
Nata

LumCAT: 3-1942-M	
Luminaire: BJB 47.319.2131	
Report No: GC2017080817	Voltage(V): 38.5000
Test No: NT-0010	Current(A): 0.5000
LampCAT: CREE CXA1816	Power (W): 19.2500
Lamp flux(lm): 2010.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 86	Width(mm): 86
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1842.04
Efficiency(%): 91.64%
Lumens(lm)/Power(W): 95.69
Central intensity(cd): 9191.418
Maximum intensity(cd): 9191.418
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=12.9
[C90/270]Total=12.9
Field angle(10%Imax): [C0/180]Total=56.3
[C90/270]Total=56.3
Maximum s/h(1/2): C0_180=0.22 C90_270=0.22
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.64%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.668%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9191.418	0.000	0	.000%	.000%
2.0	8439.217	33.741	33.741	1.679%	1.832%
4.0	6857.947	87.790	121.531	4.368%	6.598%
6.0	4894.280	112.319	233.85	5.588%	12.695%
8.0	3549.459	112.840	346.69	5.614%	18.821%
10.0	2766.093	108.338	455.028	5.390%	24.702%
12.0	2375.975	107.590	562.618	5.353%	30.543%
14.0	2123.595	110.993	673.611	5.522%	36.569%
16.0	1936.815	115.239	788.85	5.733%	42.825%
18.0	1737.652	117.805	906.655	5.861%	49.220%
20.0	1548.297	117.311	1023.966	5.836%	55.589%
22.0	1378.490	115.015	1138.981	5.722%	61.833%
24.0	1204.655	110.678	1249.66	5.506%	67.841%
26.0	1057.993	104.858	1354.517	5.217%	73.534%
28.0	927.044	98.821	1453.339	4.916%	78.898%
30.0	816.910	92.713	1546.052	4.613%	83.932%
32.0	674.483	84.230	1630.282	4.191%	88.504%
34.0	513.789	70.968	1701.249	3.531%	92.357%
36.0	307.190	51.637	1752.886	2.569%	95.160%
38.0	142.079	29.649	1782.535	1.475%	96.770%
40.0	47.624	13.091	1795.626	.651%	97.480%
42.0	20.772	4.920	1800.546	.245%	97.747%
44.0	16.000	2.750	1803.296	.137%	97.897%
46.0	12.939	2.244	1805.54	.112%	98.019%
48.0	11.402	1.952	1807.492	.097%	98.125%
50.0	10.421	1.806	1809.298	.090%	98.223%
52.0	9.781	1.722	1811.02	.086%	98.316%
54.0	9.273	1.669	1812.689	.083%	98.407%
56.0	8.876	1.630	1814.319	.081%	98.495%
58.0	8.515	1.599	1815.918	.080%	98.582%
60.0	8.285	1.579	1817.497	.079%	98.668%
62.0	8.174	1.579	1819.076	.079%	98.753%
64.0	8.063	1.586	1820.662	.079%	98.840%
66.0	7.958	1.592	1822.254	.079%	98.926%
68.0	7.903	1.601	1823.855	.080%	99.013%
70.0	7.875	1.615	1825.471	.080%	99.101%
72.0	7.798	1.625	1827.096	.081%	99.189%
74.0	7.763	1.632	1828.727	.081%	99.277%

