
Nata

LumCAT: 3-2033-M	
Luminaire: 92.70.131.00	
Report No: GC2017061705	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): 2225.20
Efficiency(%): 89.76%
Lumens(lm)/Power(W): 128.62
Central intensity(cd): 18399.850
Maximum intensity(cd): 18399.850
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=13.9
[C90/270]Total=13.9
Field angle(10%Imax): [C0/180]Total=28.7
[C90/270]Total=28.7
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.76%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.768%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	18399.850	0.000	0	.000%	.000%
1.0	18142.461	17.485	17.485	.705%	.786%
2.0	17412.963	51.033	68.517	2.059%	3.079%
3.0	16194.152	80.377	148.895	3.242%	6.691%
4.0	14395.115	102.392	251.287	4.130%	11.293%
5.0	13059.791	118.110	369.396	4.764%	16.601%
6.0	11055.600	126.733	496.129	5.112%	22.296%
7.0	9146.657	125.395	621.524	5.058%	27.931%
8.0	7655.592	120.251	741.775	4.851%	33.335%
9.0	6002.042	110.688	852.462	4.465%	38.309%
10.0	4614.690	96.078	948.54	3.876%	42.627%
11.0	3686.921	82.950	1031.49	3.346%	46.355%
12.0	2848.412	71.441	1102.93	2.882%	49.565%
13.0	2287.456	60.950	1163.88	2.459%	52.304%
14.0	1940.945	54.123	1218.003	2.183%	54.737%
15.0	1638.203	49.136	1267.14	1.982%	56.945%
16.0	1453.764	45.306	1312.446	1.828%	58.981%
17.0	1310.246	43.043	1355.489	1.736%	60.915%
18.0	1198.647	41.366	1396.855	1.669%	62.774%
19.0	1115.408	40.260	1437.115	1.624%	64.584%
20.0	1056.243	39.747	1476.862	1.603%	66.370%
21.0	1009.521	39.667	1516.529	1.600%	68.152%
22.0	973.335	39.846	1556.375	1.607%	69.943%
23.0	944.444	40.240	1596.615	1.623%	71.751%
24.0	919.435	40.751	1637.366	1.644%	73.583%
25.0	895.031	41.257	1678.623	1.664%	75.437%
26.0	872.947	41.733	1720.357	1.683%	77.312%
27.0	852.342	42.210	1762.566	1.703%	79.209%
28.0	829.700	42.586	1805.152	1.718%	81.123%
29.0	810.465	42.911	1848.063	1.731%	83.051%
30.0	793.204	43.299	1891.362	1.747%	84.997%
31.0	762.937	43.305	1934.667	1.747%	86.943%
32.0	717.715	42.419	1977.086	1.711%	88.850%
33.0	663.168	40.681	2017.767	1.641%	90.678%
34.0	580.680	37.643	2055.41	1.518%	92.370%
35.0	485.116	33.100	2088.51	1.335%	93.857%
36.0	393.061	27.961	2116.471	1.128%	95.114%
37.0	297.098	22.509	2138.98	.908%	96.125%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	200.474	16.608	2155.588	.670%	96.872%
39.0	132.383	11.361	2166.95	.458%	97.382%
40.0	75.427	7.248	2174.197	.292%	97.708%
41.0	40.515	4.129	2178.326	.167%	97.893%
42.0	24.342	2.356	2180.682	.095%	97.999%
43.0	18.588	1.590	2182.273	.064%	98.071%
44.0	15.533	1.288	2183.561	.052%	98.129%
45.0	13.317	1.109	2184.669	.045%	98.178%
46.0	12.030	0.991	2185.66	.040%	98.223%
47.0	11.163	0.922	2186.583	.037%	98.264%
48.0	10.805	0.888	2187.471	.036%	98.304%
49.0	10.523	0.876	2188.347	.035%	98.344%
50.0	10.275	0.867	2189.214	.035%	98.383%
51.0	10.082	0.861	2190.075	.035%	98.421%
52.0	9.931	0.859	2190.934	.035%	98.460%
53.0	9.759	0.856	2191.79	.035%	98.498%
54.0	9.614	0.854	2192.644	.034%	98.537%
55.0	9.497	0.853	2193.497	.034%	98.575%
56.0	9.408	0.854	2194.352	.034%	98.614%
57.0	9.380	0.859	2195.211	.035%	98.652%
58.0	9.249	0.862	2196.072	.035%	98.691%
59.0	9.181	0.862	2196.934	.035%	98.730%
60.0	9.112	0.864	2197.798	.035%	98.768%
61.0	9.050	0.867	2198.665	.035%	98.807%
62.0	8.988	0.869	2199.534	.035%	98.846%
63.0	8.947	0.872	2200.406	.035%	98.886%
64.0	8.912	0.876	2201.283	.035%	98.925%
65.0	8.885	0.881	2202.163	.036%	98.965%
66.0	8.864	0.886	2203.049	.036%	99.004%
67.0	8.809	0.889	2203.937	.036%	99.044%
68.0	8.788	0.891	2204.829	.036%	99.084%
69.0	8.781	0.896	2205.725	.036%	99.125%
70.0	8.761	0.901	2206.626	.036%	99.165%
71.0	8.747	0.905	2207.531	.037%	99.206%
72.0	8.720	0.908	2208.439	.037%	99.247%
73.0	8.699	0.911	2209.35	.037%	99.288%
74.0	8.671	0.913	2210.263	.037%	99.329%
75.0	8.665	0.916	2211.179	.037%	99.370%

