
LumCAT: 61.0081.000	
Luminaire: 92.70.183.00	
Report No: NATA0100	Voltage(V): 34.7700
Test No: GC2019120607	Current(A): 0.1470
LampCAT: LUMINUS CXM-4-AC40	Power (W): 5.1100
Lamp flux(lm): 586.0	PF: 1.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 484.91
Efficiency(%): 82.75%
Lumens(lm)/Power(W): 94.89
Central intensity(cd): 9725.484
Maximum intensity(cd): 9725.484
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=9.0
[C90/270]Total=9.0
Field angle(10%Imax): [C0/180]Total=16.3
[C90/270]Total=16.3
Maximum s/h(1/2): C0_180=0.16 C90_270=0.16
Maximum s/h(1/4): C0_180=0.15 C90_270=0.15
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.75%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 93.688%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9725.484	0.000	0	.000%	.000%
1.0	9524.250	9.211	9.211	1.572%	1.899%
2.0	8778.516	26.270	35.481	4.483%	7.317%
3.0	7483.570	38.894	74.374	6.637%	15.338%
4.0	5782.008	44.404	118.778	7.577%	24.495%
5.0	3937.430	41.813	160.591	7.135%	33.118%
6.0	2407.992	33.347	193.938	5.691%	39.995%
7.0	1422.717	23.777	217.715	4.058%	44.898%
8.0	1007.227	17.391	235.105	2.968%	48.485%
9.0	762.504	14.343	249.448	2.448%	51.442%
10.0	614.046	12.457	261.905	2.126%	54.011%
11.0	513.640	11.268	273.173	1.923%	56.335%
12.0	443.405	10.462	283.635	1.785%	58.493%
13.0	381.488	9.789	293.425	1.671%	60.511%
14.0	326.468	9.062	302.486	1.546%	62.380%
15.0	287.290	8.426	310.912	1.438%	64.118%
16.0	253.090	7.918	318.83	1.351%	65.751%
17.0	216.682	7.316	326.146	1.248%	67.259%
18.0	191.623	6.732	332.878	1.149%	68.648%
19.0	170.135	6.294	339.172	1.074%	69.946%
20.0	150.870	5.875	345.047	1.003%	71.157%
21.0	133.685	5.464	350.511	.932%	72.284%
22.0	119.271	5.083	355.594	.867%	73.332%
23.0	106.938	4.746	360.341	.810%	74.311%
