
Nata

LumCAT: 3-2042-M	
Luminaire: 92.70.131.00	
Report No: GC2017061701	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): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2197.60
Efficiency(%): 88.65%
Lumens(lm)/Power(W): 127.03
Central intensity(cd): 22723.150
Maximum intensity(cd): 22723.150
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=12.2
[C90/270]Total=12.2
Field angle(10%Imax): [C0/180]Total=24.8
[C90/270]Total=24.8
Maximum s/h(1/2): C0_180=0.21 C90_270=0.21
Maximum s/h(1/4): C0_180=0.21 C90_270=0.21
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.65%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.694%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	22723.152	0.000	0	.000%	.000%
1.0	22466.451	21.622	21.622	.872%	.984%
2.0	21604.131	63.254	84.877	2.552%	3.862%
3.0	19989.602	99.479	184.355	4.013%	8.389%
4.0	17814.186	126.541	310.897	5.105%	14.147%
5.0	14955.314	140.973	451.869	5.687%	20.562%
6.0	11532.458	139.200	591.07	5.615%	26.896%
7.0	9373.559	129.763	720.833	5.235%	32.801%
8.0	7077.638	117.738	838.571	4.749%	38.158%
9.0	5131.463	98.948	937.519	3.991%	42.661%
10.0	3830.618	81.104	1018.623	3.272%	46.352%
11.0	3032.507	68.577	1087.199	2.766%	49.472%
12.0	2439.687	59.819	1147.018	2.413%	52.194%
13.0	2010.384	52.811	1199.829	2.130%	54.597%
14.0	1645.292	46.792	1246.622	1.888%	56.726%
15.0	1434.770	42.284	1288.906	1.706%	58.651%
16.0	1268.720	39.614	1328.52	1.598%	60.453%
17.0	1152.351	37.703	1366.222	1.521%	62.169%
18.0	1078.541	36.783	1403.005	1.484%	63.843%
19.0	1032.652	36.730	1439.735	1.482%	65.514%
20.0	993.837	37.090	1476.826	1.496%	67.202%
21.0	966.839	37.649	1514.475	1.519%	68.915%
22.0	947.548	38.470	1552.945	1.552%	70.665%
23.0	929.572	39.387	1592.332	1.589%	72.458%
24.0	911.927	40.262	1632.594	1.624%	74.290%
25.0	893.930	41.061	1673.655	1.656%	76.158%
26.0	874.922	41.754	1715.409	1.684%	78.058%
27.0	851.846	42.246	1757.655	1.704%	79.981%
28.0	829.817	42.576	1800.231	1.717%	81.918%
29.0	807.629	42.840	1843.071	1.728%	83.867%
30.0	788.366	43.092	1886.163	1.738%	85.828%
31.0	765.917	43.253	1929.416	1.745%	87.796%
32.0	720.551	42.586	1972.002	1.718%	89.734%
33.0	649.005	40.348	2012.349	1.628%	91.570%
34.0	554.556	36.423	2048.773	1.469%	93.228%
35.0	451.449	31.243	2080.016	1.260%	94.649%
36.0	338.989	25.168	2105.183	1.015%	95.795%
37.0	261.050	19.570	2124.753	.789%	96.685%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	143.904	13.517	2138.27	.545%	97.300%
39.0	70.314	7.312	2145.582	.295%	97.633%
40.0	36.179	3.714	2149.296	.150%	97.802%
41.0	24.596	2.164	2151.46	.087%	97.900%
42.0	19.318	1.595	2153.056	.064%	97.973%
43.0	15.374	1.285	2154.341	.052%	98.031%
44.0	12.938	1.069	2155.409	.043%	98.080%
45.0	11.431	0.937	2156.346	.038%	98.123%
46.0	10.777	0.869	2157.214	.035%	98.162%
47.0	10.426	0.843	2158.058	.034%	98.201%
48.0	10.185	0.833	2158.891	.034%	98.239%
49.0	10.000	0.829	2159.72	.033%	98.276%
50.0	9.807	0.826	2160.546	.033%	98.314%
51.0	9.704	0.825	2161.371	.033%	98.351%
52.0	9.532	0.825	2162.196	.033%	98.389%
53.0	9.456	0.826	2163.022	.033%	98.427%
54.0	9.339	0.828	2163.851	.033%	98.464%
55.0	9.270	0.831	2164.681	.034%	98.502%
56.0	9.194	0.834	2165.516	.034%	98.540%
57.0	9.119	0.837	2166.353	.034%	98.578%
58.0	9.057	0.840	2167.194	.034%	98.616%
59.0	9.036	0.846	2168.04	.034%	98.655%
60.0	9.002	0.852	2168.892	.034%	98.694%
61.0	8.947	0.857	2169.748	.035%	98.733%
62.0	8.926	0.861	2170.609	.035%	98.772%
63.0	8.885	0.866	2171.476	.035%	98.811%
64.0	8.871	0.871	2172.347	.035%	98.851%
65.0	8.850	0.877	2173.224	.035%	98.891%
66.0	8.850	0.883	2174.107	.036%	98.931%
67.0	8.816	0.888	2174.995	.036%	98.971%
68.0	8.788	0.892	2175.887	.036%	99.012%
69.0	8.781	0.896	2176.783	.036%	99.053%
70.0	8.775	0.902	2177.685	.036%	99.094%
71.0	8.754	0.906	2178.591	.037%	99.135%
72.0	8.781	0.912	2179.503	.037%	99.176%
73.0	8.775	0.918	2180.421	.037%	99.218%
74.0	8.816	0.925	2181.346	.037%	99.260%
75.0	9.160	0.950	2182.296	.038%	99.304%

