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Nata

LumCAT: 2-2186-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 34.5000
Test No: GC20200211717	Current(A): 0.6000
LampCAT: BRIDGELUX V13B	Power (W): 20.7000
Lamp flux(lm): 2987.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2422.10
Efficiency(%): 81.09%
Lumens(lm)/Power(W): 117.01
Central intensity(cd): 16834.220
Maximum intensity(cd): 16834.220
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.3
 [C90/270]Total=17.3
Field angle(10%Imax): [C0/180]Total=41.1
 [C90/270]Total=41.1
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.738%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16834.219	0.000	0	.000%	.000%
1.0	16668.281	16.030	16.03	.537%	.662%
2.0	16141.641	47.092	63.122	1.577%	2.606%
3.0	15213.516	74.991	138.113	2.511%	5.702%
4.0	14112.422	98.163	236.277	3.286%	9.755%
5.0	12768.750	115.641	351.918	3.871%	14.529%
6.0	11403.281	127.030	478.949	4.253%	19.774%
7.0	10189.617	134.027	612.975	4.487%	25.308%
8.0	9076.289	137.882	750.858	4.616%	31.000%
9.0	8026.523	138.609	889.467	4.640%	36.723%
10.0	6957.844	135.603	1025.07	4.540%	42.322%
11.0	6180.680	131.281	1156.351	4.395%	47.742%
12.0	5482.195	127.492	1283.843	4.268%	53.005%
13.0	4747.430	121.400	1405.242	4.064%	58.018%
14.0	4207.570	114.623	1519.866	3.837%	62.750%
15.0	3740.766	109.118	1628.984	3.653%	67.255%
16.0	3256.523	102.530	1731.514	3.433%	71.488%
17.0	2892.656	95.759	1827.273	3.206%	75.442%
18.0	2544.258	89.643	1916.916	3.001%	79.143%
19.0	2147.836	81.633	1998.549	2.733%	82.513%
20.0	1843.664	73.056	2071.604	2.446%	85.529%
21.0	1551.516	65.194	2136.799	2.183%	88.221%
22.0	1277.845	56.857	2193.656	1.903%	90.569%
23.0	1017.893	48.171	2241.827	1.613%	92.557%
24.0	792.626	39.584	2281.411	1.325%	94.192%
25.0	557.037	30.688	2312.1	1.027%	95.459%
26.0	385.952	22.259	2334.359	.745%	96.378%
27.0	249.075	15.536	2349.895	.520%	97.019%
28.0	118.259	9.300	2359.195	.311%	97.403%
29.0	43.608	4.235	2363.43	.142%	97.578%
30.0	21.473	1.757	2365.187	.059%	97.650%
31.0	17.494	1.084	2366.272	.036%	97.695%
32.0	16.263	0.967	2367.239	.032%	97.735%
33.0	15.307	0.930	2368.169	.031%	97.774%
34.0	14.407	0.899	2369.068	.030%	97.811%
35.0	13.711	0.873	2369.941	.029%	97.847%
36.0	13.170	0.856	2370.797	.029%	97.882%
37.0	12.677	0.843	2371.64	.028%	97.917%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	12.284	0.833	2372.473	.028%	97.951%
39.0	11.939	0.827	2373.3	.028%	97.985%
40.0	11.644	0.822	2374.122	.028%	98.019%
41.0	11.433	0.822	2374.944	.028%	98.053%
42.0	11.222	0.823	2375.767	.028%	98.087%
43.0	11.011	0.824	2376.591	.028%	98.121%
44.0	10.877	0.826	2377.417	.028%	98.155%
45.0	10.758	0.831	2378.248	.028%	98.190%
46.0	10.652	0.837	2379.086	.028%	98.224%
47.0	10.554	0.843	2379.929	.028%	98.259%
48.0	10.484	0.850	2380.78	.028%	98.294%
49.0	10.399	0.858	2381.637	.029%	98.330%
50.0	10.322	0.864	2382.501	.029%	98.365%
51.0	10.266	0.871	2383.372	.029%	98.401%
52.0	10.216	0.879	2384.251	.029%	98.438%
53.0	10.132	0.885	2385.136	.030%	98.474%
54.0	10.090	0.891	2386.028	.030%	98.511%
55.0	10.069	0.900	2386.927	.030%	98.548%
56.0	10.034	0.908	2387.836	.030%	98.586%
57.0	9.984	0.915	2388.751	.031%	98.623%
58.0	9.935	0.921	2389.672	.031%	98.661%
59.0	9.914	0.928	2390.6	.031%	98.700%
60.0	9.865	0.934	2391.535	.031%	98.738%
61.0	9.858	0.941	2392.476	.032%	98.777%
62.0	9.851	0.950	2393.425	.032%	98.816%
63.0	9.830	0.957	2394.383	.032%	98.856%
64.0	9.788	0.963	2395.345	.032%	98.896%
65.0	9.788	0.969	2396.314	.032%	98.936%
66.0	9.773	0.976	2397.29	.033%	98.976%
67.0	9.780	0.983	2398.273	.033%	99.016%
68.0	9.759	0.990	2399.263	.033%	99.057%
69.0	9.766	0.996	2400.259	.033%	99.098%
70.0	9.738	1.002	2401.261	.034%	99.140%
71.0	9.717	1.006	2402.266	.034%	99.181%
72.0	9.745	1.012	2403.278	.034%	99.223%
73.0	9.724	1.018	2404.296	.034%	99.265%
74.0	9.731	1.023	2405.319	.034%	99.307%
75.0	9.745	1.029	2406.348	.034%	99.350%