24.0	95.906	4.435	364.776	.757%	75.226%
25.0	86.878	4.156	368.932	.709%	76.083%
26.0	79.390	3.925	372.857	.670%	76.892%
27.0	72.802	3.723	376.58	.635%	77.660%
28.0	67.240	3.546	380.126	.605%	78.391%
29.0	62.803	3.402	383.528	.581%	79.093%
30.0	59.112	3.292	386.82	.562%	79.772%
31.0	56.130	3.207	390.027	.547%	80.433%
32.0	53.627	3.144	393.171	.537%	81.082%
33.0	51.427	3.095	396.266	.528%	81.720%
34.0	49.451	3.053	399.319	.521%	82.350%
35.0	47.412	3.008	402.327	.513%	82.970%
36.0	45.471	2.957	405.284	.505%	83.580%
37.0	43.629	2.906	408.19	.496%	84.179%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	41.477	2.841	411.031	.485%	84.765%
39.0	39.389	2.760	413.791	.471%	85.334%
40.0	37.399	2.678	416.469	.457%	85.886%
41.0	35.445	2.594	419.063	.443%	86.421%
42.0	33.427	2.502	421.566	.427%	86.937%
43.0	31.507	2.405	423.971	.410%	87.433%
44.0	29.820	2.315	426.285	.395%	87.911%