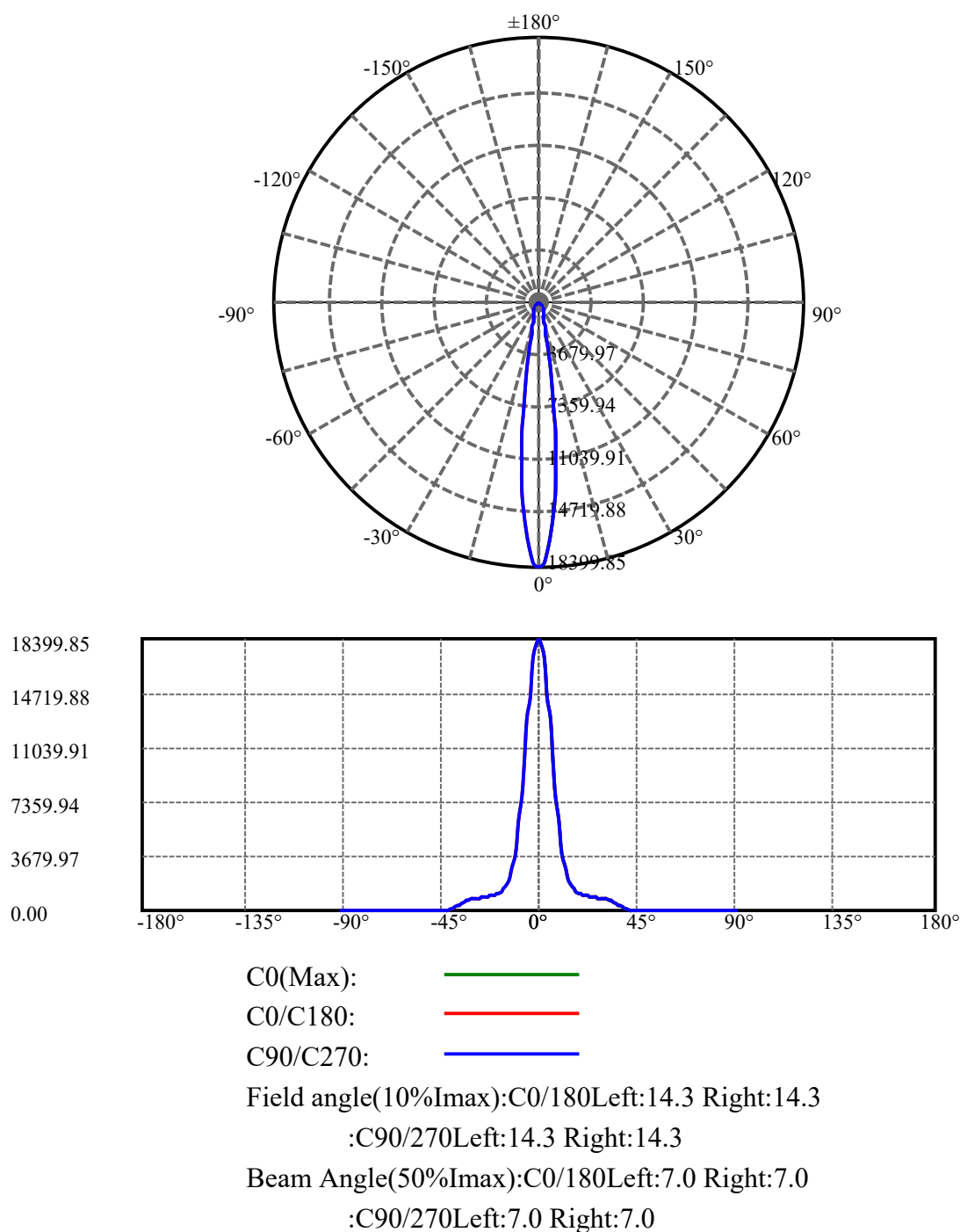
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.665	0.920	2212.099	.037%	99.411%
77.0	8.665	0.924	2213.023	.037%	99.453%
78.0	8.658	0.927	2213.95	.037%	99.494%
79.0	8.713	0.933	2214.884	.038%	99.536%
80.0	8.665	0.937	2215.821	.038%	99.578%
81.0	8.637	0.936	2216.756	.038%	99.620%
82.0	8.630	0.936	2217.693	.038%	99.662%
83.0	8.630	0.938	2218.631	.038%	99.705%
84.0	8.623	0.940	2219.571	.038%	99.747%
85.0	8.623	0.941	2220.512	.038%	99.789%
86.0	8.603	0.942	2221.454	.038%	99.831%
87.0	8.561	0.939	2222.393	.038%	99.874%
88.0	8.548	0.937	2223.33	.038%	99.916%
89.0	8.534	0.936	2224.266	.038%	99.958%
90.0	8.561	0.937	2225.204	.038%	100.000%

