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Nata

LumCAT: 2-2262-M	
Luminaire: 92.70.131.00	
Report No: 200921-B050	Voltage(V): 230.7000
Test No: 200921-C050	Current(A): 0.0920
LampCAT: OSRAM OPTO SOLERIQ S15	Power (W): 20.3300
Lamp flux(lm): 2197.0	PF: 0.9560
Number of Lamps: 1	Ballast type: AC
Length(feet)(ft.):0.000	Width(feet)(ft.):0.000
Phm Type: C	Height(feet)(ft.):0.000

Photometric Results

Lumens(lm): 2102.34
Efficiency(%): 95.69%
Lumens(lm)/Power(W): 103.56
Central intensity(cd): 12800.820
Maximum intensity(cd): 12800.820
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.8
[C90/270]Total=17.8
Field angle(10%Imax): [C0/180]Total=38.0
[C90/270]Total=38.0
Maximum s/h(1/2): C0_180=0.31 C90_270=0.31
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 95.83%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.674%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12800.826	3.063	3.063	.139%	.146%
1.0	12734.702	24.372	27.435	1.109%	1.305%
2.0	12386.097	47.403	74.838	2.158%	3.560%
3.0	11760.028	67.493	142.331	3.072%	6.770%
4.0	11046.954	84.504	226.835	3.846%	10.790%
5.0	10393.102	99.333	326.168	4.521%	15.515%
6.0	9290.878	106.498	432.667	4.848%	20.580%
7.0	8409.214	112.383	545.05	5.115%	25.926%
8.0	7408.294	113.064	658.114	5.146%	31.304%
9.0	6311.319	108.269	766.383	4.928%	36.454%
10.0	5278.728	100.520	866.903	4.575%	41.235%
11.0	4391.264	91.884	958.787	4.182%	45.606%
12.0	3605.714	82.209	1040.996	3.742%	49.516%
13.0	2961.809	73.063	1114.059	3.326%	52.991%
14.0	2505.375	66.466	1180.525	3.025%	56.153%
15.0	2178.869	61.841	1242.367	2.815%	59.095%
16.0	1897.752	57.363	1299.729	2.611%	61.823%
17.0	1692.098	54.252	1353.981	2.469%	64.404%
18.0	1456.949	49.372	1403.353	2.247%	66.752%
19.0	1278.992	45.663	1449.015	2.078%	68.924%
20.0	1139.301	42.731	1491.746	1.945%	70.957%
21.0	1040.978	40.909	1532.655	1.862%	72.903%
22.0	968.600	39.790	1572.445	1.811%	74.795%
23.0	911.188	39.042	1611.488	1.777%	76.652%
24.0	861.942	38.445	1649.933	1.750%	78.481%
25.0	818.132	37.916	1687.849	1.726%	80.284%
26.0	782.221	37.603	1725.452	1.712%	82.073%
27.0	749.785	37.328	1762.78	1.699%	83.849%
28.0	723.022	37.223	1800.003	1.694%	85.619%
29.0	695.511	36.977	1836.98	1.683%	87.378%
30.0	664.664	36.444	1873.424	1.659%	89.112%
31.0	621.521	35.103	1908.527	1.598%	90.781%
32.0	575.918	33.467	1941.994	1.523%	92.373%
33.0	508.824	30.390	1972.384	1.383%	93.819%
34.0	447.375	27.434	1999.818	1.249%	95.124%
35.0	370.931	23.331	2023.149	1.062%	96.233%
36.0	307.521	19.822	2042.971	.902%	97.176%
37.0	240.137	15.848	2058.819	.721%	97.930%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	165.886	11.200	2070.018	.510%	98.463%
39.0	135.446	9.347	2079.366	.425%	98.907%
40.0	92.957	6.552	2085.918	.298%	99.219%
41.0	37.772	2.717	2088.636	.124%	99.348%
42.0	20.493	1.504	2090.139	.068%	99.420%
43.0	12.111	0.906	2091.045	.041%	99.463%
44.0	9.437	0.719	2091.764	.033%	99.497%
45.0	8.196	0.636	2092.4	.029%	99.527%
46.0	6.920	0.546	2092.946	.025%	99.553%
47.0	6.154	0.494	2093.439	.022%	99.577%
48.0	5.708	0.465	2093.904	.021%	99.599%
49.0	5.377	0.445	2094.349	.020%	99.620%
50.0	5.139	0.432	2094.781	.020%	99.641%
51.0	4.901	0.418	2095.199	.019%	99.661%
52.0	4.687	0.405	2095.604	.018%	99.680%
53.0	4.495	0.394	2095.997	.018%	99.699%
54.0	4.327	0.384	2096.381	.017%	99.717%
55.0	4.176	0.375	2096.756	.017%	99.735%
56.0	4.014	0.365	2097.121	.017%	99.752%
57.0	3.863	0.355	2097.477	.016%	99.769%
58.0	3.648	0.339	2097.816	.015%	99.785%
59.0	3.474	0.327	2098.143	.015%	99.801%
60.0	3.266	0.310	2098.453	.014%	99.815%
61.0	3.068	0.294	2098.747	.013%	99.829%
62.0	2.854	0.276	2099.023	.013%	99.842%
63.0	2.645	0.258	2099.282	.012%	99.855%
64.0	2.465	0.243	2099.525	.011%	99.866%
65.0	2.291	0.228	2099.752	.010%	99.877%
66.0	2.152	0.216	2099.968	.010%	99.887%
67.0	1.972	0.199	2100.167	.009%	99.897%
68.0	1.839	0.187	2100.354	.009%	99.906%
69.0	1.659	0.170	2100.524	.008%	99.914%
70.0	1.514	0.156	2100.68	.007%	99.921%
71.0	1.375	0.143	2100.822	.006%	99.928%
72.0	1.230	0.128	2100.951	.006%	99.934%
73.0	1.119	0.117	2101.068	.005%	99.940%
74.0	0.986	0.104	2101.172	.005%	99.945%
75.0	0.905	0.096	2101.268	.004%	99.949%

