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Nata

LumCAT: LN01D04524DA-N

Luminaire: 97.70.234.00

Report No: 210709-B015

Test No: 210709-C015

LampCAT: Fortimo LED SLM 1204 G7N

Lamp flux(lm): 2429.4

Number of Lamps: 1

Length(mm): 570

Phm Type: C

Voltage(V): 35.9900

Current(A): 0.5100

Power (W): 18.3540

PF: 0.0000

Ballast type: DC

Width(mm): 45

Height(mm): 20

Photometric Results

Lumens(lm): 2181.74

Efficiency(%): 89.81%

Lumens(lm)/Power(W): 118.87

Central intensity(cd): 7228.968

Maximum intensity(cd): 7228.968

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=29.3

[C90/270]Total=29.3

Field angle(10%Imax): [C0/180]Total=49.7

[C90/270]Total=49.7

Maximum s/h(1/2): C0_180=0.49 C90_270=0.49

Maximum s/h(1/4): C0_180=0.48 C90_270=0.48

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.81%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.149%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7228.969	0.000	0	.000%	.000%
1.0	7204.219	6.906	6.906	.284%	.317%
2.0	7143.891	20.594	27.5	.848%	1.260%
3.0	7037.859	33.918	61.418	1.396%	2.815%
4.0	6898.430	46.649	108.067	1.920%	4.953%
5.0	6734.180	58.647	166.714	2.414%	7.641%
6.0	6514.453	69.625	236.339	2.866%	10.833%
7.0	6264.914	79.321	315.66	3.265%	14.468%
8.0	6024.234	87.951	403.611	3.620%	18.500%
9.0	5718.516	95.169	498.78	3.917%	22.862%
10.0	5375.672	100.398	599.178	4.133%	27.463%
11.0	5060.391	104.278	703.456	4.292%	32.243%
12.0	4696.594	106.658	810.114	4.390%	37.132%
13.0	4267.336	106.379	916.493	4.379%	42.007%
14.0	3882.797	104.321	1020.814	4.294%	46.789%
15.0	3483.773	101.132	1121.946	4.163%	51.424%
16.0	3062.039	95.914	1217.86	3.948%	55.821%
17.0	2681.930	89.449	1307.309	3.682%	59.920%
18.0	2313.703	82.367	1389.676	3.390%	63.696%
19.0	1975.078	74.616	1464.292	3.071%	67.116%
20.0	1682.381	66.942	1531.234	2.755%	70.184%
21.0	1404.584	59.276	1590.51	2.440%	72.901%
22.0	1173.874	51.815	1642.325	2.133%	75.276%
23.0	995.027	45.509	1687.835	1.873%	77.362%
24.0	838.392	40.085	1727.92	1.650%	79.199%
25.0	703.027	35.048	1762.968	1.443%	80.806%
26.0	601.882	30.803	1793.771	1.268%	82.217%
27.0	510.553	27.216	1820.987	1.120%	83.465%
28.0	433.139	23.892	1844.879	.983%	84.560%
29.0	376.467	21.182	1866.061	.872%	85.531%
30.0	331.446	19.114	1885.174	.787%	86.407%
31.0	286.713	17.202	1902.377	.708%	87.195%
32.0	252.752	15.455	1917.832	.636%	87.904%
33.0	227.025	14.134	1931.966	.582%	88.552%
34.0	200.004	12.923	1944.889	.532%	89.144%
35.0	179.733	11.793	1956.682	.485%	89.684%
36.0	162.802	10.906	1967.589	.449%	90.184%
37.0	147.382	10.116	1977.705	.416%	90.648%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	134.149	9.397	1987.102	.387%	91.079%
39.0	122.063	8.745	1995.848	.360%	91.480%
40.0	111.762	8.155	2004.002	.336%	91.853%
41.0	102.874	7.643	2011.646	.315%	92.204%
42.0	94.676	7.177	2018.823	.295%	92.533%
43.0	86.850	6.724	2025.547	.277%	92.841%
44.0	80.501	6.316	2031.863	.260%	93.130%
45.0	74.770	5.967	2037.831	.246%	93.404%
46.0	68.745	5.613	2043.443	.231%	93.661%
47.0	63.795	5.271	2048.715	.217%	93.903%
48.0	59.470	4.983	2053.698	.205%	94.131%
49.0	55.090	4.704	2058.402	.194%	94.347%
50.0	51.209	4.432	2062.834	.182%	94.550%
51.0	47.974	4.196	2067.03	.173%	94.742%
52.0	44.958	3.988	2071.018	.164%	94.925%
53.0	42.173	3.790	2074.808	.156%	95.099%
54.0	39.959	3.620	2078.428	.149%	95.265%
55.0	37.941	3.477	2081.906	.143%	95.424%
56.0	36.281	3.354	2085.26	.138%	95.578%
57.0	34.741	3.247	2088.507	.134%	95.727%
58.0	33.342	3.148	2091.655	.130%	95.871%
59.0	32.217	3.065	2094.72	.126%	96.011%
60.0	31.127	2.993	2097.713	.123%	96.149%
61.0	30.094	2.922	2100.634	.120%	96.282%
62.0	29.377	2.866	2103.5	.118%	96.414%
63.0	29.018	2.840	2106.34	.117%	96.544%
64.0	28.997	2.847	2109.187	.117%	96.674%
65.0	29.524	2.896	2112.083	.119%	96.807%
66.0	30.122	2.976	2115.059	.122%	96.944%
67.0	30.902	3.068	2118.127	.126%	97.084%
68.0	31.634	3.168	2121.295	.130%	97.229%
69.0	32.442	3.269	2124.564	.135%	97.379%
70.0	33.223	3.372	2127.937	.139%	97.534%
71.0	34.024	3.476	2131.412	.143%	97.693%
72.0	34.741	3.576	2134.988	.147%	97.857%
73.0	35.515	3.674	2138.662	.151%	98.025%
74.0	36.007	3.760	2142.422	.155%	98.198%
75.0	36.366	3.824	2146.246	.157%	98.373%