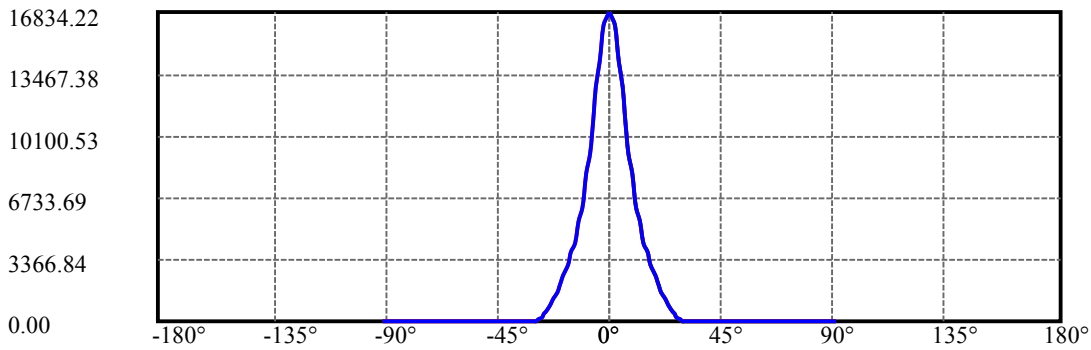
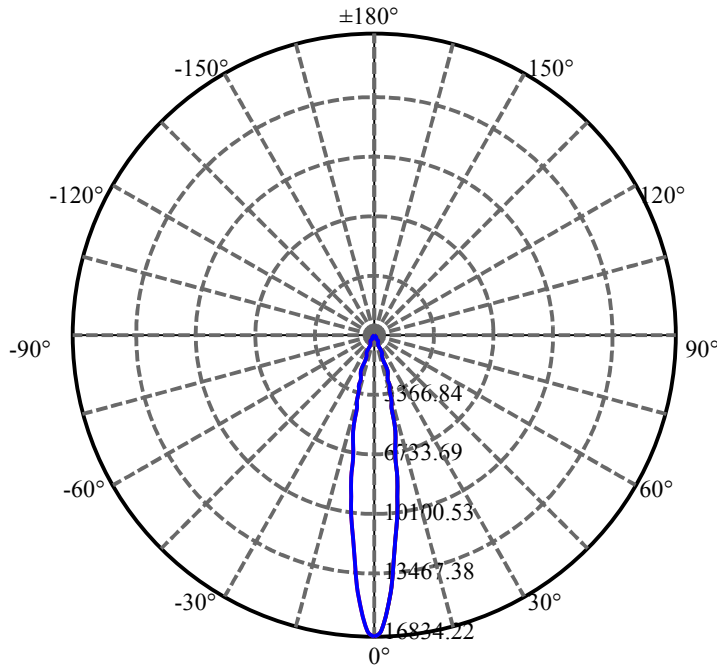
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.717	1.033	2407.382	.035%	99.393%
77.0	9.738	1.037	2408.419	.035%	99.435%
78.0	9.731	1.042	2409.461	.035%	99.478%
79.0	9.738	1.046	2410.507	.035%	99.522%
80.0	9.703	1.048	2411.555	.035%	99.565%
81.0	9.703	1.049	2412.605	.035%	99.608%
82.0	9.731	1.054	2413.659	.035%	99.652%
83.0	9.738	1.058	2414.717	.035%	99.695%
84.0	9.745	1.061	2415.778	.036%	99.739%
85.0	9.710	1.062	2416.84	.036%	99.783%
86.0	9.612	1.056	2417.896	.035%	99.827%
87.0	9.584	1.051	2418.947	.035%	99.870%
88.0	9.570	1.049	2419.996	.035%	99.913%
89.0	9.577	1.049	2421.046	.035%	99.957%
90.0	9.570	1.050	2422.095	.035%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2365.19	79.18%	97.65%
0-40	2374.12	79.48%	98.02%
0-60	2391.53	80.06%	98.74%
0-90	2421.05	81.05%	99.96%
0-120	2421.05	81.05%	99.96%
0-180	2422.10	81.09%	100.00%
60-90	30.45	1.02%	1.26%
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%
0-18.25	1937.68	64.87%	80.00%

ZONAL LUMEN SUMMARY

0-10	1025.07
10-20	1046.53
20-30	293.58
30-40	8.94
40-50	8.38
50-60	9.03
60-70	9.73
70-80	10.29
80-90	9.49
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