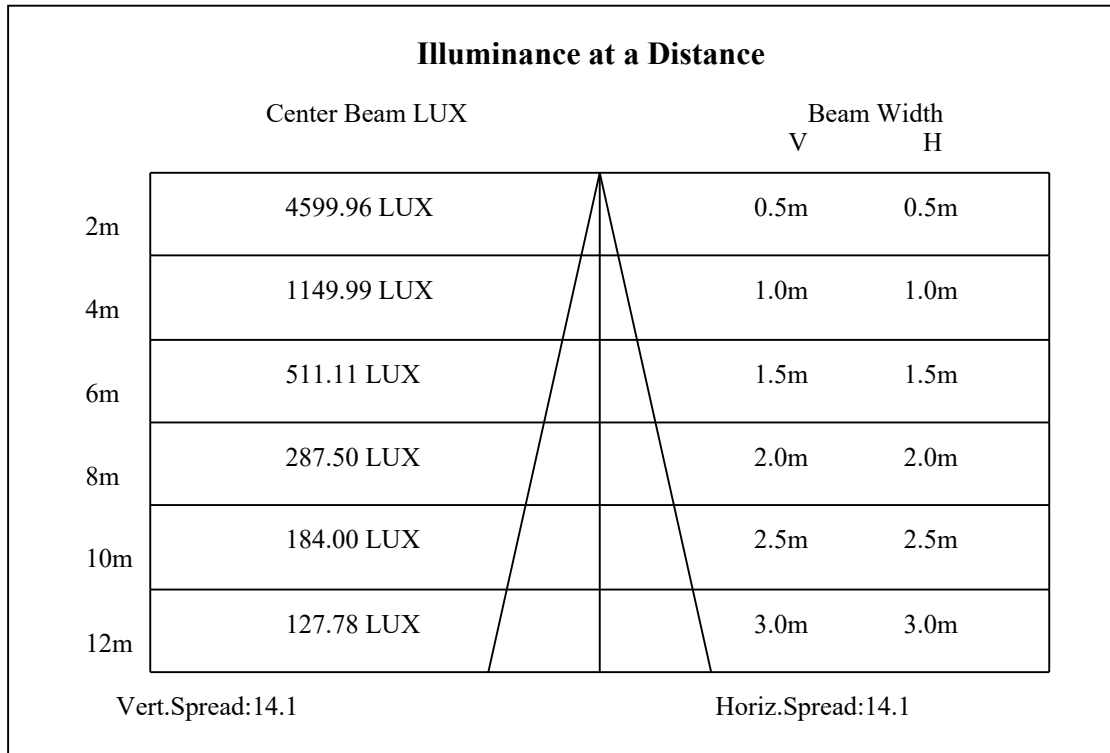
ZONAL LUMEN SUMMARY

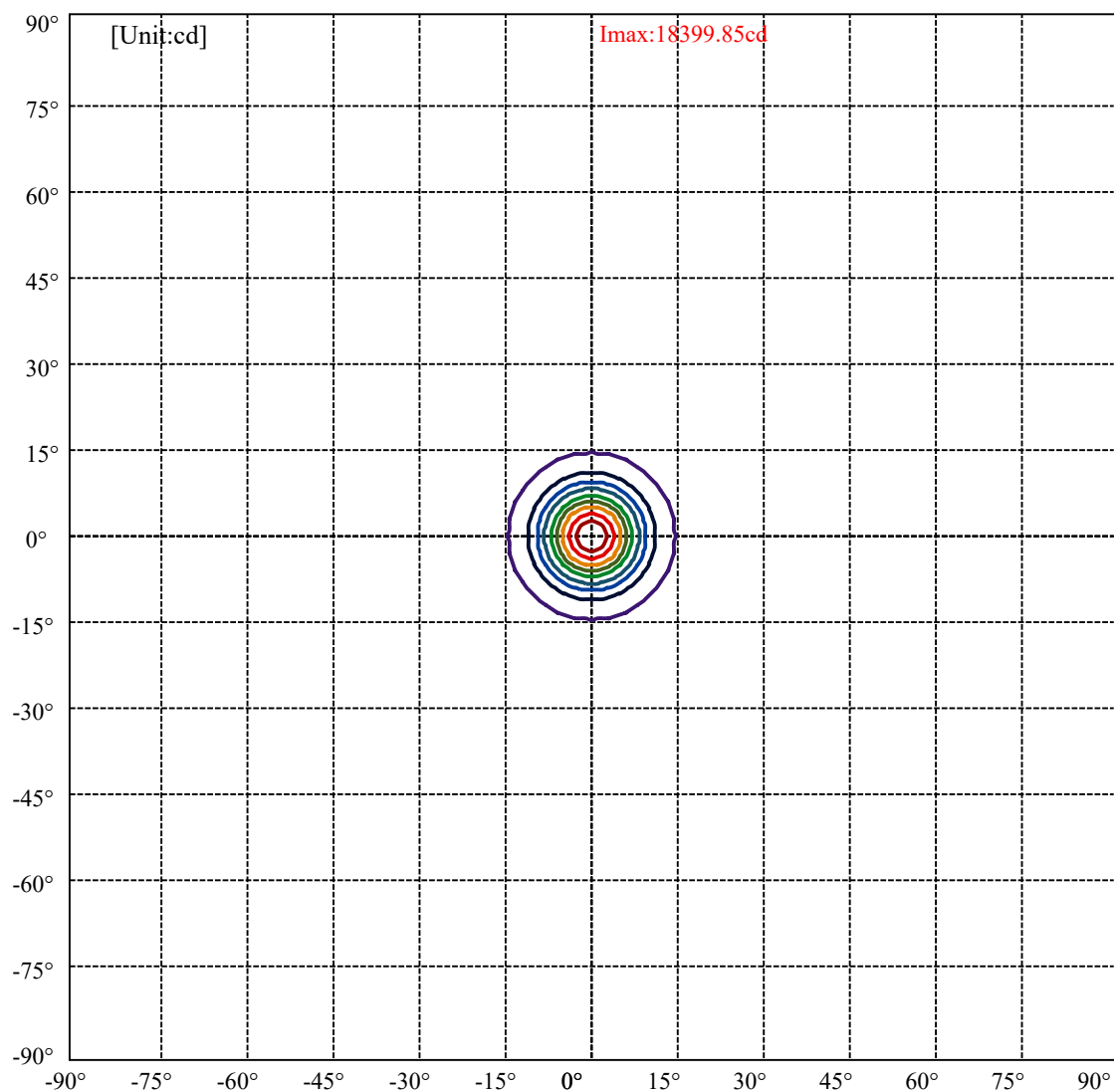
Zone	Lumens	%Lamp	%Fixt
0-30	1891.36	76.30%	85.00%
0-40	2174.20	87.70%	97.71%
0-60	2197.80	88.66%	98.77%
0-90	2224.27	89.72%	99.96%
0-120	2224.27	89.72%	99.96%
0-180	2225.20	89.76%	100.00%
60-90	27.33	1.10%	1.23%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.41	1780.16	71.81%	80.00%

