
Nata

LumCAT: 3-2040-M	
Luminaire: 92.70.131.00	
Report No: GC2017061708	Voltage(V): 34.6000
Test No: NT-0010	Current(A): 0.5000
LampCAT: BRIDGELUX V13B	Power (W): 17.3000
Lamp flux(lm): 2479.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2215.79
Efficiency(%): 89.38%
Lumens(lm)/Power(W): 128.08
Central intensity(cd): 9440.521
Maximum intensity(cd): 9440.521
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=21.7
[C90/270]Total=21.7
Field angle(10%Imax): [C0/180]Total=50.3
[C90/270]Total=50.3
Maximum s/h(1/2): C0_180=0.37 C90_270=0.37
Maximum s/h(1/4): C0_180=0.38 C90_270=0.38
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.38%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.729%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9440.521	0.000	0	.000%	.000%
1.0	9368.259	9.000	9	.363%	.406%
2.0	9138.330	26.562	35.562	1.071%	1.605%
3.0	8810.263	42.927	78.489	1.732%	3.542%
4.0	8441.247	57.746	136.236	2.329%	6.148%
5.0	8013.941	70.789	207.025	2.856%	9.343%
6.0	7478.724	81.418	288.443	3.284%	13.018%
7.0	6975.095	89.715	378.158	3.619%	17.067%
8.0	6414.346	95.826	473.983	3.865%	21.391%
9.0	5804.115	99.024	573.007	3.995%	25.860%
10.0	5213.841	99.708	672.716	4.022%	30.360%
11.0	4629.417	98.354	771.07	3.968%	34.799%
12.0	4064.126	95.033	866.103	3.834%	39.088%
13.0	3512.323	89.913	956.016	3.627%	43.146%
14.0	3052.052	84.023	1040.04	3.389%	46.938%
15.0	2652.893	78.320	1118.36	3.159%	50.472%
16.0	2341.480	73.182	1191.541	2.952%	53.775%
17.0	2015.408	67.848	1259.39	2.737%	56.837%
18.0	1782.520	62.620	1322.009	2.526%	59.663%
19.0	1606.339	58.959	1380.969	2.378%	62.324%
20.0	1430.572	55.584	1436.552	2.242%	64.833%
21.0	1289.620	52.233	1488.786	2.107%	67.190%
22.0	1187.684	49.782	1538.568	2.008%	69.437%
23.0	1086.538	47.719	1586.287	1.925%	71.590%
24.0	1010.023	45.838	1632.126	1.849%	73.659%
25.0	951.808	44.608	1676.734	1.799%	75.672%
26.0	899.904	43.710	1720.443	1.763%	77.645%
27.0	860.704	43.074	1763.517	1.738%	79.589%
28.0	833.946	42.905	1806.422	1.731%	81.525%
29.0	811.779	43.057	1849.479	1.737%	83.468%
30.0	792.392	43.312	1892.791	1.747%	85.423%
31.0	769.310	43.460	1936.251	1.753%	87.384%
32.0	722.464	42.738	1978.989	1.724%	89.313%
33.0	649.480	40.418	2019.407	1.630%	91.137%
34.0	574.197	37.032	2056.439	1.494%	92.809%
35.0	461.132	32.153	2088.592	1.297%	94.260%
36.0	356.249	26.026	2114.618	1.050%	95.434%
37.0	277.663	20.675	2135.292	.834%	96.367%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	186.221	15.484	2150.776	.625%	97.066%
39.0	101.015	9.804	2160.58	.395%	97.509%
40.0	49.647	5.255	2165.835	.212%	97.746%
41.0	28.561	2.785	2168.62	.112%	97.871%
42.0	21.238	1.809	2170.429	.073%	97.953%
43.0	17.425	1.432	2171.861	.058%	98.018%
44.0	14.604	1.209	2173.07	.049%	98.072%
45.0	12.863	1.056	2174.126	.043%	98.120%
46.0	11.975	0.971	2175.097	.039%	98.164%
47.0	11.424	0.931	2176.028	.038%	98.206%
48.0	11.135	0.912	2176.94	.037%	98.247%
49.0	10.874	0.904	2177.844	.036%	98.288%
50.0	10.647	0.897	2178.741	.036%	98.328%
51.0	10.454	0.893	2179.633	.036%	98.368%
52.0	10.282	0.890	2180.523	.036%	98.409%
53.0	10.110	0.887	2181.41	.036%	98.449%
54.0	9.979	0.885	2182.296	.036%	98.489%
55.0	9.862	0.886	2183.181	.036%	98.529%
56.0	9.752	0.886	2184.068	.036%	98.569%
57.0	9.649	0.887	2184.955	.036%	98.609%
58.0	9.566	0.889	2185.843	.036%	98.649%
59.0	9.490	0.891	2186.734	.036%	98.689%
60.0	9.422	0.893	2187.628	.036%	98.729%
61.0	9.366	0.897	2188.524	.036%	98.770%
62.0	9.325	0.901	2189.425	.036%	98.810%
63.0	9.284	0.905	2190.33	.037%	98.851%
64.0	9.236	0.909	2191.239	.037%	98.892%
65.0	9.160	0.910	2192.149	.037%	98.933%
66.0	9.119	0.912	2193.061	.037%	98.974%
67.0	9.105	0.916	2193.977	.037%	99.016%
68.0	9.064	0.920	2194.898	.037%	99.057%
69.0	9.043	0.924	2195.822	.037%	99.099%
70.0	9.029	0.928	2196.75	.037%	99.141%
71.0	8.995	0.932	2197.681	.038%	99.183%
72.0	8.960	0.934	2198.615	.038%	99.225%
73.0	8.954	0.937	2199.552	.038%	99.267%
74.0	8.947	0.941	2200.493	.038%	99.310%
75.0	8.912	0.944	2201.436	.038%	99.352%