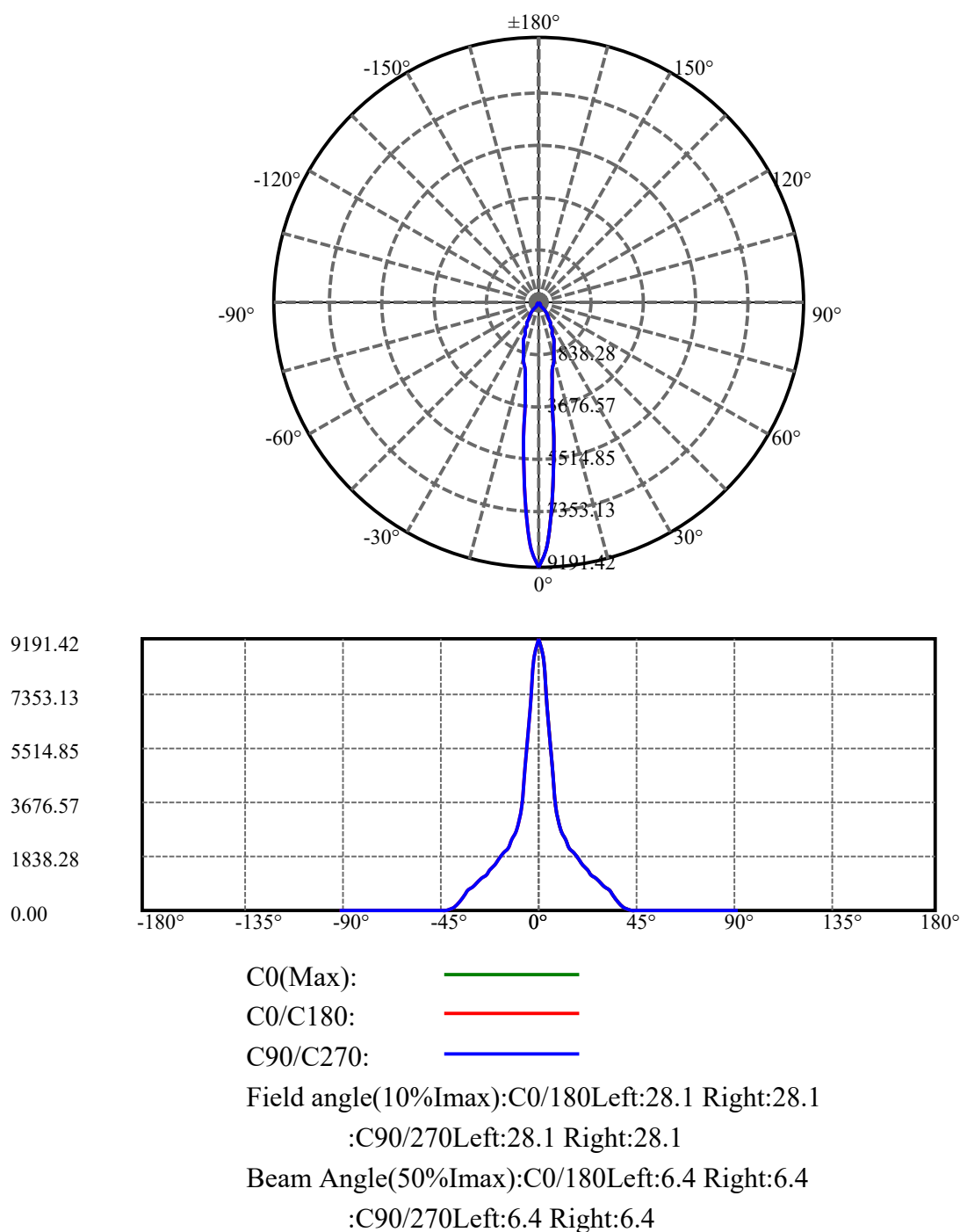
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.736	1.642	1830.369	.082%	99.366%
78.0	7.729	1.652	1832.021	.082%	99.456%
80.0	7.715	1.662	1833.684	.083%	99.546%
82.0	7.659	1.665	1835.349	.083%	99.637%
84.0	7.687	1.670	1837.019	.083%	99.727%
86.0	7.659	1.676	1838.695	.083%	99.819%
88.0	7.617	1.673	1840.368	.083%	99.909%
90.0	7.617	1.670	1842.039	.083%	100.000%