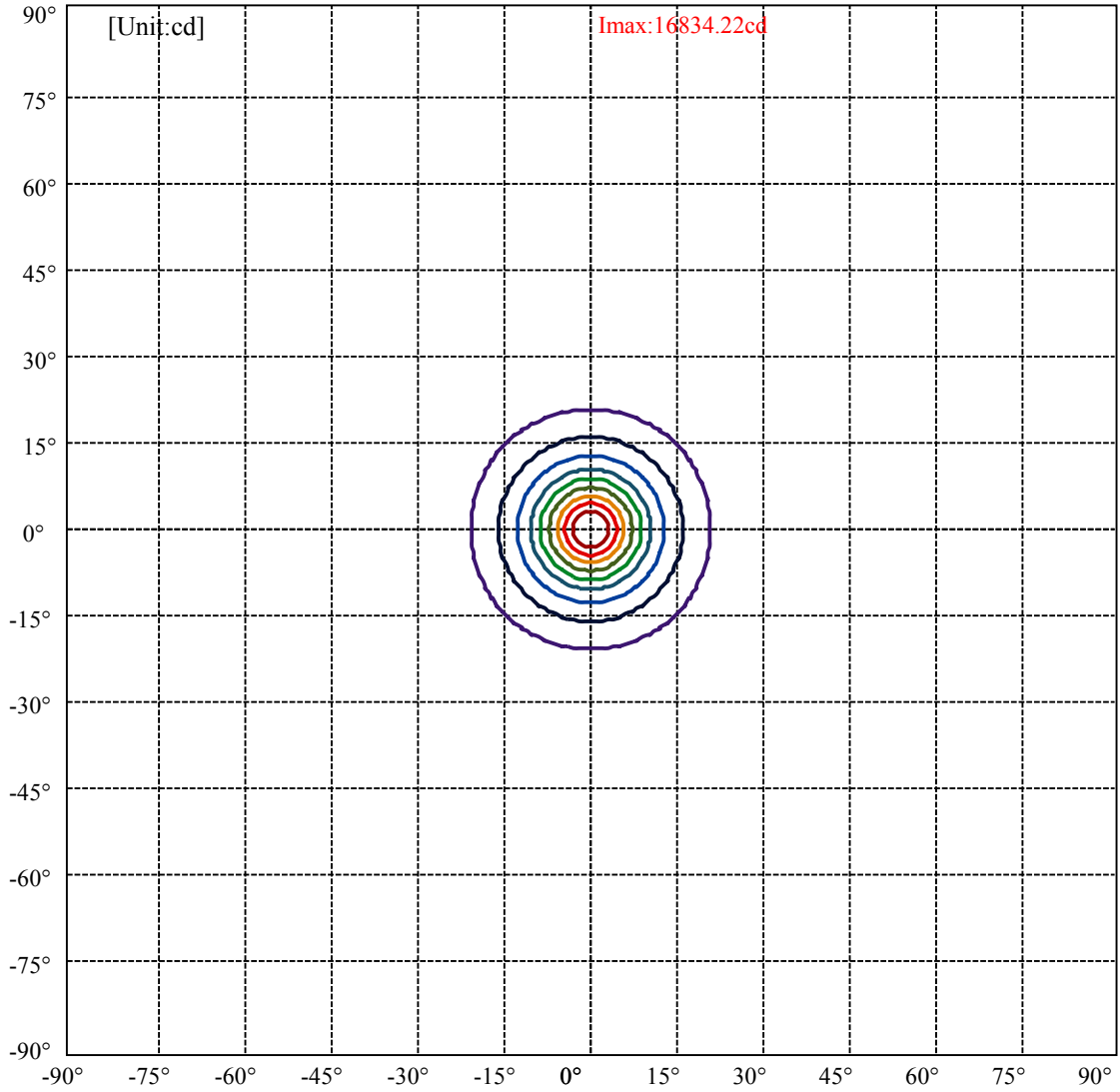
C0(Max): —————

C0/C180: —————

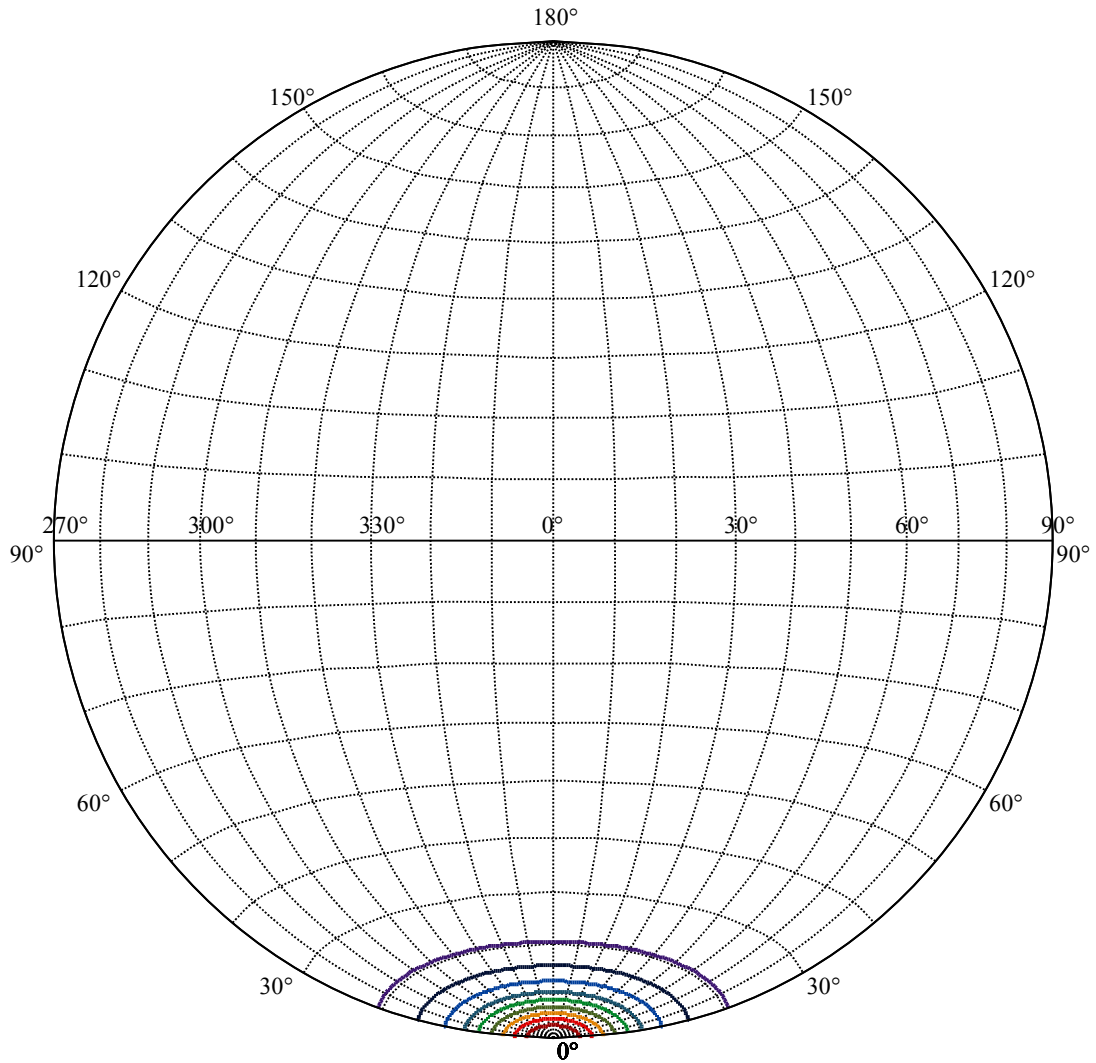
C90/C270: —————

Field angle(10%Imax):C0/180Left:20.5 Right:20.5
:C90/270Left:20.5 Right:20.5

Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6
:C90/270Left:8.6 Right:8.6



