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Nata

LumCAT: 3-2546-M	
Luminaire: 92.70.131.00	
Report No: 200919-B040	Voltage(V): 230.5000
Test No: 200919-C040	Current(A): 0.0850
LampCAT: OSRAM OPTO SOLERIQ S13	Power (W): 18.6400
Lamp flux(lm): 1409.3	PF: 0.9500
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): 1354.03
Efficiency(%): 96.08%
Lumens(lm)/Power(W): 72.64
Central intensity(cd): 7414.789
Maximum intensity(cd): 7414.789
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=21.2
 [C90/270]Total=21.2
Field angle(10%Imax): [C0/180]Total=37.0
 [C90/270]Total=37.0
Maximum s/h(1/2): C0_180=0.36 C90_270=0.36
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(%): 96.20%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.735%

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7414.790	1.774	1.774	.126%	.131%
1.0	7388.340	14.140	15.914	1.003%	1.175%
2.0	7315.893	27.999	43.913	1.987%	3.243%
3.0	7164.502	41.119	85.031	2.918%	6.280%
4.0	6960.908	53.248	138.279	3.778%	10.212%
5.0	6667.813	63.728	202.007	4.522%	14.919%
6.0	6260.043	71.757	273.764	5.092%	20.219%
7.0	5807.379	77.612	351.376	5.507%	25.950%
8.0	5296.942	80.841	432.217	5.736%	31.921%
9.0	4702.341	80.667	512.884	5.724%	37.878%
10.0	4043.587	77.000	589.884	5.464%	43.565%
11.0	3470.622	72.620	662.504	5.153%	48.928%
12.0	2824.456	64.397	726.901	4.569%	53.684%
13.0	2222.546	54.827	781.728	3.890%	57.734%
14.0	1778.721	47.188	828.916	3.348%	61.219%
15.0	1394.792	39.587	868.504	2.809%	64.142%
16.0	1047.399	31.659	900.163	2.246%	66.480%
17.0	895.190	28.701	928.864	2.037%	68.600%
18.0	783.451	26.549	955.413	1.884%	70.561%
19.0	701.021	25.028	980.441	1.776%	72.409%
20.0	640.314	24.016	1004.457	1.704%	74.183%
21.0	591.875	23.260	1027.717	1.650%	75.901%
22.0	554.230	22.768	1050.484	1.616%	77.582%
23.0	526.759	22.571	1073.055	1.602%	79.249%
24.0	503.894	22.475	1095.53	1.595%	80.909%
25.0	487.653	22.600	1118.13	1.604%	82.578%
26.0	473.842	22.779	1140.909	1.616%	84.260%
27.0	462.357	23.018	1163.927	1.633%	85.960%
28.0	452.125	23.277	1187.204	1.652%	87.680%
29.0	441.215	23.457	1210.661	1.664%	89.412%
30.0	426.714	23.397	1234.058	1.660%	91.140%
31.0	401.256	22.663	1256.721	1.608%	92.814%
32.0	365.525	21.241	1277.962	1.507%	94.382%
33.0	313.275	18.711	1296.672	1.328%	95.764%
34.0	259.633	15.921	1312.593	1.130%	96.940%
35.0	225.149	14.162	1326.755	1.005%	97.986%
36.0	149.169	9.615	1336.37	.682%	98.696%
37.0	90.202	5.953	1342.323	.422%	99.136%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	50.620	3.418	1345.741	.243%	99.388%
39.0	20.777	1.434	1347.174	.102%	99.494%
40.0	11.688	0.824	1347.998	.058%	99.555%
41.0	6.873	0.495	1348.493	.035%	99.591%
42.0	5.499	0.403	1348.896	.029%	99.621%
43.0	4.640	0.347	1349.243	.025%	99.647%
44.0	3.846	0.293	1349.536	.021%	99.668%
45.0	3.202	0.248	1349.784	.018%	99.687%
46.0	2.802	0.221	1350.005	.016%	99.703%
47.0	2.517	0.202	1350.207	.014%	99.718%
48.0	2.239	0.182	1350.39	.013%	99.731%
49.0	2.053	0.170	1350.56	.012%	99.744%
50.0	1.932	0.162	1350.722	.012%	99.756%
51.0	1.839	0.157	1350.879	.011%	99.768%
52.0	1.787	0.154	1351.033	.011%	99.779%
53.0	1.734	0.152	1351.185	.011%	99.790%
54.0	1.676	0.149	1351.334	.011%	99.801%
55.0	1.618	0.145	1351.479	.010%	99.812%
56.0	1.543	0.140	1351.619	.010%	99.822%
57.0	1.468	0.135	1351.754	.010%	99.832%
58.0	1.404	0.131	1351.885	.009%	99.842%
59.0	1.404	0.132	1352.017	.009%	99.852%
60.0	1.421	0.135	1352.152	.010%	99.862%
61.0	1.380	0.132	1352.284	.009%	99.871%
62.0	1.421	0.138	1352.422	.010%	99.882%
63.0	1.398	0.137	1352.558	.010%	99.892%
64.0	1.351	0.133	1352.692	.009%	99.901%
65.0	1.282	0.127	1352.819	.009%	99.911%
66.0	1.154	0.116	1352.935	.008%	99.919%
67.0	1.009	0.102	1353.037	.007%	99.927%
68.0	0.882	0.090	1353.126	.006%	99.934%
69.0	0.760	0.078	1353.204	.006%	99.939%
70.0	0.679	0.070	1353.274	.005%	99.944%
71.0	0.592	0.061	1353.335	.004%	99.949%
72.0	0.516	0.054	1353.389	.004%	99.953%
73.0	0.464	0.049	1353.438	.003%	99.957%
74.0	0.429	0.045	1353.483	.003%	99.960%
75.0	0.377	0.040	1353.523	.003%	99.963%