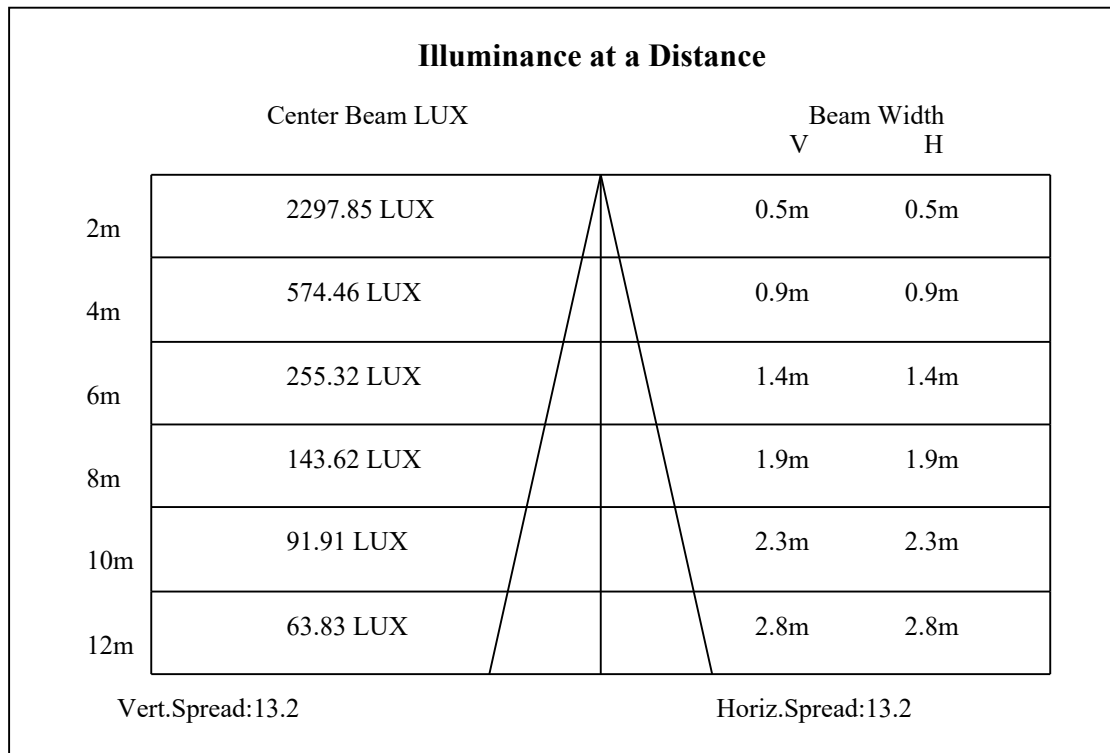
ZONAL LUMEN SUMMARY

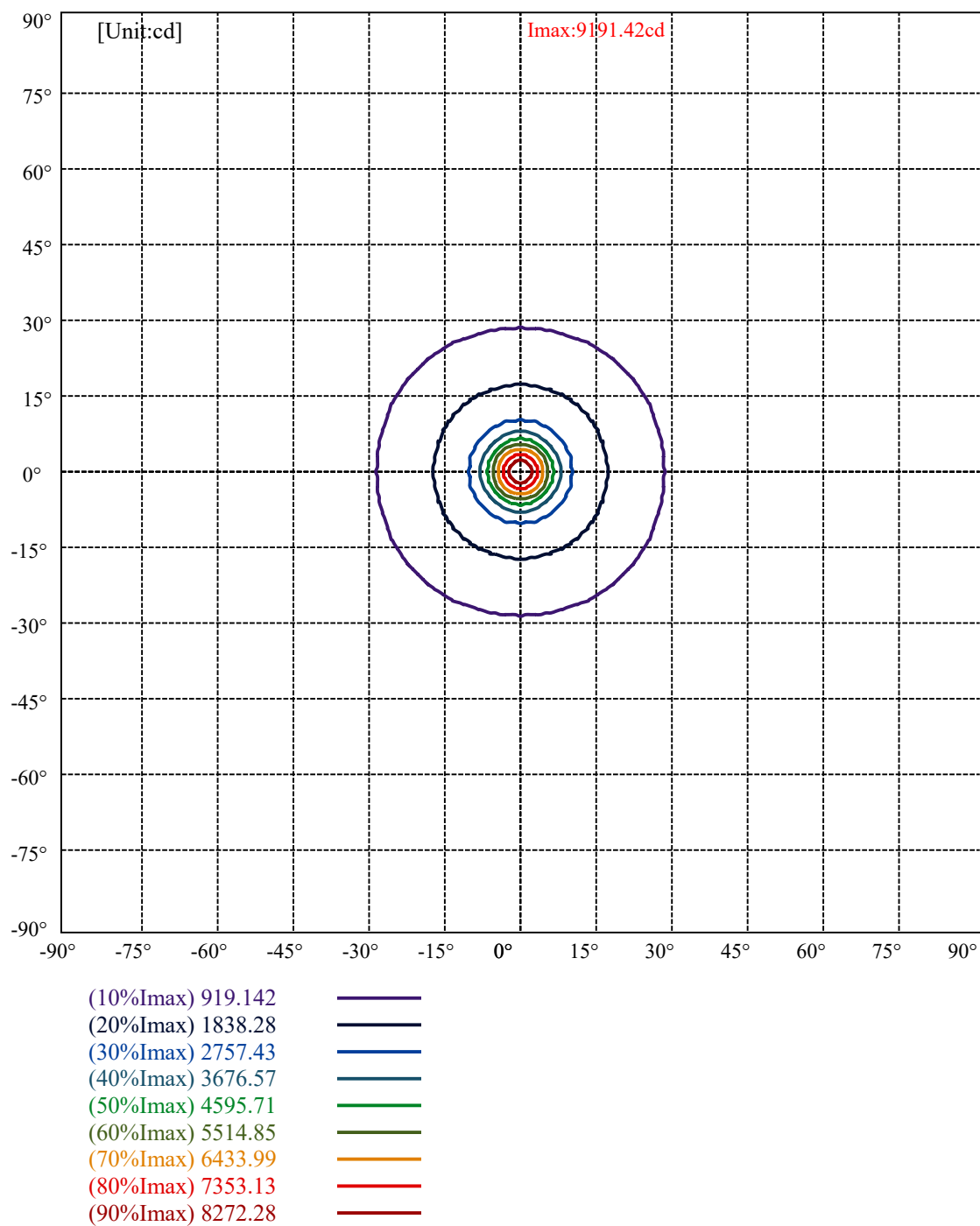
Zone	Lumens	%Lamp	%Fixt
0-30	1546.05	76.92%	83.93%
0-40	1795.63	89.33%	97.48%
0-60	1817.50	90.42%	98.67%
0-90	1840.37	91.56%	99.91%
0-120	1840.37	91.56%	99.91%
0-180	1842.04	91.64%	100.00%
60-90	24.45	1.22%	1.33%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.44	1473.63	73.31%	80.00%