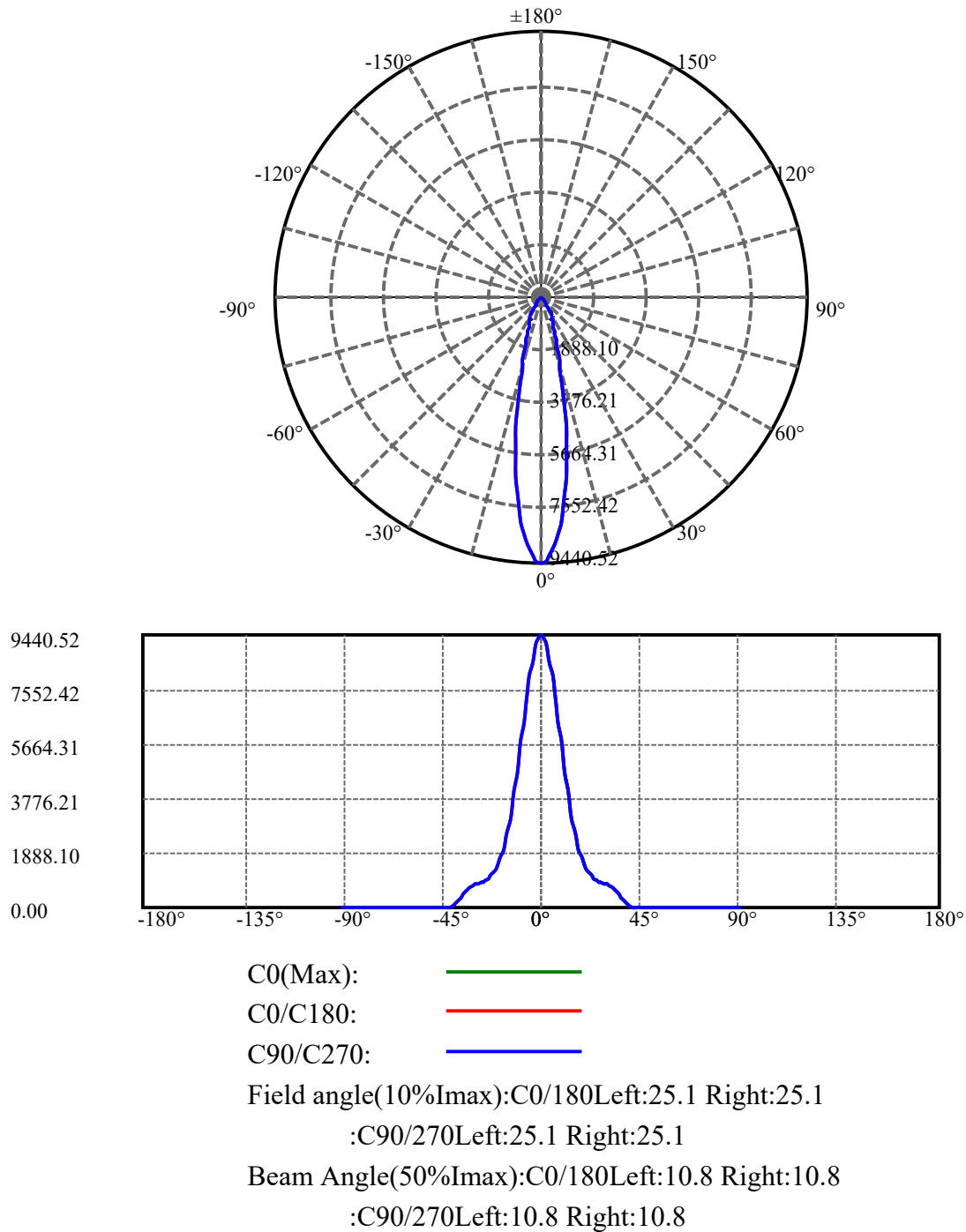
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.905	0.946	2202.382	.038%	99.395%
77.0	8.892	0.949	2203.331	.038%	99.438%
78.0	8.857	0.950	2204.281	.038%	99.481%
79.0	8.864	0.952	2205.233	.038%	99.524%
80.0	8.843	0.955	2206.188	.039%	99.567%
81.0	8.837	0.956	2207.144	.039%	99.610%
82.0	8.816	0.957	2208.101	.039%	99.653%
83.0	8.816	0.958	2209.06	.039%	99.696%
84.0	8.816	0.961	2210.02	.039%	99.740%
85.0	8.830	0.963	2210.983	.039%	99.783%
86.0	8.809	0.964	2211.948	.039%	99.827%
87.0	8.761	0.962	2212.909	.039%	99.870%
88.0	8.754	0.959	2213.869	.039%	99.913%
89.0	8.740	0.959	2214.827	.039%	99.957%
90.0	8.754	0.959	2215.787	.039%	100.000%