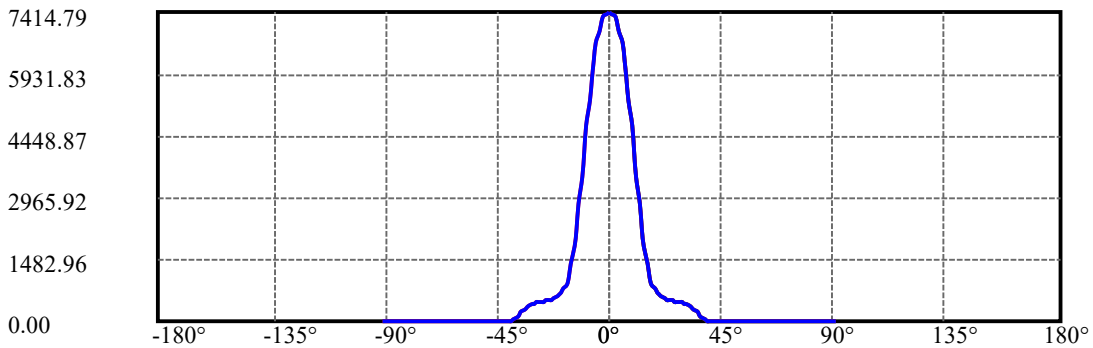
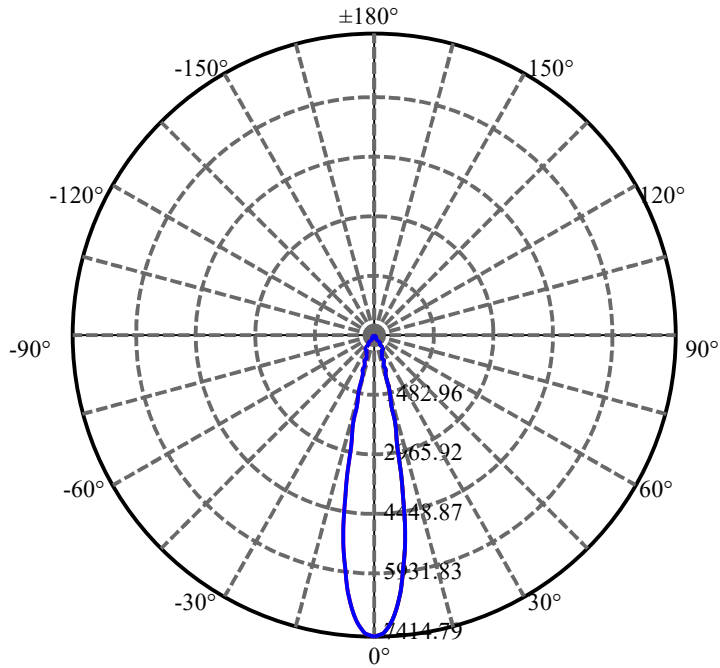
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	0.348	0.037	1353.56	.003%	99.966%
77.0	0.342	0.037	1353.597	.003%	99.968%
78.0	0.313	0.034	1353.63	.002%	99.971%
79.0	0.307	0.033	1353.663	.002%	99.973%
80.0	0.319	0.034	1353.698	.002%	99.976%
81.0	0.302	0.033	1353.73	.002%	99.978%
82.0	0.296	0.032	1353.762	.002%	99.981%
83.0	0.296	0.032	1353.795	.002%	99.983%
84.0	0.290	0.032	1353.826	.002%	99.985%
85.0	0.278	0.030	1353.857	.002%	99.987%
86.0	0.377	0.041	1353.898	.003%	99.991%
87.0	0.360	0.039	1353.937	.003%	99.993%
88.0	0.302	0.033	1353.97	.002%	99.996%
89.0	0.313	0.034	1354.005	.002%	99.998%
90.0	0.389	0.021	1354.026	.002%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1234.06	87.57%	91.14%
0-40	1348.00	95.65%	99.55%
0-60	1352.15	95.94%	99.86%
0-90	1354.00	96.08%	100.00%
0-120	1354.00	96.08%	100.00%
0-180	1354.03	96.08%	100.00%
60-90	1.99	0.14%	0.15%
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%
0-23.45	1083.22	76.86%	80.00%

ZONAL LUMEN SUMMARY

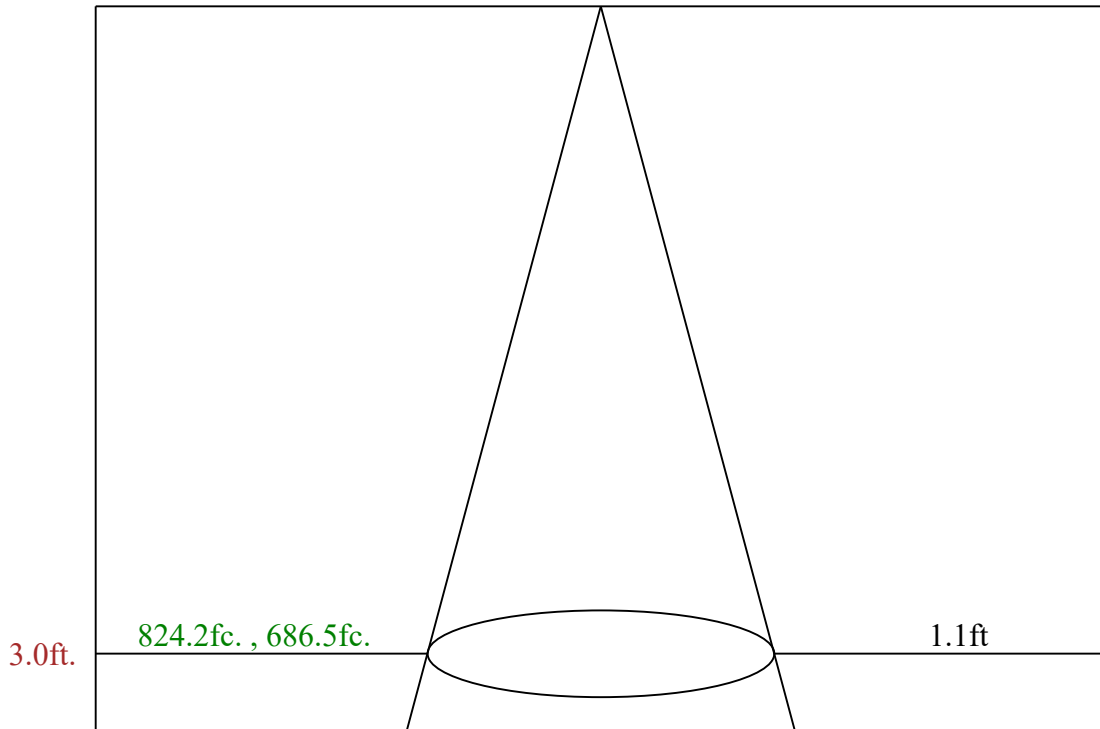
0-10	589.88
10-20	414.57
20-30	229.60
30-40	113.94
40-50	2.72
50-60	1.43
60-70	1.12
70-80	0.42
80-90	0.31
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