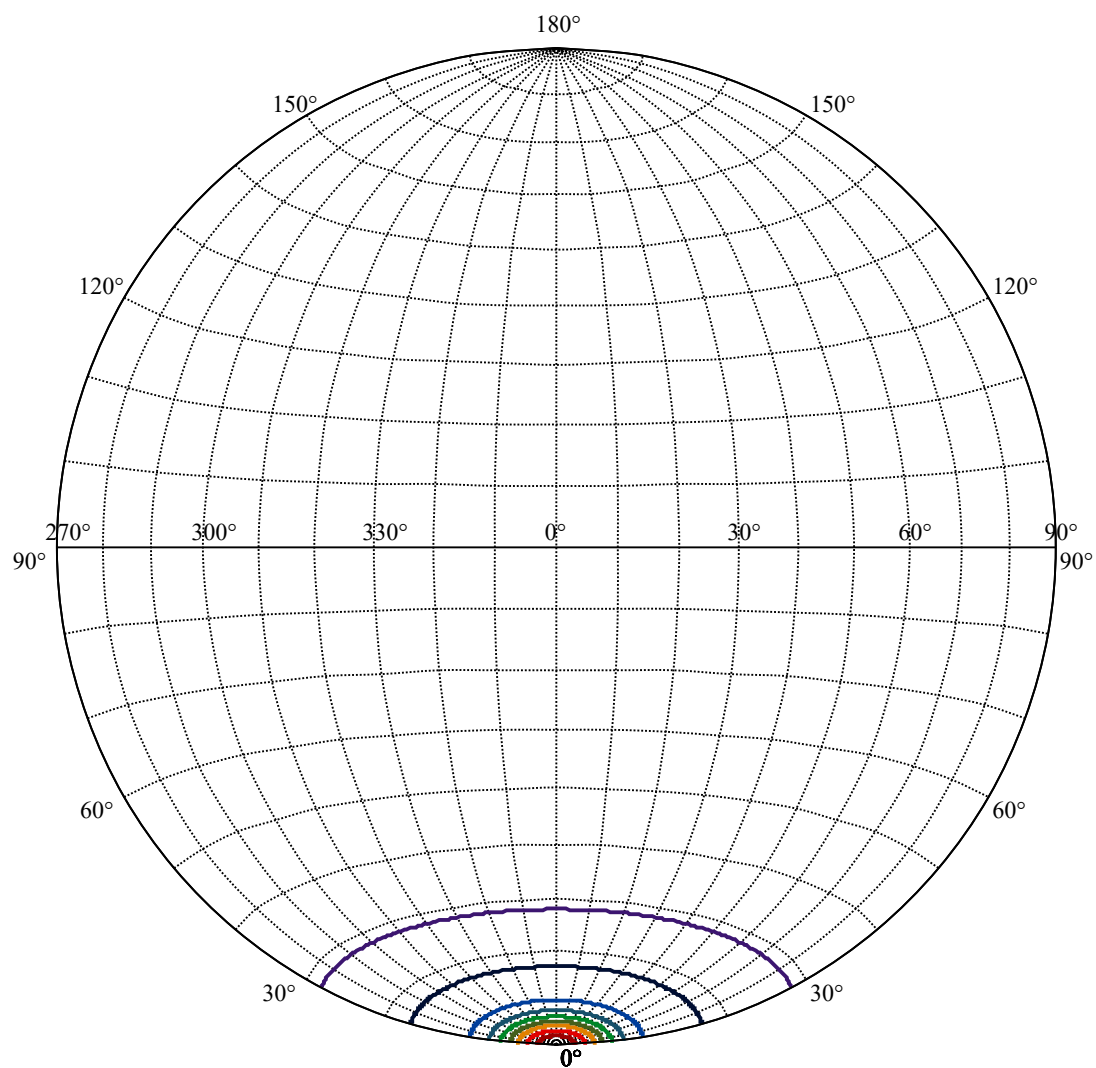
ZONAL LUMEN SUMMARY

0-10	455.03
10-20	568.94
20-30	522.09
30-40	249.57
40-50	13.67
50-60	8.20
60-70	7.97
70-80	8.21
80-90	6.68
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









