.55	8700.39	8531.95	8399.24	7941.24	7480.92	7161.20
225.0	8807.12	8661.88	8434.04	8091.12	7621.05	7057.72	6437.30	5777.45	5371.88
270.0	8911.53	8839.14	8714.78	8489.26	8123.60	7627.09	7030.34	6387.19	5731.97
315.0	8925.92	8883.22	8788.10	8599.70	8269.31	7795.07	7325.00	6693.45	5918.98
360.0	8892.04	8876.73	8799.23	8633.11	8348.66	7936.13	7410.85	6805.75	6163.99
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5504.13	4821.08	4118.99	3564.01	2778.40	2204.39	1838.27	1462.87	1293.49
45.0	7621.52	6894.38	6234.06	5686.50	4842.88	4273.98	3569.58	2768.19	2304.16
90.0	7345.42	6434.52	6033.13	5351.47	4652.63	3952.40	3272.60	2626.66	2048.01
135.0	6803.89	6158.88	5496.71	4815.51	4125.03	3445.22	2796.03	2430.38	1730.15
180.0	6299.49	5903.20	5216.90	4516.21	3828.97	3197.89	2620.16	2090.24	1662.40
225.0	4394.63	3711.57	3325.50	2492.56	2166.34	1715.30	1408.57	1204.86	918.09
270.0	5062.37	4386.28	3979.32	3056.82	2440.12	2103.23	1514.84	1281.43	1179.81
315.0	5389.05	4705.07	4020.62	3336.17	2690.70	2111.12	1667.04	1380.73	1196.05
360.0	5504.13	4821.08	4118.99	3564.01	2778.40	2204.39	1838.27	1462.87	1293.49
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1136.19	902.03	902.03	860.27	803.15	755.72	720.46	691.83	668.72
45.0	1837.80	1513.45	1291.64	1132.94	1016.47	927.83	858.69	803.94	759.39
90.0	1621.56	1357.07	1181.66	921.43	921.43	890.90	805.70	776.42	735.45
135.0	1525.97	1291.64	1132.47	1012.29	918.09	844.77	787.23	741.76	706.95
180.0	1377.02	1189.09	1053.59	949.64	868.44	803.01	753.36	716.70	696.75
225.0	884.59	869.60	802.59	751.55	713.96	685.24	663.15	649.37	633.54
270.0	1046.16	944.54	864.26	798.37	748.25	711.60	682.83	660.55	641.53
315.0	1018.79	914.98	884.08	842.64	765.05	739.67	705.93	677.81	655.91
360.0	1136.19	902.03	902.03	860.27	803.15	755.72	720.46	691.83	668.72
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	649.74	630.44	608.86	572.01	515.45	475.63	371.64	325.66	249.28
45.0	723.66	693.50	669.37	648.02	628.53	605.33	582.59	505.56	466.12
90.0	703.57	675.96	653.54	633.82	618.32	589.88	540.18	476.56	407.79
135.0	677.72	655.45	634.57	618.79	597.91	558.46	499.07	430.39	352.90
180.0	662.87	643.85	633.17	607.65	586.77	535.26	470.30	399.30	323.20
225.0	616.05	578.42	521.57	454.01	384.36	312.94	239.21	171.37	108.12
270.0	624.82	604.87	564.50	505.56	439.21	366.35	289.79	229.93	229.93
315.0	635.77	620.88	600.41	557.68	496.79	425.57	348.77	267.98	191.83
360.0	649.74	630.44	608.86	572.01	515.45	475.63	371.64	325.66	249.28
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	175.73	109.47	55.59	21.67	10.90	8.26	5.80	4.78	4.08
45.0	396.05	323.66	252.20	252.20	114.94	59.58	22.60	11.55	8.54
90.0	332.11	254.89	181.85	116.47	60.05	23.85	11.88	9.00	7.19
135.0	274.01	243.39	243.39	79.12	33.87	15.36	11.93	9.61	7.61
180.0	247.56	247.56	96.24	44.96	17.03	10.16	7.80	5.20	4.41
225.0	53.92	19.49	10.12	8.03	5.52	4.22	3.62	3.20	2.83
270.0	95.13	45.85	16.61	9.33	7.10	4.73	3.62	3.06	2.74
315.0	122.23	64.59	26.13	11.09	8.91	5.99	4.41	3.48	2.92
360.0	175.73	109.47	55.59	21.67	10.90	8.26	5.80	4.78	4.08