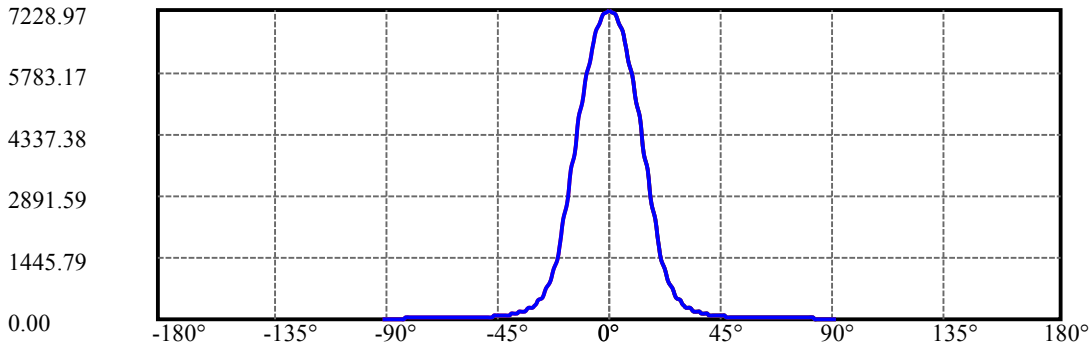
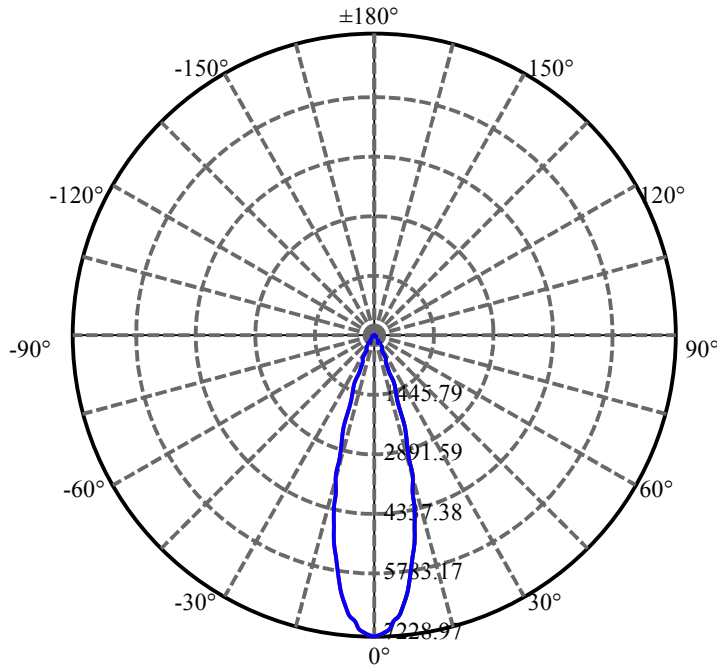
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	36.148	3.849	2150.095	.158%	98.549%
77.0	35.121	3.800	2153.895	.156%	98.724%
78.0	33.441	3.670	2157.565	.151%	98.892%
79.0	31.521	3.490	2161.055	.144%	99.052%
80.0	28.737	3.249	2164.304	.134%	99.201%
81.0	25.699	2.944	2167.248	.121%	99.336%
82.0	22.092	2.592	2169.839	.107%	99.454%
83.0	18.675	2.216	2172.056	.091%	99.556%
84.0	16.109	1.895	2173.951	.078%	99.643%
85.0	13.725	1.628	2175.579	.067%	99.718%
86.0	12.305	1.423	2177.002	.059%	99.783%
87.0	11.243	1.289	2178.29	.053%	99.842%
88.0	10.645	1.199	2179.489	.049%	99.897%
89.0	10.209	1.143	2180.632	.047%	99.949%
90.0	10.020	1.109	2181.742	.046%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1885.17	77.60%	86.41%
0-40	2004.00	82.49%	91.85%
0-60	2097.71	86.35%	96.15%
0-90	2180.63	89.76%	99.95%
0-120	2180.63	89.76%	99.95%
0-180	2181.74	89.81%	100.00%
60-90	85.91	3.54%	3.94%
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%
0-24.50	1745.39	71.84%	80.00%