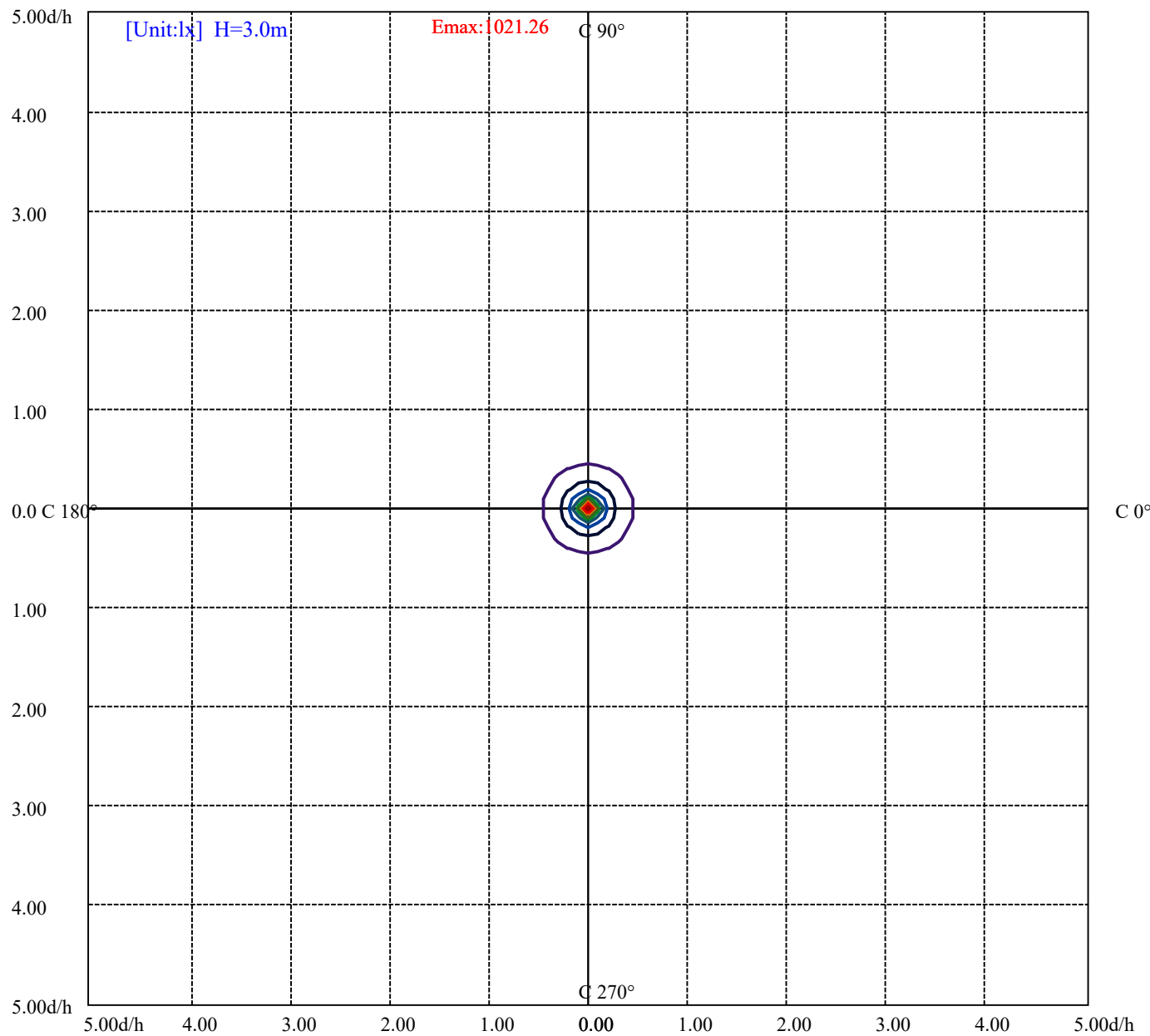
House

[Unit:cd]

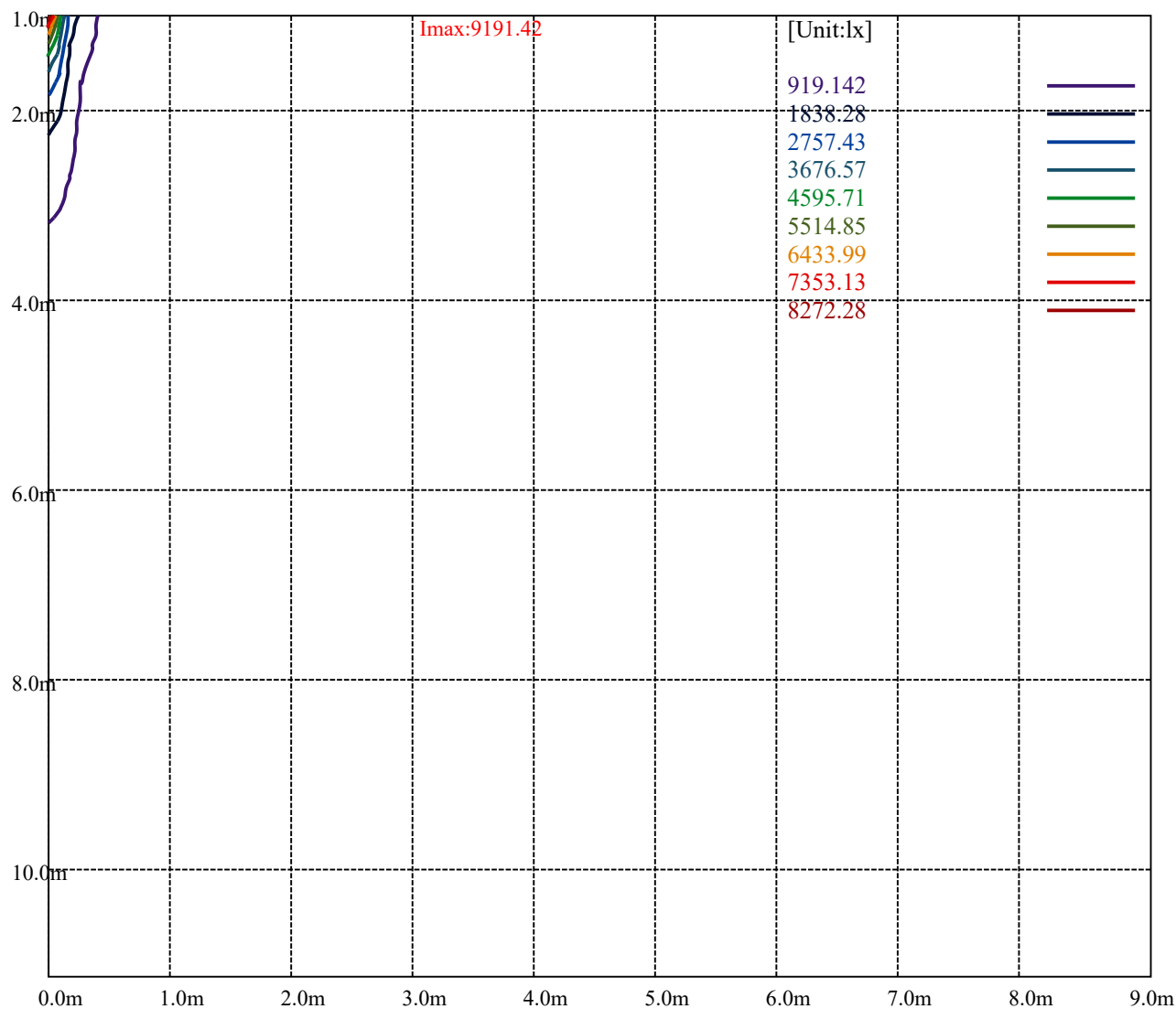
Road

Imax:9191.42

(10%Imax)	919.142	—
(20%Imax)	1838.28	—
(30%Imax)	2757.43	—
(40%Imax)	3676.57	—
(50%Imax)	4595.71	—
(60%Imax)	5514.85	—
(70%Imax)	6433.99	—
(80%Imax)	7353.13	—
(90%Imax)	8272.28	—