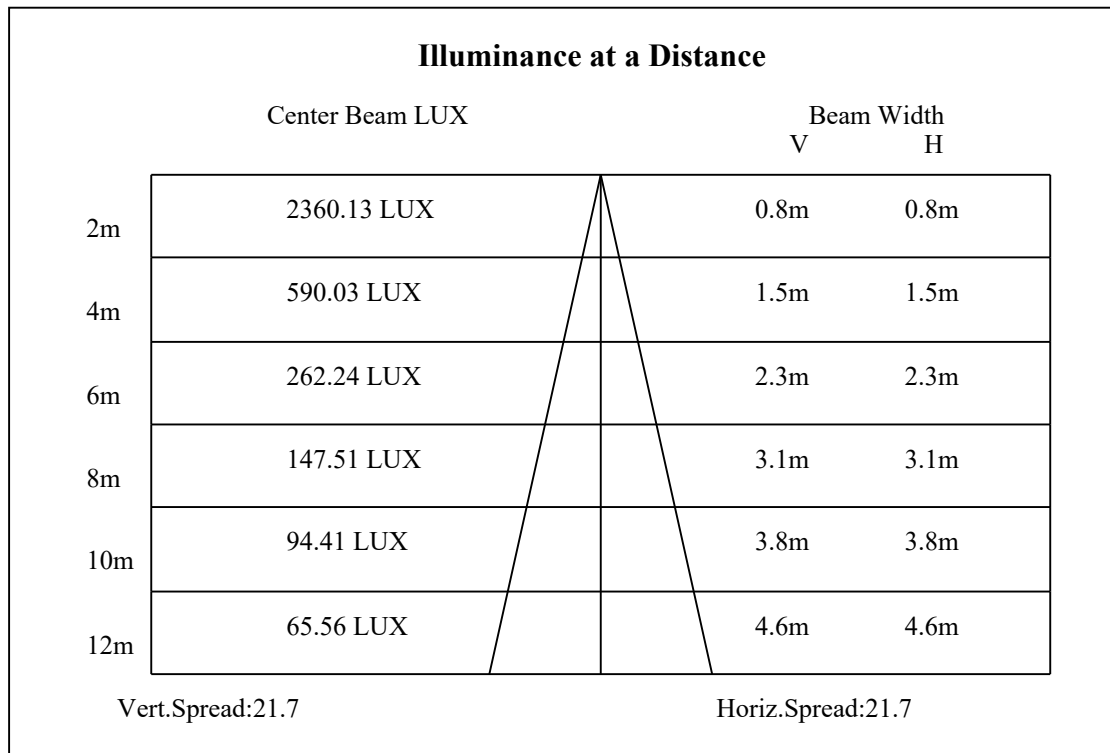
ZONAL LUMEN SUMMARY

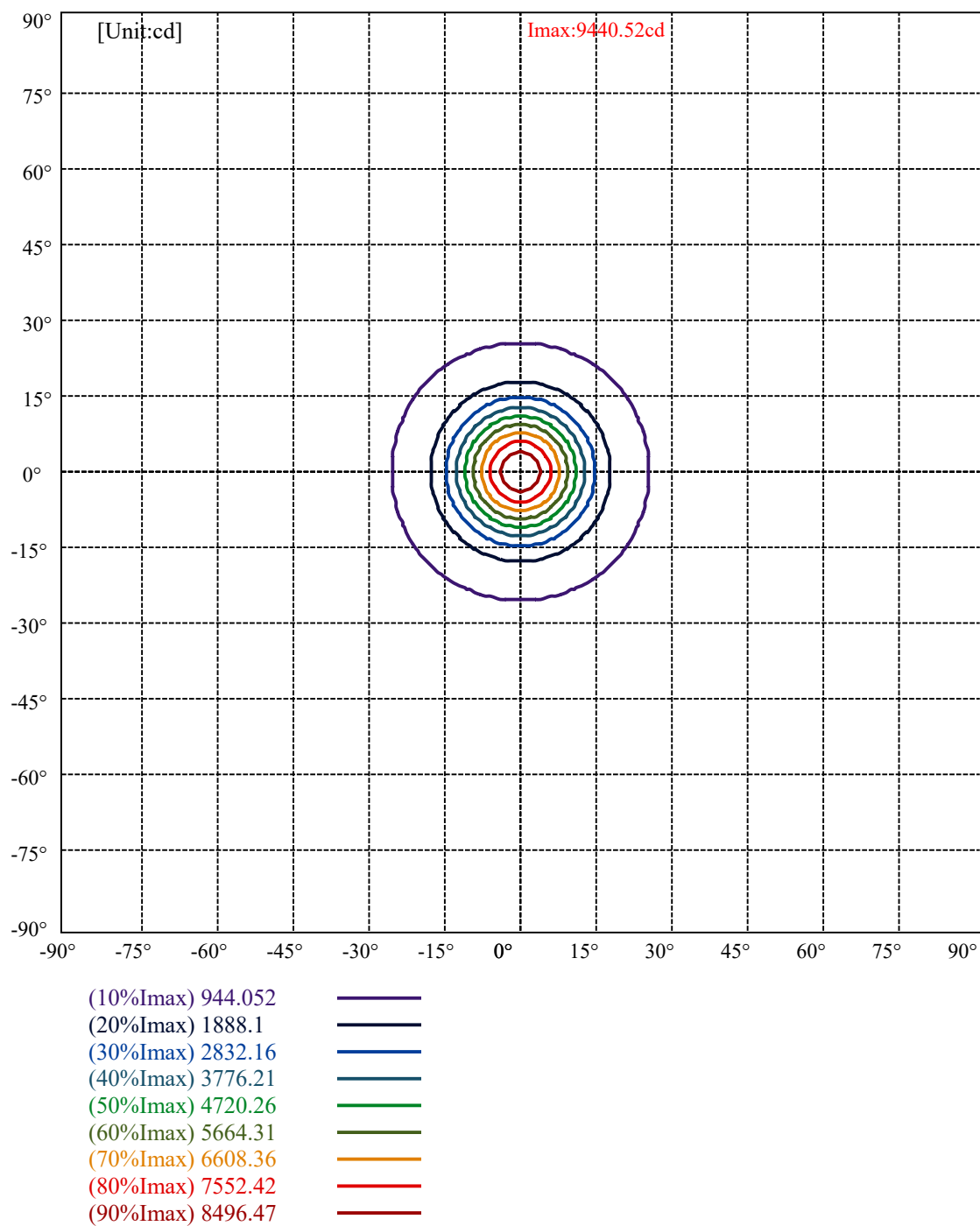
Zone	Lumens	%Lamp	%Fixt
0-30	1892.79	76.35%	85.42%
0-40	2165.83	87.37%	97.75%
0-60	2187.63	88.25%	98.73%
0-90	2214.83	89.34%	99.96%
0-120	2214.83	89.34%	99.96%
0-180	2215.79	89.38%	100.00%
60-90	28.09	1.13%	1.27%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.21	1772.63	71.51%	80.00%