(10%Imax) 1683.42	—
(20%Imax) 3366.84	—
(30%Imax) 5050.27	—
(40%Imax) 6733.69	—
(50%Imax) 8417.11	—
(60%Imax) 10100.5	—
(70%Imax) 11784	—
(80%Imax) 13467.4	—
(90%Imax) 15150.8	—



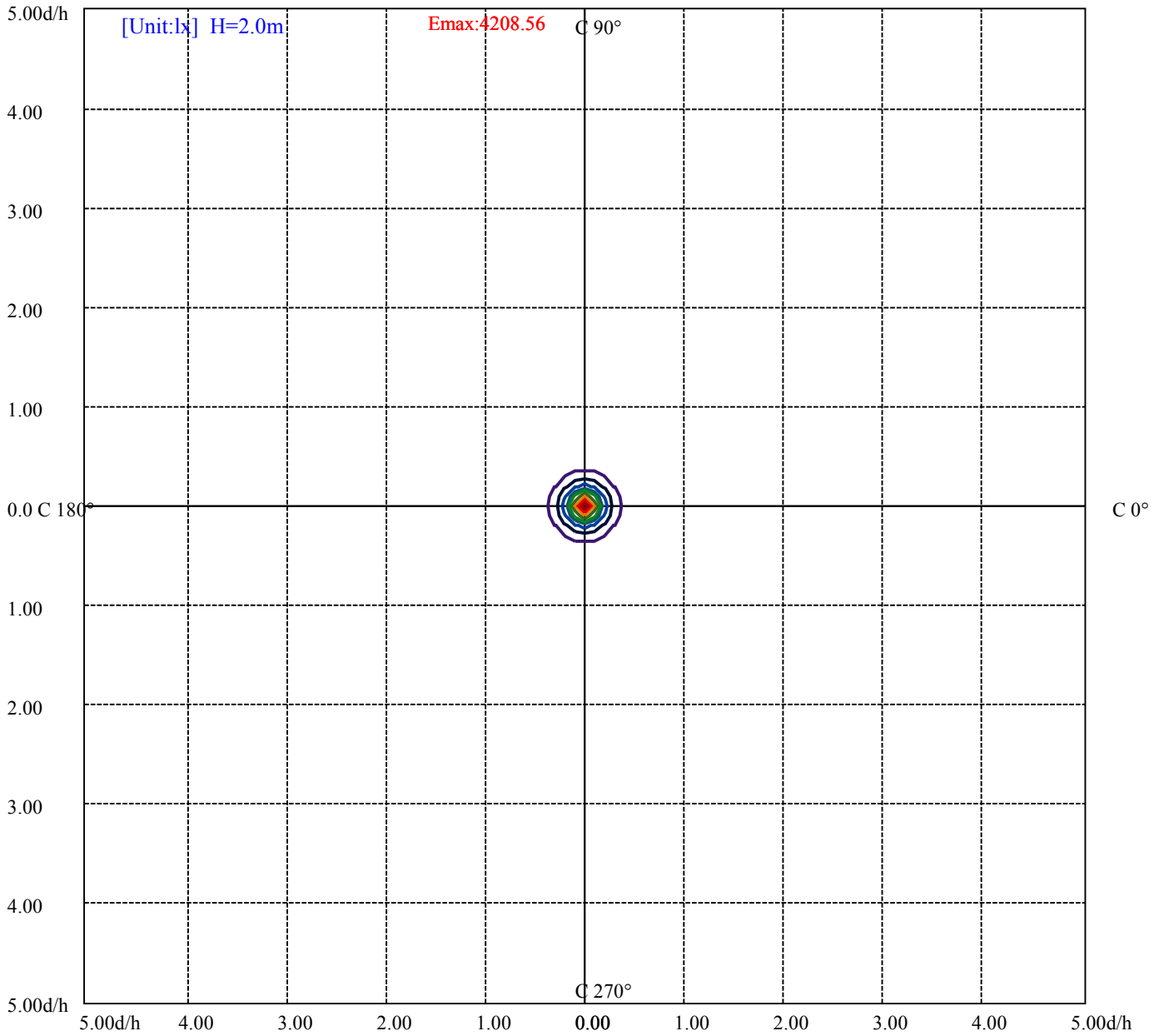
House

[Unit:cd]