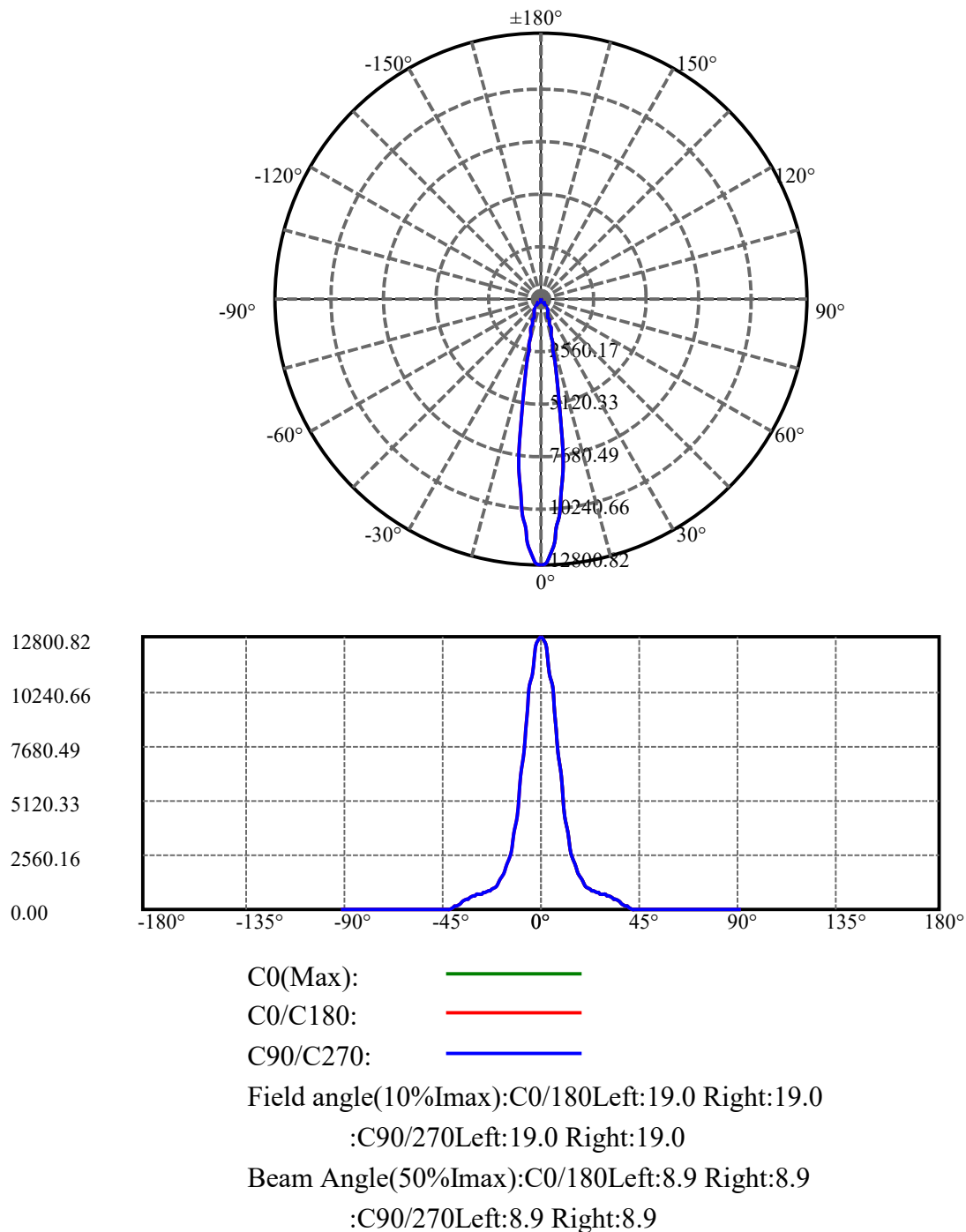
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	0.858	0.091	2101.359	.004%	99.954%
77.0	0.829	0.089	2101.448	.004%	99.958%
78.0	0.783	0.084	2101.532	.004%	99.962%
79.0	0.754	0.081	2101.613	.004%	99.966%
80.0	0.719	0.078	2101.691	.004%	99.969%
81.0	0.702	0.076	2101.767	.003%	99.973%
82.0	0.661	0.072	2101.838	.003%	99.976%
83.0	0.661	0.072	2101.91	.003%	99.980%
84.0	0.621	0.068	2101.978	.003%	99.983%
85.0	0.621	0.068	2102.046	.003%	99.986%
86.0	0.615	0.067	2102.113	.003%	99.989%
87.0	0.597	0.065	2102.179	.003%	99.993%
88.0	0.592	0.065	2102.243	.003%	99.996%
89.0	0.568	0.062	2102.306	.003%	99.999%
90.0	0.545	0.030	2102.336	.001%	100.000%

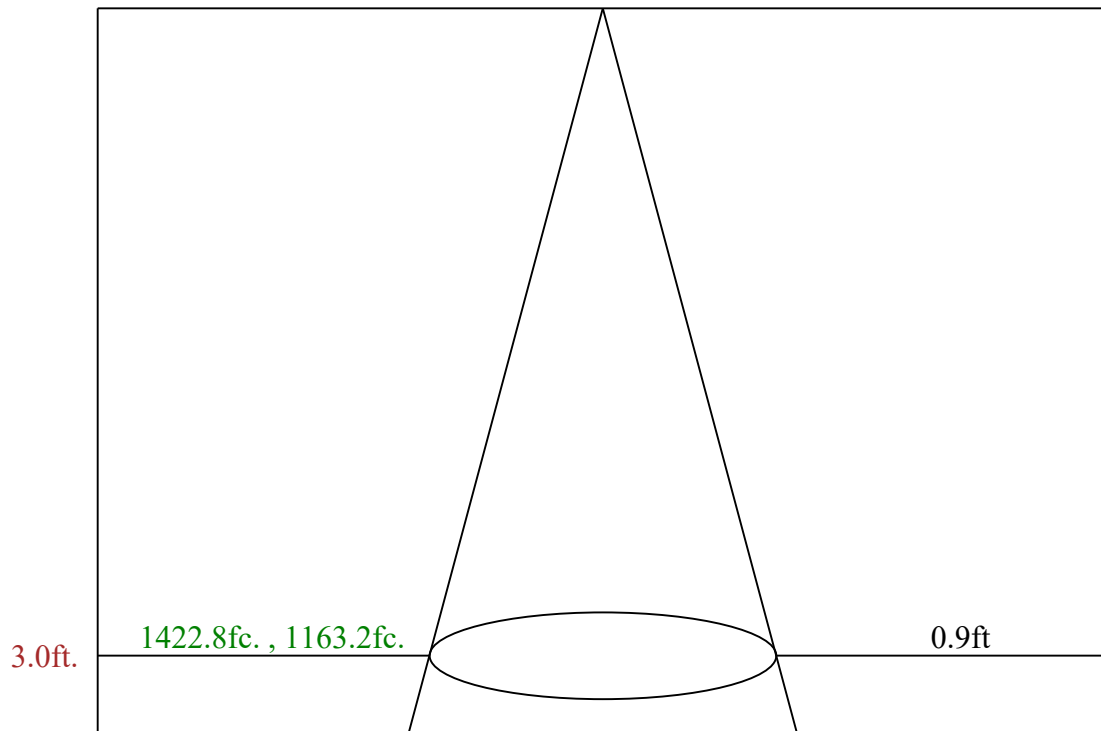
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1873.42	85.27%	89.11%
0-40	2085.92	94.95%	99.22%
0-60	2098.45	95.52%	99.82%
0-90	2102.31	95.69%	100.00%
0-120	2102.31	95.69%	100.00%
0-180	2102.34	95.69%	100.00%
60-90	4.16	0.19%	0.20%
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%
0-24.84	1681.87	76.55%	80.00%