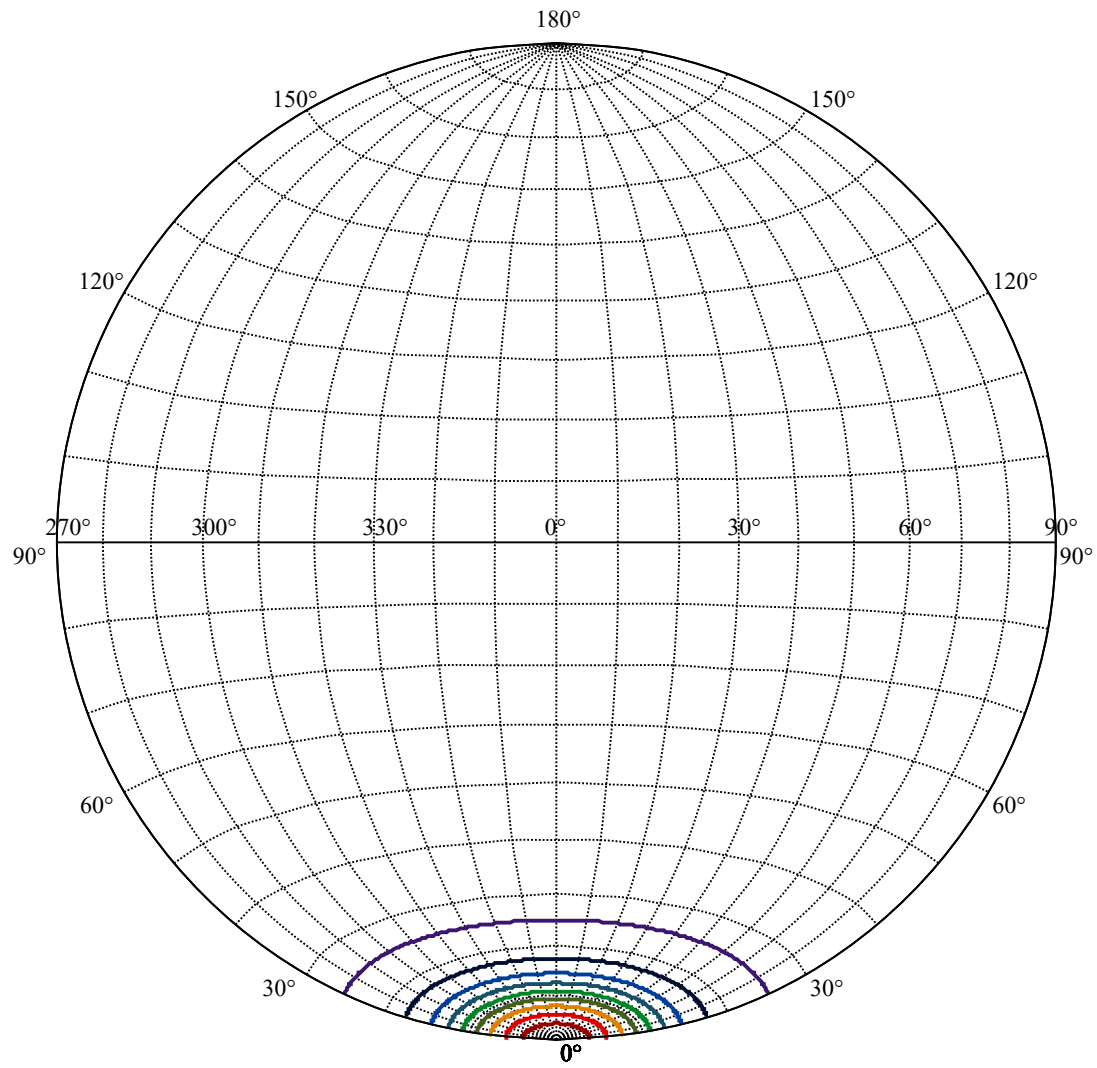
ZONAL LUMEN SUMMARY

0-10	672.72
10-20	763.84
20-30	456.24
30-40	273.04
40-50	12.91
50-60	8.89
60-70	9.12
70-80	9.44
80-90	8.64
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