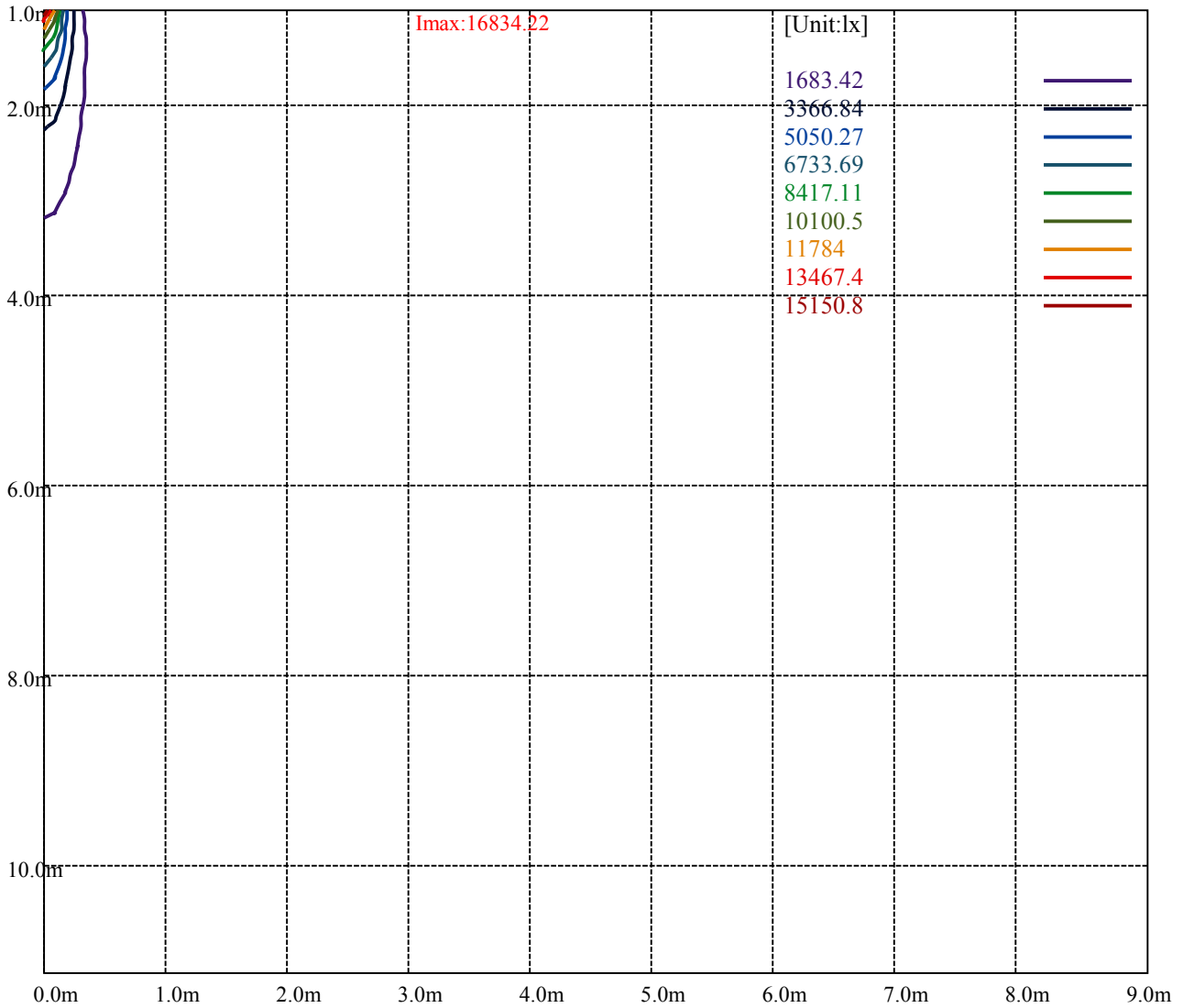
Road

Imax:16834.22

(10%Imax) 1683.42	—
(20%Imax) 3366.84	—
(30%Imax) 5050.27	—
(40%Imax) 6733.69	—
(50%Imax) 8417.11	—
(60%Imax) 10100.5	—
(70%Imax) 11784	—
(80%Imax) 13467.4	—
(90%Imax) 15150.8	—



(10%Emax) 420.855	—
(20%Emax) 841.71	—
(30%Emax) 1262.565	—
(40%Emax) 1683.42	—
(50%Emax) 2104.275	—
(60%Emax) 2525.125	—
(70%Emax) 2945.975	—
(80%Emax) 3366.85	—
(90%Emax) 3787.7	—



Luminance Table

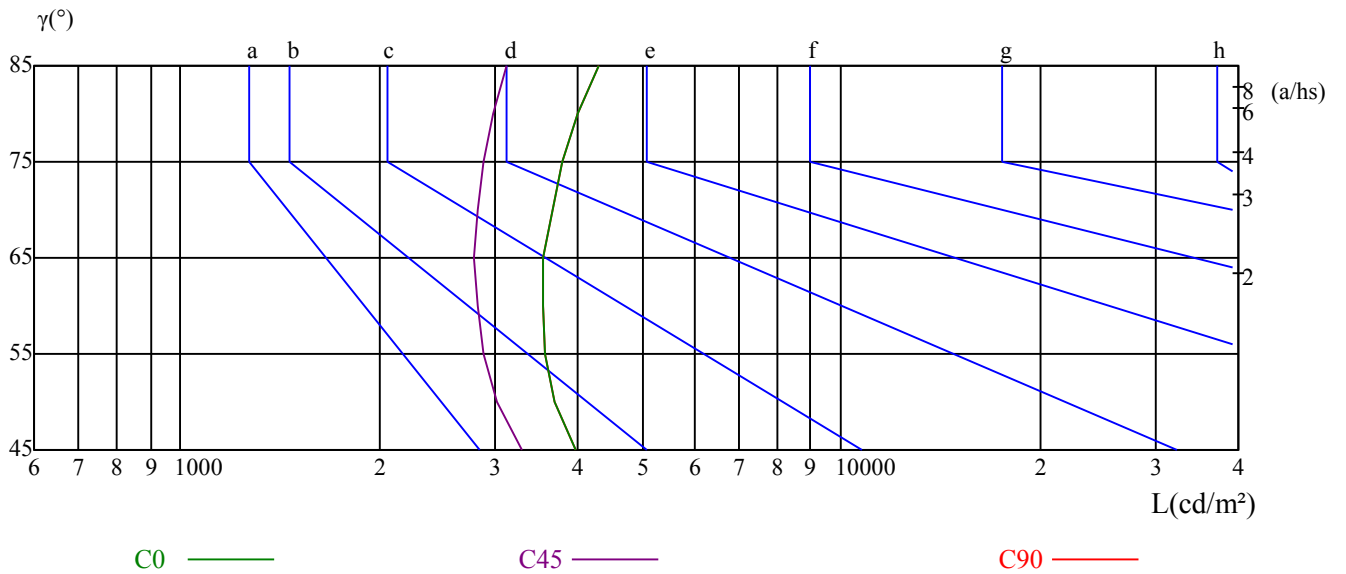
γ	45	50	55	60	65	70	75	80	85
C0	3955	3683	3556	3535	3547	3659	3797	4003	4302
C45	3296	3023	2875	2815	2780	2819	2873	2969	3120
C90	3955	3683	3556	3535	3547	3659	3797	4003	4302