ZONAL LUMEN SUMMARY

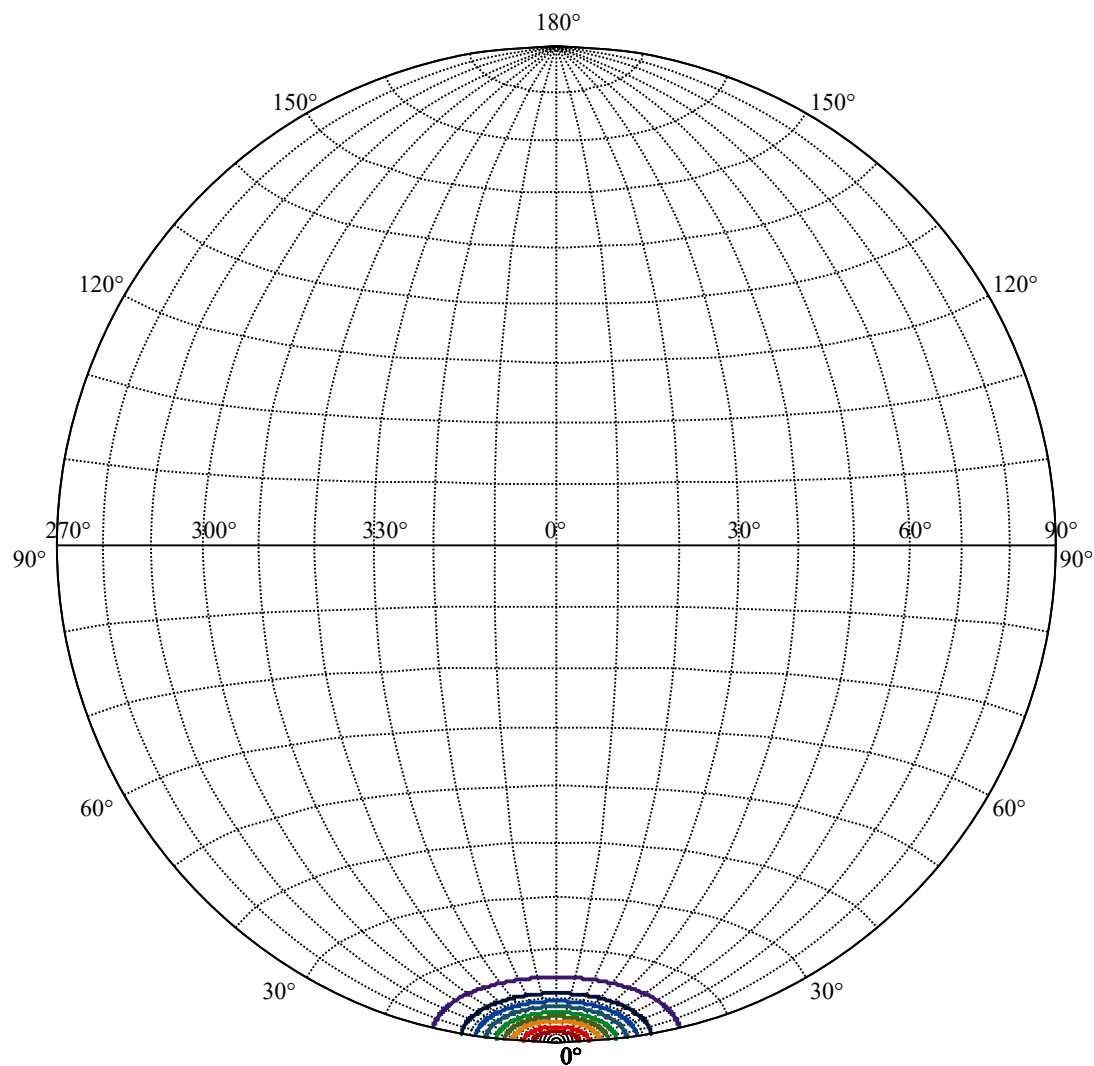
0-10	948.54
10-20	528.32
20-30	414.50
30-40	282.84
40-50	15.02
50-60	8.58
60-70	8.83
70-80	9.19
80-90	8.45
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00







(10%Imax)	1839.98	—
(20%Imax)	3679.97	—
(30%Imax)	5519.95	—
(40%Imax)	7359.94	—
(50%Imax)	9199.92	—
(60%Imax)	11039.9	—
(70%Imax)	12879.9	—
(80%Imax)	14719.9	—
(90%Imax)	16559.9	—