45.0	28.294	2.233	428.519	.381%	88.371%
46.0	26.824	2.156	430.674	.368%	88.816%
47.0	25.552	2.083	432.758	.355%	89.245%
48.0	24.328	2.016	434.774	.344%	89.661%
49.0	23.020	1.944	436.718	.332%	90.062%
50.0	21.811	1.869	438.587	.319%	90.448%
51.0	20.756	1.801	440.388	.307%	90.819%
52.0	19.765	1.739	442.127	.297%	91.178%
53.0	18.865	1.680	443.808	.287%	91.524%
54.0	18.042	1.627	445.434	.278%	91.860%
55.0	17.283	1.577	447.011	.269%	92.185%
56.0	16.657	1.534	448.545	.262%	92.501%
57.0	16.003	1.493	450.038	.255%	92.809%
58.0	15.448	1.454	451.492	.248%	93.109%
59.0	14.948	1.421	452.914	.242%	93.402%
60.0	14.407	1.387	454.3	.237%	93.688%
61.0	13.901	1.351	455.651	.231%	93.967%
62.0	13.521	1.321	456.973	.225%	94.239%
63.0	13.099	1.295	458.267	.221%	94.506%
64.0	12.691	1.266	459.533	.216%	94.767%
65.0	12.333	1.238	460.771	.211%	95.023%
66.0	11.953	1.212	461.983	.207%	95.272%