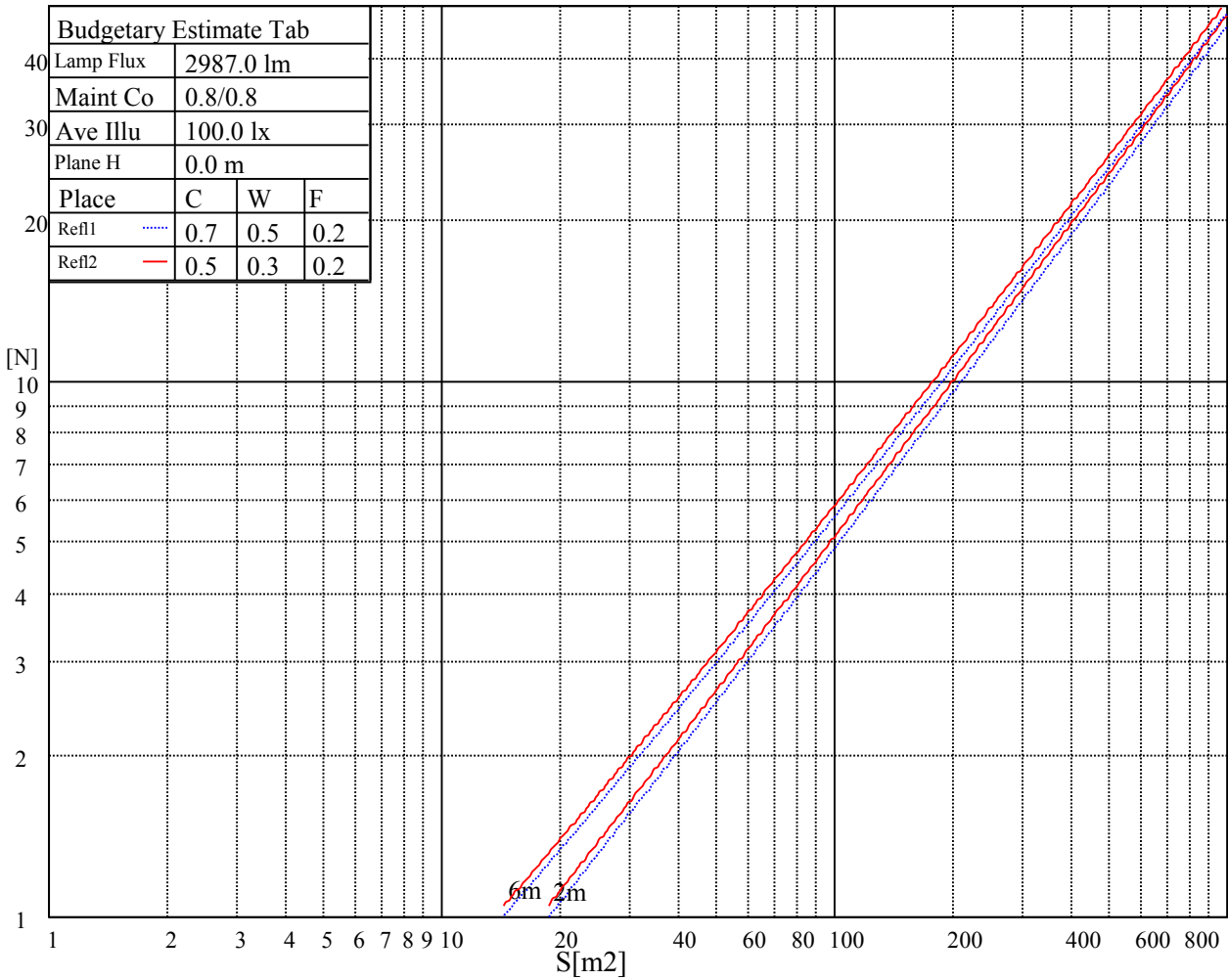
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10648	10648	10648	17024	17024	17024	50197	50197	50197