ZONAL LUMEN SUMMARY

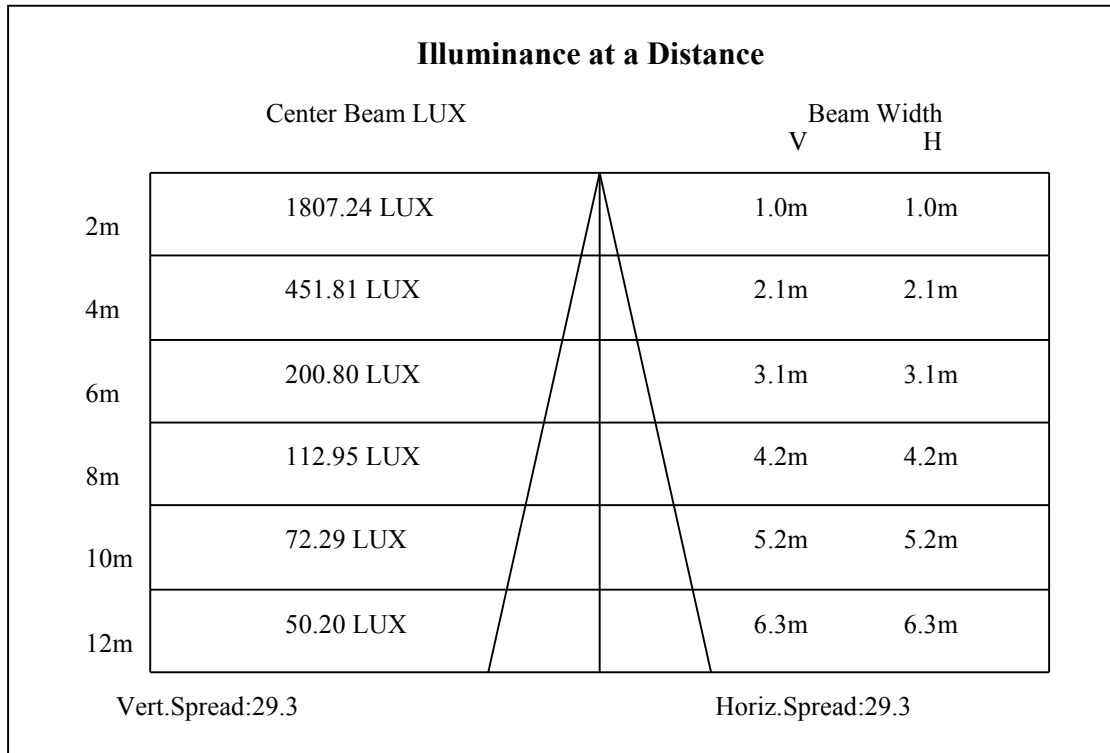
0-10	599.18
10-20	932.06
20-30	353.94
30-40	118.83
40-50	58.83
50-60	34.88
60-70	30.22
70-80	36.37
80-90	16.33
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