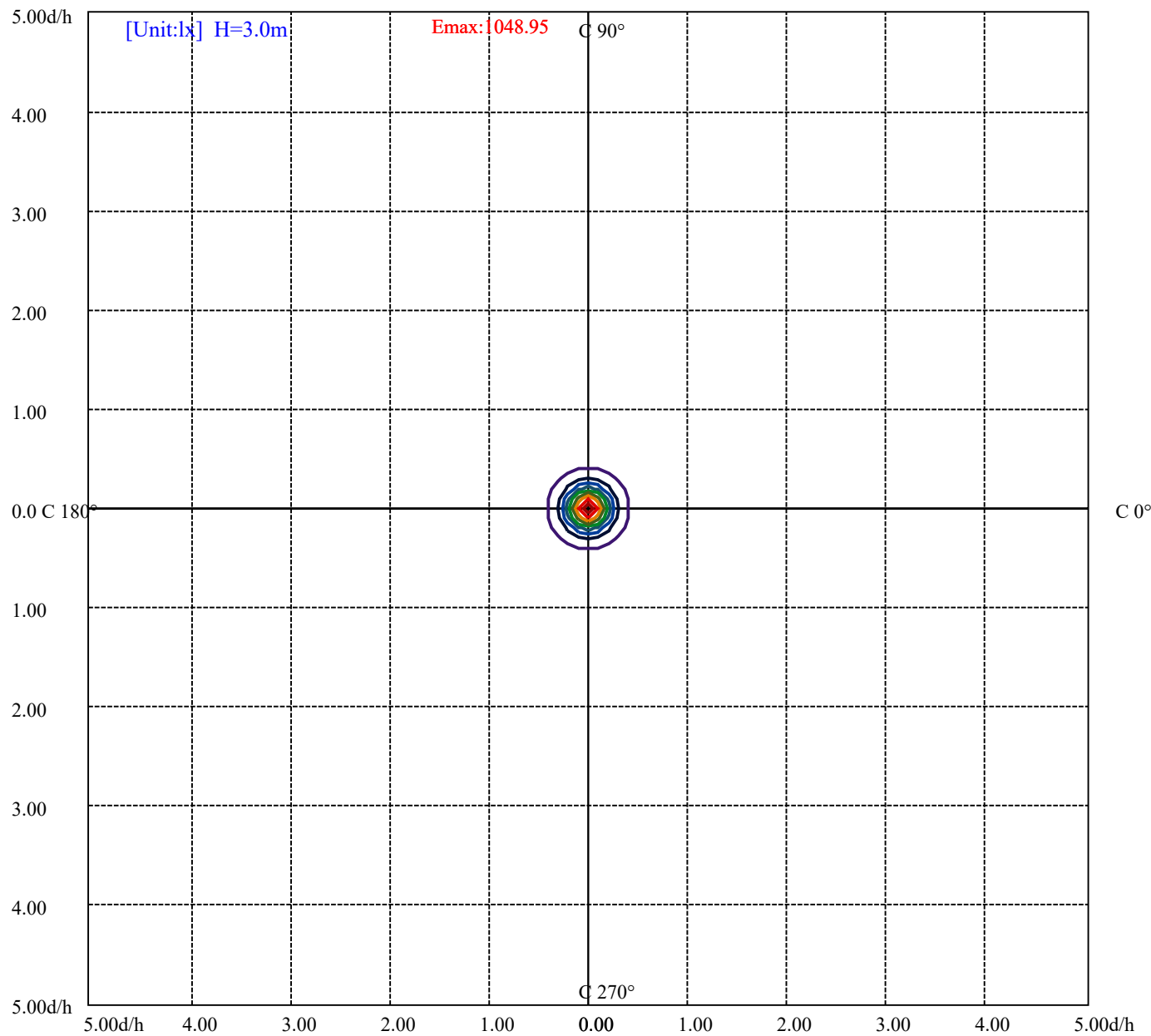


House

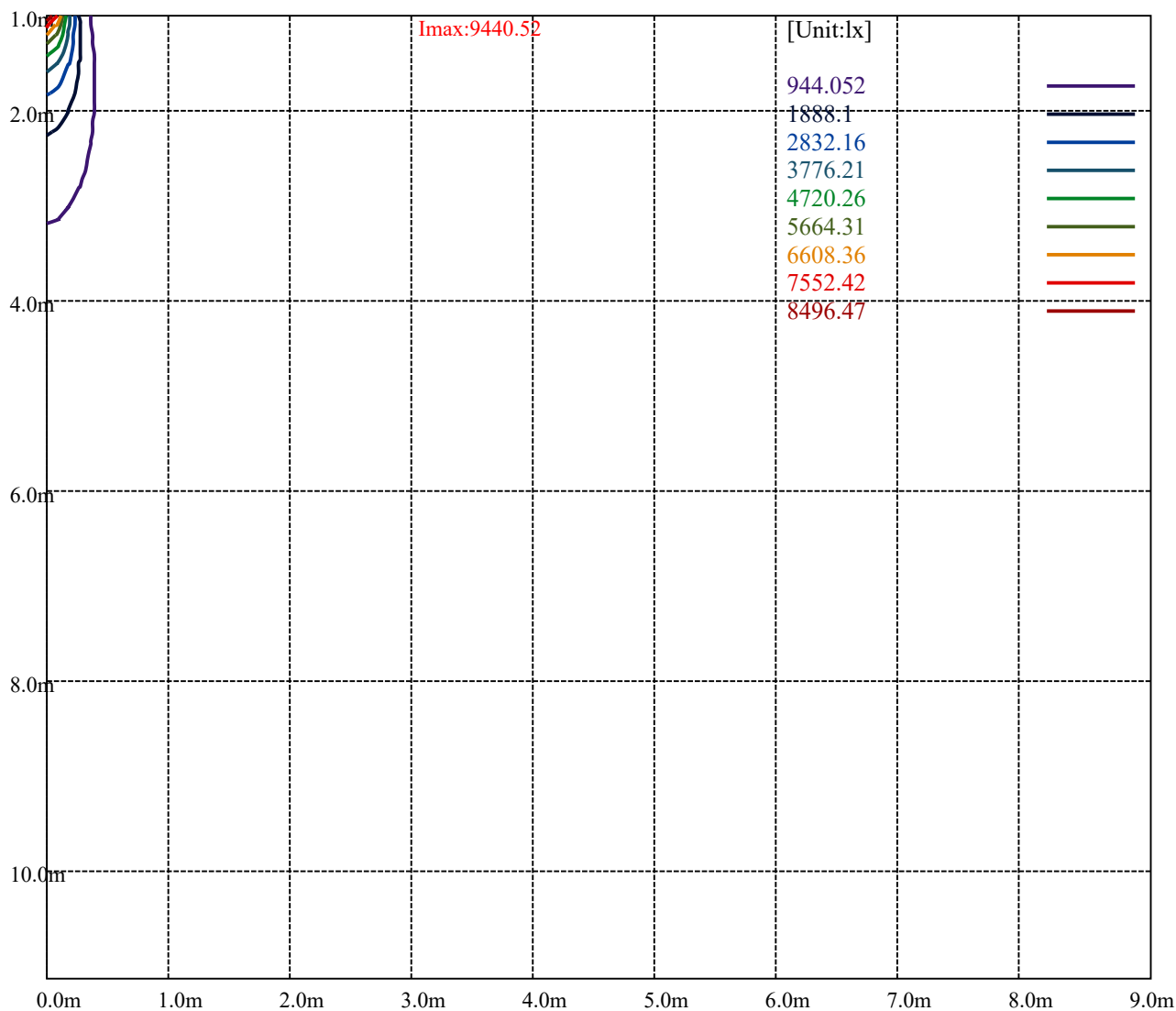
[Unit:cd]

Road

Imax:9440.52	
(10%Imax)	944.052
(20%Imax)	1888.1
(30%Imax)	2832.16
(40%Imax)	3776.21
(50%Imax)	4720.26
(60%Imax)	5664.31
(70%Imax)	6608.36
(80%Imax)	7552.42
(90%Imax)	8496.47



(10%Emax)	104.8946	—
(20%Emax)	209.7889	—
(30%Emax)	314.6833	—
(40%Emax)	419.5778	—
(50%Emax)	524.4722	—
(60%Emax)	629.3678	—
(70%Emax)	734.2622	—
(80%Emax)	839.1567	—
(90%Emax)	944.0511	—



Luminance Table

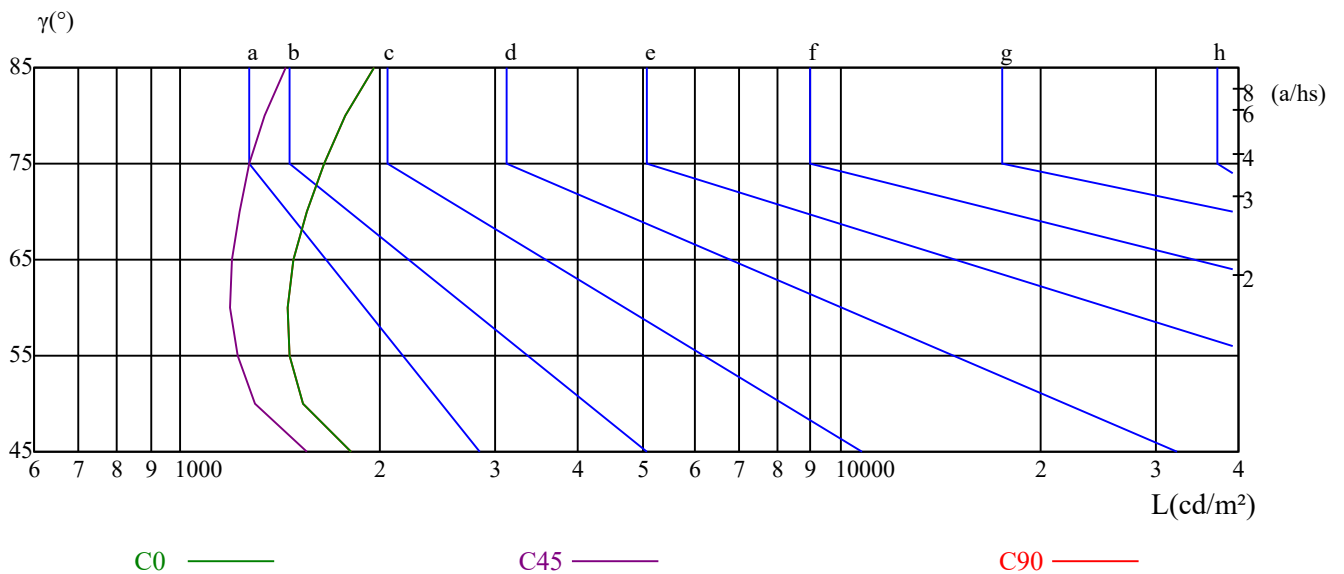
γ	45	50	55	60	65	70	75	80	85
C0	1808	1530	1461	1452	1483	1552	1645	1778	1965
C45	1553	1295	1218	1190	1194	1226	1272	1341	1439
C90	1808	1530	1461	1452	1483	1552	1645	1778	1965