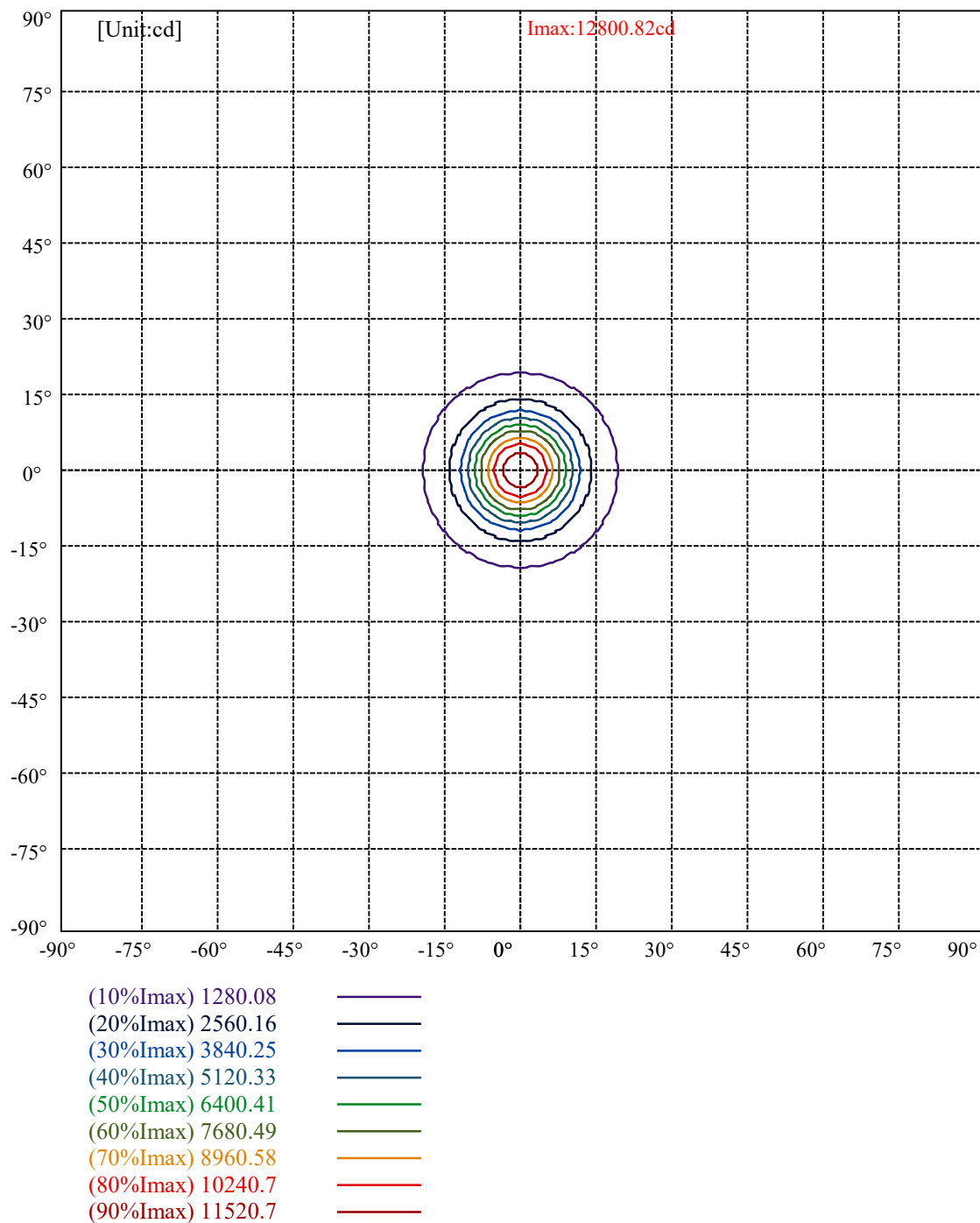
ZONAL LUMEN SUMMARY

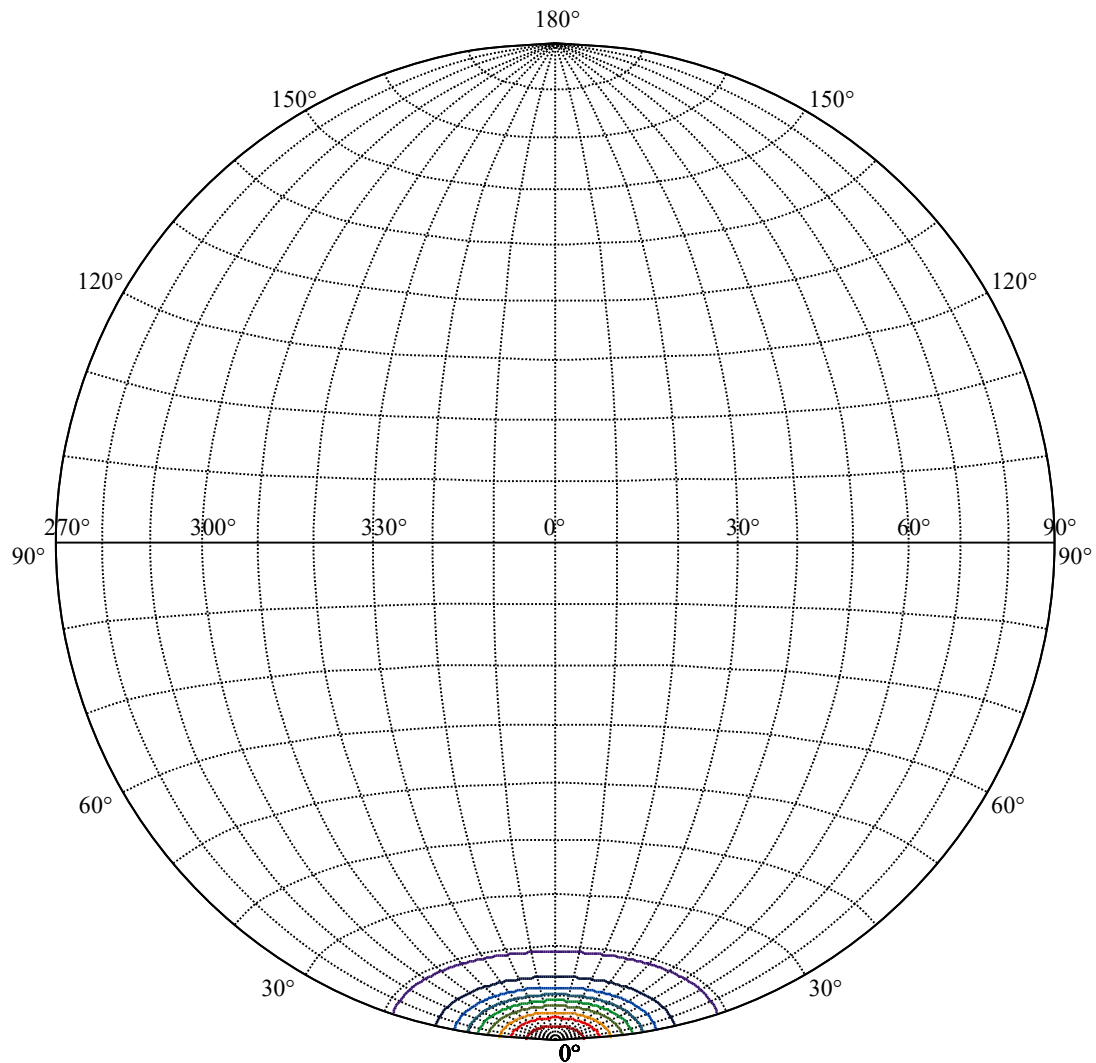
0-10	866.90
10-20	624.84
20-30	381.68
30-40	212.49
40-50	8.86
50-60	3.67
60-70	2.23
70-80	1.01
80-90	0.62
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 17.90