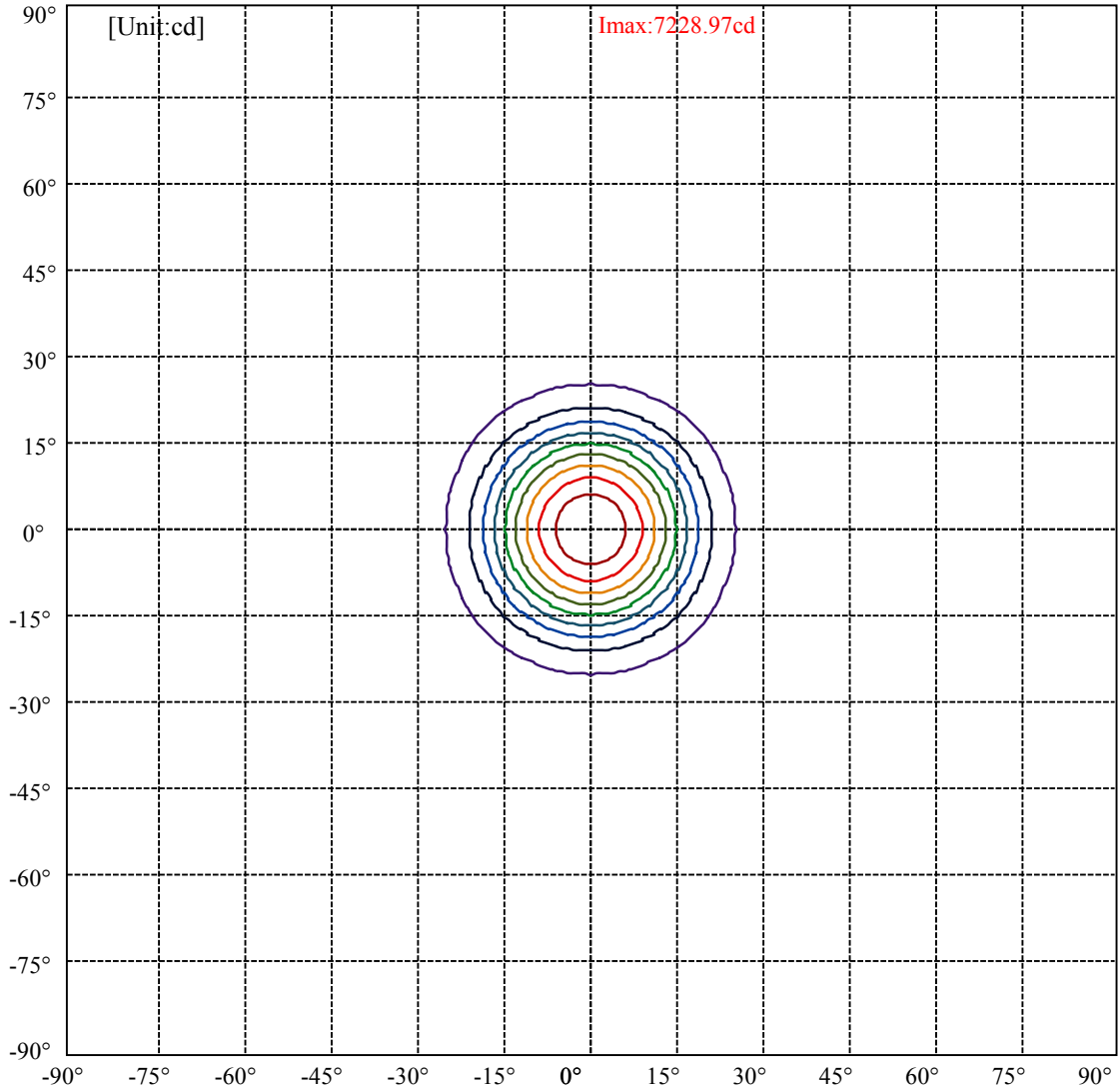


C0(Max): ———
C0/C180: ———
C90/C270: ———

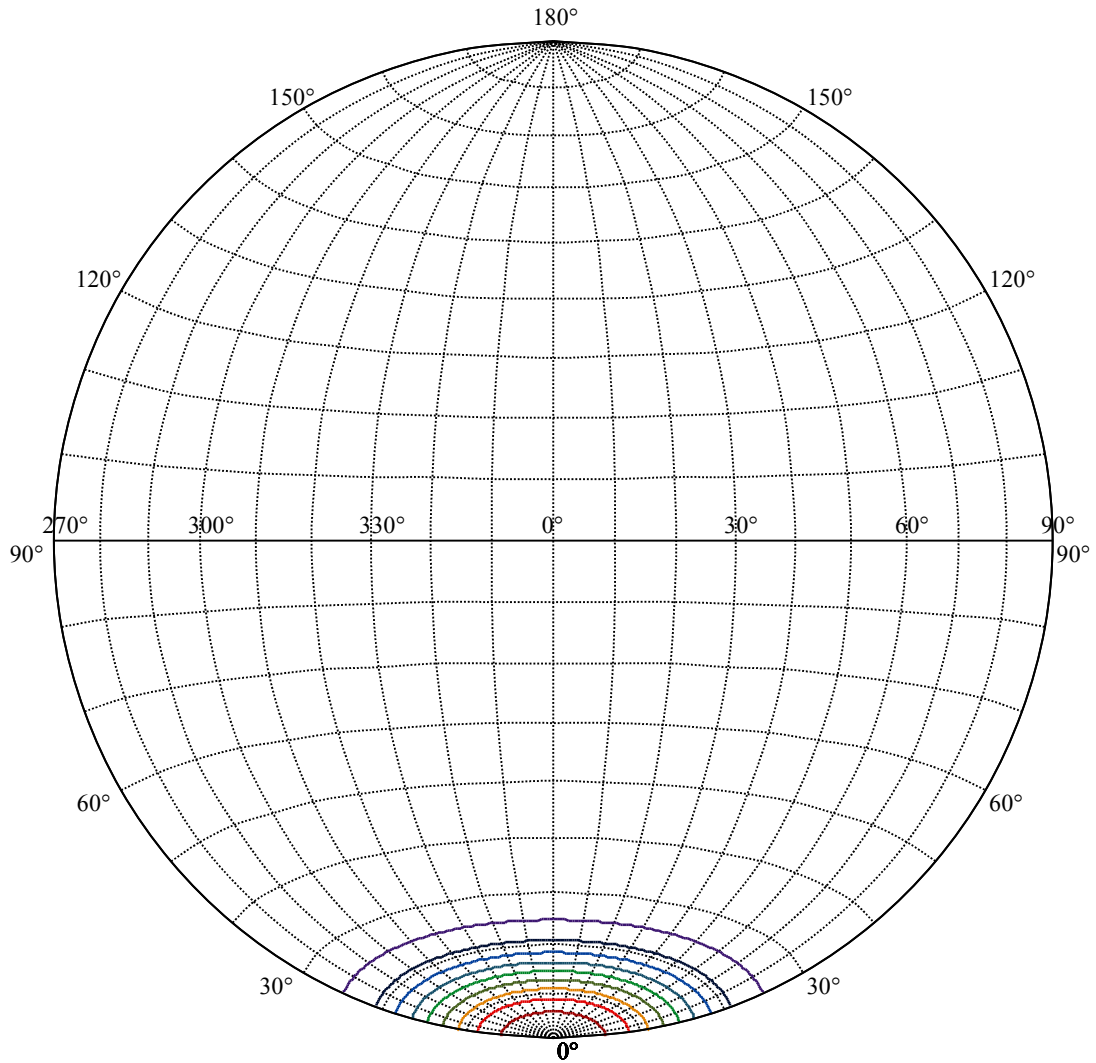
Field angle(10%Imax):C0/180Left:24.9 Right:24.9
:C90/270Left:24.9 Right:24.9

Beam Angle(50%Imax):C0/180Left:14.7 Right:14.7
:C90/270Left:14.7 Right:14.7





(10%Imax) 722.897	—
(20%Imax) 1445.79	—
(30%Imax) 2168.69	—
(40%Imax) 2891.59	—
(50%Imax) 3614.48	—
(60%Imax) 4337.38	—
(70%Imax) 5060.28	—
(80%Imax) 5783.17	—
(90%Imax) 6506.07	—