Glare Table

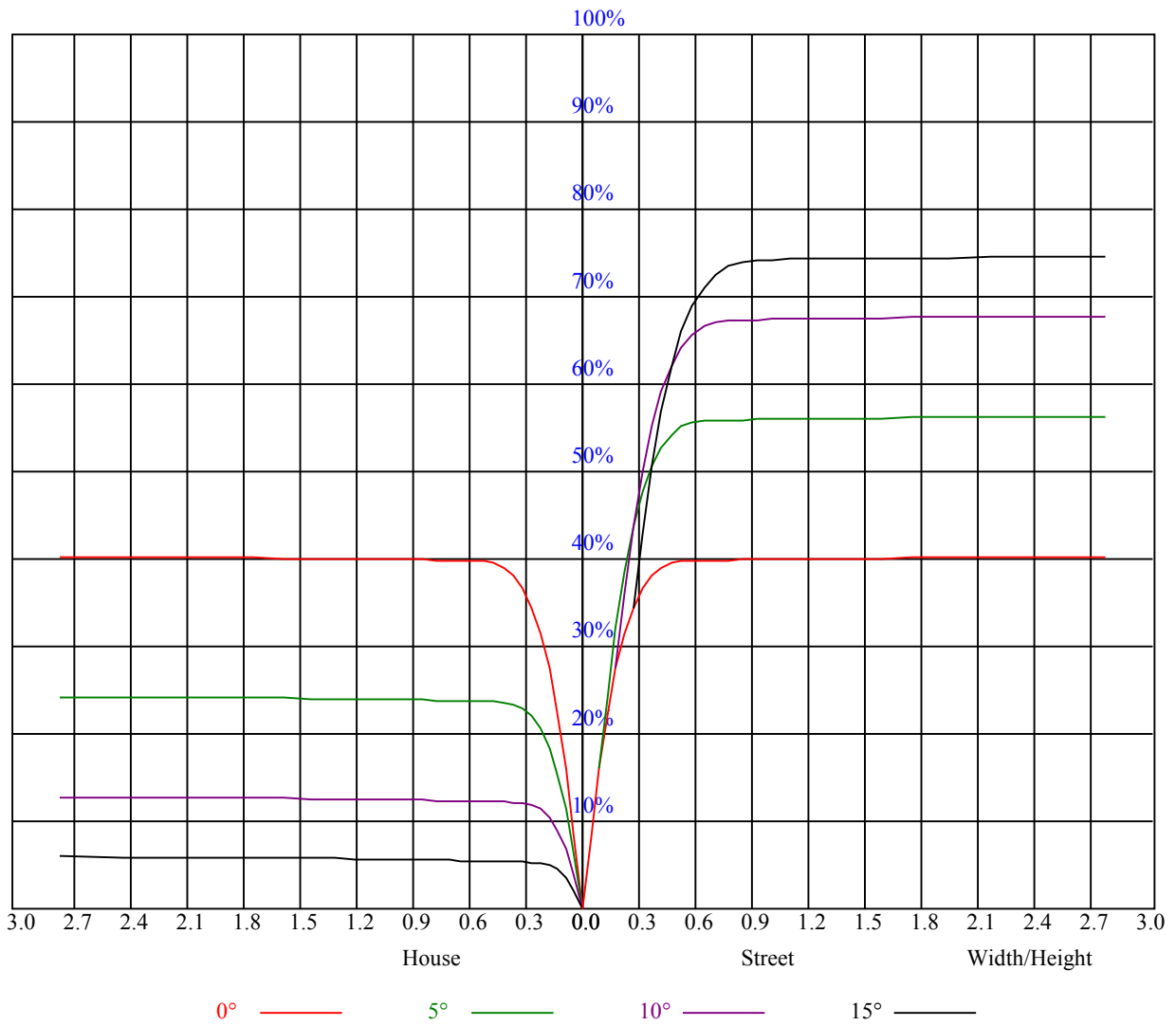
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.97	0.97	0.97	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.81
1	0.92	0.90	0.89	0.90	0.88	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.78
2	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.79	0.79	0.78	0.77	0.76
3	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.78	0.76	0.78	0.76	0.75	0.74
4	0.81	0.78	0.76	0.80	0.78	0.75	0.79	0.76	0.75	0.77	0.75	0.74	0.76	0.74	0.73	0.72
5	0.79	0.75	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.72	0.74	0.72	0.71	0.70
6	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.74	0.71	0.70	0.73	0.71	0.69	0.68
7	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.68	0.67
8	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.67	0.70	0.68	0.66	0.70	0.68	0.66	0.65
9	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.65	0.64
10	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.65	0.64	0.67	0.65	0.63	0.67	0.65	0.63	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	16875.00	16633.13	15958.13	15159.38	13758.75	12521.25	11283.75	9804.38	8730.00
45.0	16891.88	16475.63	15637.50	14625.00	13303.13	12088.13	10704.38	9376.88	8341.88
90.0	16745.63	16312.50	15570.00	14152.50	13128.75	11131.88	10363.50	9210.38	8183.81
135.0	16824.38	16756.88	16329.38	15384.38	14360.63	13224.38	11986.88	10428.75	9298.13
180.0	16875.00	16785.00	16374.38	15345.00	14439.38	13275.00	11082.38	10459.69	9289.13
225.0	16891.88	16965.00	16706.25	15958.13	15035.63	13916.25	12026.25	11153.81	9959.06
270.0	16745.63	16886.25	16638.75	16048.13	15075.00	13955.63	12588.75	11216.25	10029.38
315.0	16824.38	16531.88	15918.75	15035.63	13798.13	12037.50	11190.38	9866.81	8778.94
360.0	16875.00	16633.13	15958.13	15159.38	13758.75	12521.25	11283.75	9804.38	8730.00
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7773.75	6710.63	5973.75	5315.63	4590.00	4078.13	3611.25	3150.00	2868.75
45.0	7329.38	6423.75	5698.13	5141.25	4376.25	3881.25	3493.13	2998.13	2857.50
90.0	7279.31	6283.69	5589.00	4974.19	4298.06	3819.38	3390.75	2958.19	2569.50
135.0	8274.38	7143.75	6350.63	5574.38	4961.25	4348.13	3870.00	3397.50	3009.38
180.0	8235.56	7092.00	6300.00	5600.81	4835.25	4299.19	3821.63	3350.25	2931.19
225.0	8847.56	7611.19	6752.81	5988.94	5154.75	4574.25	4064.63	3553.31	3094.31
270.0	8791.88	7683.75	6828.75	6058.13	5220.00	4629.38	4095.00	3577.50	3110.63
315.0	7680.38	6714.00	5952.38	5204.25	4543.88	4030.88	3579.75	3067.31	2700.00
360.0	7773.75	6710.63	5973.75	5315.63	4590.00	4078.13	3611.25	3150.00	2868.75
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2404.69	2063.81	1747.69	1488.94	1210.50	970.31	720.00	491.63	322.88
45.0	2278.69	1922.06	1613.81	1360.69	1095.19	849.38	615.94	415.69	285.75
90.0	2247.19	1904.63	1632.94	1261.69	1078.93	850.95	617.74	412.31	261.06
135.0	2840.63	2256.19	1955.81	1652.63	1387.69	1116.56	893.25	624.94	438.19
180.0	2590.88	2238.75	1947.38	1649.81	1367.44	1098.06	869.51	630.39	438.86
225.0	2740.50	2378.25	2081.81	1762.88	1481.06	1106.44	957.60	709.31	511.14
270.0	2880.00	2386.69	2050.31	1770.19	1483.88	1236.94	972.56	720.00	518.06
315.0	2371.50	2032.31	1719.56	1465.31	1118.08	914.51	694.41	452.03	311.68
360.0	2404.69	2063.81	1747.69	1488.94	1210.50	970.31	720.00	491.63	322.88
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	284.06	67.61	23.51	18.73	16.93	15.86	14.91	14.12	13.39
45.0	138.83	42.64	19.58	17.66	16.20	15.24	14.51	13.73	13.11
90.0	144.90	46.69	19.80	17.89	16.54	15.47	14.63	13.95	13.33
135.0	295.31	138.32	49.11	19.52	17.33	15.98	15.08	14.23	13.61
180.0	282.88	135.79	57.83	20.25	17.16	15.92	14.96	14.18	13.50
225.0	339.13	172.35	78.69	30.09	19.13	17.66	16.54	15.24	14.51
270.0	341.44	286.88	76.50	28.69	19.63	17.94	16.76	15.75	14.68
315.0	166.05	55.80	23.85	18.96	17.04	16.03	15.08	14.06	13.56
360.0	284.06	67.61	23.51	18.73	16.93	15.86	14.91	14.12	13.39
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	12.83	12.43	12.04	11.64	11.42	11.19	10.97	10.86	10.69
45.0	12.71	12.32	11.98	11.76	11.48	11.31	11.14	10.91	10.80
90.0	12.88	12.43	12.15	11.87	11.59	11.42	11.25	10.97	10.86
135.0	13.11	12.66	12.26	11.93	11.59	11.42	11.25	10.97	10.86
180.0	12.94	12.49	12.09	11.76	11.48	11.31	11.14	10.91	10.80
225.0	13.84	13.16	12.71	12.25	11.93	11.70	11.42	11.19	11.08
270.0	14.06	13.44	12.94	12.49	12.15	11.81	11.53	11.36	11.14
315.0	12.99	12.49	12.09	11.81	11.53	11.31	11.08	10.91	10.80
360.0	12.83	12.43	12.04	11.64	11.42	11.19	10.97	10.86	10.69