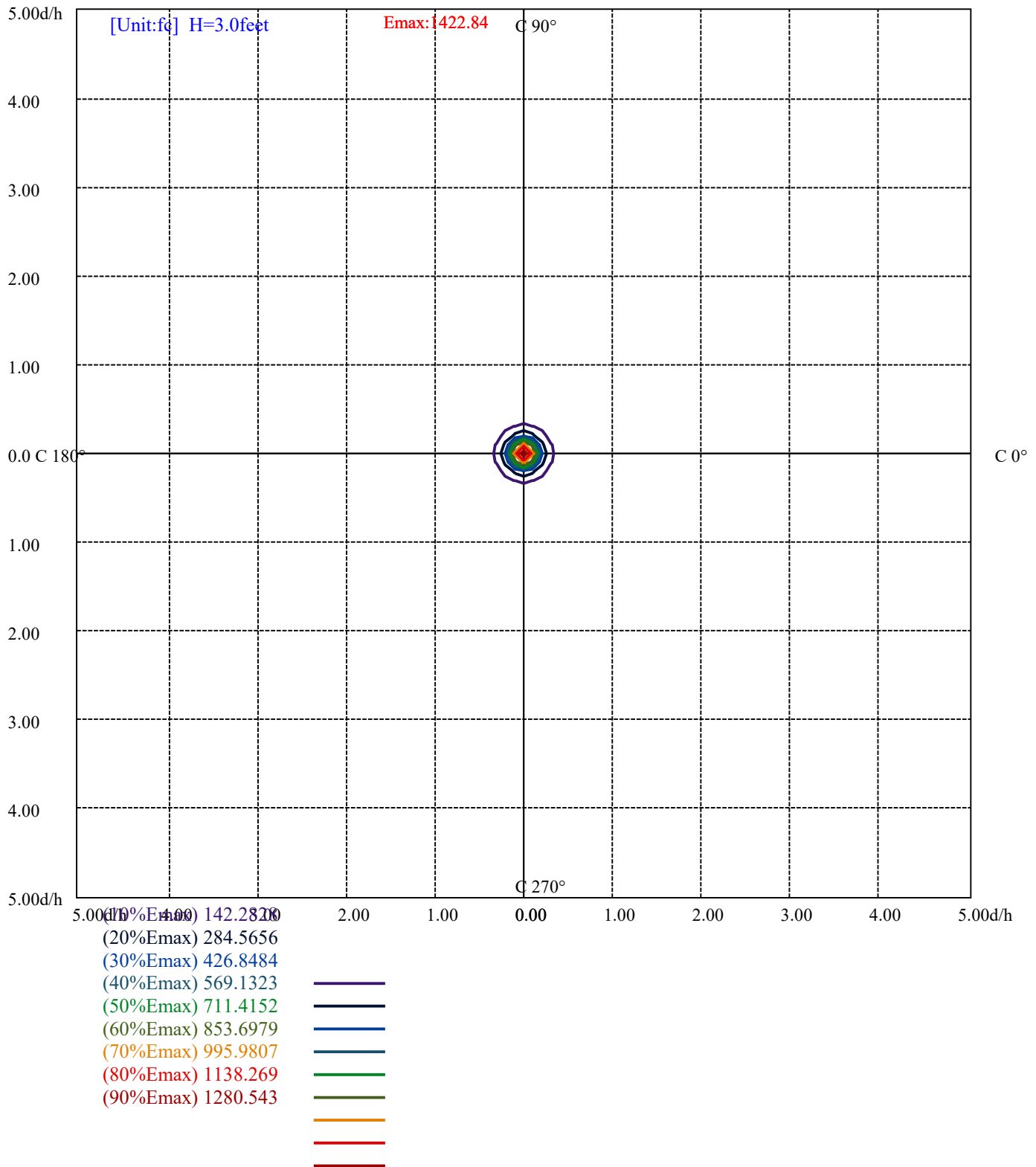
House

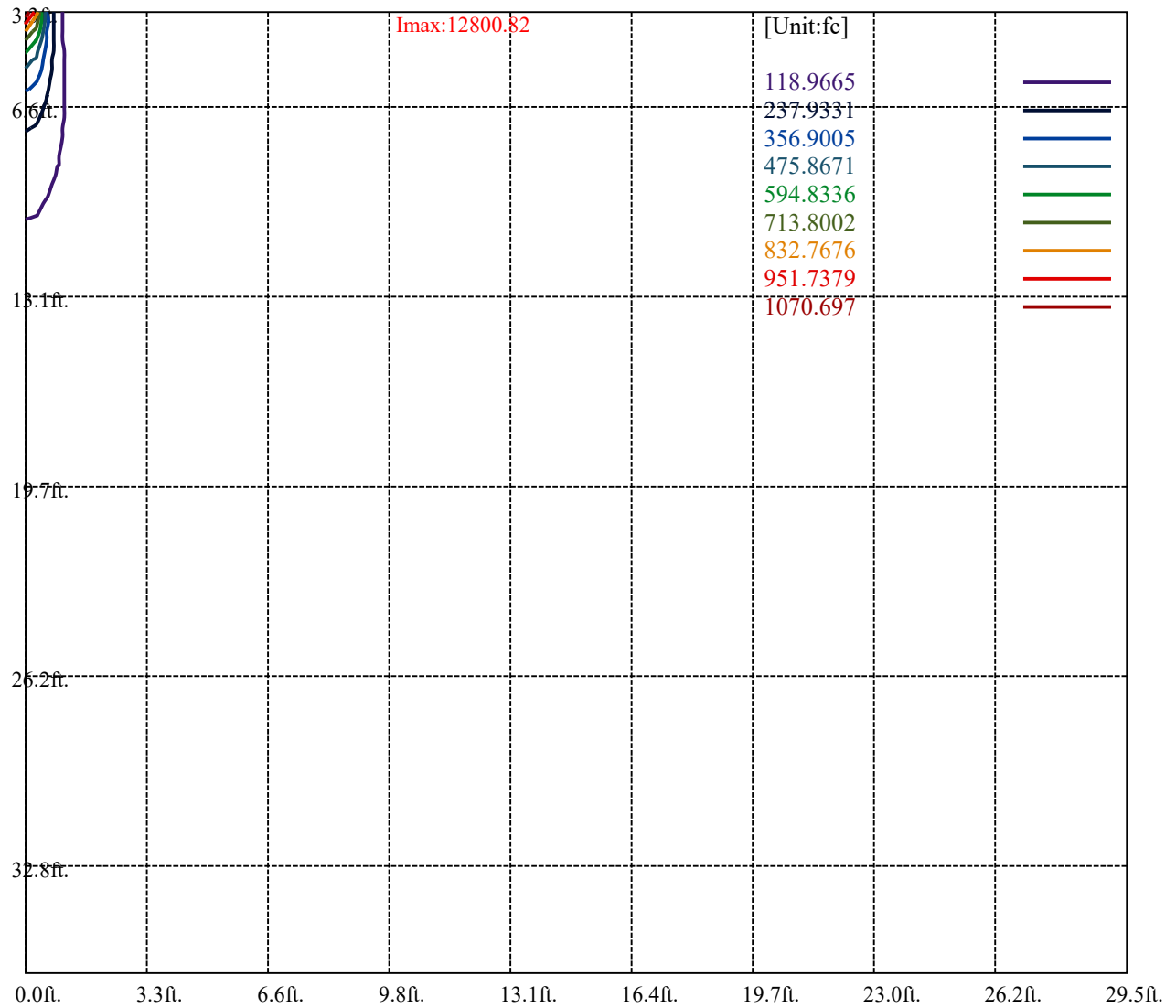
[Unit:cd]

Road

I_{max}:12800.82

(10%I _{max})	1280.08	—
(20%I _{max})	2560.16	—
(30%I _{max})	3840.25	—
(40%I _{max})	5120.33	—