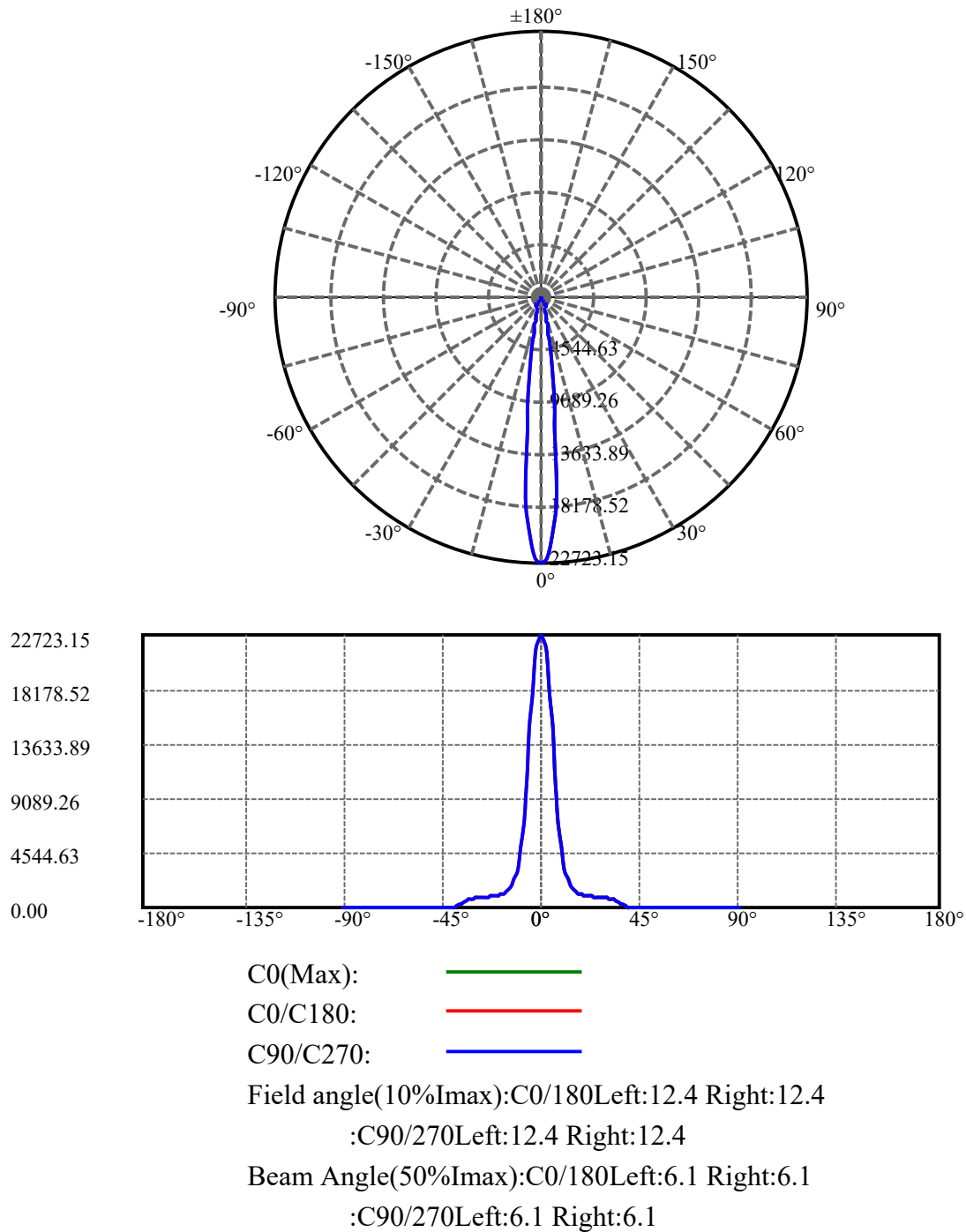
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.759	1.004	2183.3	.041%	99.349%
77.0	10.385	1.074	2184.374	.043%	99.398%
78.0	10.633	1.125	2185.499	.045%	99.449%
79.0	10.530	1.137	2186.636	.046%	99.501%
80.0	10.082	1.111	2187.747	.045%	99.552%
81.0	9.366	1.052	2188.799	.042%	99.599%
82.0	9.036	0.998	2189.797	.040%	99.645%
83.0	9.043	0.983	2190.78	.040%	99.690%
84.0	9.091	0.988	2191.768	.040%	99.735%
85.0	9.139	0.995	2192.763	.040%	99.780%
86.0	9.188	1.002	2193.764	.040%	99.825%
87.0	8.905	0.990	2194.755	.040%	99.870%
88.0	8.609	0.959	2195.714	.039%	99.914%
89.0	8.609	0.944	2196.658	.038%	99.957%
90.0	8.603	0.944	2197.601	.038%	100.000%