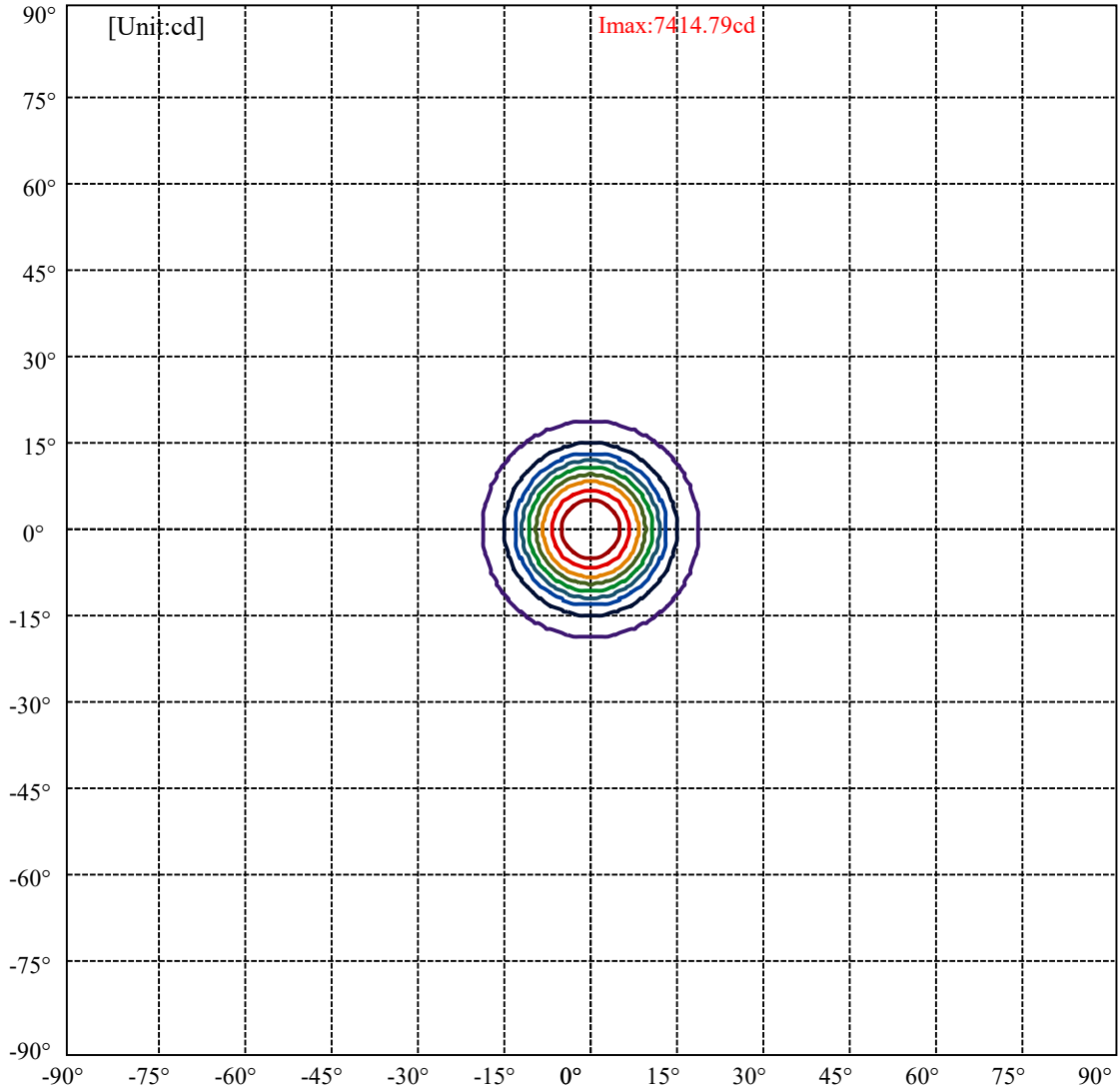
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:18.5 Right:18.5
:C90/270Left:18.5 Right:18.5

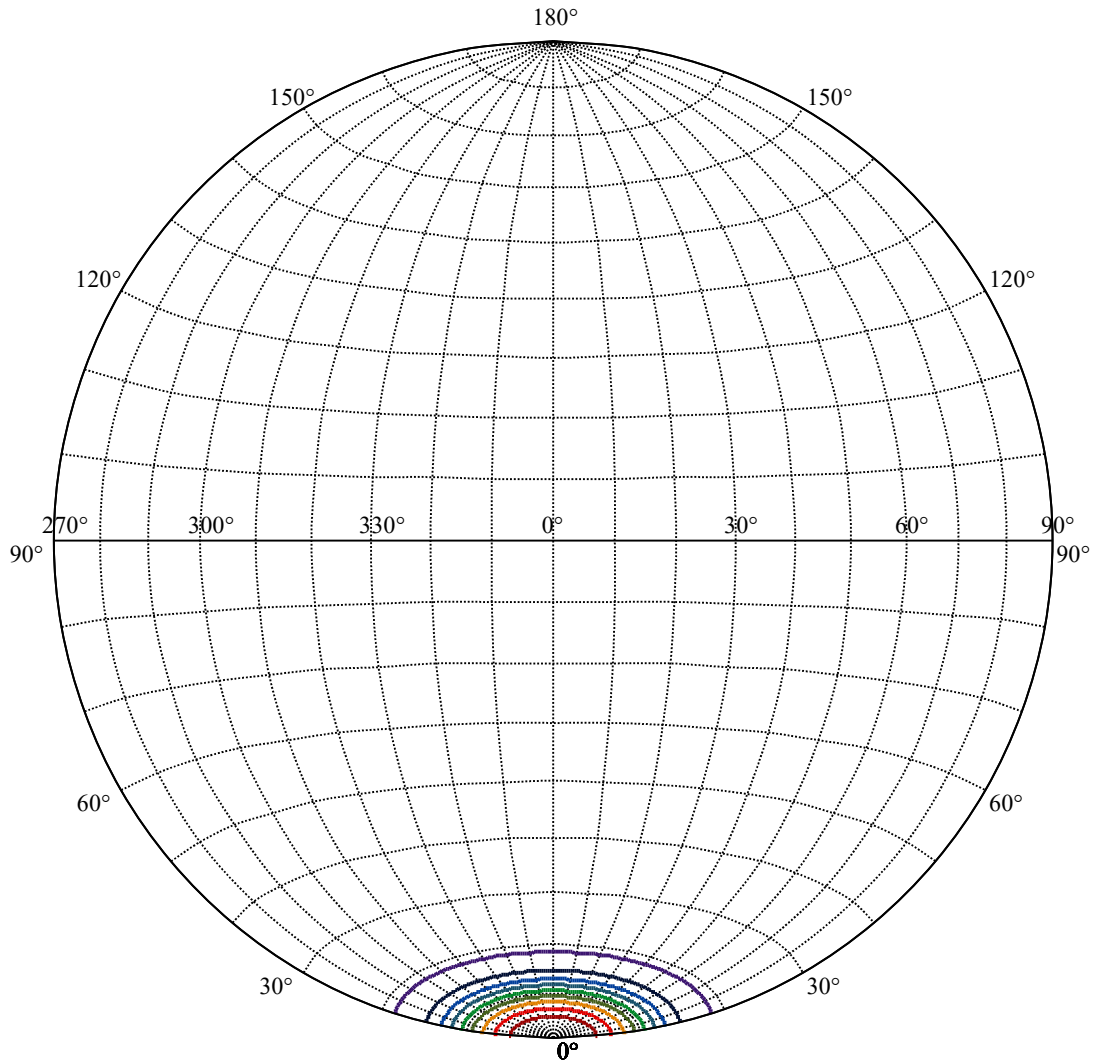
Beam Angle(50%Imax):C0/180Left:10.6 Right:10.6
:C90/270Left:10.6 Right:10.6