(50%I _{max})	6400.41	—
(60%I _{max})	7680.49	—
(70%I _{max})	8960.58	—
(80%I _{max})	10240.7	—
(90%I _{max})	11520.7	—





Luminance Table

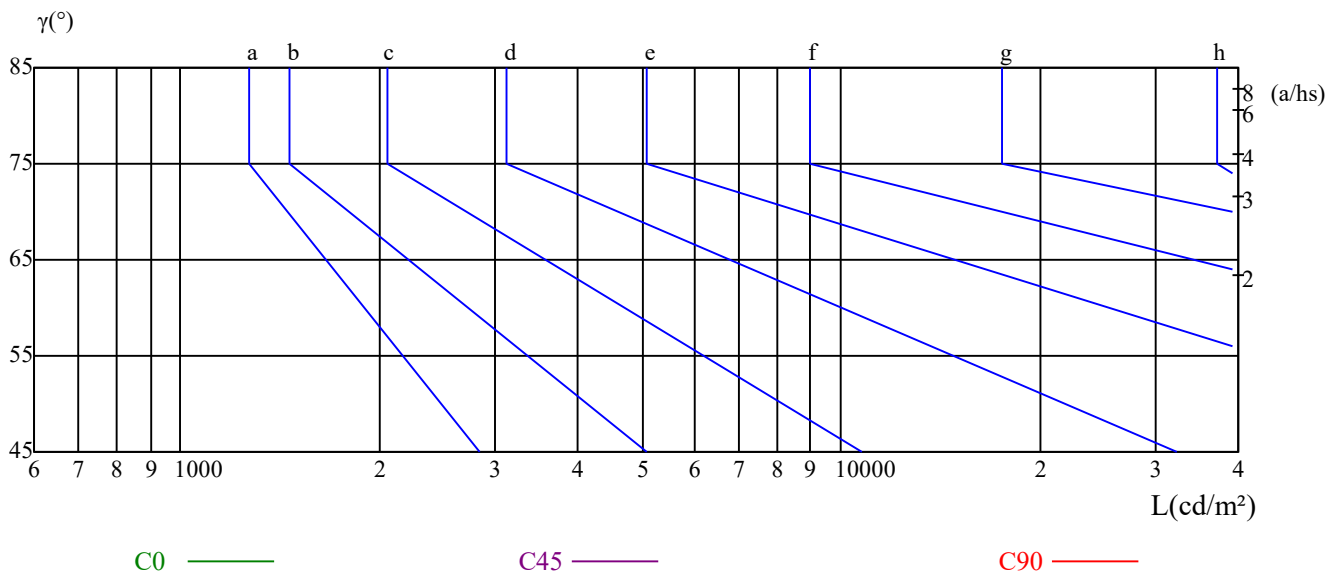
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