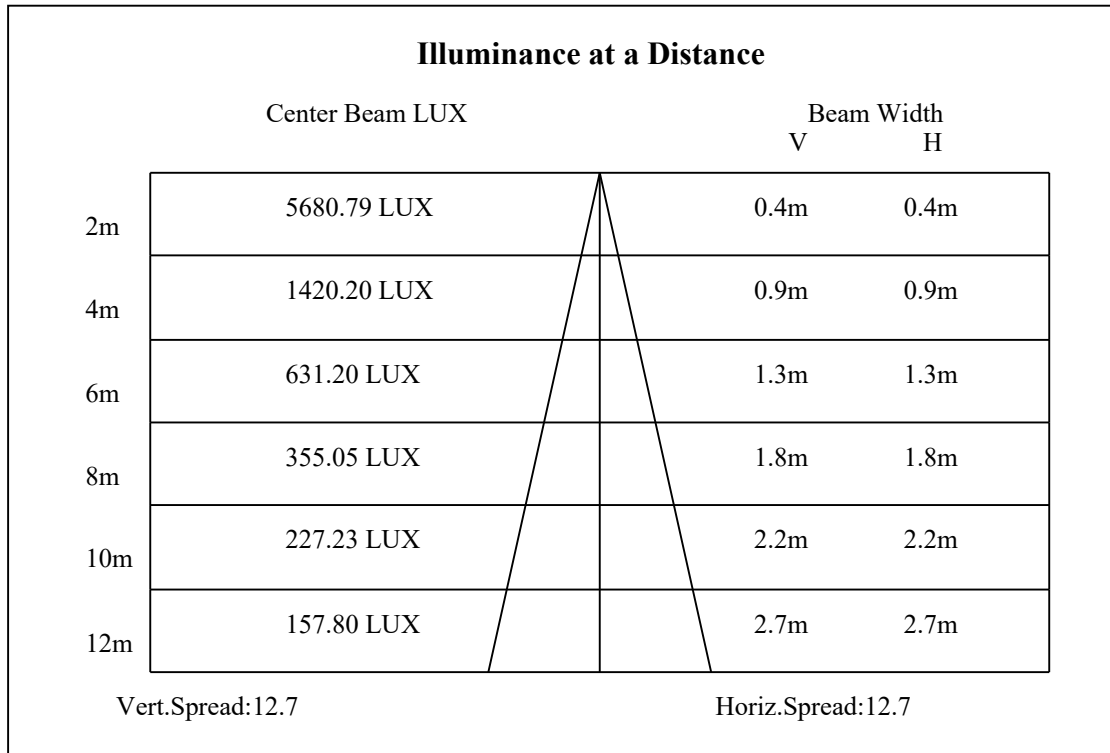
ZONAL LUMEN SUMMARY

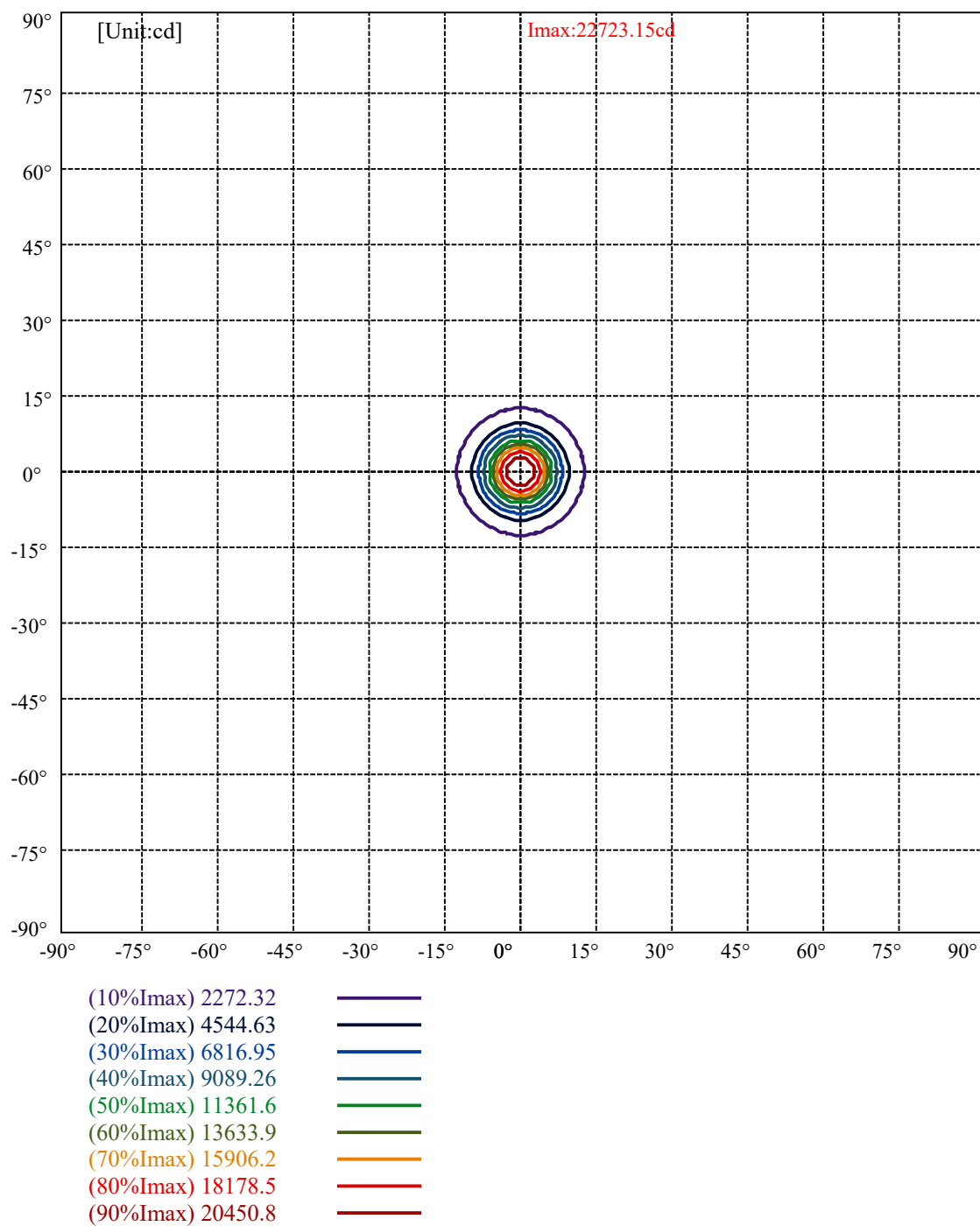
Zone	Lumens	%Lamp	%Fixt
0-30	1886.16	76.09%	85.83%
0-40	2149.30	86.70%	97.80%
0-60	2168.89	87.49%	98.69%
0-90	2196.66	88.61%	99.96%
0-120	2196.66	88.61%	99.96%
0-180	2197.60	88.65%	100.00%
60-90	28.62	1.15%	1.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.01	1758.08	70.92%	80.00%