Max , Ave Beam angle of C0 plane 21.22



(10%Imax) 741.479	—
(20%Imax) 1482.96	—
(30%Imax) 2224.44	—
(40%Imax) 2965.92	—
(50%Imax) 3707.39	—
(60%Imax) 4448.87	—
(70%Imax) 5190.35	—
(80%Imax) 5931.83	—
(90%Imax) 6673.31	—



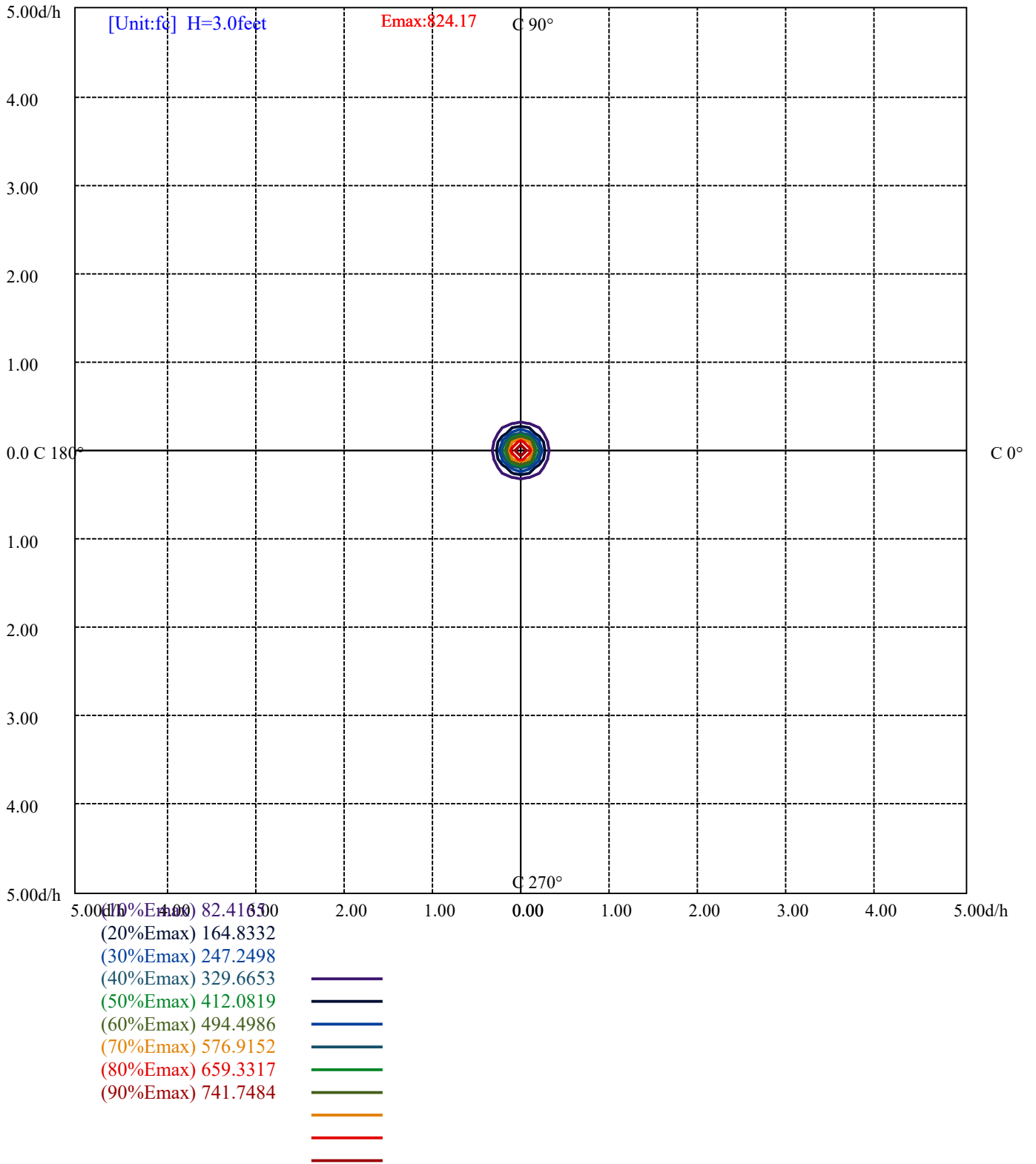
House

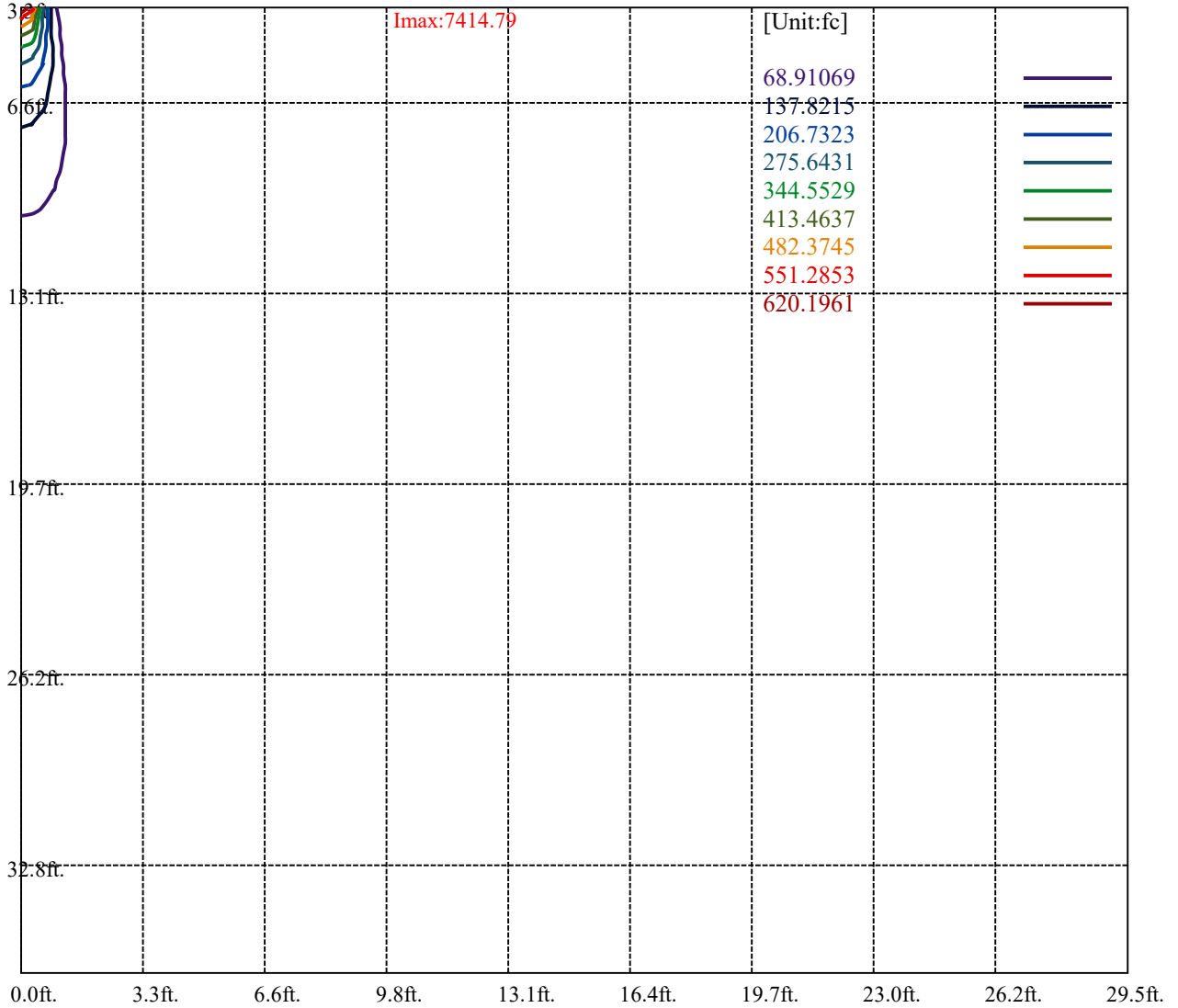
[Unit:cd]