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	10.58	10.46	10.41	10.35	10.29	10.18	10.13	10.07	10.01
45.0	10.74	10.63	10.46	10.52	10.35	10.29	10.24	10.18	10.13
90.0	10.80	10.69	10.63	10.46	10.52	10.35	10.29	10.29	10.18
135.0	10.74	10.69	10.58	10.52	10.41	10.35	10.29	10.24	10.18
180.0	10.69	10.58	10.46	10.41	10.29	10.24	10.18	10.13	10.07
225.0	10.86	10.69	10.63	10.58	10.46	10.41	10.35	10.29	10.13
270.0	11.03	10.91	10.80	10.63	10.58	10.46	10.41	10.41	10.29
315.0	10.63	10.58	10.46	10.41	10.29	10.29	10.24	10.13	10.07
360.0	10.58	10.46	10.41	10.35	10.29	10.18	10.13	10.07	10.01
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.01	9.96	9.90	9.90	9.79	9.79	9.79	9.73	9.73
45.0	10.07	10.01	10.01	9.96	9.96	9.90	9.84	9.84	9.84
90.0	10.13	10.13	10.13	10.13	10.01	10.01	9.96	10.01	9.96
135.0	10.07	10.07	10.07	10.01	9.96	9.90	9.90	9.84	9.84
180.0	10.07	10.01	9.96	9.90	9.84	9.84	9.79	9.79	9.79
225.0	10.07	10.13	10.07	9.96	9.96	9.96	9.84	9.84	9.84
270.0	10.24	10.18	10.13	10.13	10.07	10.07	9.96	9.96	9.96
315.0	10.07	10.07	10.01	9.90	9.90	9.84	9.84	9.84	9.84
360.0	10.01	9.96	9.90	9.90	9.79	9.79	9.79	9.73	9.73
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.73	9.68	9.68	9.68	9.68	9.68	9.62	9.62	9.56
45.0	9.79	9.79	9.79	9.73	9.73	9.68	9.73	9.68	9.68
90.0	9.96	9.90	9.90	9.96	10.01	9.96	10.01	10.07	10.07
135.0	9.84	9.84	9.79	9.79	9.79	9.79	9.73	9.68	9.68
180.0	9.73	9.73	9.73	9.68	9.68	9.68	9.68	9.62	9.62
225.0	9.79	9.73	9.79	9.79	9.73	9.68	9.73	9.73	9.68
270.0	9.96	9.90	9.90	9.84	9.90	9.90	9.90	9.84	9.84
315.0	9.84	9.73	9.73	9.73	9.73	9.73	9.73	9.68	9.62
360.0	9.73	9.68	9.68	9.68	9.68	9.68	9.62	9.62	9.56
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.62	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.51
45.0	9.68	9.62	9.68	9.68	9.62	9.62	9.68	9.62	9.56
90.0	10.13	10.13	10.18	10.13	10.18	10.18	10.18	10.18	10.13
135.0	9.68	9.68	9.62	9.68	9.68	9.68	9.62	9.68	9.62
180.0	9.62	9.62	9.56	9.62	9.56	9.62	9.56	9.56	9.56
225.0	9.68	9.62	9.68	9.68	9.62	9.62	9.62	9.62	9.62
270.0	9.90	9.90	9.90	9.96	9.90	9.96	10.01	10.01	10.01
315.0	9.68	9.68	9.68	9.68	9.62	9.68	9.62	9.68	9.62
360.0	9.62	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.51
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.51	9.51	9.56	9.56	9.56	9.51	9.51	9.51	9.51
45.0	9.56	9.62	9.62	9.62	9.56	9.56	9.56	9.56	9.56
90.0	10.13	10.13	10.35	10.07	9.84	9.62	9.62	9.62	9.62
135.0	9.62	9.68	9.62	9.68	9.56	9.62	9.62	9.62	9.62
180.0	9.56	9.56	9.51	9.56	9.56	9.51	9.51	9.51	9.51
225.0	9.62	9.62	9.56	9.62	9.62	9.62	9.68	9.51	9.56
270.0	10.01	10.07	10.07	10.24	10.29	9.84	9.56	9.62	9.62
315.0	9.62	9.68	9.62	9.62	9.68	9.62	9.62	9.62	9.62
360.0	9.51	9.51	9.56	9.56	9.56	9.51	9.51	9.51	9.51

Intensity data(cd)

C/γ(°)	90.0
0.0	9.51
45.0	9.56
90.0	9.56
135.0	9.62
180.0	9.56
225.0	9.56
270.0	9.56
315.0	9.62
360.0	9.51