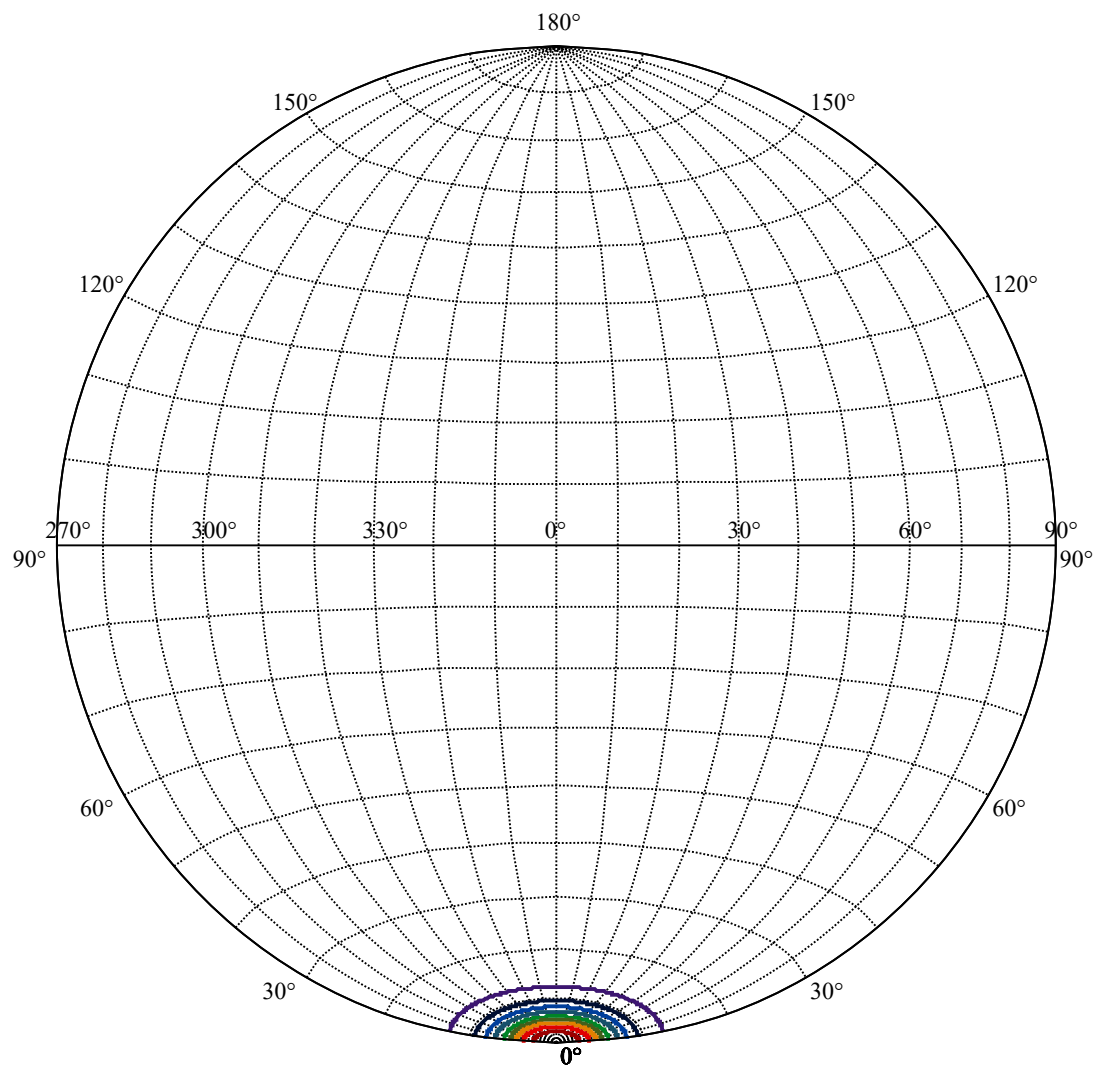
ZONAL LUMEN SUMMARY

0-10	1018.62
10-20	458.20
20-30	409.34
30-40	263.13
40-50	11.25
50-60	8.35
60-70	8.79
70-80	10.06
80-90	8.91
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









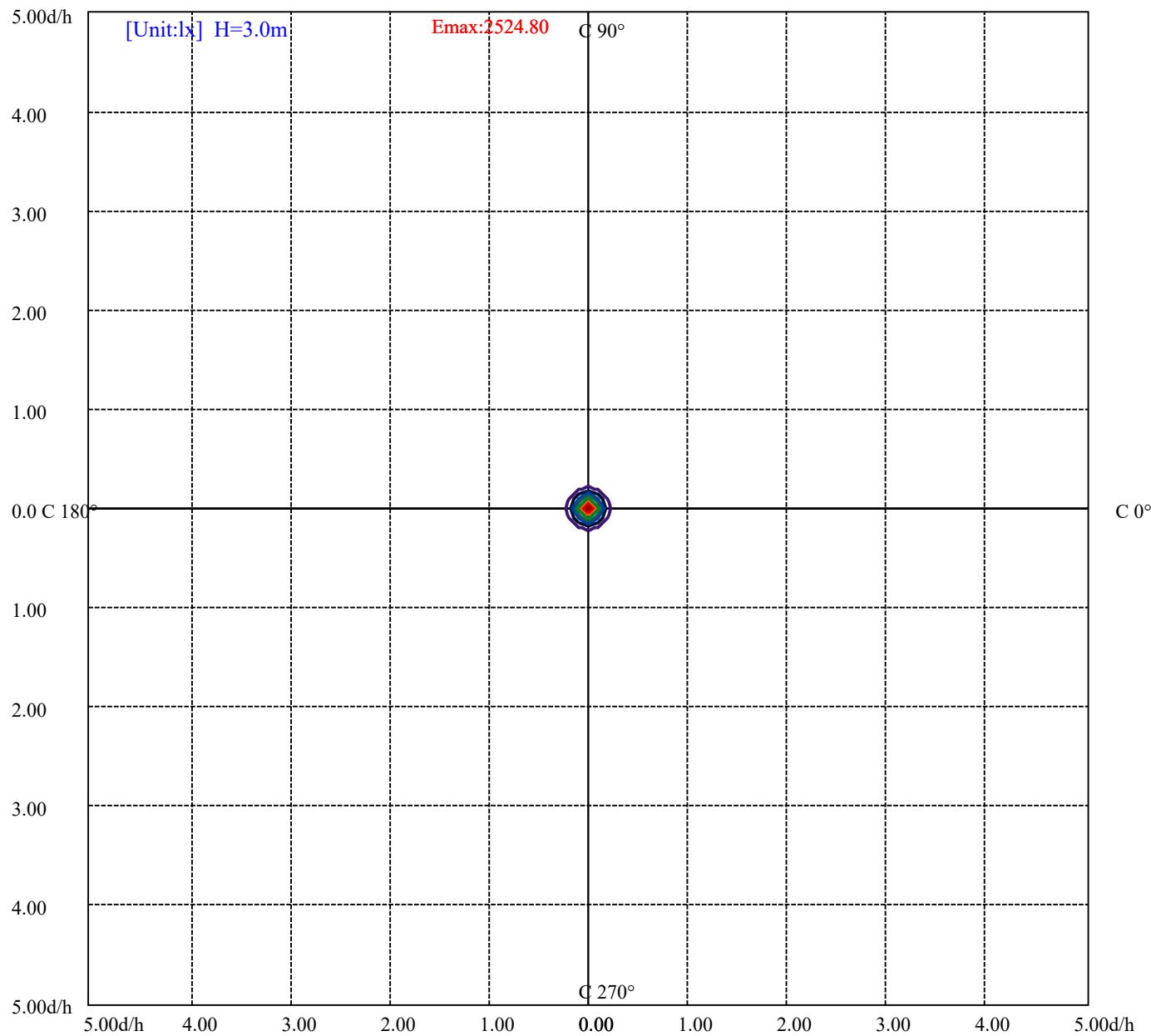
House

[Unit:cd]