Road

Imax:7414.79

(10%Imax) 741.479	—
(20%Imax) 1482.96	—
(30%Imax) 2224.44	—
(40%Imax) 2965.92	—
(50%Imax) 3707.39	—
(60%Imax) 4448.87	—
(70%Imax) 5190.35	—
(80%Imax) 5931.83	—
(90%Imax) 6673.31	—





Luminance Table

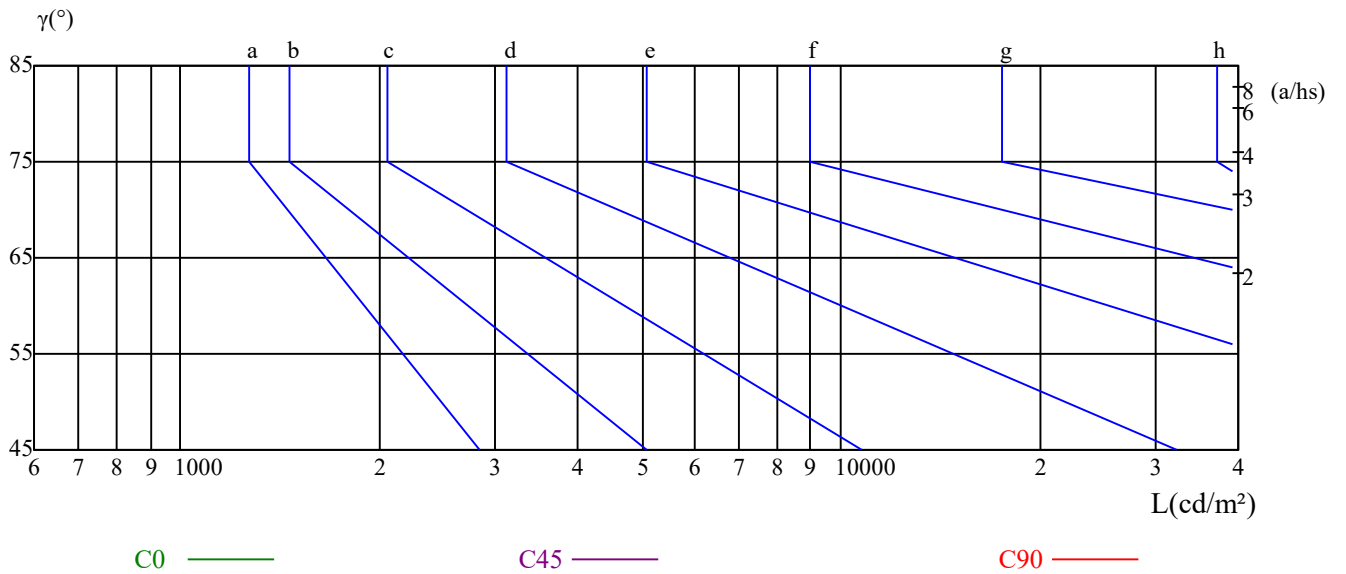
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