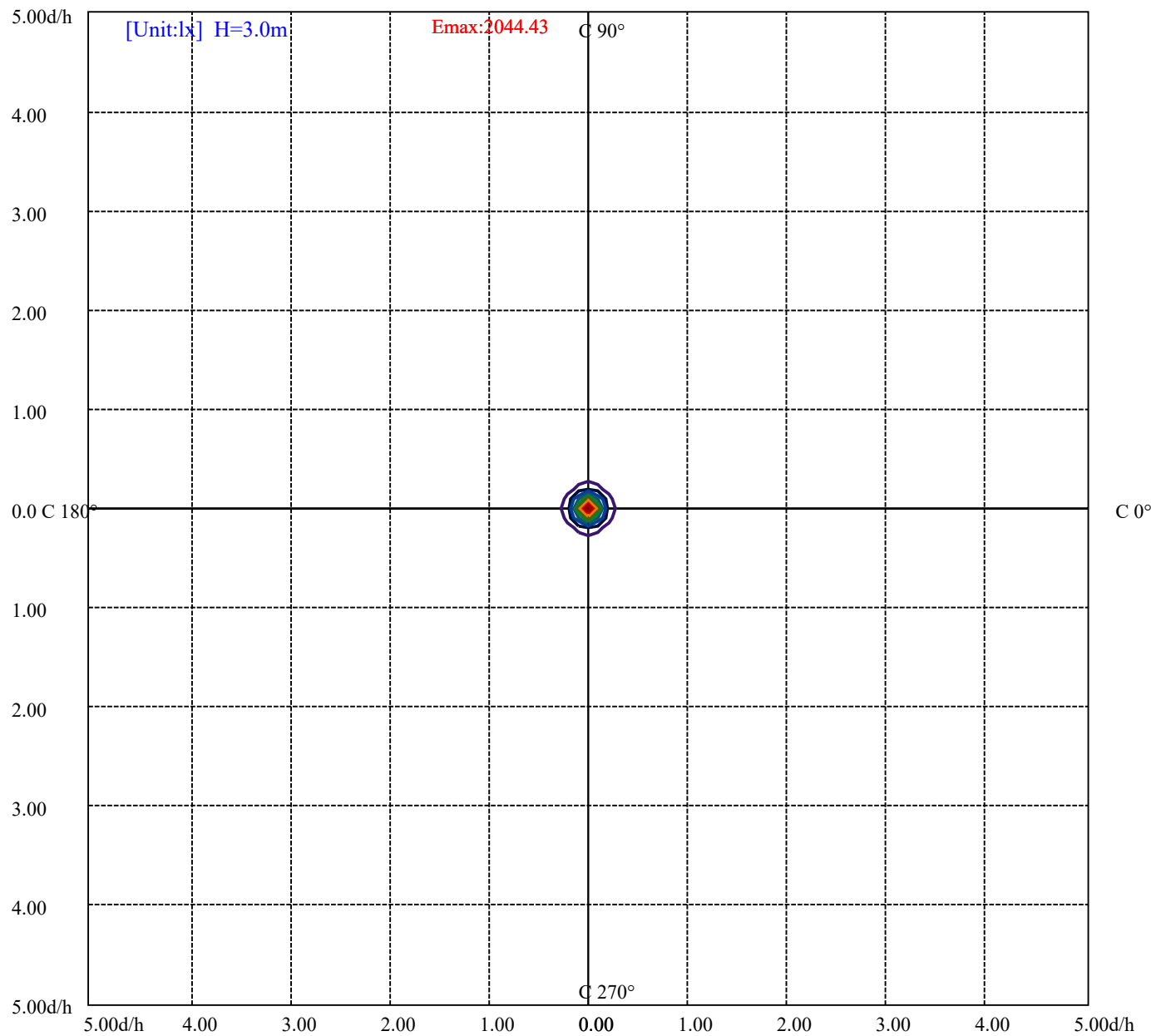


House

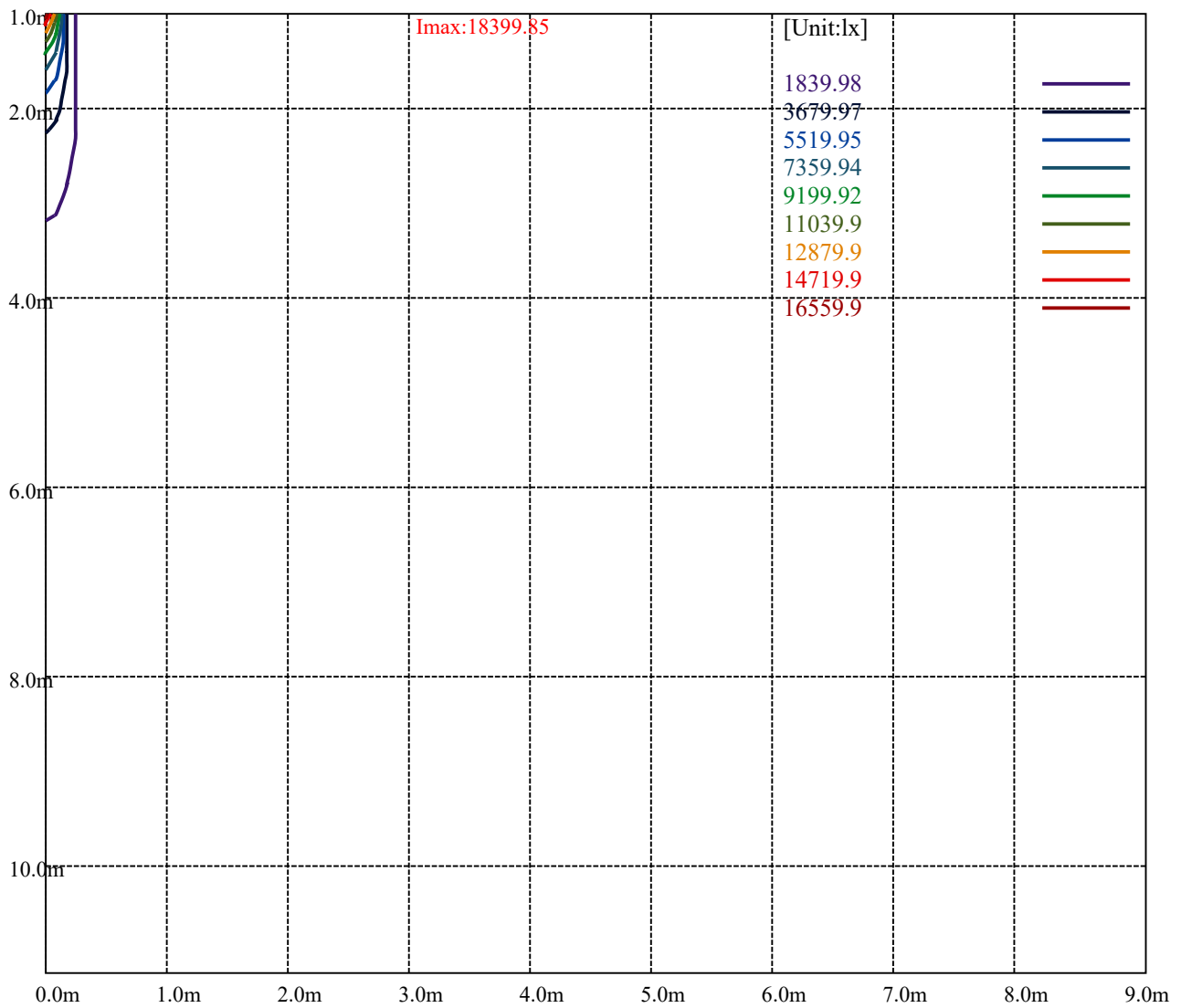
[Unit:cd]

Road

Imax:18399.85	
(10%Imax) 1839.98	
(20%Imax) 3679.97	
(30%Imax) 5519.95	
(40%Imax) 7359.94	
(50%Imax) 9199.92	
(60%Imax) 11039.9	
(70%Imax) 12879.9	
(80%Imax) 14719.9	
(90%Imax) 16559.9	



(10%E _{max}) 204.4422	—
(20%E _{max}) 408.8844	—
(30%E _{max}) 613.3267	—
(40%E _{max}) 817.7689	—
(50%E _{max}) 1022.211	—
(60%E _{max}) 1226.656	—
(70%E _{max}) 1431.1	—
(80%E _{max}) 1635.533	—
(90%E _{max}) 1839.978	—



Luminance Table

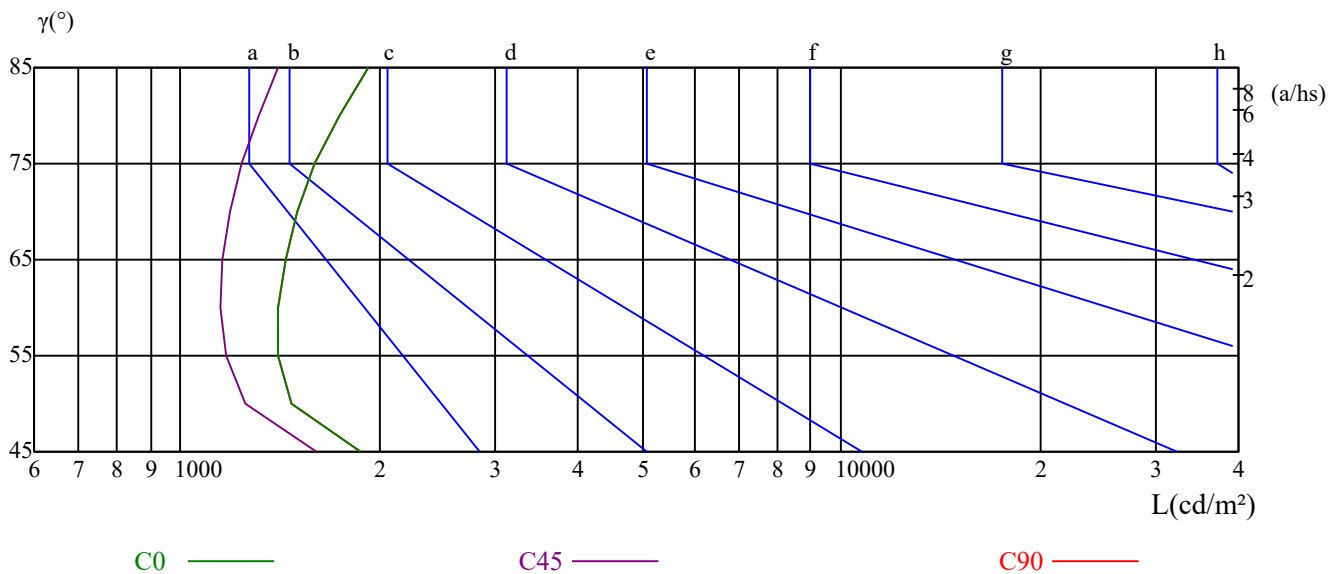
γ	45	50	55	60	65	70	75	80	85
C0	1872	1477	1407	1405	1438	1506	1599	1742	1919
C45	1608	1250	1173	1151	1158	1189	1236	1313	1406
C90	1872	1477	1407	1405	1438	1506	1599	1742	1919