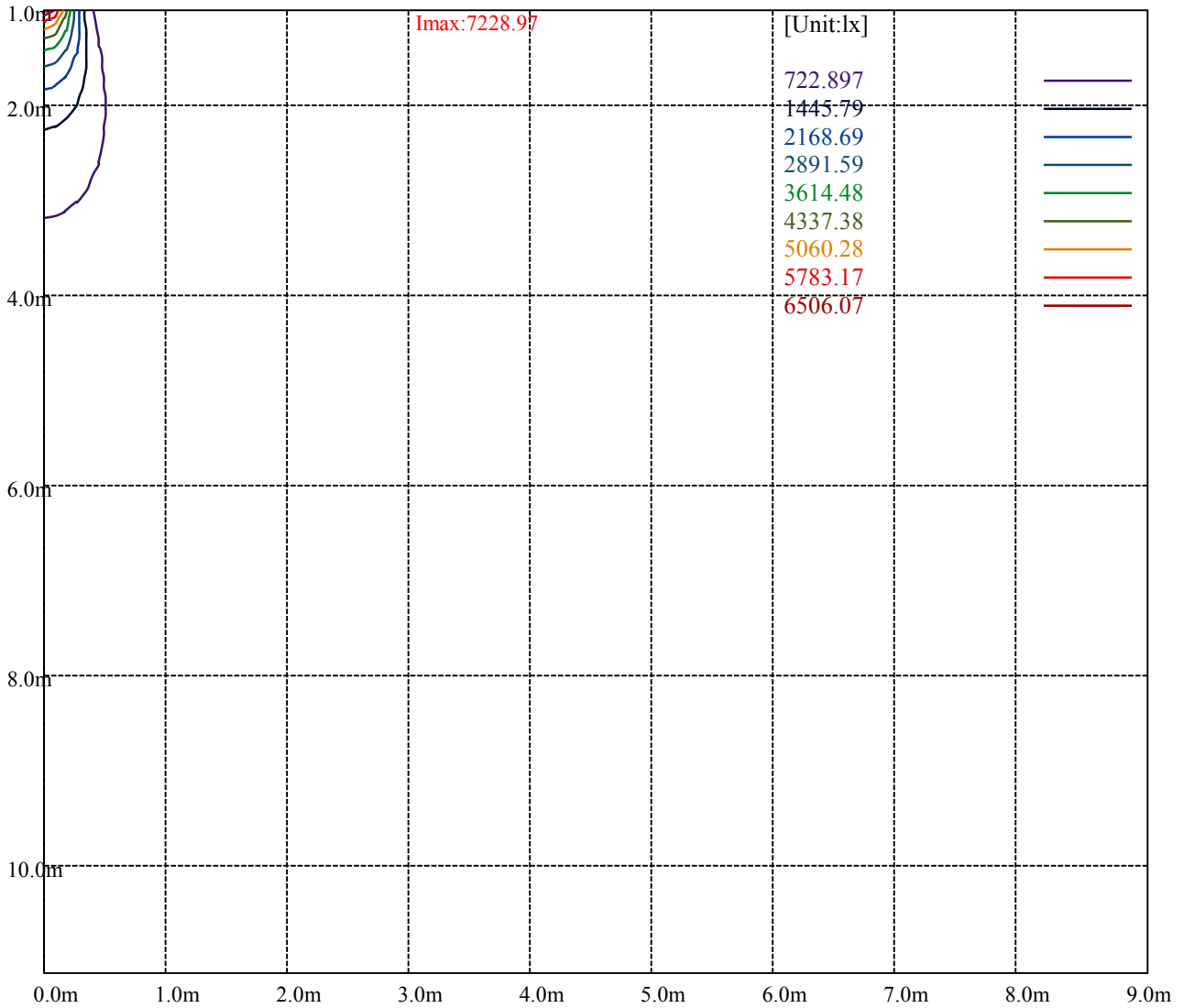
House

[Unit:cd]

Road

Imax:7228.97

(10%Imax) 722.897	—
(20%Imax) 1445.79	—
(30%Imax) 2168.69	—
(40%Imax) 2891.59	—
(50%Imax) 3614.48	—
(60%Imax) 4337.38	—
(70%Imax) 5060.28	—
(80%Imax) 5783.17	—
(90%Imax) 6506.07	—



Luminance Table

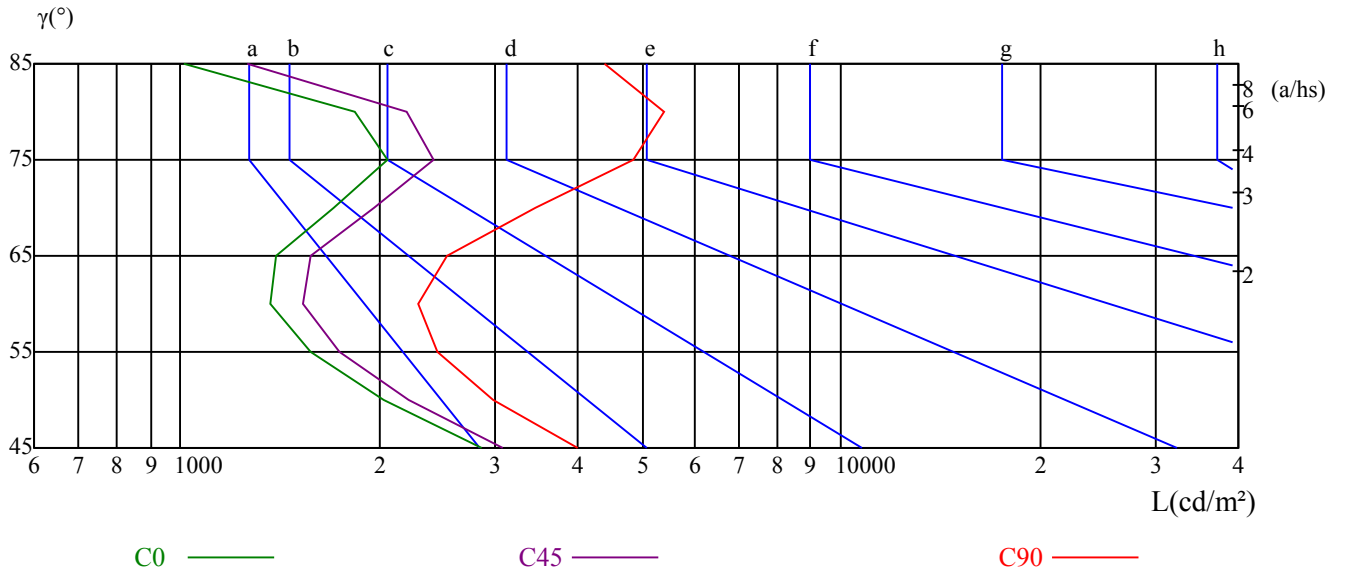
γ	45	50	55	60	65	70	75	80	85
C0	2854	2030	1578	1371	1394	1705	2060	1833	1010
C45	3079	2212	1737	1529	1577	1961	2418	2207	1259
C90	3983	2981	2456	2288	2533	3454	4844	5381	4382