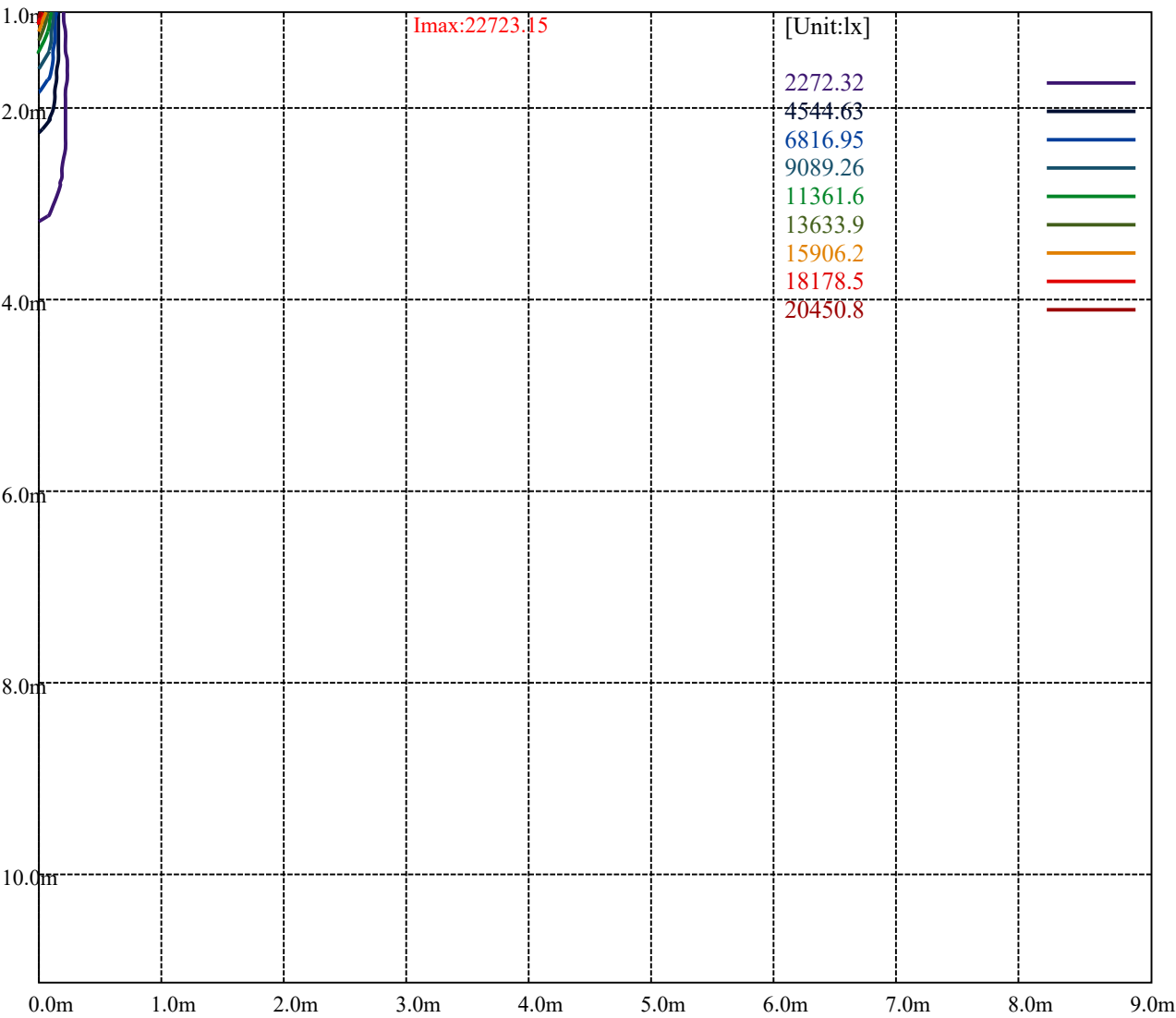
Road

Imax:22723.15

(10%Imax)	2272.32	—
(20%Imax)	4544.63	—
(30%Imax)	6816.95	—
(40%Imax)	9089.26	—
(50%Imax)	11361.6	—
(60%Imax)	13633.9	—
(70%Imax)	15906.2	—
(80%Imax)	18178.5	—
(90%Imax)	20450.8	—



(10%Emax)	252.4789	
(20%Emax)	504.9578	
(30%Emax)	757.4367	
(40%Emax)	1009.917	
(50%Emax)	1262.4	
(60%Emax)	1514.878	
(70%Emax)	1767.356	
(80%Emax)	2019.833	
(90%Emax)	2272.311	



Luminance Table

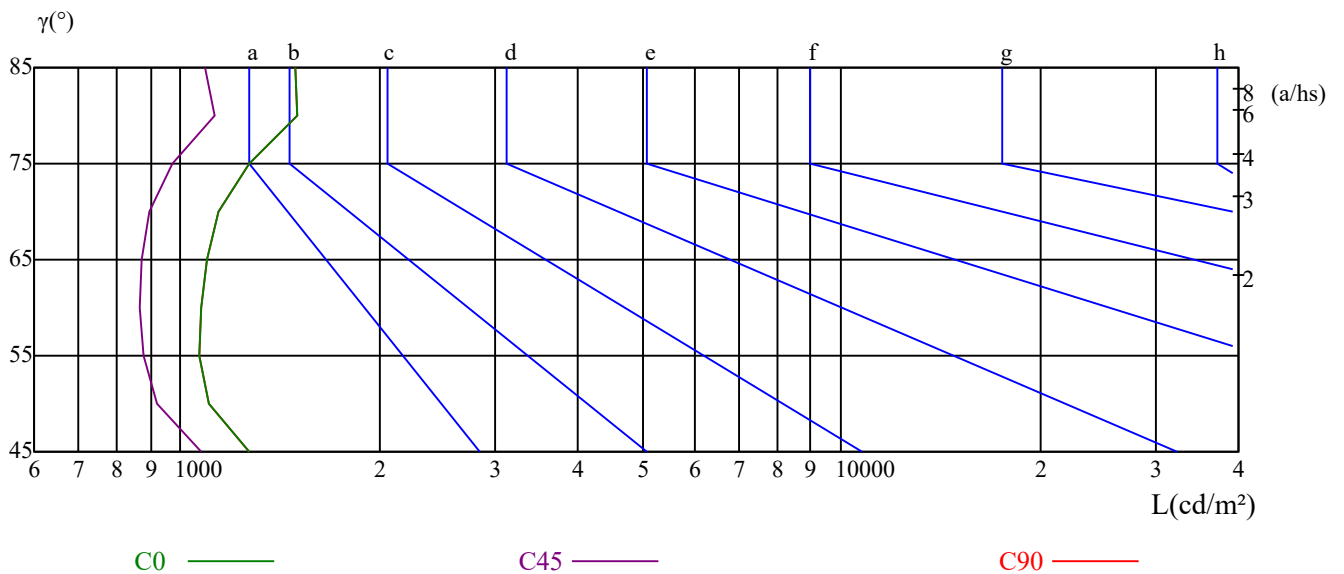
γ	45	50	55	60	65	70	75	80	85
C0	1268	1105	1069	1072	1098	1145	1271	1506	1490
C45	1075	923	879	867	873	894	973	1127	1086
C90	1268	1105	1069	1072	1098	1145	1271	1506	1490