67.0	11.566	1.183	463.166	.202%	95.516%
68.0	11.102	1.148	464.314	.196%	95.753%
69.0	10.568	1.106	465.419	.189%	95.981%
70.0	10.223	1.068	466.487	.182%	96.201%
71.0	9.977	1.044	467.531	.178%	96.417%
72.0	9.605	1.018	468.55	.174%	96.627%
73.0	9.338	0.991	469.54	.169%	96.831%
74.0	9.176	0.973	470.513	.166%	97.032%
75.0	9.077	0.964	471.478	.165%	97.230%

61.0081.000

Zonal flux distribution table

Appendix Page: 4 Total:18

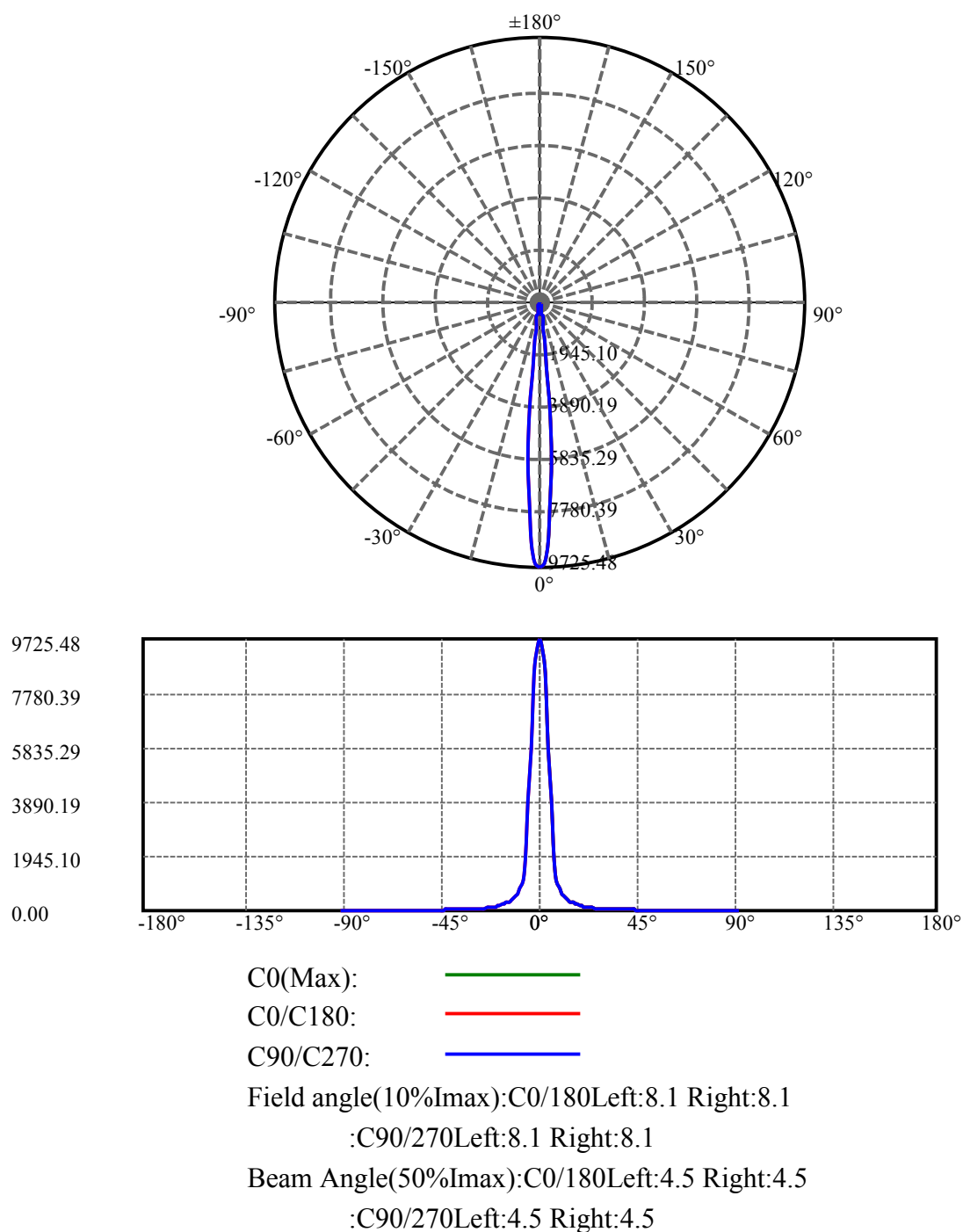
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.098	0.965	472.443	.165%	97.429%
77.0	9.056	0.968	473.411	.165%	97.629%
78.0	8.810	0.956	474.367	.163%	97.826%
79.0	8.508	0.930	475.297	.159%	98.018%
80.0	8.255	0.904	476.201	.154%	98.205%
81.0	8.149	0.887	477.088	.151%	98.388%
82.0	8.220	0.888	477.976	.151%	98.571%
83.0	8.318	0.899	478.875	.153%	98.756%
84.0	8.374	0.909	479.784	.155%	98.943%
85.0	8.297	0.910	480.694	.155%	99.131%