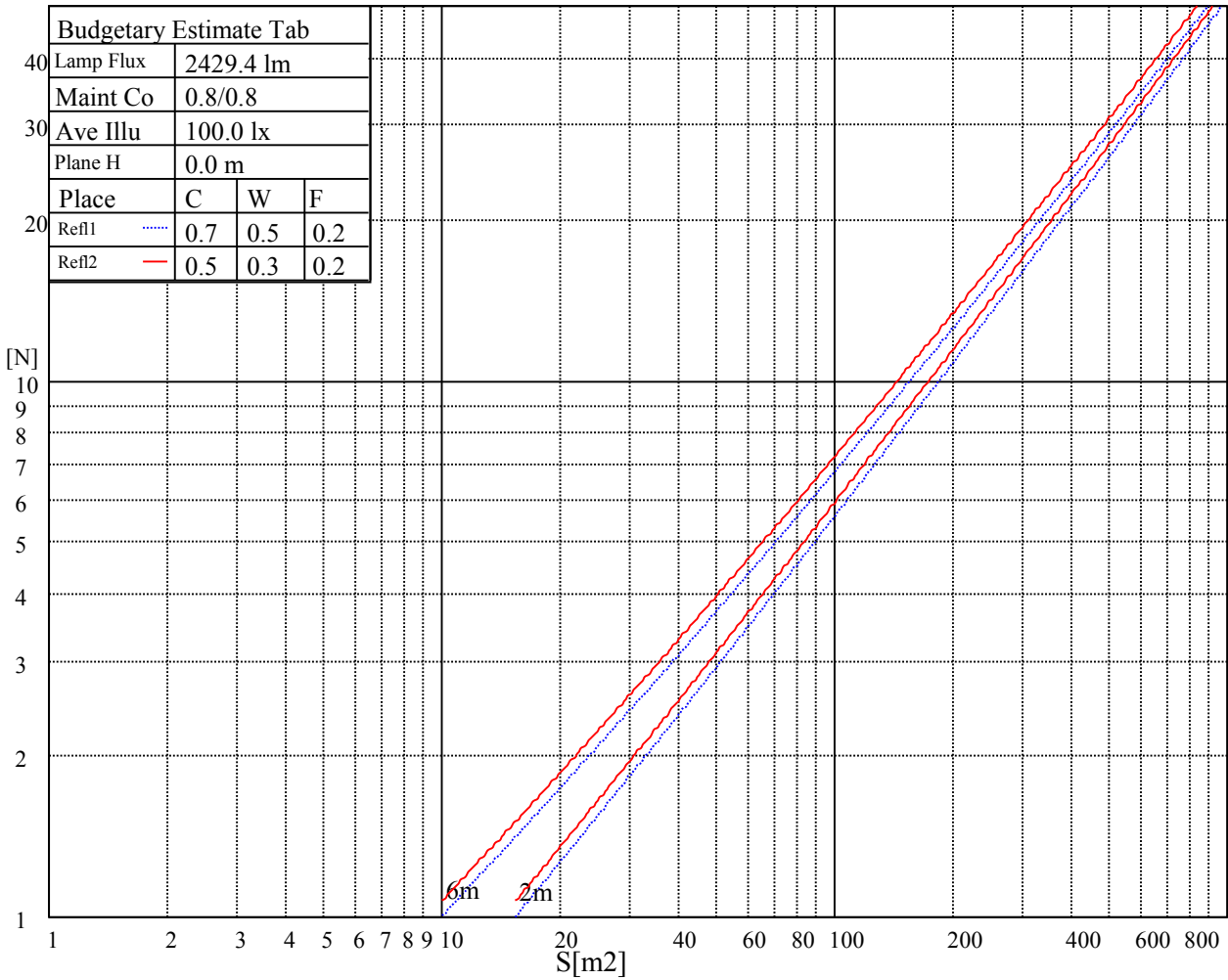
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2724	2724	2724	5478	5478	5478	6139	6139	6139

Glare Table

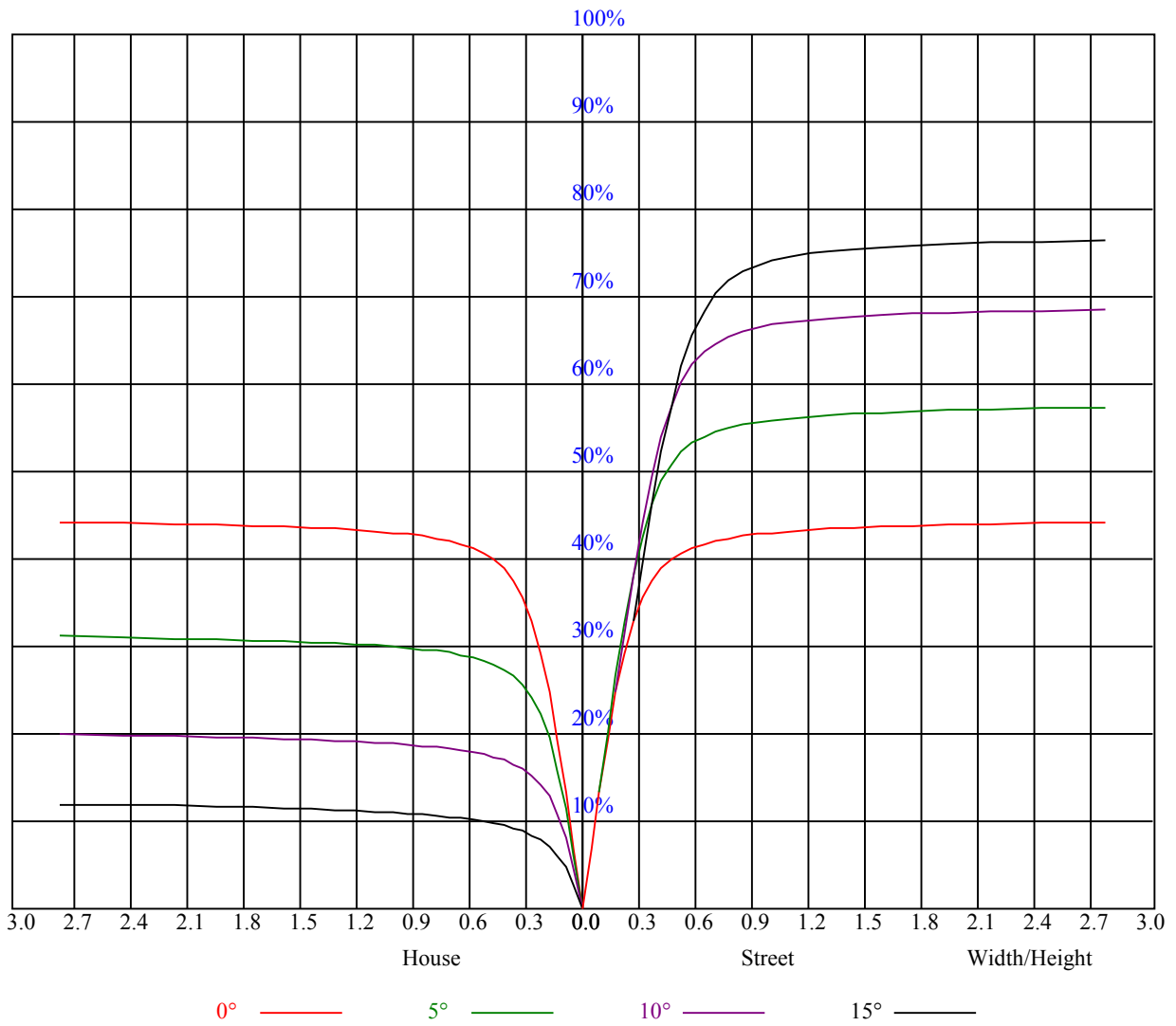
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.76
4	0.85	0.81	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.75	0.79	0.76	0.74	0.73
5	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.73	0.71	0.70
6	0.78	0.73	0.70	0.77	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	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