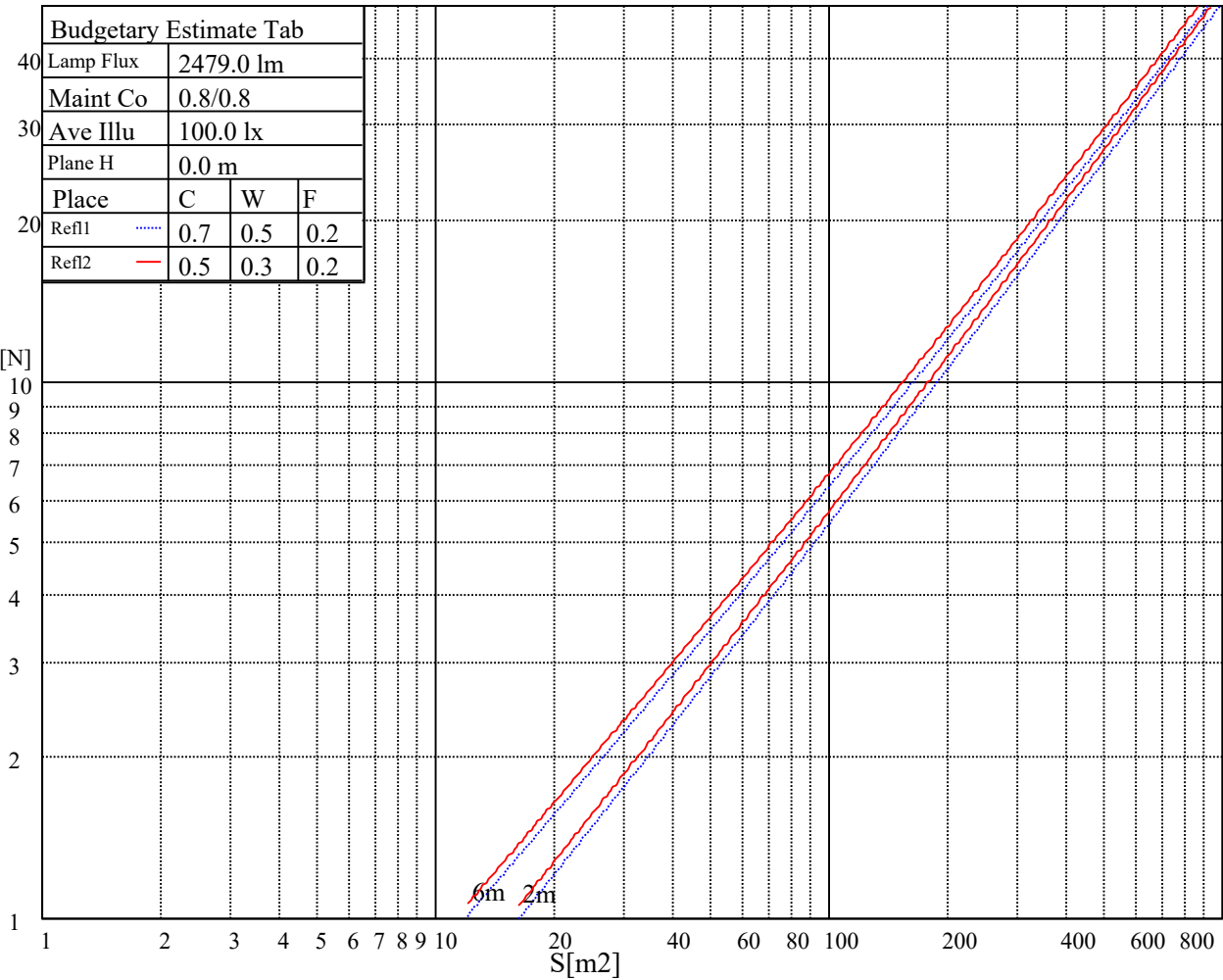
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2898	2898	2898	4898	4898	4898	14514	14514	14514