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	3.62	3.20	2.88	2.60	2.46	2.32	2.23	2.18	2.13
45.0	6.03	4.73	4.08	3.62	3.16	2.69	2.46	2.32	2.18
90.0	5.01	4.08	3.85	3.20	2.97	2.69	2.51	2.37	2.23
135.0	6.31	5.57	4.97	4.45	3.99	3.62	3.39	3.29	3.06
180.0	3.53	3.29	2.97	2.51	2.37	2.23	2.13	2.09	2.00
225.0	2.55	2.46	2.23	2.09	2.04	1.95	1.81	1.81	1.76
270.0	2.46	2.18	2.00	1.81	1.76	1.67	1.53	1.53	1.44
315.0	2.60	2.23	2.04	1.95	1.86	1.76	1.62	1.62	1.58
360.0	3.62	3.20	2.88	2.60	2.46	2.32	2.23	2.18	2.13
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.13	2.04	1.95	1.81	1.72	1.72	1.62	1.58	1.62
45.0	2.09	2.00	1.95	1.95	1.90	1.76	1.67	1.67	1.62
90.0	2.18	2.13	2.04	1.90	1.76	1.67	1.58	1.53	1.58
135.0	2.88	2.88	2.55	2.46	2.32	2.27	2.27	2.27	2.23
180.0	1.95	1.95	1.86	1.67	1.62	1.58	1.53	1.53	1.53
225.0	1.67	1.58	1.53	1.53	1.48	1.44	1.48	1.48	1.39
270.0	1.39	1.30	1.25	1.16	1.11	1.11	1.11	1.07	1.02
315.0	1.48	1.39	1.35	1.30	1.21	1.16	1.21	1.21	1.11
360.0	2.13	2.04	1.95	1.81	1.72	1.72	1.62	1.58	1.62
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.58	1.48	1.39	1.30	1.16	0.93	0.79	0.74	0.70
45.0	1.53	1.53	1.58	1.53	1.44	1.35	1.25	1.07	0.88
90.0	1.58	1.48	1.44	1.44	1.35	1.25	1.02	0.93	0.84
135.0	2.27	2.27	2.13	2.00	1.86	1.72	1.48	1.25	1.07
180.0	1.53	1.53	1.48	1.35	1.30	1.11	0.97	0.88	0.79
225.0	1.30	1.25	1.16	1.02	0.88	0.84	0.74	0.74	0.65
270.0	1.02	0.97	0.88	0.74	0.70	0.65	0.60	0.51	0.56
315.0	1.07	1.07	1.02	0.93	0.84	0.74	0.65	0.60	0.60
360.0	1.58	1.48	1.39	1.30	1.16	0.93	0.79	0.74	0.70
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	0.60	0.51	0.56	0.51	0.46	0.46	0.46	0.42	0.46
45.0	0.88	0.70	0.65	0.65	0.60	0.51	0.51	0.56	0.51
90.0	0.74	0.65	0.60	0.56	0.51	0.46	0.42	0.46	0.42
135.0	0.97	0.88	0.70	0.60	0.60	0.46	0.51	0.46	0.42
180.0	0.70	0.70	0.65	0.56	0.56	0.51	0.51	0.46	0.42
225.0	0.60	0.56	0.56	0.51	0.46	0.46	0.51	0.46	0.46
270.0	0.51	0.42	0.42	0.46	0.42	0.42	0.37	0.37	0.42
315.0	0.51	0.46	0.46	0.46	0.42	0.37	0.37	0.42	0.42
360.0	0.60	0.51	0.56	0.51	0.46	0.46	0.46	0.42	0.46
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	0.37	0.42	0.42	0.37	0.37	0.42	0.37	0.37	0.37
45.0	0.42	0.42	0.42	0.46	0.42	0.37	0.46	0.46	0.42
90.0	0.37	0.42	0.42	0.42	0.37	0.37	0.32	0.42	0.32
135.0	0.42	0.42	0.37	0.37	0.37	0.42	0.37	0.37	0.32
180.0	0.46	0.42	0.46	0.37	0.37	0.37	0.37	0.32	0.32
225.0	0.46	0.42	0.46	0.42	0.46	0.46	0.46	0.51	0.46
270.0	0.37	0.37	0.37	0.37	0.32	0.32	0.28	0.42	0.32
315.0	0.32	0.37	0.32	0.37	0.32	0.32	0.32	0.32	0.32
360.0	0.37	0.42	0.42	0.37	0.37	0.42	0.37	0.37	0.37

Intensity data(cd)

C/γ(°)	90.0
0.0	0.32
45.0	0.37
90.0	0.32
135.0	0.32
180.0	0.32
225.0	0.46
270.0	0.28
315.0	0.28
360.0	0.32