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	7216.31	7246.13	7248.38	7205.06	7127.44	7016.06	6832.69	6657.75	6453.56
45.0	7245.56	7221.38	7151.63	7045.88	6917.63	6735.38	6518.81	6298.88	6060.38
90.0	7217.44	7144.88	7041.94	6893.44	6702.19	6505.31	6289.31	5974.88	5699.81
135.0	7236.56	7185.38	7075.69	6906.38	6738.19	6535.13	6244.31	5990.63	5720.06
180.0	7216.31	7115.63	6991.31	6836.06	6599.81	6408.56	6120.56	5765.06	5495.63
225.0	7245.56	7229.25	7176.38	7064.44	6940.13	6782.06	6584.63	6312.38	6066.00
270.0	7217.44	7234.31	7225.31	7176.38	7090.88	6956.44	6776.44	6582.94	6378.75
315.0	7236.56	7256.81	7240.50	7175.25	7071.19	6934.50	6748.88	6536.81	6319.69
360.0	7216.31	7246.13	7248.38	7205.06	7127.44	7016.06	6832.69	6657.75	6453.56
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6155.44	5892.19	5607.56	5261.63	4885.88	4528.13	4098.38	3708.56	3258.56
45.0	5727.94	5432.63	5122.13	4784.06	4337.44	3958.31	3571.31	3103.31	2740.50
90.0	5404.50	5011.31	4671.56	4312.69	3889.13	3455.44	3081.38	2674.69	2334.94
135.0	5342.63	5011.88	4658.06	4232.25	3791.81	3403.69	2978.44	2619.56	2245.50
180.0	5169.94	4675.50	4340.81	3948.19	3403.69	3061.13	2685.38	2291.63	1927.69
225.0	5795.44	5421.38	5097.38	4742.44	4313.25	3868.31	3479.63	3052.13	2681.44
270.0	6081.75	5821.31	5540.06	5155.31	4806.56	4442.63	4006.13	3562.88	3168.56
315.0	6070.50	5739.19	5445.56	5136.19	4710.94	4344.75	3969.56	3483.56	3098.25
360.0	6155.44	5892.19	5607.56	5261.63	4885.88	4528.13	4098.38	3708.56	3258.56
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2831.63	2472.19	2100.94	1761.19	1495.69	1261.69	1017.00	854.44	720.00
45.0	2392.31	2031.19	1712.81	1456.88	1208.81	1010.25	860.06	716.06	610.31
90.0	1978.31	1665.00	1420.88	1109.53	980.16	831.49	707.63	568.07	496.29
135.0	1898.44	1619.44	1350.56	1120.50	946.13	808.31	660.94	567.00	486.56
180.0	1636.88	1353.94	1114.43	940.39	794.14	661.33	555.30	478.13	407.87
225.0	2299.50	1957.50	1688.06	1420.88	1102.95	1021.11	876.26	727.03	628.65
270.0	2745.00	2398.50	2044.13	1723.50	1473.19	1258.31	1031.06	878.63	750.38
315.0	2727.56	2302.88	2027.25	1703.81	1389.94	1107.73	998.89	834.86	714.99
360.0	2831.63	2472.19	2100.94	1761.19	1495.69	1261.69	1017.00	854.44	720.00
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	597.94	502.31	432.56	369.56	319.50	287.44	246.83	221.68	197.94
45.0	511.31	430.88	373.50	333.00	284.63	246.49	217.52	190.91	174.71
90.0	426.88	363.43	312.41	274.67	239.57	211.89	191.64	172.07	157.39
135.0	412.88	354.94	313.31	286.88	238.56	214.65	191.08	174.49	157.56
180.0	357.08	310.50	272.48	244.01	219.77	194.85	177.98	163.18	146.81
225.0	546.41	459.90	403.31	355.84	311.40	273.21	244.01	216.23	194.79
270.0	616.50	531.00	459.00	399.38	339.19	299.81	286.31	228.43	204.86
315.0	615.43	512.16	445.16	388.24	341.10	293.68	260.83	233.04	203.79
360.0	597.94	502.31	432.56	369.56	319.50	287.44	246.83	221.68	197.94
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	177.47	161.89	148.16	132.98	122.68	113.29	102.94	95.63	88.99
45.0	158.91	143.49	130.28	119.70	109.41	101.03	92.93	85.44	79.48
90.0	142.88	129.99	119.70	109.41	100.91	92.31	85.44	77.79	72.28
135.0	142.93	130.89	120.32	108.96	100.91	93.66	85.56	79.48	74.08
180.0	135.56	125.38	115.03	105.69	98.10	90.39	84.15	77.63	71.78
225.0	173.98	156.15	142.48	128.81	116.94	107.89	99.51	90.28	83.59
270.0	186.98	164.64	147.49	135.84	121.22	111.38	102.49	92.70	85.67
315.0	183.71	166.61	149.74	135.11	123.92	113.06	104.40	95.85	88.14
360.0	177.47	161.89	148.16	132.98	122.68	113.29	102.94	95.63	88.99