Glare Table

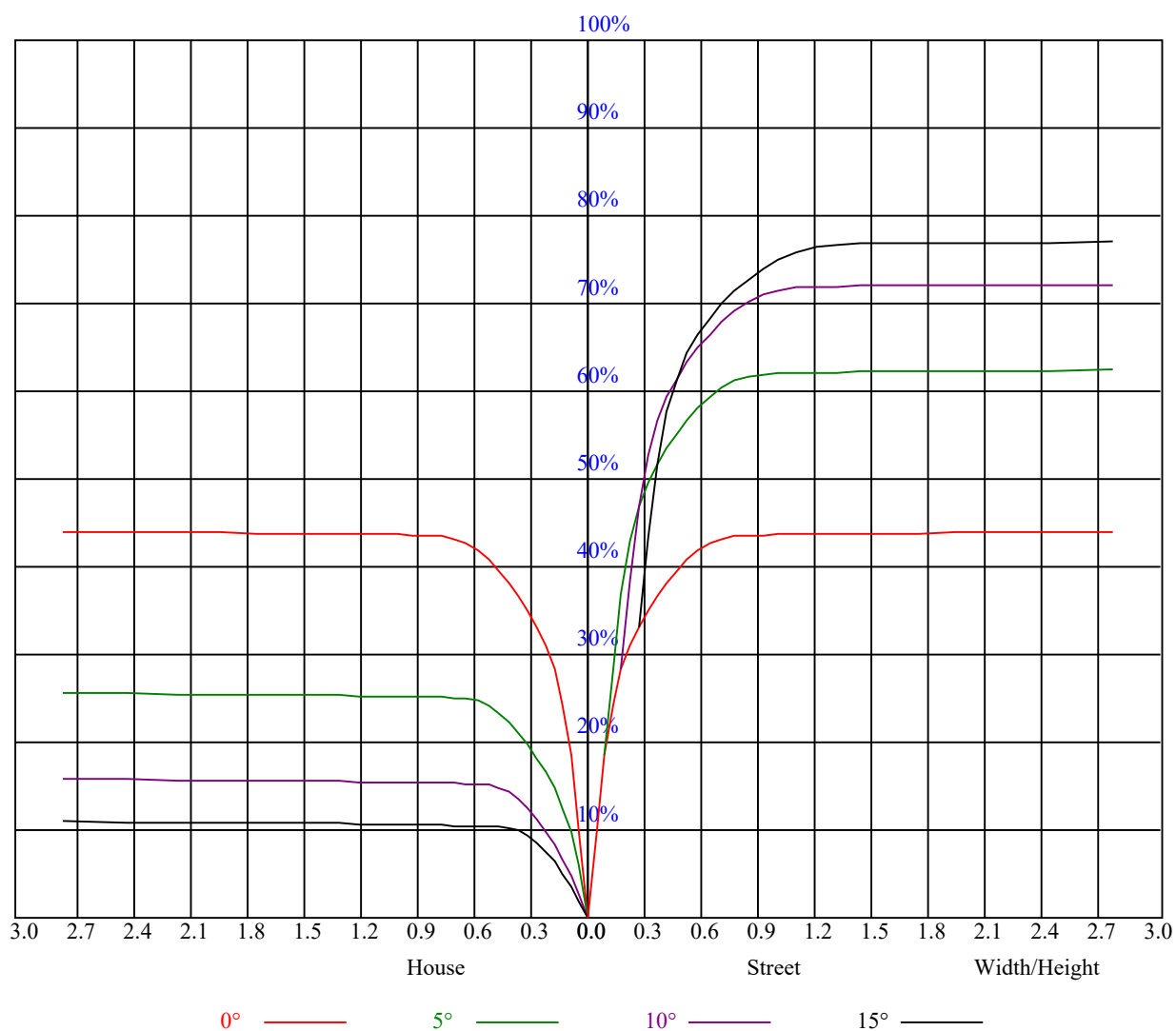
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	1.00	0.98	0.96	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.85
2	0.95	0.92	0.90	0.93	0.91	0.89	0.90	0.88	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.90	0.87	0.84	0.89	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.79	0.76	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	0.75	0.73	0.71	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.73	0.70	0.68	0.67
9	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.66
10	0.71	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64



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	22567.62	22187.73	20937.95	19231.20	16951.87	13637.47	11000.27	8522.73	6210.36		
45.0	22853.91	22286.83	21020.53	19225.69	16577.48	13532.86	10840.61	8038.23	5995.64		
90.0	22650.20	21725.26	20134.13	17298.72	14589.95	10724.44	8472.63	6295.70	4695.76		
135.0	22820.88	22424.47	21339.86	19649.63	17056.47	14055.90	11308.58	8385.09	6210.36		
180.0	22567.62	22545.60	21989.53	20475.48	18515.47	16059.95	10908.88	9899.69	7405.09		
225.0	22853.91	22842.90	22413.46	21081.10	19170.64	16715.12	12684.99	10553.21	7977.67		
270.0	22650.20	23057.62	22925.48	22374.92	21020.53	18763.22	16258.15	13163.99	10416.67		
315.0	22820.88	22661.21	22072.11	20580.08	18631.09	16153.55	10785.55	10129.83	7709.55		
360.0	22567.62	22187.73	20937.95	19231.20	16951.87	13637.47	11000.27	8522.73	6210.36		
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	4608.22	3644.73	2879.45	2807.88	1958.36	1657.75	1459.55	1289.97	1157.29		
45.0	4421.03	3407.99	2835.40	2297.50	1860.91	1618.11	1432.57	1255.29	1144.07		
90.0	3404.14	2735.75	2249.60	1822.37	1615.91	1418.25	1255.84	1096.28	1080.21		
135.0	4481.59	3352.93	2807.88	2148.30	1758.50	1500.84	1345.03	1211.24	1108.84		
180.0	5247.98	3811.00	2961.48	2294.20	1885.13	1576.26	1372.01	1242.07	1091.55		
225.0	5688.98	4107.76	3154.18	2404.31	1955.60	1618.11	1387.42	1245.93	1091.05		
270.0	7625.31	5467.10	4129.23	3187.77	2912.48	1980.38	1677.02	1421.56	1282.26		
315.0	5574.46	4117.67	3242.82	2555.17	2136.19	1792.64	1548.74	1387.42	1263.54		
360.0	4608.22	3644.73	2879.45	2807.88	1958.36	1657.75	1459.55	1289.97	1157.29		
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	1080.76	1032.31	993.77	970.09	951.37	933.21	915.04	899.07	880.35		
45.0	1068.09	1014.69	981.11	960.73	941.46	927.15	909.53	891.36	873.75		
90.0	1021.13	984.90	962.50	943.17	926.87	911.73	895.49	872.42	849.85		
135.0	1049.93	1014.14	974.50	953.58	937.61	916.69	901.27	888.61	868.79		
180.0	1061.43	1015.68	983.58	955.56	939.37	925.00	906.39	890.04	872.75		
225.0	1068.48	1016.56	985.73	959.25	939.37	922.97	906.94	885.47	867.85		
270.0	1183.16	1110.49	1043.87	1007.53	978.90	953.58	932.10	916.14	896.87		
315.0	1095.35	1072.44	1025.65	984.79	965.41	946.25	928.64	908.32	889.16		
360.0	1080.76	1032.31	993.77	970.09	951.37	933.21	915.04	899.07	880.35		
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	856.68	836.31	816.49	798.87	781.25	736.65	662.33	558.82	444.31		
45.0	846.77	824.19	806.03	787.86	764.18	711.88	632.05	518.63	407.97		
90.0	826.95	804.54	783.34	766.33	714.80	622.80	528.16	417.49	317.40		
135.0	844.01	826.40	804.92	786.21	767.49	697.01	608.92	512.02	395.30		
180.0	849.30	827.22	803.55	780.20	766.44	730.21	635.02	556.73	461.54		
225.0	849.30	823.15	802.34	785.60	767.32	742.44	680.99	590.09	491.93		
270.0	876.50	858.33	831.35	810.98	791.71	772.44	750.97	679.40	584.15		
315.0	865.27	838.40	813.02	790.89	774.15	750.97	693.60	603.25	509.00		
360.0	856.68	836.31	816.49	798.87	781.25	736.65	662.33	558.82	444.31		
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	337.50	285.74	118.92	53.46	29.12	24.28	18.94	15.47	13.05		
45.0	308.87	279.14	103.01	44.49	27.31	22.02	17.01	13.82	11.45		
90.0	210.59	115.01	51.53	26.76	21.97	17.34	13.82	11.45	10.79		
135.0	281.89	228.76	93.38	41.46	25.93	21.53	17.01	14.53	12.50		
180.0	323.90	238.67	150.63	69.37	30.01	24.22	19.05	14.70	12.77		
225.0	376.92	261.68	166.77	81.15	34.74	25.82	21.75	16.46	13.82		
270.0	490.00	399.71	282.99	159.22	81.10	35.13	25.44	21.03	16.19		
315.0	382.26	279.69	184.00	86.60	39.26	26.43	21.53	15.53	12.94		
360.0	337.50	285.74	118.92	53.46	29.12	24.28	18.94	15.47	13.05		