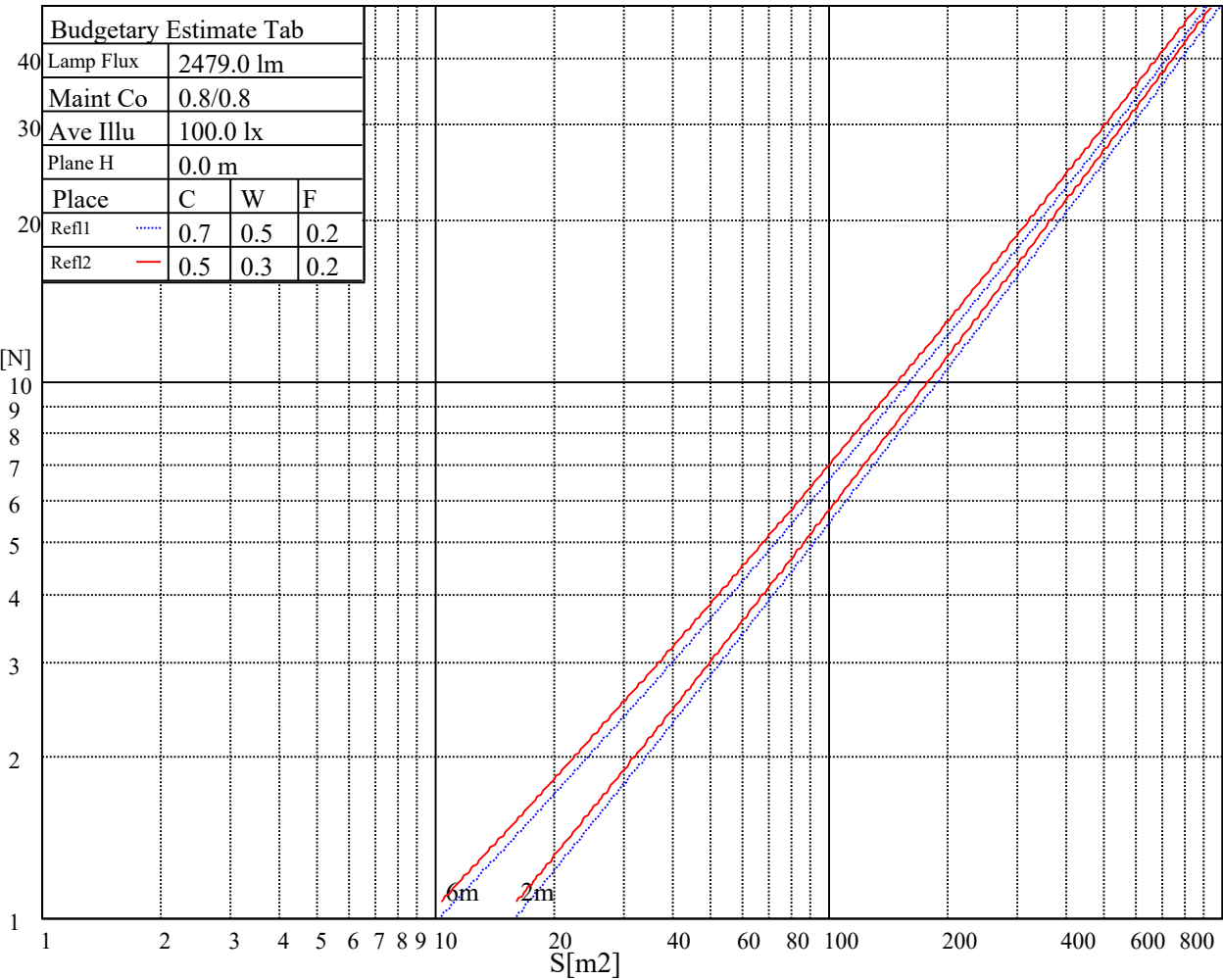
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3563	3563	3563	5660	5660	5660	16652	16652	16652