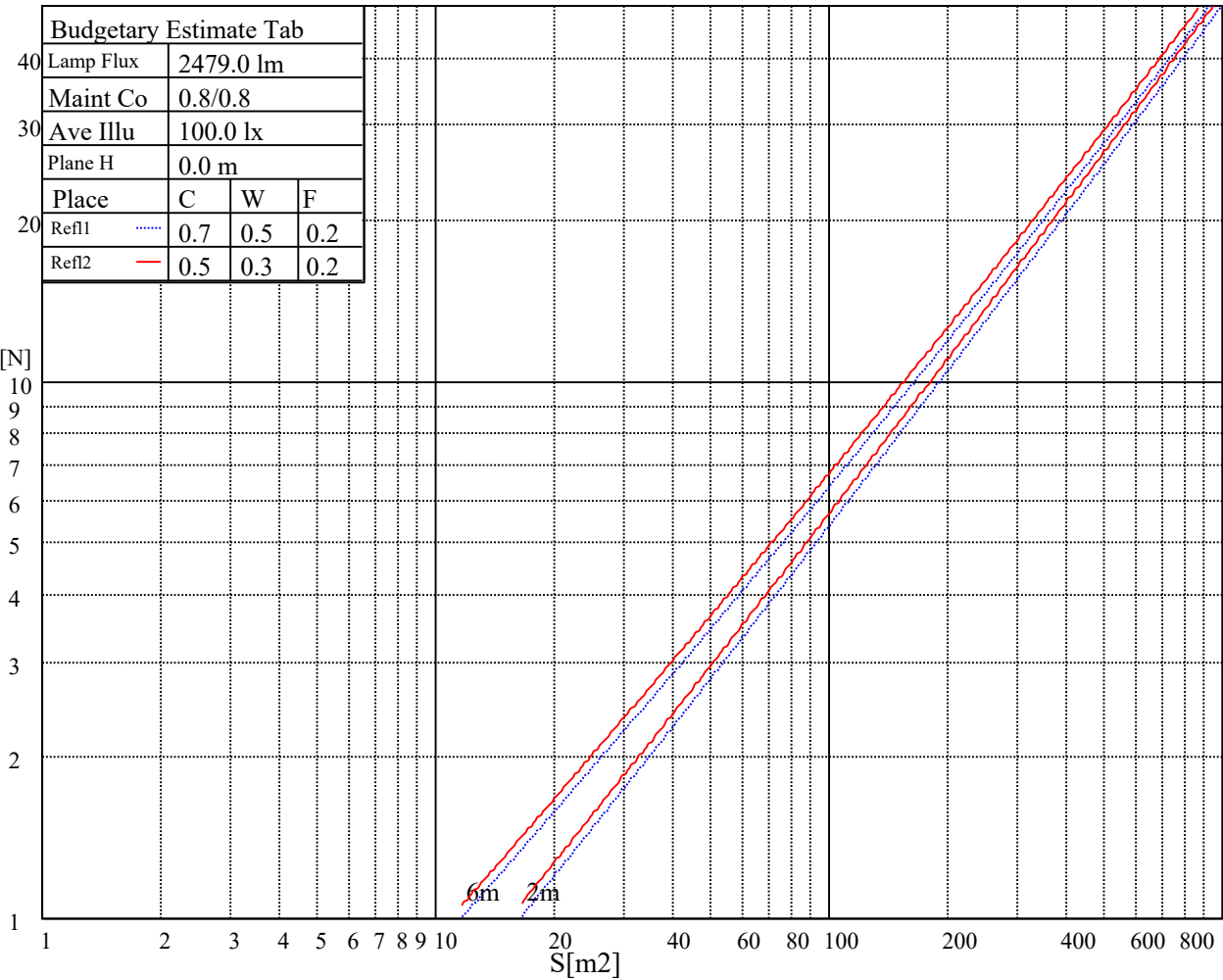
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3455	3455	3455	5502	5502	5502	16262	16262	16262