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	11.29	10.90	10.57	10.35	10.13	9.91	9.80	9.69	9.58
45.0	10.68	10.35	10.08	9.91	9.80	9.58	9.47	9.36	9.25
90.0	10.41	10.08	9.97	9.74	9.69	9.47	9.36	9.19	9.25
135.0	11.01	10.63	10.35	10.19	9.97	9.86	9.91	9.58	9.52
180.0	11.45	10.79	10.41	10.19	9.97	9.86	9.63	9.58	9.47
225.0	11.45	10.85	10.35	10.08	9.91	9.74	9.63	9.41	9.36
270.0	13.54	11.56	10.96	10.57	10.30	10.02	9.91	9.69	9.58
315.0	11.62	11.07	10.74	10.46	10.24	10.02	9.91	9.74	9.63
360.0	11.29	10.90	10.57	10.35	10.13	9.91	9.80	9.69	9.58
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.41	9.36	9.30	9.25	9.19	9.14	9.08	9.03	9.03
45.0	9.19	9.08	9.03	8.97	8.92	8.92	8.92	8.92	8.86
90.0	9.19	9.14	9.03	9.03	8.86	8.92	8.86	8.86	8.81
135.0	9.41	9.36	9.30	9.19	9.14	9.08	9.08	9.03	9.03
180.0	9.36	9.30	9.25	9.14	9.14	9.08	9.08	8.97	8.97
225.0	9.19	9.14	9.03	8.97	8.92	8.92	8.86	8.81	8.75
270.0	9.47	9.41	9.30	9.19	9.08	9.08	8.97	8.97	8.92
315.0	9.47	9.36	9.30	9.19	9.19	9.14	9.14	8.97	9.03
360.0	9.41	9.36	9.30	9.25	9.19	9.14	9.08	9.03	9.03
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.97	8.97	8.97	8.97	8.92	8.86	8.86	8.97	8.86
45.0	8.81	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.70
90.0	8.81	8.81	8.75	8.81	8.75	8.75	8.70	8.70	8.70
135.0	8.97	8.97	8.92	8.92	8.86	8.81	8.81	8.81	8.81
180.0	8.92	8.86	8.86	8.86	8.86	8.81	8.81	8.75	8.75
225.0	8.70	8.75	8.70	8.70	8.64	8.64	8.64	8.64	8.59
270.0	8.92	8.92	8.92	8.86	8.81	8.75	8.81	8.75	8.81
315.0	8.97	8.92	8.92	8.92	8.92	8.92	8.86	8.81	8.81
360.0	8.97	8.97	8.97	8.97	8.92	8.86	8.86	8.97	8.86
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.86	8.86	8.86	8.92	9.08	9.69	11.01	10.35	9.97
45.0	8.70	8.75	8.92	11.07	13.43	16.19	15.97	15.75	14.09
90.0	8.81	8.75	8.86	9.52	11.23	12.11	11.73	11.12	10.35
135.0	8.86	8.81	8.86	8.81	8.81	8.86	8.75	8.81	8.81
180.0	8.75	8.75	8.75	8.70	8.75	8.75	8.75	8.70	8.64
225.0	8.59	8.59	8.59	8.59	8.53	8.53	8.53	8.53	8.53
270.0	8.81	8.81	8.75	8.75	8.75	8.75	9.19	9.52	9.19
315.0	8.86	8.86	8.92	8.92	9.47	10.19	11.12	11.45	11.07
360.0	8.86	8.86	8.86	8.92	9.08	9.69	11.01	10.35	9.97
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.41	9.30	9.30	9.19	9.08	8.97	8.64	8.70	8.70
45.0	10.85	9.19	9.52	10.02	10.68	11.73	10.79	8.53	8.53
90.0	9.58	9.52	9.52	9.47	9.30	9.03	8.59	8.59	8.59
135.0	8.81	8.86	8.81	8.81	8.81	8.75	8.70	8.64	8.64
180.0	8.70	8.70	8.70	8.70	8.70	8.75	8.70	8.64	8.70
225.0	8.53	8.48	8.53	8.48	8.53	8.53	8.53	8.48	8.48
270.0	8.86	8.70	8.70	8.64	8.70	8.64	8.59	8.59	8.59
315.0	10.19	9.52	9.25	9.41	9.30	9.08	8.70	8.70	8.64
360.0	9.41	9.30	9.30	9.19	9.08	8.97	8.64	8.70	8.70

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	8.70
45.0	8.53
90.0	8.53
135.0	8.59
180.0	8.70
225.0	8.48
270.0	8.64
315.0	8.64
360.0	8.70