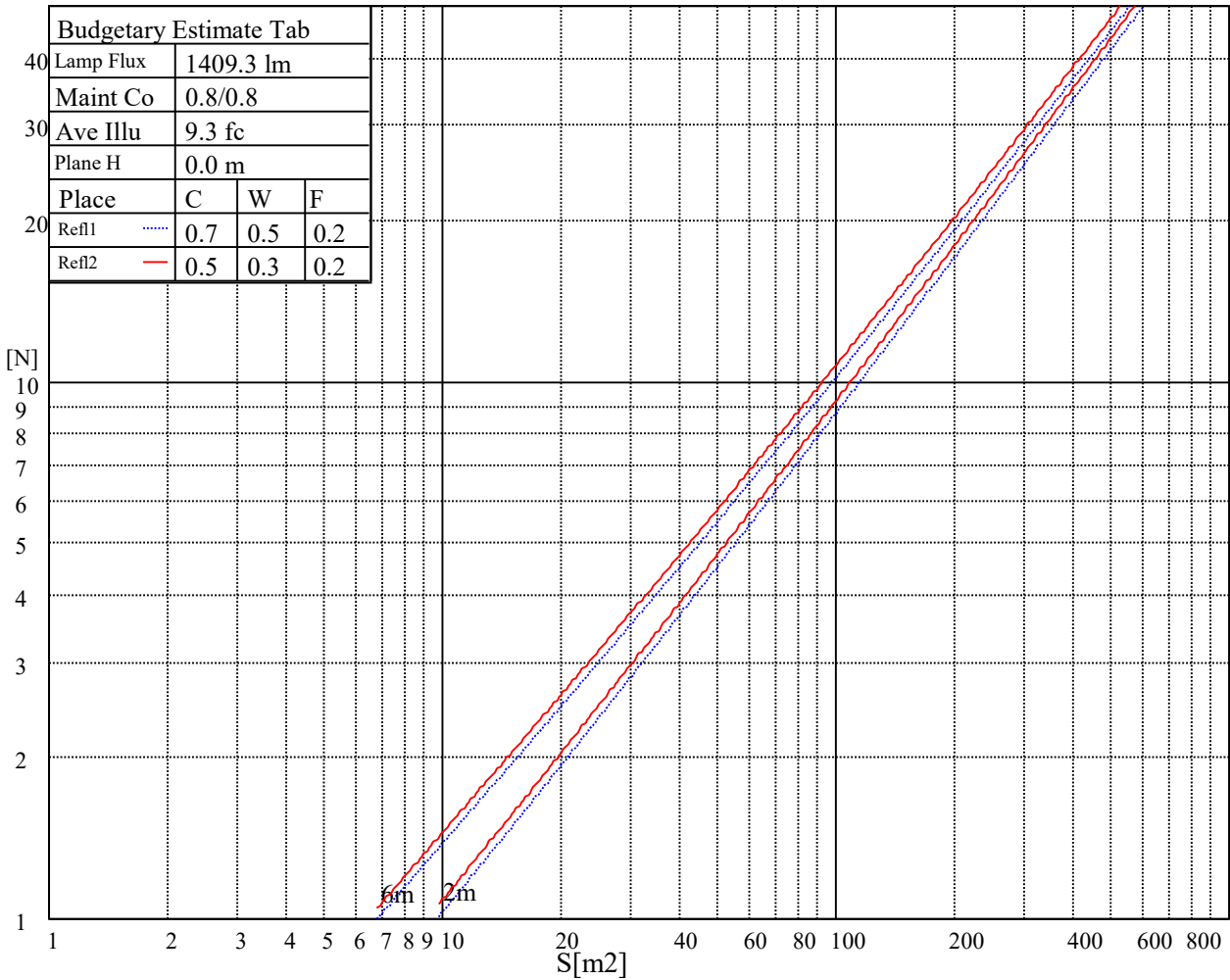
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