(10%Emax)	102.1262	
(20%Emax)	204.2522	
(30%Emax)	306.3789	
(40%Emax)	408.5045	
(50%Emax)	510.6311	
(60%Emax)	612.7578	
(70%Emax)	714.8834	
(80%Emax)	817.01	
(90%Emax)	919.1367	



Luminance Table

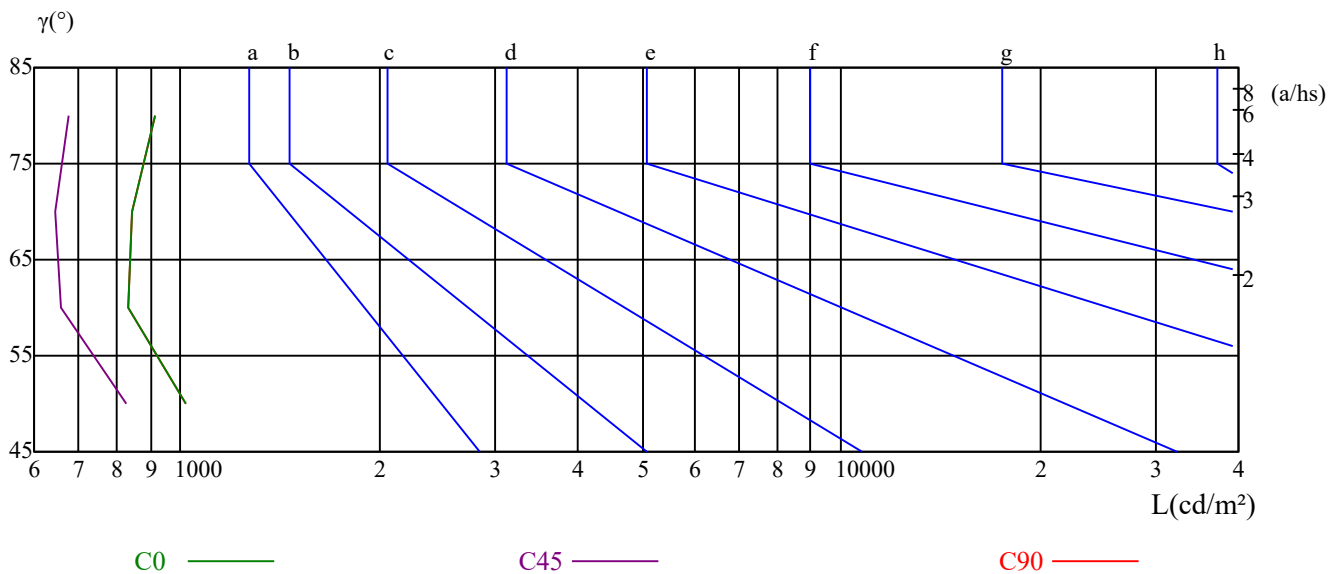
γ	45	50	55	60	65	70	75	80	85
C0	0	1017	0	833	0	843	0	913	0
C45	0	829	0	659	0	646	0	675	0
C90	0	1017	0	833	0	843	0	913	0

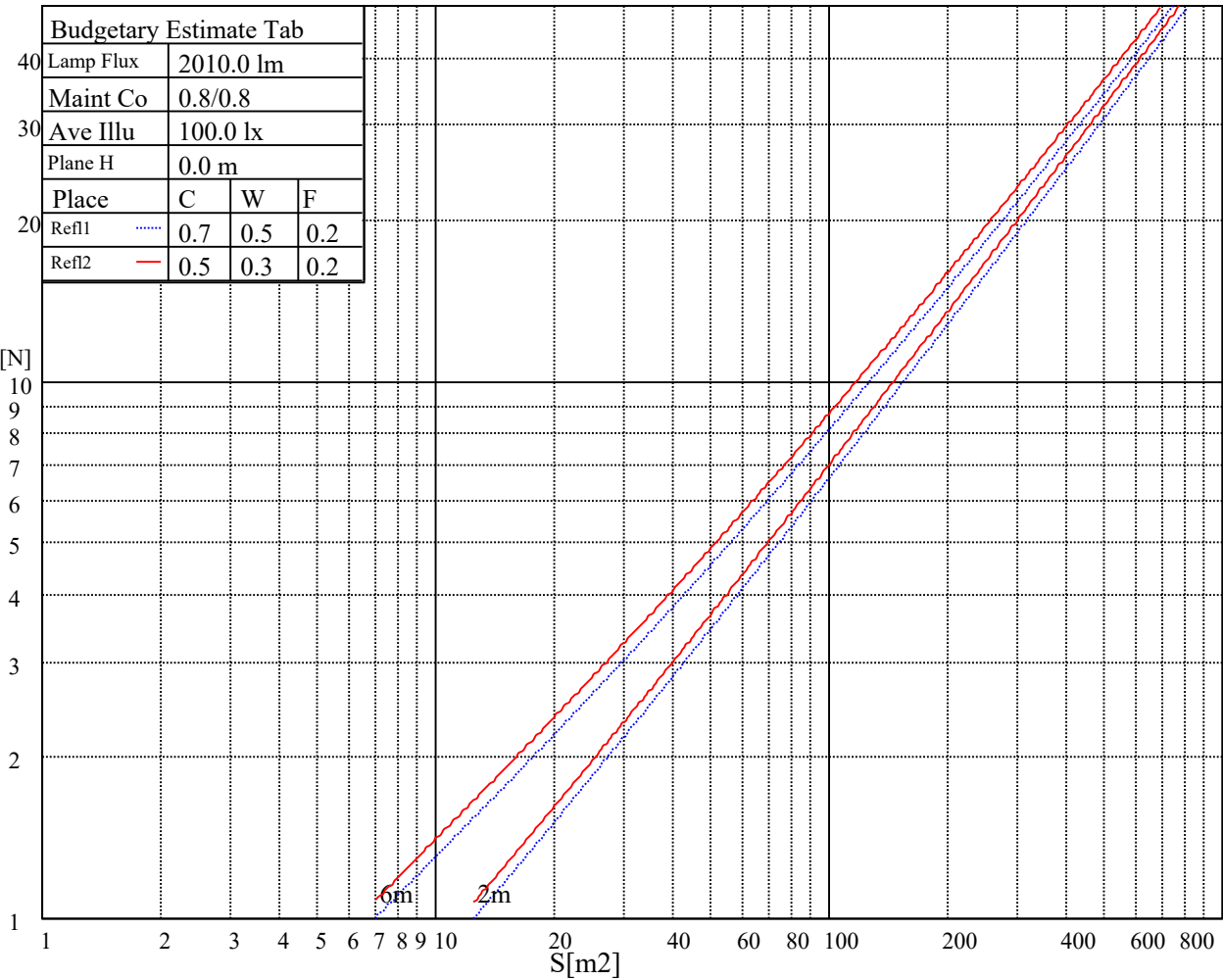
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
74989	74989	74989	119292	119292	119292	350750	350750	350750