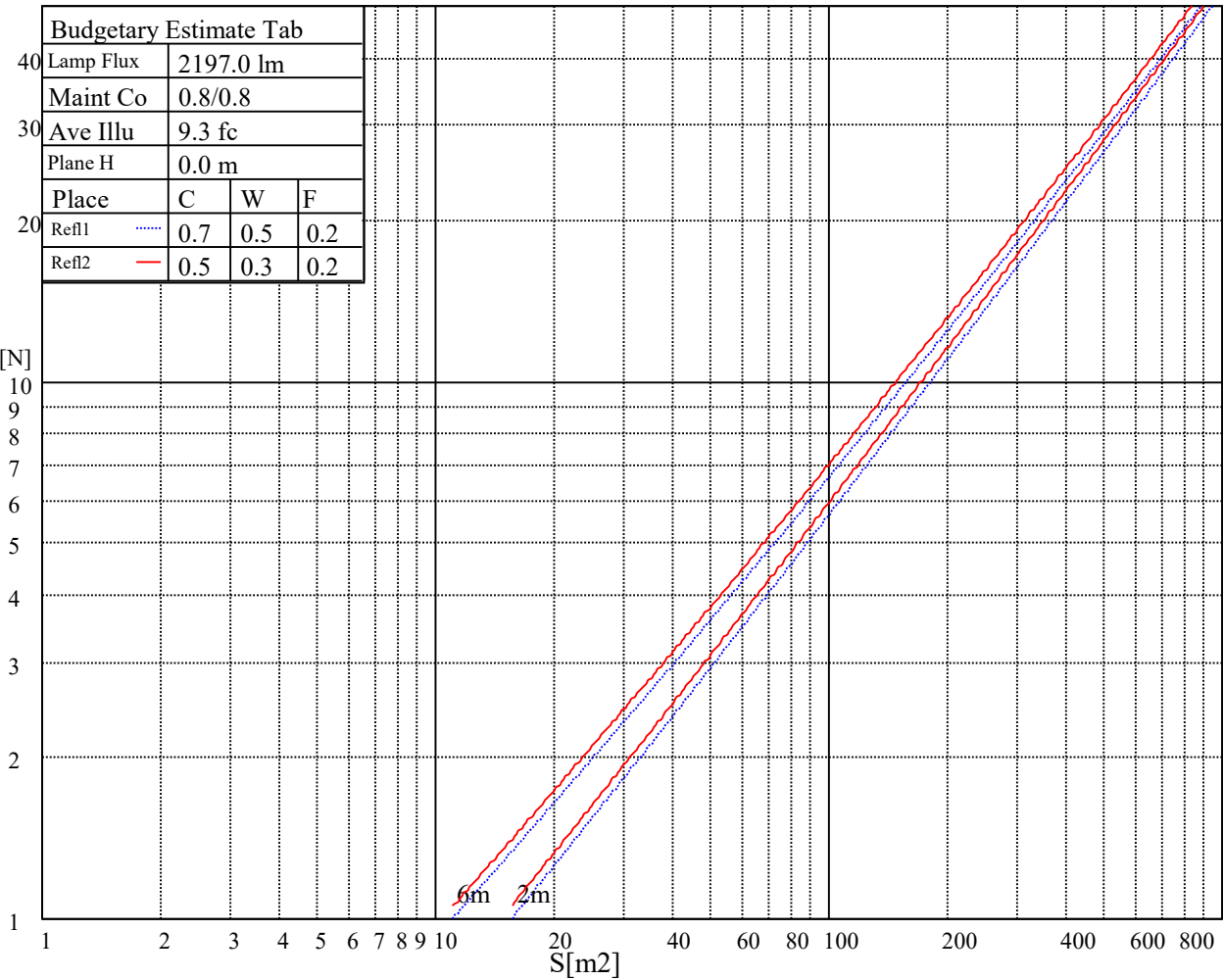
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