Glare Table

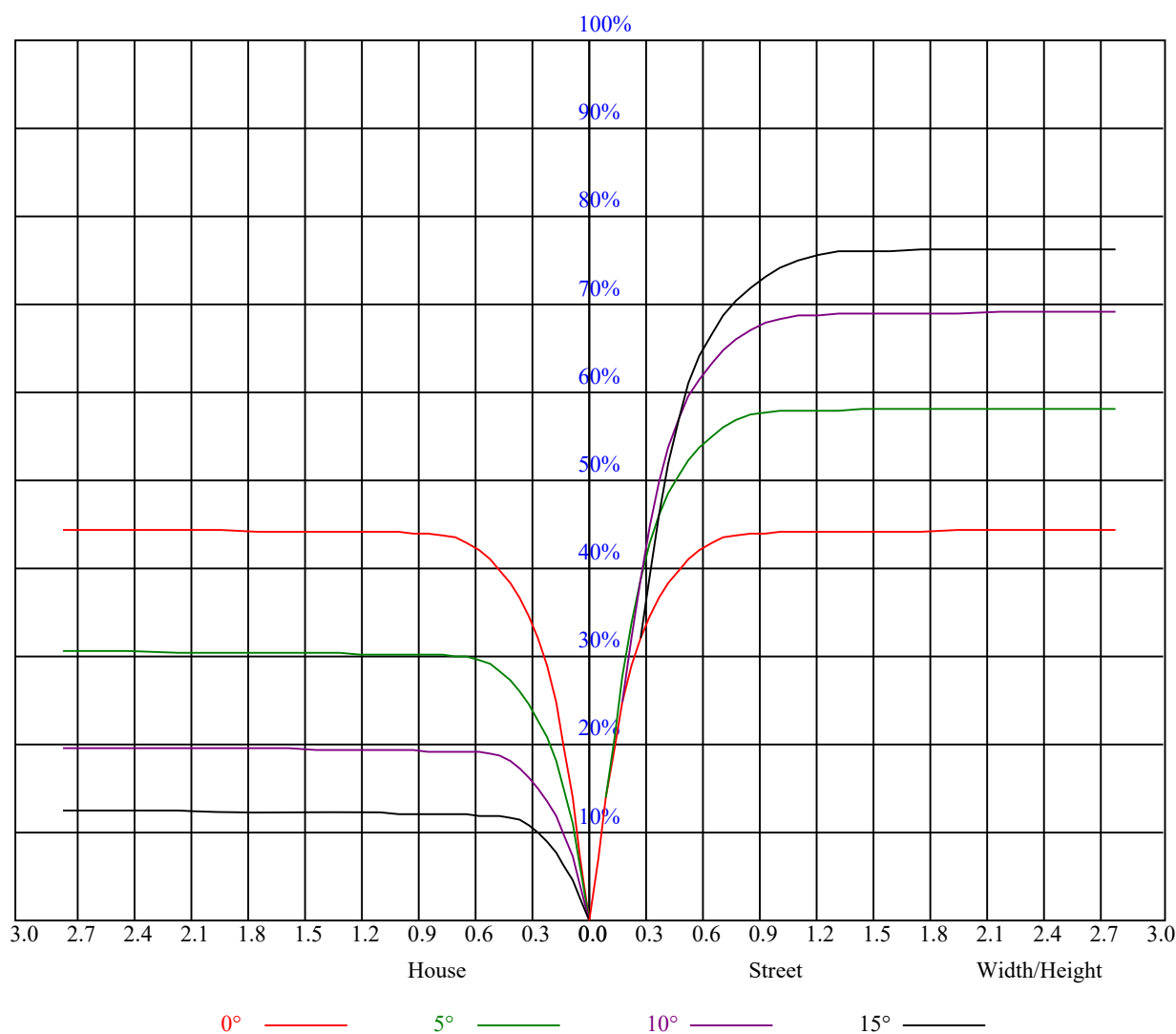
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	1.00	0.98	0.96	0.98	0.96	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.85
2	0.95	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.83	0.81
3	0.90	0.86	0.83	0.89	0.85	0.83	0.86	0.84	0.81	0.84	0.82	0.80	0.82	0.81	0.79	0.78
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.80	0.77	0.76	0.74
5	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.69
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.62	0.61
10	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59



Intensity data(cd)									Appendix Page: 16 Total:18
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	9400.88	9356.28	9139.91	8860.78	8475.38	8080.63	7586.77	7042.26	6529.14
45.0	9439.42	9338.67	9053.47	8753.97	8394.45	7940.78	7430.96	6922.79	6317.72
90.0	9405.84	9131.10	8803.52	8333.89	7905.55	7437.57	6802.77	6258.26	5696.69
135.0	9515.95	9326.55	8953.82	8595.41	8197.90	7706.24	7160.64	6639.25	6014.36
180.0	9400.88	9280.86	9050.72	8657.07	8286.54	7873.07	7292.77	6789.00	6241.19
225.0	9439.42	9389.87	9139.36	8834.90	8467.67	8058.61	7506.39	7010.33	6418.48
270.0	9405.84	9568.80	9541.27	9341.42	9034.20	8631.74	8180.28	7734.32	7195.32
315.0	9515.95	9553.94	9424.55	9104.68	8768.28	8382.89	7869.21	7404.54	6901.87
360.0	9400.88	9356.28	9139.91	8860.78	8475.38	8080.63	7586.77	7042.26	6529.14
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5927.92	5375.71	4756.87	4219.52	3652.99	3151.43	2757.22	2415.87	2068.47
45.0	5700.54	5140.07	4517.38	3982.78	3432.22	2954.33	2590.95	2320.08	1961.11
90.0	5046.47	4410.57	3889.73	3352.38	2882.20	2527.64	2194.55	1941.29	1707.30
135.0	5380.11	4822.39	4206.86	3687.68	3159.14	2713.18	2383.94	2104.81	1814.11
180.0	5610.25	4982.60	4437.00	3847.89	3313.29	2899.82	2505.62	2208.86	1928.63
225.0	5866.26	5241.92	4685.85	4070.32	3508.74	3071.05	2637.20	2314.57	2019.47
270.0	6605.67	6065.56	5436.82	4869.74	4252.01	3673.36	3205.93	2843.11	2376.78
315.0	6295.70	5671.91	5104.83	4482.69	3897.99	3425.61	2947.72	2583.25	2247.40
360.0	5927.92	5375.71	4756.87	4219.52	3652.99	3151.43	2757.22	2415.87	2068.47
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1838.88	1647.84	1455.14	1328.51	1222.25	1120.40	1033.41	968.44	911.73
45.0	1744.19	1586.73	1386.87	1268.50	1179.31	1071.95	990.46	937.61	883.66
90.0	1517.35	1377.51	1260.79	1092.26	1052.84	982.76	913.99	875.34	845.17
135.0	1625.26	1470.01	1315.85	1211.24	1123.15	1037.26	964.59	915.04	872.64
180.0	1696.84	1530.02	1376.41	1251.43	1092.54	1073.10	986.06	930.45	889.27
225.0	1775.02	1596.64	1449.08	1298.23	1196.93	1095.68	1011.00	948.95	901.82
270.0	2100.40	1892.29	1626.92	1473.31	1360.44	1222.25	1122.05	1052.13	966.79
315.0	1962.21	1749.69	1573.51	1393.48	1274.01	1088.91	1058.62	986.50	928.14
360.0	1838.88	1647.84	1455.14	1328.51	1222.25	1120.40	1033.41	968.44	911.73
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	871.54	841.26	819.24	802.17	785.10	757.03	696.46	627.09	501.56
45.0	850.62	829.70	806.58	788.96	774.09	721.79	650.22	567.63	438.80
90.0	821.66	800.74	785.05	764.62	714.52	626.76	513.02	430.32	323.73
135.0	845.12	823.64	802.72	787.31	748.77	676.09	588.00	512.58	377.69
180.0	849.80	827.44	807.73	785.38	768.48	708.47	618.89	530.19	426.91
225.0	858.88	831.02	811.97	791.88	777.56	741.55	666.73	586.46	479.60
270.0	914.49	874.85	839.61	819.79	801.07	780.15	756.47	694.81	595.16
315.0	873.52	842.91	821.33	799.03	784.88	767.87	706.04	644.49	545.61
360.0	871.54	841.26	819.24	802.17	785.10	757.03	696.46	627.09	501.56
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	402.46	317.68	281.34	106.53	49.66	27.47	23.07	18.83	15.36
45.0	344.65	282.44	149.86	73.56	33.64	23.29	19.10	15.53	12.83
90.0	212.30	140.67	73.06	26.26	22.57	18.88	14.76	12.55	11.67
135.0	278.03	223.75	104.33	45.70	26.54	22.52	18.17	15.14	13.82
180.0	318.94	227.60	146.28	63.37	30.61	23.78	19.66	15.36	13.10
225.0	358.53	275.06	183.72	83.30	42.67	26.04	22.19	17.56	14.53
270.0	507.07	411.82	302.26	278.03	114.79	50.10	27.36	23.67	18.99
315.0	428.01	342.29	248.91	131.36	76.69	36.39	25.60	20.76	16.52
360.0	402.46	317.68	281.34	106.53	49.66	27.47	23.07	18.83	15.36