Glare Table

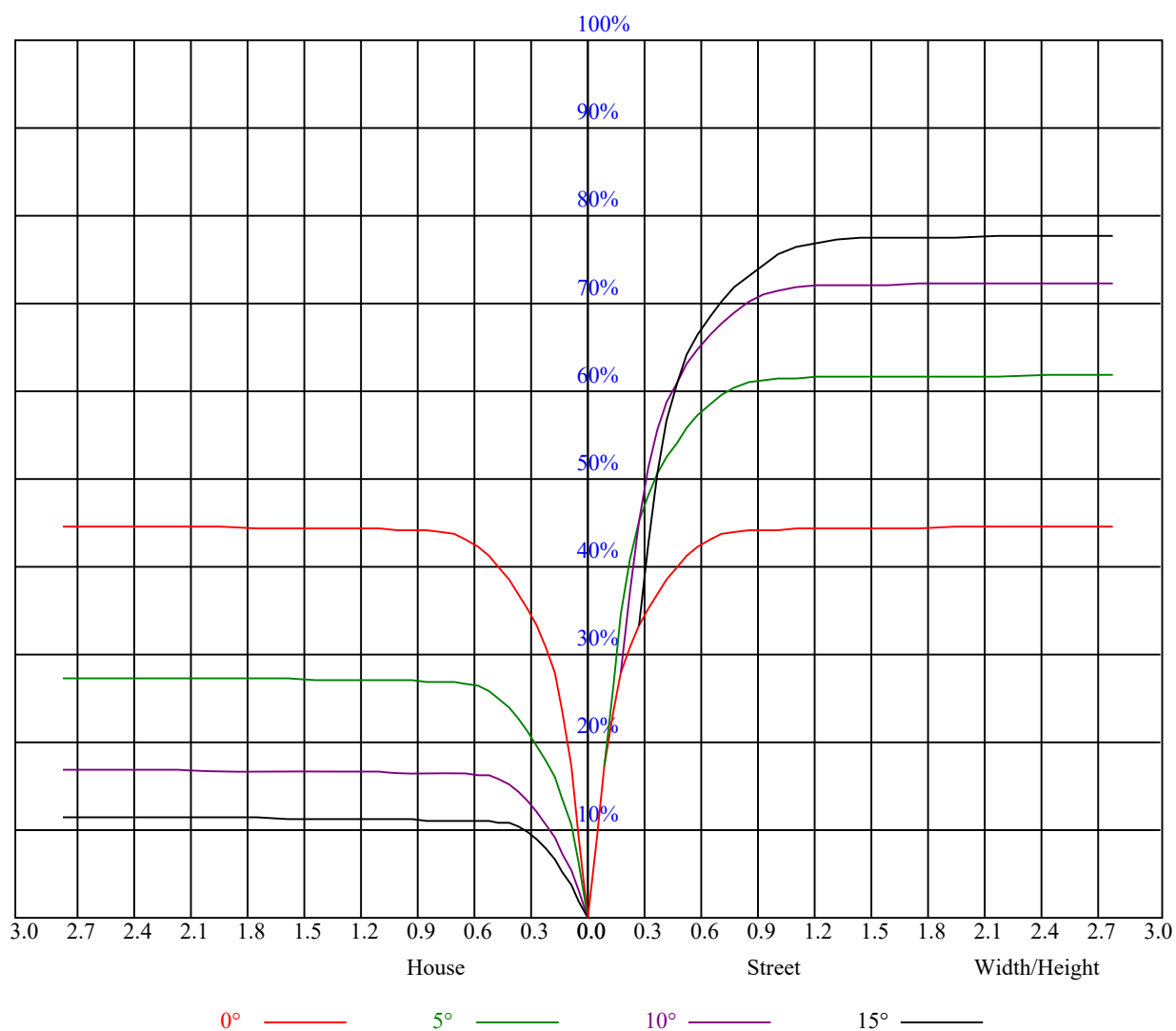
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.92	0.92	0.92	0.90
1	1.01	0.99	0.97	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.91	0.89	0.87	0.89	0.87	0.86	0.86	0.85	0.84	0.82
3	0.91	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.87	0.84	0.81	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.78	0.76
5	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.76	0.80	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63



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	18399.85	18030.97	17001.42	15724.11	13940.28	12172.97	10157.91	8208.91	6601.26
45.0	18399.85	18779.74	18631.09	18135.58	16902.31	15377.25	13753.09	11721.51	9882.62
90.0	18399.85	19060.53	19033.00	18333.78	17342.77	16021.41	14221.07	10971.64	10263.61
135.0	18399.85	18834.79	18950.41	18493.44	17496.92	16269.17	14573.43	12596.90	10763.53
180.0	18399.85	18476.93	17959.40	16775.69	15454.33	13868.71	10770.68	9889.78	8184.68
225.0	18399.85	17375.80	16142.54	14221.07	10804.82	10582.39	8674.14	6882.05	5466.55
270.0	18399.85	17551.98	16076.47	14441.29	12365.67	10257.01	8511.72	6694.86	5274.40
315.0	18399.85	17028.94	15509.39	13428.26	10853.82	9929.42	7782.77	6207.61	4808.08
360.0	18399.85	18030.97	17001.42	15724.11	13940.28	12172.97	10157.91	8208.91	6601.26
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5169.80	3688.78	2857.43	2523.79	1880.18	1636.83	1456.24	1304.29	1194.17
45.0	7900.59	6111.26	4712.83	3562.15	2829.90	2153.81	1834.48	1555.34	1392.38
90.0	8021.72	6394.25	4971.04	3540.68	2857.43	2285.94	1869.16	1660.50	1473.31
135.0	8990.71	6959.13	5500.13	4239.34	3182.26	2846.42	2132.88	1816.31	1584.52
180.0	6433.34	4906.08	3814.31	2865.69	2375.68	2028.28	1711.15	1542.13	1372.56
225.0	4116.57	3140.42	2559.57	2114.17	1831.73	1596.64	1417.70	1294.38	1199.13
270.0	3942.04	3000.57	2840.91	2079.48	1741.98	1549.29	1397.88	1267.95	1169.40
315.0	3441.58	2717.03	2239.14	1862.01	1600.49	1430.37	1286.12	1189.22	1096.50
360.0	5169.80	3688.78	2857.43	2523.79	1880.18	1636.83	1456.24	1304.29	1194.17
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1119.85	1060.94	1006.98	974.50	948.07	922.75	900.17	880.90	859.98
45.0	1270.15	1167.75	1090.67	1038.36	994.87	965.69	938.71	915.04	894.67
90.0	1288.32	1202.98	1097.77	1048.77	1006.49	972.79	947.19	917.68	897.75
135.0	1428.71	1294.93	1202.43	1119.30	1055.98	1010.84	977.25	940.91	915.59
180.0	1233.26	1097.05	1080.65	1015.52	979.51	950.55	920.10	899.18	880.02
225.0	1095.90	1046.46	1003.73	966.57	937.56	915.26	895.00	870.77	846.99
270.0	1103.33	1049.37	999.27	968.44	943.12	915.04	894.67	875.40	848.97
315.0	1049.65	1003.79	968.44	944.71	921.09	902.65	882.39	860.37	839.61
360.0	1119.85	1060.94	1006.98	974.50	948.07	922.75	900.17	880.90	859.98
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	838.51	818.69	801.62	787.86	770.79	714.63	639.76	552.77	434.95
45.0	872.09	847.87	828.60	812.08	791.71	777.40	753.72	681.05	596.26
90.0	878.37	855.91	828.87	809.88	791.33	773.38	755.15	695.25	619.22
135.0	892.46	866.59	841.81	818.69	799.42	779.05	765.28	720.69	650.77
180.0	860.75	830.75	811.26	793.97	774.86	757.08	715.24	635.96	541.31
225.0	827.77	807.46	791.38	778.39	746.84	674.11	590.53	484.11	385.12
270.0	826.40	808.78	792.26	777.95	733.90	651.87	564.88	462.47	352.36
315.0	822.38	801.57	787.91	766.83	694.65	614.21	520.78	413.14	300.94
360.0	838.51	818.69	801.62	787.86	770.79	714.63	639.76	552.77	434.95
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	335.84	286.84	141.05	64.25	31.11	23.45	19.38	15.69	13.16
45.0	498.81	402.46	285.19	226.34	120.63	48.72	25.66	22.90	18.39
90.0	520.72	415.57	321.86	222.59	129.82	62.49	30.94	23.18	19.32
135.0	571.49	466.33	374.93	286.29	173.04	91.39	43.05	25.11	20.54
180.0	450.64	344.54	251.72	155.59	74.93	35.73	25.82	20.65	16.46
225.0	275.01	173.98	98.33	41.62	25.71	22.13	18.11	14.09	12.00
270.0	280.24	164.45	74.44	34.36	24.67	20.48	16.08	13.38	11.89
315.0	211.75	122.61	56.27	28.02	23.51	19.71	15.69	13.71	12.50
360.0	335.84	286.84	141.05	64.25	31.11	23.45	19.38	15.69	13.16