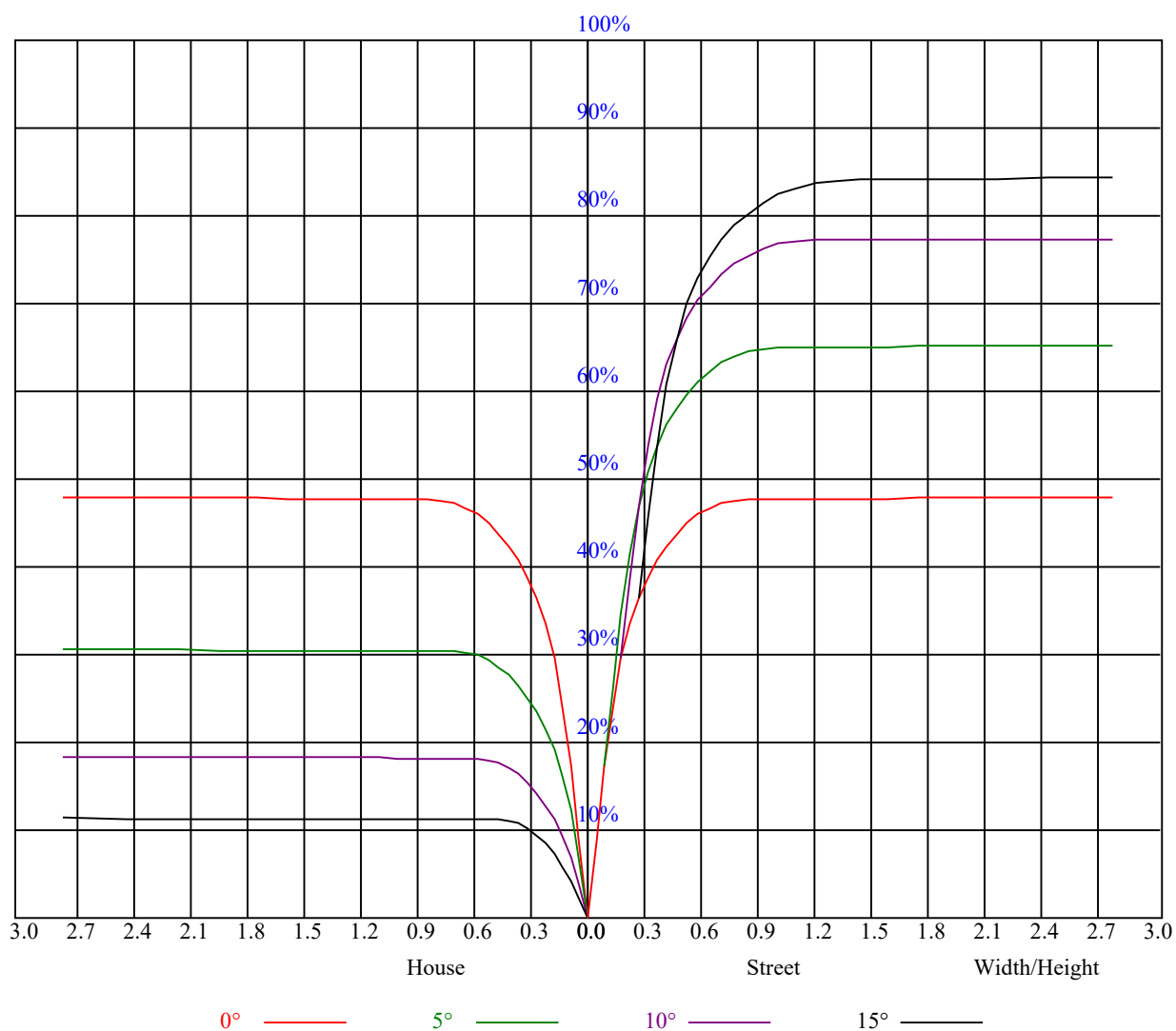
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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 RHOFC=20 CU															
0	1.14	1.14	1.14	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.08	1.06	1.04	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.95	0.95	0.94	0.92
2	1.03	1.00	0.97	1.01	0.98	0.96	0.98	0.96	0.94	0.95	0.94	0.92	0.93	0.91	0.90	0.89
3	0.98	0.95	0.92	0.97	0.94	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.90	0.88	0.87	0.86
4	0.94	0.90	0.87	0.93	0.90	0.87	0.91	0.88	0.86	0.89	0.87	0.85	0.88	0.86	0.84	0.83
5	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.87	0.84	0.82	0.85	0.83	0.81	0.80
6	0.87	0.83	0.80	0.87	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.83	0.81	0.79	0.77
7	0.84	0.80	0.77	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
8	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.73
9	0.79	0.75	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.77	0.74	0.72	0.71
10	0.77	0.73	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.69



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	12536.33	12206.86	11223.11	8859.56	8859.56	8397.38	7221.06	6054.48	4968.17
45.0	13060.69	12749.78	12225.43	11603.62	10810.12	9877.42	8800.86	7636.13	6457.49
90.0	12749.78	12359.99	11793.87	11069.98	8915.24	8915.24	7768.62	6601.11	5453.55
135.0	12856.51	12898.27	12819.39	12527.05	12039.81	11343.76	10466.74	9478.35	8378.59
180.0	12536.33	12930.76	13102.45	13107.09	12879.71	12457.44	11812.44	10977.18	9951.66
225.0	13060.69	13181.33	13097.81	12740.50	12197.58	11380.88	8825.68	8825.68	8585.78
270.0	12749.78	12953.96	12930.76	12703.38	12295.03	11937.72	10814.76	10248.64	9186.01
315.0	12856.51	12596.65	11895.96	11469.05	10378.57	8834.96	8616.87	7452.15	6285.10
360.0	12536.33	12206.86	11223.11	8859.56	8859.56	8397.38	7221.06	6054.48	4968.17
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4043.82	3304.61	2733.85	2313.90	1983.97	1728.76	1524.12	1356.14	1216.93
45.0	5348.45	4373.98	3580.48	2981.88	2606.01	2374.00	2374.00	1700.91	1504.63
90.0	4429.43	3604.84	3196.03	2662.86	2114.37	1937.11	1687.46	1489.32	1326.44
135.0	7241.71	6072.34	4977.22	4007.39	3237.10	2680.26	2327.59	2327.59	1652.66
180.0	8819.42	7612.93	6401.81	5264.92	4262.61	3459.83	2842.67	2397.20	2397.20
225.0	7388.57	6193.22	5078.61	4086.05	3280.95	2678.17	2230.84	1902.31	1653.58
270.0	8025.92	6847.28	5696.47	4666.32	3793.94	3116.45	2596.73	2429.68	2350.79
315.0	5193.23	4220.62	3465.63	2862.39	2415.53	2068.43	1847.55	1578.87	1434.56
360.0	4043.82	3304.61	2733.85	2313.90	1983.97	1728.76	1524.12	1356.14	1216.93
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1147.79	996.05	918.46	918.46	869.51	824.59	788.25	759.90	733.87
45.0	1344.54	1210.90	1100.92	1011.36	943.15	881.90	832.71	791.41	757.07
90.0	1195.12	1087.93	918.97	899.30	886.95	841.52	801.01	767.60	744.40
135.0	1525.97	1357.53	1211.82	1094.89	1006.72	936.19	882.82	840.13	800.69
180.0	2034.09	1613.68	1431.31	1278.18	1156.14	1054.52	970.53	906.95	853.13
225.0	1456.83	1293.49	1159.85	1054.52	898.74	866.91	822.92	790.11	790.11
270.0	1670.29	1510.20	1309.73	1175.63	1092.10	986.30	931.08	871.69	823.43
315.0	1280.96	1162.17	1063.33	895.49	895.49	865.75	822.22	784.45	755.08
360.0	1147.79	996.05	918.46	918.46	869.51	824.59	788.25	759.90	733.87
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	711.13	683.47	643.66	588.44	523.15	451.55	376.05	299.16	225.43
45.0	730.16	703.71	679.58	663.34	591.87	554.29	484.22	413.22	338.98
90.0	711.22	692.11	667.56	625.61	574.19	506.82	432.94	355.40	275.59
135.0	769.60	744.08	717.16	693.96	668.44	627.61	564.03	526.45	423.89
180.0	805.33	768.21	738.05	712.52	688.86	659.16	617.40	560.78	493.50
225.0	760.69	736.98	714.57	694.43	668.49	619.95	556.24	484.68	412.57
270.0	782.13	750.11	724.59	699.53	678.18	647.56	597.44	541.30	473.08
315.0	728.02	705.52	678.93	639.48	578.97	540.41	442.27	398.00	324.41
360.0	711.13	683.47	643.66	588.44	523.15	451.55	376.05	299.16	225.43
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	170.67	98.00	58.79	26.73	15.50	14.20	11.97	9.93	9.33
45.0	264.73	264.73	112.53	56.43	24.78	13.74	11.97	9.79	7.98
90.0	200.18	134.15	77.59	37.08	16.47	11.51	9.88	7.80	6.36
135.0	351.51	308.81	250.35	250.35	87.93	38.28	16.89	10.39	8.58
180.0	452.20	346.86	270.76	254.52	254.52	96.05	49.05	21.53	12.67
225.0	369.09	266.77	196.15	155.03	90.72	40.88	19.07	11.97	10.49
270.0	399.30	319.95	244.78	244.78	229.00	74.66	33.83	15.68	12.11
315.0	252.48	181.81	116.15	58.65	24.73	12.85	11.28	9.79	7.98
360.0	170.67	98.00	58.79	26.73	15.50	14.20	11.97	9.93	9.33