Intensity data(cd)

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C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	13.98	12.17	11.62	11.34	11.12	10.85	10.68	10.46	10.19
45.0	11.56	11.12	10.96	10.68	10.46	10.24	10.08	9.97	9.80
90.0	11.29	11.01	10.74	10.57	10.35	10.24	10.08	9.91	9.80
135.0	12.28	11.84	11.45	11.23	11.01	10.74	10.52	10.41	10.24
180.0	12.06	11.62	11.29	11.01	10.79	10.57	10.41	10.24	10.13
225.0	12.44	11.56	11.23	10.96	10.68	10.46	10.24	10.08	9.91
270.0	15.53	13.93	11.95	11.56	11.18	10.90	10.68	10.46	10.24
315.0	13.76	12.55	12.17	11.73	11.40	11.18	10.96	10.74	10.57
360.0	13.98	12.17	11.62	11.34	11.12	10.85	10.68	10.46	10.19
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.19	9.97	9.86	9.74	9.69	9.52	9.52	9.47	9.41
45.0	9.69	9.63	9.52	9.41	9.36	9.30	9.25	9.19	9.14
90.0	9.69	9.63	9.52	9.41	9.36	9.36	9.25	9.19	9.19
135.0	10.13	10.02	9.91	9.80	9.69	9.63	9.58	9.52	9.47
180.0	9.97	9.86	9.80	9.63	9.58	9.52	9.47	9.41	9.36
225.0	9.80	9.69	9.58	9.52	9.41	9.30	9.25	9.25	9.19
270.0	10.08	9.97	9.80	9.74	9.63	9.58	9.47	9.41	9.36
315.0	10.30	10.13	10.02	9.91	9.80	9.69	9.58	9.47	9.47
360.0	10.19	9.97	9.86	9.74	9.69	9.52	9.52	9.47	9.41
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.36	9.25	9.19	9.19	9.19	9.19	9.14	9.14	9.08
45.0	9.14	9.03	9.03	8.92	8.97	8.92	8.92	8.86	8.86
90.0	9.14	9.14	9.03	8.97	8.97	8.97	8.97	8.97	8.92
135.0	9.41	9.36	9.25	9.25	9.25	9.19	9.19	9.14	9.08
180.0	9.36	9.25	9.25	9.19	9.14	9.08	9.08	9.08	9.08
225.0	9.14	9.14	9.03	8.97	8.97	8.92	8.86	8.86	8.86
270.0	9.30	9.25	9.19	9.19	9.08	9.08	9.03	9.03	8.97
315.0	9.41	9.47	9.30	9.25	9.25	9.14	9.14	9.14	9.08
360.0	9.36	9.25	9.19	9.19	9.19	9.19	9.14	9.14	9.08
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.03	9.08	9.03	8.97	8.97	8.97	8.92	8.92	8.92
45.0	8.86	8.86	8.86	8.75	8.75	8.81	8.81	8.81	8.75
90.0	8.86	8.86	8.86	8.86	8.86	8.81	8.81	8.81	8.75
135.0	9.03	9.03	9.03	9.03	9.03	8.97	8.92	8.97	8.97
180.0	9.03	8.97	8.97	8.97	8.97	8.92	8.92	8.86	8.86
225.0	8.81	8.81	8.81	8.75	8.75	8.75	8.70	8.70	8.70
270.0	8.97	8.92	8.92	8.92	8.86	8.86	8.81	8.81	8.81
315.0	9.08	9.08	9.08	9.03	9.03	9.03	8.97	9.03	8.97
360.0	9.03	9.08	9.03	8.97	8.97	8.97	8.92	8.92	8.92
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.86	8.86	8.86	8.86	8.86	8.81	8.81	8.81	8.75
45.0	8.70	8.70	8.70	8.70	8.75	8.75	8.64	8.64	8.64
90.0	8.81	8.75	8.75	8.81	8.86	8.92	8.75	8.70	8.75
135.0	8.97	8.92	8.92	8.92	8.92	8.92	8.81	8.81	8.81
180.0	8.86	8.86	8.86	8.81	8.86	8.86	8.86	8.86	8.81
225.0	8.70	8.70	8.70	8.70	8.64	8.64	8.64	8.64	8.59
270.0	8.81	8.75	8.75	8.81	8.75	8.75	8.75	8.75	8.75
315.0	8.97	8.97	8.97	8.92	8.97	8.81	8.81	8.81	8.81
360.0	8.86	8.86	8.86	8.86	8.86	8.81	8.81	8.81	8.75

Intensity data(cd)

Appendix Page: 18 Total:18

C/ $\gamma(^{\circ})$	90.0
0.0	8.86
45.0	8.70
90.0	8.70
135.0	8.81
180.0	8.81
225.0	8.64
270.0	8.75
315.0	8.75
360.0	8.86