Glare Table

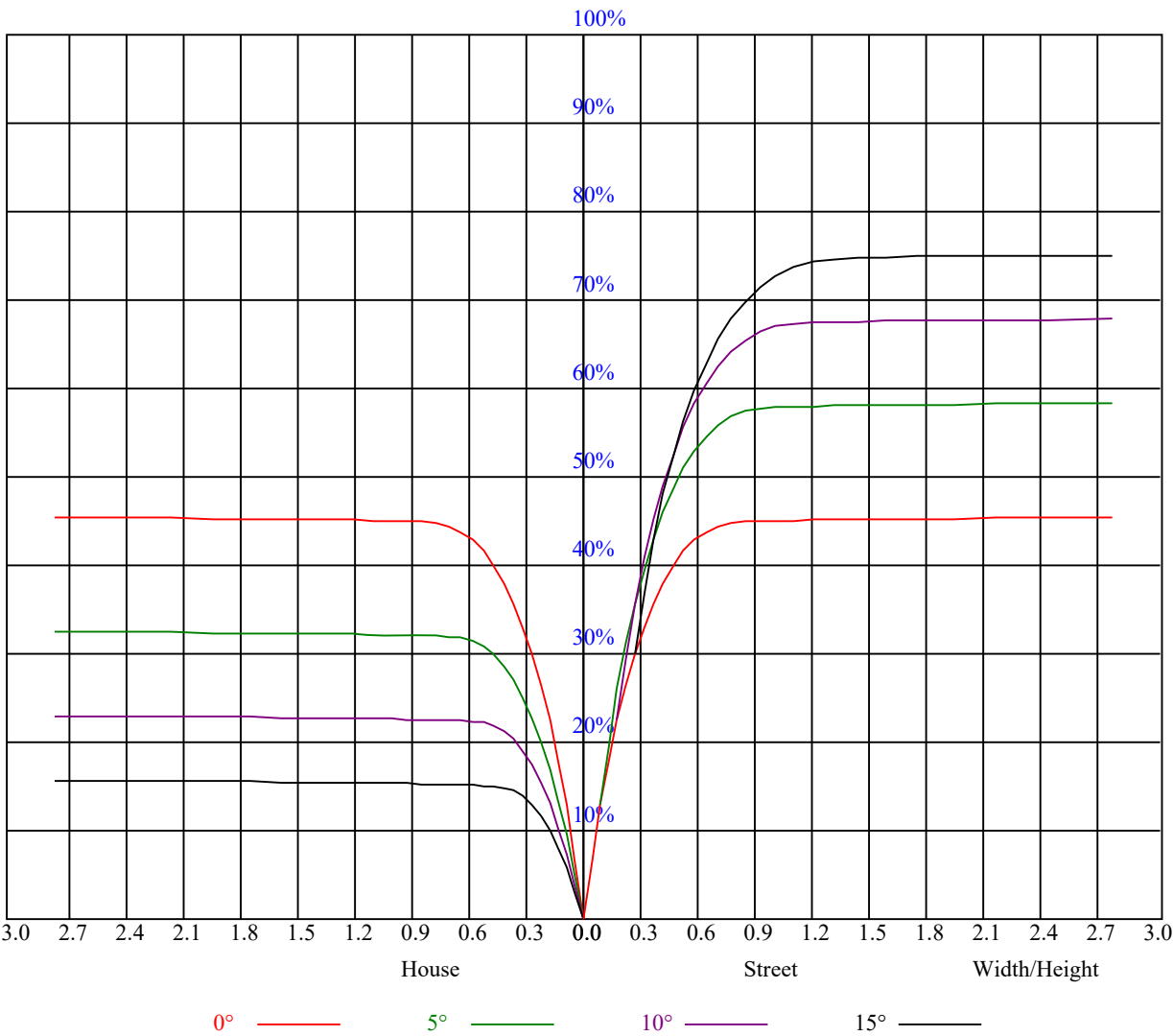
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.97	0.97	0.97	0.94	0.94	0.94	0.92
1	1.02	1.00	0.98	1.00	0.98	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	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	0.82	0.79	0.76	0.80	0.78	0.76	0.74
5	0.82	0.78	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
10	0.66	0.62	0.59	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57