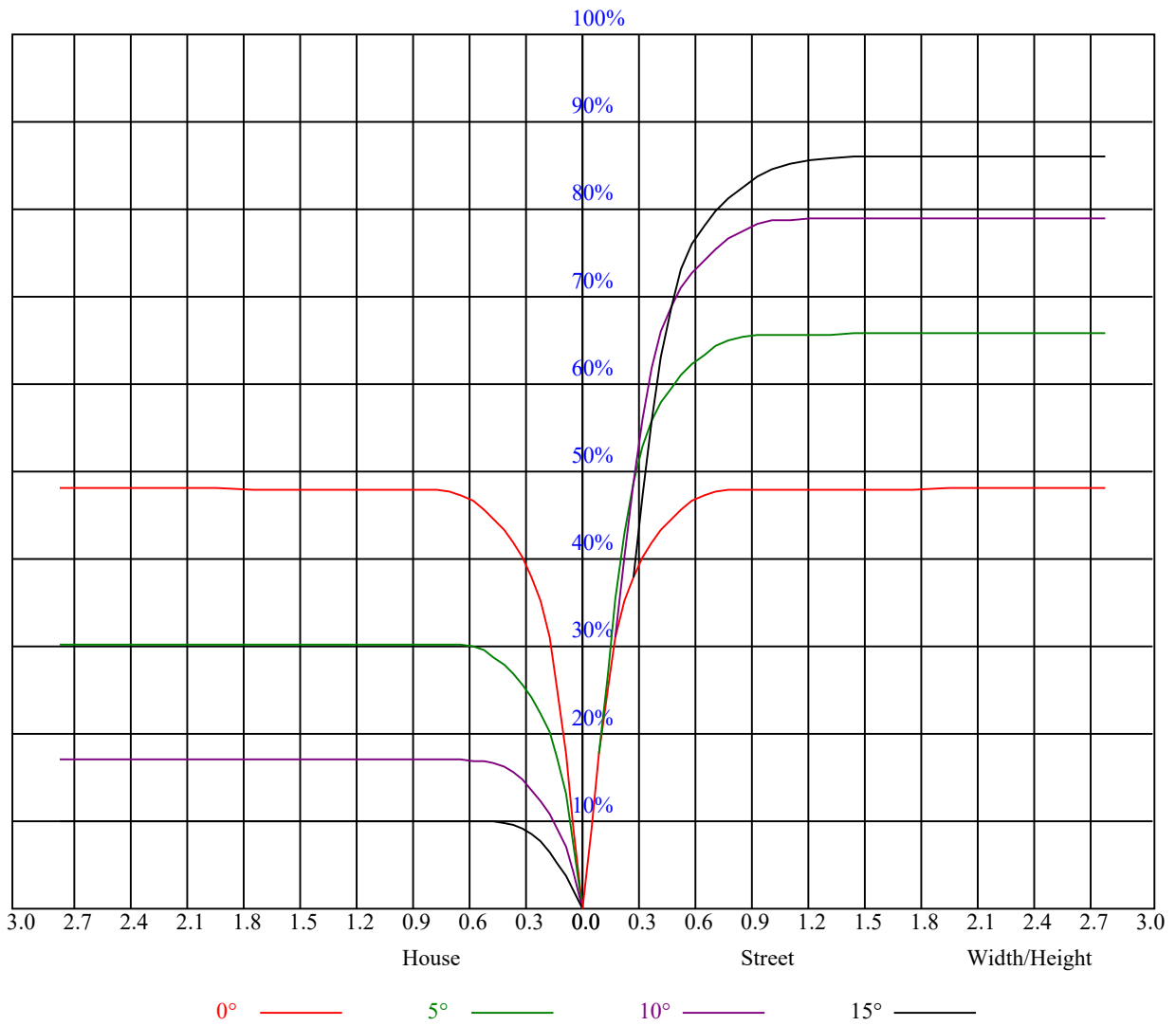
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.15	1.15	1.15	1.12	1.12	1.12	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.09	1.07	1.05	1.06	1.05	1.03	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93
2	1.03	1.01	0.98	1.02	0.99	0.97	0.99	0.97	0.95	0.96	0.94	0.93	0.94	0.92	0.91	0.90
3	0.99	0.96	0.93	0.98	0.95	0.92	0.95	0.93	0.91	0.93	0.91	0.89	0.91	0.90	0.88	0.87
4	0.95	0.91	0.89	0.94	0.91	0.88	0.92	0.89	0.87	0.91	0.88	0.86	0.89	0.87	0.85	0.84
5	0.92	0.88	0.85	0.91	0.87	0.85	0.89	0.86	0.84	0.88	0.85	0.83	0.87	0.84	0.83	0.82
6	0.89	0.85	0.82	0.88	0.84	0.82	0.87	0.84	0.81	0.86	0.83	0.81	0.85	0.82	0.80	0.79
7	0.86	0.82	0.79	0.85	0.82	0.79	0.84	0.81	0.79	0.83	0.80	0.78	0.82	0.80	0.78	0.77
8	0.83	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.80	0.78	0.76	0.75
9	0.81	0.77	0.75	0.81	0.77	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.79	0.76	0.74	0.73
10	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



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	7428.02	7391.36	7300.41	7140.31	6934.75	6660.04	6278.60	5779.30	5199.26
45.0	7430.80	7394.60	7349.59	7153.31	7029.41	6745.89	6366.31	5879.54	5335.22
90.0	7370.01	7245.65	7056.79	6769.55	6327.33	5803.43	5237.78	4632.68	4013.66
135.0	7430.34	7385.32	7274.42	7103.19	6815.96	6366.31	5843.34	5283.25	4938.01
180.0	7428.02	7425.23	7396.46	7247.04	7065.61	6897.63	6319.44	6015.50	5455.41
225.0	7430.80	7408.99	7340.31	7218.74	7033.59	6761.66	6359.81	5849.84	5277.68
270.0	7370.01	7431.73	7434.05	7396.46	7343.10	7189.04	7035.91	6786.72	6428.49
315.0	7430.34	7423.84	7375.12	7287.41	7137.53	6918.51	6639.16	6232.20	5727.80
360.0	7428.02	7391.36	7300.41	7140.31	6934.75	6660.04	6278.60	5779.30	5199.26

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4553.79	3899.04	3253.11	2664.25	2128.29	1633.17	1374.70	862.64	862.64
45.0	4730.12	4090.69	3437.79	2813.67	2247.08	1733.40	1312.52	1034.10	867.05
90.0	3378.86	2748.24	2144.53	1597.90	912.06	884.40	884.40	778.23	702.59
135.0	4325.49	3435.47	3050.79	2426.66	1842.44	1360.78	1059.16	888.86	780.74
180.0	4855.41	4222.94	3570.04	2922.71	2314.83	1757.99	1328.30	1055.44	890.71
225.0	4654.02	3994.63	3331.53	2704.62	2130.15	1621.10	1087.93	876.42	876.42
270.0	5943.11	5382.56	4775.14	4137.09	3489.76	2873.99	2297.66	1752.42	1287.00
315.0	5177.92	4575.14	4202.05	3328.74	2715.76	2364.95	1813.67	1131.08	894.38
360.0	4553.79	3899.04	3253.11	2664.25	2128.29	1633.17	1374.70	862.64	862.64

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	759.76	685.47	628.58	582.13	546.31	518.93	496.93	481.25	468.53
45.0	760.32	683.75	623.89	577.49	541.76	524.59	501.39	484.22	470.30
90.0	643.10	592.94	555.49	523.43	500.51	484.40	470.85	459.86	450.30
135.0	704.17	644.77	598.37	557.07	525.52	502.78	486.08	472.15	461.48
180.0	783.52	704.17	643.85	596.05	558.93	529.69	506.03	488.86	477.72
225.0	774.15	699.81	642.13	596.42	561.62	534.10	510.99	493.17	478.60
270.0	998.37	849.41	753.82	683.29	625.29	579.81	545.47	528.30	504.64
315.0	844.22	747.84	676.38	619.11	573.92	539.76	513.41	493.41	479.16
360.0	759.76	685.47	628.58	582.13	546.31	518.93	496.93	481.25	468.53