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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	8.82	8.17	7.80	7.47	7.15	6.87	6.50	6.22	6.03		
45.0	7.19	6.77	6.64	6.31	5.89	5.75	5.43	5.15	4.92		
90.0	5.75	5.43	5.34	5.15	5.10	5.06	5.06	5.01	5.01		
135.0	6.82	4.97	4.18	3.53	3.25	3.06	2.78	2.69	2.46		
180.0	11.00	8.49	6.26	5.48	5.06	4.73	4.50	4.18	4.04		
225.0	8.40	6.54	5.85	5.52	4.97	4.64	4.41	4.08	3.81		
270.0	10.81	8.72	7.15	6.54	6.31	6.03	5.85	5.71	5.38		
315.0	6.77	6.26	6.03	5.66	5.29	4.97	4.69	4.45	4.32		
360.0	8.82	8.17	7.80	7.47	7.15	6.87	6.50	6.22	6.03		
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	5.80	5.48	5.15	4.97	4.69	4.50	4.22	3.94	3.62		
45.0	4.73	4.50	4.22	3.99	3.76	3.48	3.25	2.97	2.78		
90.0	5.01	4.92	4.73	4.55	4.27	4.04	3.71	3.53	3.29		
135.0	2.37	2.37	2.37	2.27	2.18	2.13	2.04	1.90	1.81		
180.0	3.90	3.76	3.67	3.62	3.48	3.29	3.06	2.92	2.74		
225.0	3.57	3.34	3.16	3.06	2.78	2.64	2.51	2.37	2.18		
270.0	5.15	5.10	4.97	4.83	4.64	4.45	4.27	4.08	3.76		
315.0	4.08	3.94	3.85	3.62	3.39	3.25	3.06	2.83	2.64		
360.0	5.80	5.48	5.15	4.97	4.69	4.50	4.22	3.94	3.62		
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	3.39	3.11	2.83	2.60	2.37	2.13	1.81	1.53	1.35		
45.0	2.55	2.37	2.18	2.13	1.95	1.81	1.67	1.48	1.44		
90.0	3.02	2.74	2.55	2.37	2.13	2.00	1.62	1.44	1.25		
135.0	1.72	1.67	1.53	1.44	1.39	1.35	1.21	1.21	1.16		
180.0	2.51	2.27	2.13	2.00	1.81	1.67	1.53	1.48	1.39		
225.0	2.00	1.86	1.76	1.67	1.48	1.44	1.39	1.30	1.16		
270.0	3.53	3.39	3.20	3.02	2.74	2.55	2.41	2.18	1.90		
315.0	2.46	2.32	2.13	2.00	1.90	1.76	1.62	1.48	1.35		
360.0	3.39	3.11	2.83	2.60	2.37	2.13	1.81	1.53	1.35		
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	1.16	0.97	0.93	0.93	0.88	0.84	0.88	0.79	0.74		
45.0	1.30	1.16	1.07	1.02	0.88	0.88	0.84	0.84	0.79		
90.0	0.97	0.93	0.79	0.74	0.74	0.74	0.65	0.60	0.56		
135.0	1.07	1.07	0.97	0.88	0.93	0.84	0.79	0.79	0.79		
180.0	1.25	1.16	1.07	0.97	0.88	0.88	0.79	0.79	0.79		
225.0	1.11	1.07	0.93	0.84	0.79	0.79	0.74	0.74	0.70		
270.0	1.72	1.53	1.21	0.97	0.88	0.84	0.79	0.74	0.70		
315.0	1.25	1.07	0.93	0.88	0.88	0.84	0.79	0.74	0.70		
360.0	1.16	0.97	0.93	0.93	0.88	0.84	0.88	0.79	0.74		
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	0.74	0.70	0.74	0.70	0.74	0.70	0.65	0.60	0.56		
45.0	0.70	0.70	0.70	0.70	0.60	0.65	0.65	0.65	0.60		
90.0	0.60	0.51	0.56	0.51	0.51	0.56	0.51	0.51	0.56		
135.0	0.74	0.70	0.70	0.70	0.65	0.65	0.65	0.65	0.60		
180.0	0.74	0.74	0.74	0.65	0.70	0.65	0.60	0.60	0.56		
225.0	0.65	0.65	0.60	0.56	0.56	0.56	0.51	0.56	0.56		
270.0	0.74	0.65	0.60	0.56	0.56	0.56	0.60	0.56	0.51		
315.0	0.70	0.65	0.65	0.60	0.65	0.60	0.60	0.60	0.60		
360.0	0.74	0.70	0.74	0.70	0.74	0.70	0.65	0.60	0.56		

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	0.46
45.0	0.56
90.0	0.56
135.0	0.60
180.0	0.46
225.0	0.56
270.0	0.56
315.0	0.60
360.0	0.46