Nata 3-1942-M

Intensity data(cd)									
Appendix Page: 15 Total:16									
C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	8930.41	9889.29	9194.76	6920.28	4792.16	3365.81	2706.34	2366.86	2148.15
45.0	9552.60	8369.44	6332.04	4247.89	3054.16	2529.92	2247.21	2040.19	1869.89
90.0	9018.34	6948.10	4789.93	3217.78	2578.90	2273.37	2074.14	1895.49	1733.55
135.0	9264.32	6948.66	4823.32	3214.44	2568.88	2272.25	2071.35	1895.49	1741.90
180.0	8930.41	6704.90	4524.48	3142.65	2553.30	2281.72	2093.61	1899.39	1724.09
225.0	9552.60	8948.78	7131.20	4843.92	3363.03	2693.54	2367.42	2132.57	1946.14
270.0	9018.34	9729.57	8913.72	6704.90	4681.97	3299.03	2682.96	2342.93	2128.67
315.0	9264.32	9974.99	9154.13	6862.40	4803.29	3413.11	2764.77	2415.84	2202.13
360.0	8930.41	9889.29	9194.76	6920.28	4792.16	3365.81	2706.34	2366.86	2148.15
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1943.35	1737.44	1561.58	1373.48	1205.97	1062.39	941.07	824.76	720.69
45.0	1687.36	1504.82	1346.21	1176.47	1026.77	890.98	780.79	665.04	482.50
90.0	1552.12	1382.94	1228.23	1058.22	922.20	811.01	722.36	546.50	322.06
135.0	1566.04	1392.96	1234.35	1072.41	942.18	818.64	720.13	516.45	306.64
180.0	1532.09	1370.14	1198.18	1051.04	923.09	804.28	691.08	493.24	267.74
225.0	1733.55	1543.78	1369.03	1202.07	1067.95	935.50	827.82	726.59	584.84
270.0	1912.75	1705.72	1528.19	1342.87	1182.04	1045.69	926.60	810.84	718.46
315.0	1973.96	1748.57	1562.14	1360.68	1193.73	1047.86	925.43	812.46	707.39
360.0	1943.35	1737.44	1561.58	1373.48	1205.97	1062.39	941.07	824.76	720.69
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	534.81	284.94	98.17	27.77	20.09	14.97	12.47	11.02	10.24
45.0	292.17	71.57	26.55	18.25	14.19	12.30	10.91	10.13	9.68
90.0	108.41	31.61	20.54	15.19	12.80	11.30	10.30	9.57	9.13
135.0	94.05	28.22	19.59	14.41	12.47	11.02	10.35	9.79	9.29
180.0	76.91	26.38	18.59	14.02	12.13	10.85	10.18	9.74	9.29
225.0	333.13	121.04	30.66	21.31	15.42	12.69	11.19	10.24	9.63
270.0	514.78	288.83	79.53	27.55	20.93	15.53	13.30	11.74	10.69
315.0	503.26	284.05	87.37	27.66	19.98	14.86	12.52	11.13	10.30
360.0	534.81	284.94	98.17	27.77	20.09	14.97	12.47	11.02	10.24
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	9.74	9.24	8.85	8.46	8.29	8.24	8.07	8.01	8.01
45.0	8.96	8.57	8.35	8.13	8.07	7.96	7.90	7.85	7.79
90.0	8.74	8.40	8.18	8.07	8.01	7.90	7.79	7.79	7.79
135.0	8.90	8.57	8.35	8.18	8.13	8.07	7.96	7.90	7.85
180.0	8.79	8.51	8.40	8.24	8.13	8.13	8.01	7.96	7.90
225.0	9.18	8.79	8.40	8.24	8.13	8.01	7.90	7.85	7.85
270.0	10.07	9.57	8.85	8.51	8.35	8.13	8.01	7.90	7.90
315.0	9.79	9.35	8.74	8.46	8.29	8.07	8.01	7.96	7.90
360.0	9.74	9.24	8.85	8.46	8.29	8.24	8.07	8.01	8.01
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	7.90	7.85	7.85	7.79	7.79	7.74	7.79	7.79	7.68
45.0	7.74	7.68	7.68	7.62	7.62	7.62	7.62	7.57	7.57
90.0	7.68	7.68	7.62	7.68	7.68	7.57	7.62	7.57	7.57
135.0	7.85	7.79	7.74	7.74	7.74	7.68	7.68	7.68	7.62
180.0	7.85	7.79	7.79	7.79	7.74	7.74	7.74	7.68	7.68
225.0	7.74	7.74	7.68	7.68	7.68	7.62	7.62	7.62	7.57
270.0	7.79	7.79	7.74	7.74	7.74	7.62	7.68	7.68	7.62
315.0	7.85	7.79	7.79	7.79	7.74	7.68	7.74	7.68	7.62
360.0	7.90	7.85	7.85	7.79	7.79	7.74	7.79	7.79	7.68

Intensity data(cd)

Appendix Page: 16 Total:16

C/ $\gamma(^{\circ})$	90.0
0.0	7.74
45.0	7.57
90.0	7.57
135.0	7.62
180.0	7.68
225.0	7.51
270.0	7.57
315.0	7.68
360.0	7.74