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	457.40	448.07	439.86	430.48	399.25	349.32	289.56	227.65	189.88
45.0	460.55	451.27	442.92	435.50	414.61	373.31	318.09	256.84	256.84
90.0	441.99	434.06	411.46	366.63	308.86	247.01	196.15	122.74	78.33
135.0	454.06	441.99	433.18	422.04	375.64	335.26	275.40	262.87	236.43
180.0	464.73	455.45	446.17	435.50	422.04	384.92	331.09	269.37	256.84
225.0	466.91	456.56	443.71	433.82	413.96	390.07	313.18	249.70	211.55
270.0	487.00	473.08	461.95	452.20	443.38	432.71	414.61	373.78	319.95
315.0	466.21	456.52	450.48	437.54	432.29	411.60	368.12	314.10	251.37
360.0	457.40	448.07	439.86	430.48	399.25	349.32	289.56	227.65	189.88

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	129.37	73.64	29.84	10.07	7.89	6.77	5.15	3.94	3.25
45.0	115.87	62.88	24.69	8.45	7.47	6.59	4.87	4.13	3.53
90.0	33.87	8.07	6.87	5.94	4.69	3.39	2.74	2.37	2.09
135.0	87.61	41.86	12.99	7.89	6.68	5.20	3.81	3.02	2.60
180.0	232.25	85.06	38.19	12.11	7.93	6.68	5.29	4.45	3.71
225.0	149.74	91.55	44.22	14.57	7.56	6.64	5.57	4.27	3.29
270.0	259.16	233.64	175.08	75.68	39.86	9.98	7.42	6.87	5.66
315.0	185.47	124.92	73.09	31.51	11.42	9.74	9.14	8.07	6.64
360.0	129.37	73.64	29.84	10.07	7.89	6.77	5.15	3.94	3.25

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	2.83	2.46	2.23	1.95	1.81	1.76	1.72	1.62	1.67
45.0	2.92	2.55	2.23	2.09	1.86	1.76	1.76	1.72	1.67
90.0	1.81	1.53	1.48	1.44	1.35	1.25	1.25	1.25	1.21
135.0	2.13	1.90	1.81	1.67	1.67	1.58	1.48	1.48	1.48
180.0	2.92	2.78	2.46	2.27	2.13	2.00	1.90	1.90	1.81
225.0	2.83	2.46	2.13	1.81	1.67	1.58	1.53	1.44	1.39
270.0	4.55	3.71	3.20	2.83	2.51	2.23	2.04	2.00	1.90
315.0	5.61	5.01	4.59	3.85	3.43	3.29	3.02	2.88	2.74
360.0	2.83	2.46	2.23	1.95	1.81	1.76	1.72	1.62	1.67
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.67	1.62	1.58	1.48	1.39	1.44	1.48	1.44	1.48
45.0	1.67	1.67	1.58	1.48	1.53	1.53	1.58	1.53	1.62
90.0	1.07	1.07	1.07	1.07	1.02	1.07	0.79	0.65	0.88
135.0	1.44	1.30	1.21	1.21	1.16	1.16	1.21	1.21	1.16
180.0	1.72	1.53	1.39	1.25	1.16	1.16	1.21	1.16	1.16
225.0	1.39	1.53	1.44	1.39	1.39	1.39	1.48	1.44	1.39
270.0	1.81	1.72	1.72	1.62	1.44	1.35	1.39	1.35	1.39
315.0	2.64	2.51	2.37	2.23	2.13	2.13	2.23	2.27	2.27
360.0	1.67	1.62	1.58	1.48	1.39	1.44	1.48	1.44	1.48
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.48	1.44	1.30	1.16	1.02	0.88	0.74	0.65	0.65
45.0	1.58	1.58	1.53	1.35	1.16	1.02	0.93	0.79	0.70
90.0	0.93	0.79	0.70	0.65	0.56	0.46	0.42	0.42	0.42
135.0	1.07	1.02	0.88	0.74	0.56	0.56	0.56	0.51	0.46
180.0	1.07	1.11	1.11	1.02	0.97	0.84	0.74	0.60	0.46
225.0	1.39	1.35	1.30	1.07	0.93	0.79	0.65	0.56	0.42
270.0	1.39	1.35	1.35	1.30	1.21	1.02	0.84	0.84	0.70
315.0	2.27	2.18	2.09	1.95	1.67	1.48	1.21	1.07	0.93
360.0	1.48	1.44	1.30	1.16	1.02	0.88	0.74	0.65	0.65
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	0.56	0.46	0.46	0.42	0.37	0.37	0.32	0.37	0.32
45.0	0.60	0.56	0.46	0.37	0.37	0.37	0.32	0.32	0.32
90.0	0.37	0.32	0.32	0.32	0.32	0.28	0.32	0.28	0.32
135.0	0.42	0.42	0.37	0.32	0.32	0.37	0.32	0.28	0.32
180.0	0.46	0.42	0.42	0.32	0.32	0.37	0.32	0.28	0.28
225.0	0.42	0.42	0.37	0.32	0.28	0.28	0.23	0.28	0.32
270.0	0.56	0.51	0.51	0.51	0.42	0.37	0.37	0.37	0.32
315.0	0.74	0.60	0.51	0.42	0.37	0.32	0.28	0.28	0.32
360.0	0.56	0.46	0.46	0.42	0.37	0.37	0.32	0.37	0.32
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	0.32	0.37	0.32	0.37	0.28	0.28	0.28	0.28	0.28
45.0	0.32	0.32	0.28	0.32	0.28	0.32	0.32	0.28	0.28
90.0	0.32	0.28	0.32	0.28	0.37	1.11	0.93	0.37	0.42
135.0	0.32	0.28	0.32	0.28	0.23	0.23	0.23	0.28	0.28
180.0	0.32	0.28	0.28	0.28	0.28	0.23	0.28	0.28	0.19
225.0	0.23	0.28	0.23	0.23	0.23	0.23	0.28	0.28	0.23
270.0	0.28	0.32	0.32	0.32	0.32	0.32	0.28	0.37	0.56
315.0	0.28	0.23	0.28	0.23	0.23	0.28	0.28	0.28	0.28
360.0	0.32	0.37	0.32	0.37	0.28	0.28	0.28	0.28	0.28

Intensity data(cd)

C/γ(°)	90.0
0.0	0.32
45.0	0.28
90.0	0.32
135.0	0.28
180.0	0.23
225.0	0.28
270.0	1.11
315.0	0.28
360.0	0.32