Intensity data(cd)										Appendix Page: 17 Total:18	
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	12.06	11.56	11.12	10.79	10.52	10.30	10.08	9.97	9.74		
45.0	14.65	12.99	11.29	10.96	10.68	10.41	10.19	10.02	9.86		
90.0	15.53	13.32	11.51	10.96	10.63	10.35	10.19	9.97	9.86		
135.0	16.19	13.32	12.06	11.62	11.18	10.79	10.57	10.41	10.13		
180.0	13.98	12.22	11.29	10.90	10.63	10.41	10.19	9.97	9.86		
225.0	11.45	10.96	10.63	10.41	10.19	9.97	9.80	9.69	9.58		
270.0	11.34	10.96	10.63	10.35	10.19	9.97	9.80	9.69	9.58		
315.0	11.34	10.90	10.79	10.46	10.19	10.02	9.86	9.74	9.47		
360.0	12.06	11.56	11.12	10.79	10.52	10.30	10.08	9.97	9.74		
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	9.58	9.47	9.41	9.36	9.25	9.19	9.03	9.03	8.97		
45.0	9.74	9.58	9.47	9.41	9.36	9.25	9.25	9.14	9.08		
90.0	9.63	9.52	9.36	9.36	9.30	9.19	9.14	9.08	8.97		
135.0	9.97	9.80	9.69	9.86	9.41	9.36	9.25	9.19	9.08		
180.0	9.63	9.52	9.41	9.30	9.25	9.19	9.08	8.97	8.92		
225.0	9.47	9.36	9.30	9.19	9.14	9.14	9.08	9.03	8.97		
270.0	9.47	9.41	9.30	9.25	9.19	9.08	9.08	8.97	8.92		
315.0	9.41	9.30	9.30	9.30	9.08	9.03	8.97	8.97	8.97		
360.0	9.58	9.47	9.41	9.36	9.25	9.19	9.03	9.03	8.97		
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	8.92	8.86	8.86	8.81	8.75	8.75	8.70	8.70	8.70		
45.0	9.03	9.03	8.97	8.97	8.92	8.86	8.86	8.81	8.81		
90.0	8.92	8.86	8.92	8.81	8.81	8.75	8.75	8.75	8.75		
135.0	9.08	8.97	8.97	8.97	8.92	8.86	8.86	8.81	8.81		
180.0	8.86	8.86	8.81	8.81	8.75	8.70	8.64	8.70	8.70		
225.0	8.92	8.92	8.92	8.86	8.75	8.81	8.86	8.81	8.81		
270.0	8.92	8.92	8.86	8.86	8.81	8.81	8.75	8.75	8.70		
315.0	8.92	8.86	8.75	8.81	8.75	8.75	8.81	8.75	8.70		
360.0	8.92	8.86	8.86	8.81	8.75	8.75	8.70	8.70	8.70		
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	8.64	8.64	8.59	8.59	8.59	8.59	8.59	8.53	8.53		
45.0	8.86	8.81	8.75	8.75	8.70	8.75	8.75	8.75	8.75		
90.0	8.75	8.64	8.64	8.64	8.70	8.70	8.70	9.19	8.97		
135.0	8.75	8.75	8.75	8.75	8.75	8.70	8.70	8.70	8.75		
180.0	8.64	8.64	8.59	8.53	8.53	8.53	8.53	8.53	8.53		
225.0	8.75	8.70	8.70	8.70	8.75	8.70	8.70	8.70	8.64		
270.0	8.70	8.70	8.64	8.70	8.70	8.70	8.64	8.70	8.53		
315.0	8.64	8.70	8.70	8.64	8.59	8.64	8.64	8.59	8.59		
360.0	8.64	8.64	8.59	8.59	8.59	8.59	8.59	8.53	8.53		
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	8.53	8.64	8.53	8.53	8.53	8.48	8.48	8.48	8.48		
45.0	8.70	8.75	8.70	8.70	8.70	8.64	8.70	8.64	8.59		
90.0	8.70	8.64	8.64	8.59	8.64	8.59	8.59	8.59	8.53		
135.0	8.70	8.70	8.70	8.70	8.70	8.64	8.59	8.48	8.53		
180.0	8.53	8.48	8.48	8.53	8.48	8.53	8.42	8.48	8.48		
225.0	8.64	8.64	8.70	8.64	8.64	8.70	8.64	8.59	8.59		
270.0	8.70	8.59	8.70	8.70	8.70	8.70	8.53	8.59	8.59		
315.0	8.59	8.59	8.59	8.59	8.59	8.53	8.53	8.53	8.48		
360.0	8.53	8.64	8.53	8.53	8.53	8.48	8.48	8.48	8.48		

Intensity data(cd)

Appendix Page: 18 Total:18

C/ $\gamma(^{\circ})$	90.0
0.0	8.48
45.0	8.64
90.0	8.59
135.0	8.53
180.0	8.48
225.0	8.64
270.0	8.59
315.0	8.53
360.0	8.48