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	82.80	75.88	70.82	65.53	61.09	56.59	52.88	49.11	45.84
45.0	73.41	67.84	63.39	59.34	54.62	51.30	48.15	45.06	42.24
90.0	67.16	61.93	57.09	53.27	49.22	45.56	42.69	40.16	37.86
135.0	69.13	63.45	59.29	55.58	51.64	48.15	45.34	42.58	40.16
180.0	66.94	62.04	57.54	53.89	50.57	46.91	44.21	41.96	39.77
225.0	77.51	71.21	65.59	61.03	56.14	52.43	48.99	45.84	43.09
270.0	79.37	72.23	66.99	62.16	56.76	52.76	49.22	45.73	42.69
315.0	81.84	75.38	69.64	64.97	60.69	55.97	52.31	49.22	45.73
360.0	82.80	75.88	70.82	65.53	61.09	56.59	52.88	49.11	45.84
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	43.26	40.67	38.81	36.84	35.21	33.98	32.63	31.61	30.77
45.0	39.94	37.91	36.23	34.82	33.41	32.23	31.05	29.98	29.08
90.0	35.89	34.31	32.91	31.84	30.71	30.09	29.48	29.08	29.81
135.0	38.31	36.45	34.99	33.41	32.06	30.94	29.76	28.63	27.73
180.0	37.80	36.39	34.99	33.69	32.68	31.61	30.66	29.53	28.52
225.0	40.73	38.42	37.01	35.44	33.64	32.57	31.44	30.09	29.08
270.0	40.44	38.25	36.34	34.88	33.47	32.40	31.33	30.49	29.93
315.0	43.31	41.12	38.98	37.01	35.55	33.92	32.68	31.33	30.09
360.0	43.26	40.67	38.81	36.84	35.21	33.98	32.63	31.61	30.77
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	29.76	28.63	27.79	27.00	26.16	25.31	24.58	23.85	23.18
45.0	28.18	27.17	26.44	25.71	24.92	24.30	23.74	23.12	22.56
90.0	32.34	36.34	42.30	46.86	51.69	57.32	62.27	66.77	71.66
135.0	26.94	25.88	25.14	24.58	23.74	23.01	22.50	21.71	20.98
180.0	27.68	26.78	25.88	25.14	24.41	23.63	23.01	22.33	21.71
225.0	28.18	27.17	26.27	25.54	24.69	24.08	23.34	22.73	22.11
270.0	30.04	32.06	35.38	39.99	46.24	51.02	56.36	62.27	67.73
315.0	29.03	27.96	27.00	26.16	25.37	24.41	23.74	23.01	22.28
360.0	29.76	28.63	27.79	27.00	26.16	25.31	24.58	23.85	23.18
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	22.56	21.88	21.26	20.70	20.14	19.46	18.90	18.06	17.49
45.0	22.16	21.94	21.66	21.38	20.98	20.59	19.91	18.84	17.61
90.0	75.88	79.88	82.74	84.83	84.32	79.03	71.21	63.34	51.30
135.0	20.48	19.80	19.24	18.68	17.89	17.27	16.71	15.92	15.24
180.0	21.15	20.59	19.91	19.29	18.62	17.78	17.16	16.48	15.81
225.0	21.60	21.26	21.09	20.93	20.64	19.86	17.44	16.76	16.20
270.0	72.56	77.85	81.90	85.56	87.58	88.59	88.31	85.50	79.59
315.0	21.54	20.93	20.25	19.58	19.01	18.39	17.89	17.27	16.65
360.0	22.56	21.88	21.26	20.70	20.14	19.46	18.90	18.06	17.49
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	17.04	16.31	15.69	15.02	14.46	13.78	13.11	12.15	11.42
45.0	16.37	15.36	14.57	13.95	12.66	11.87	11.03	10.41	9.96
90.0	40.05	28.86	18.00	14.46	11.59	10.80	10.13	9.73	9.45
135.0	14.68	13.95	13.28	12.49	11.59	10.69	10.18	9.73	9.56
180.0	15.24	14.63	13.84	13.22	12.71	11.36	10.63	10.41	10.52
225.0	15.75	15.30	14.79	13.95	13.16	12.43	11.25	10.58	9.90
270.0	70.37	56.87	44.49	31.67	20.14	14.85	11.93	11.14	10.41
315.0	16.09	15.47	14.74	14.12	13.50	12.66	11.70	11.03	10.46
360.0	17.04	16.31	15.69	15.02	14.46	13.78	13.11	12.15	11.42

Intensity data(cd)

C/ γ (°)	90.0
0.0	10.91
45.0	9.73
90.0	9.45
135.0	9.62
180.0	10.69
225.0	9.90
270.0	9.90
315.0	9.96
360.0	10.91