86.0	8.332	0.909	481.603	.155%	99.319%
87.0	7.980	0.893	482.496	.152%	99.503%
88.0	7.608	0.854	483.35	.146%	99.679%
89.0	7.102	0.806	484.156	.138%	99.845%
90.0	6.602	0.751	484.907	.128%	100.000%

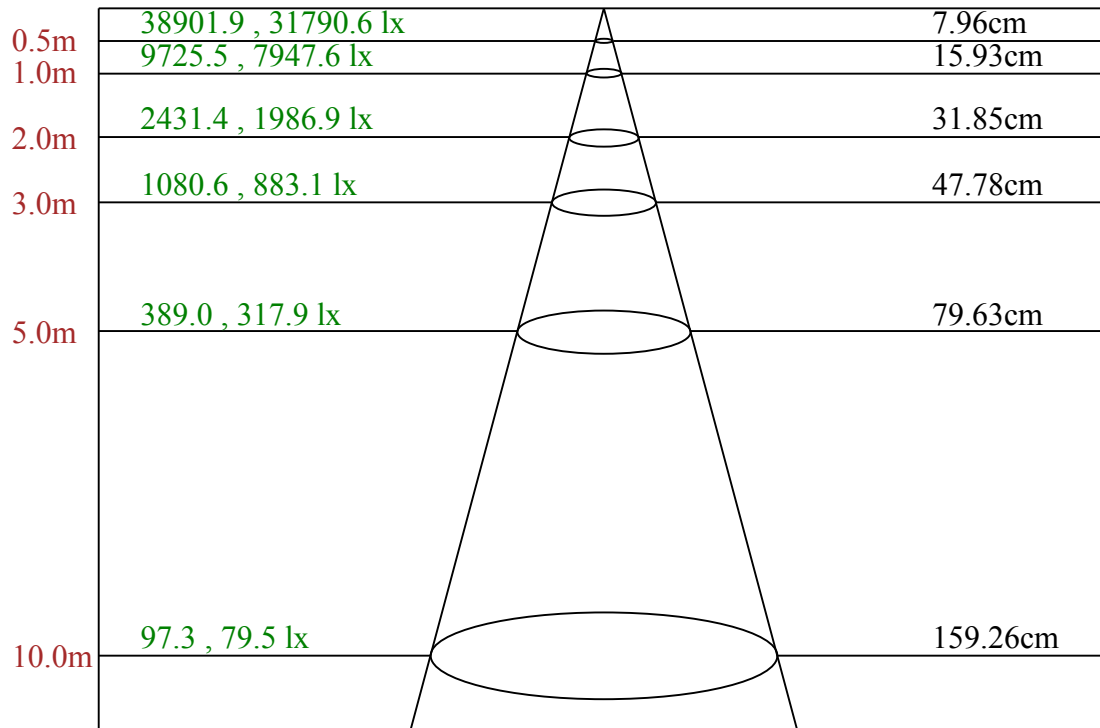
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	386.82	66.01%	79.77%
0-40	416.47	71.07%	85.89%
0-60	454.30	77.53%	93.69%
0-90	484.16	82.62%	99.85%
0-120	484.16	82.62%	99.85%
0-180	484.91	82.75%	100.00%
60-90	31.24	5.33%	6.44%
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%
0-30.34	387.93	66.20%	80.00%

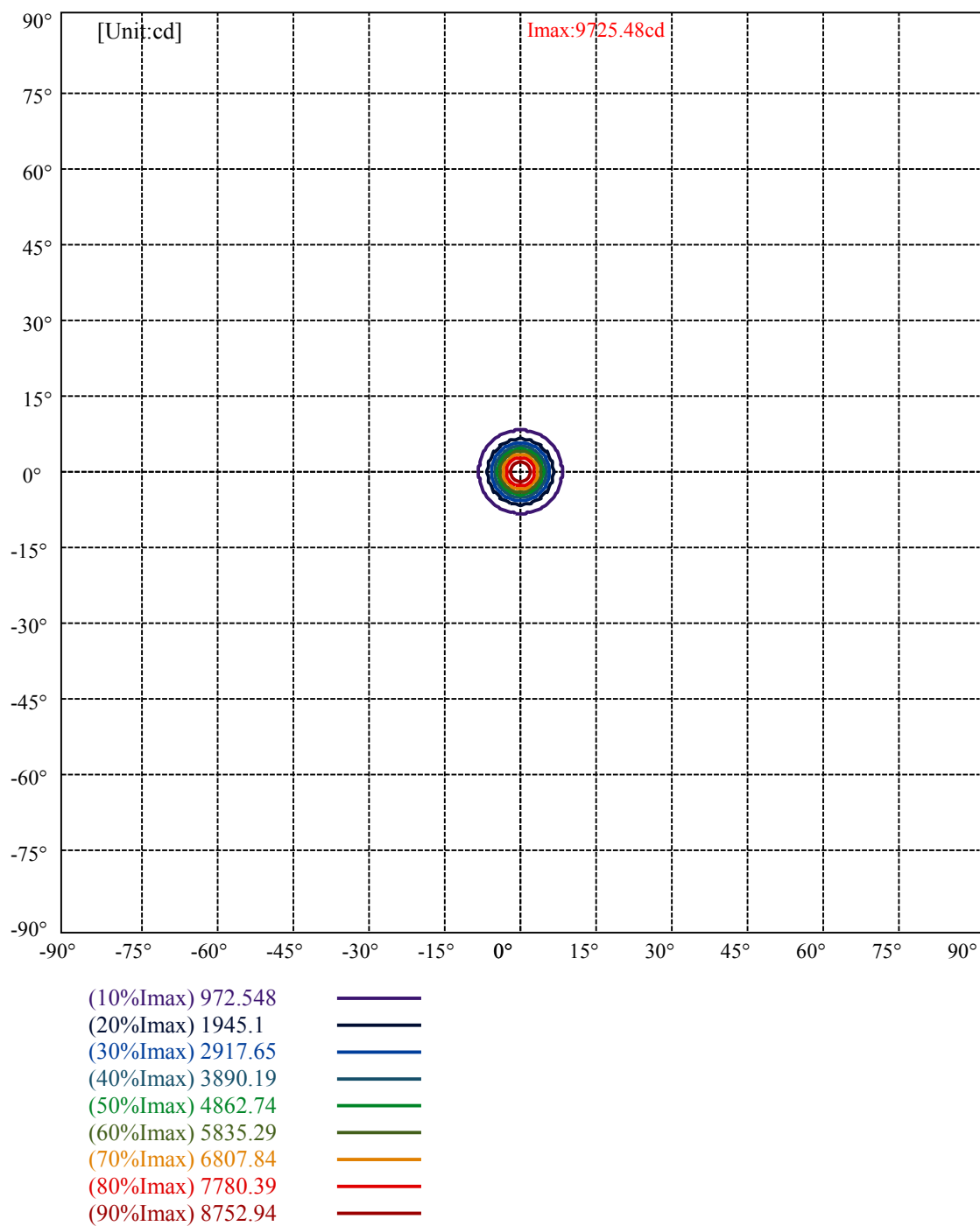
ZONAL LUMEN SUMMARY

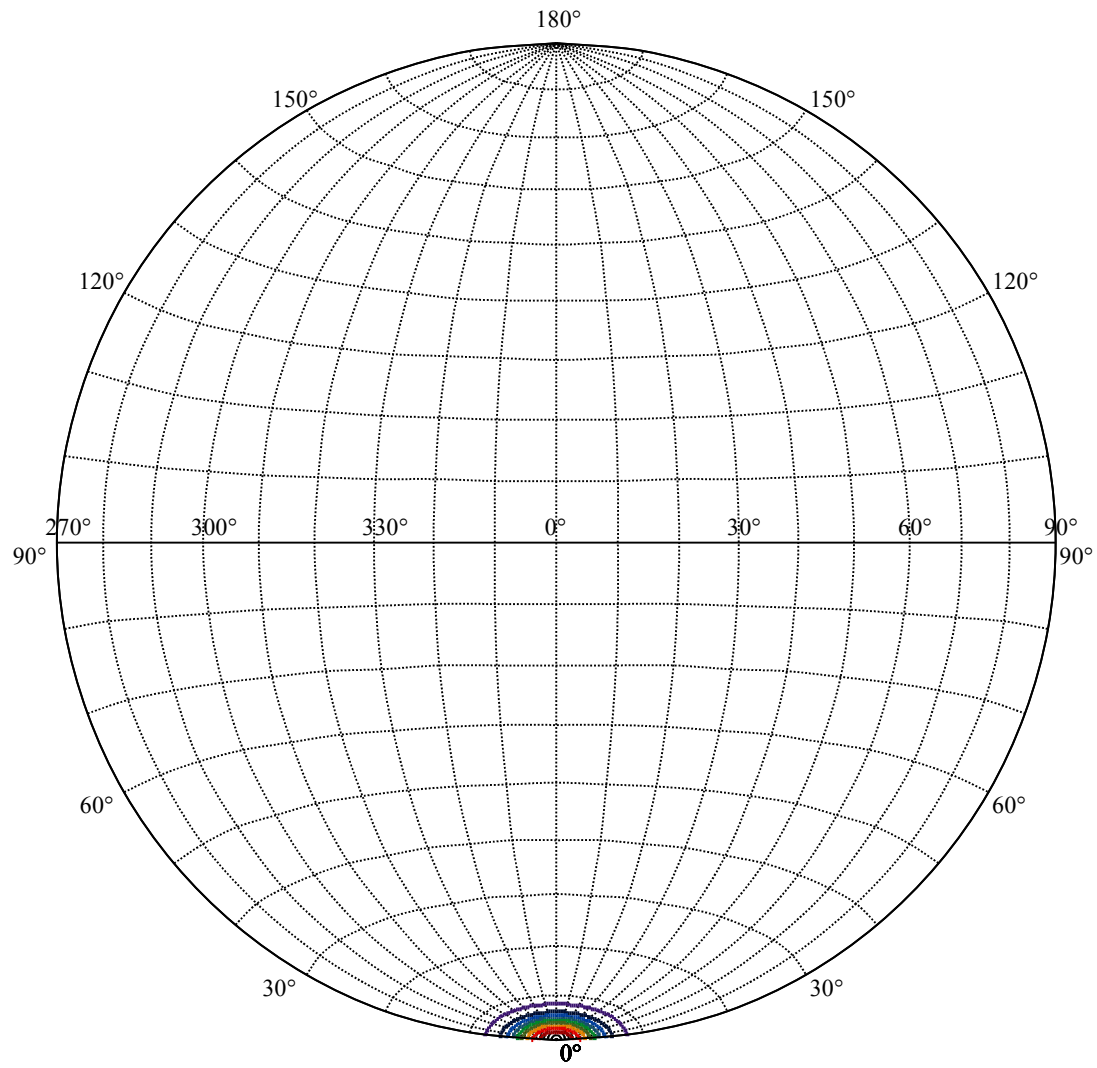
0-10	261.91
10-20	83.14
20-30	41.77
30-40	29.65
40-50	22.12
50-60	15.71
60-70	12.19
70-80	9.71
80-90	7.95
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 9.11



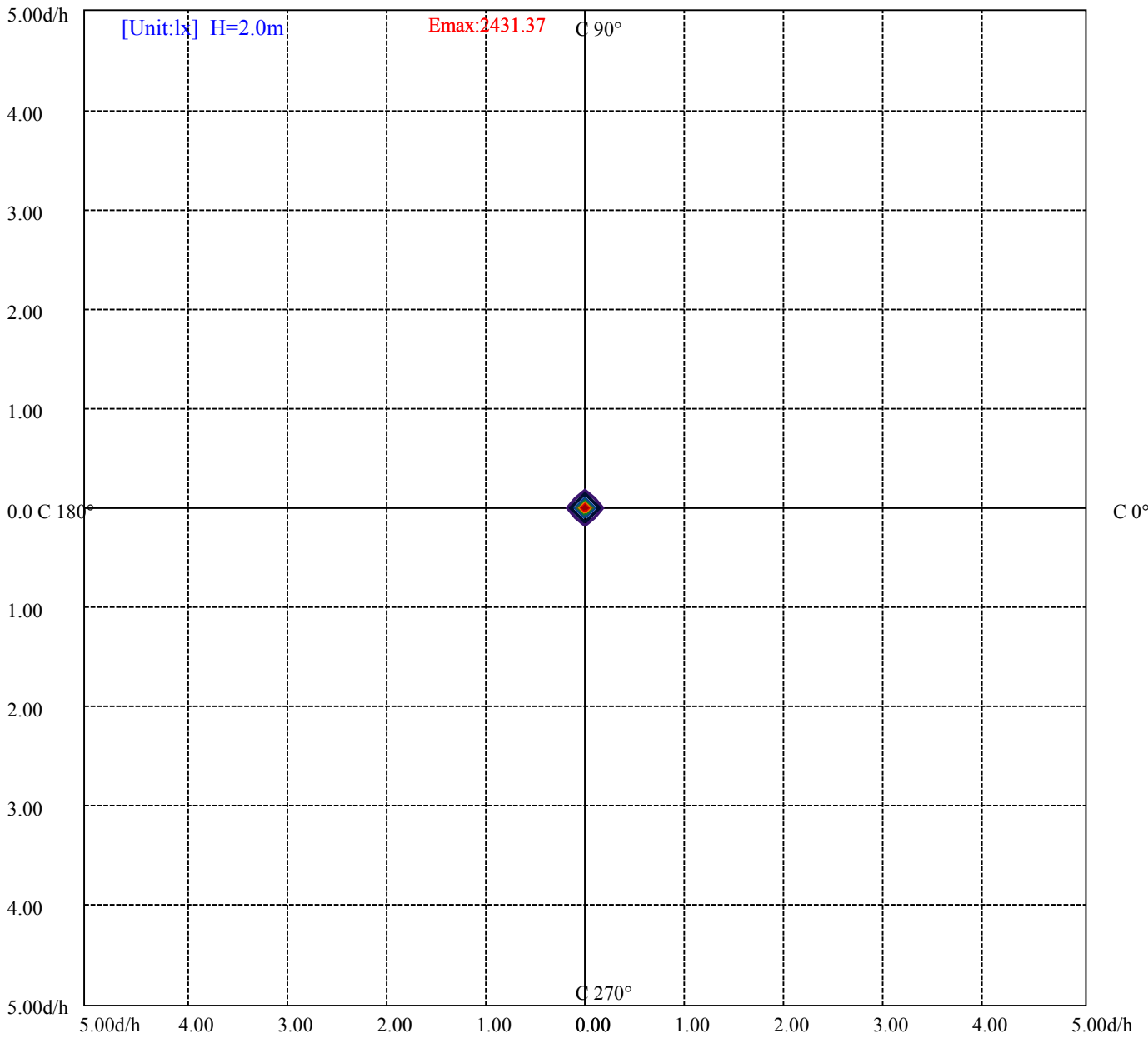


House

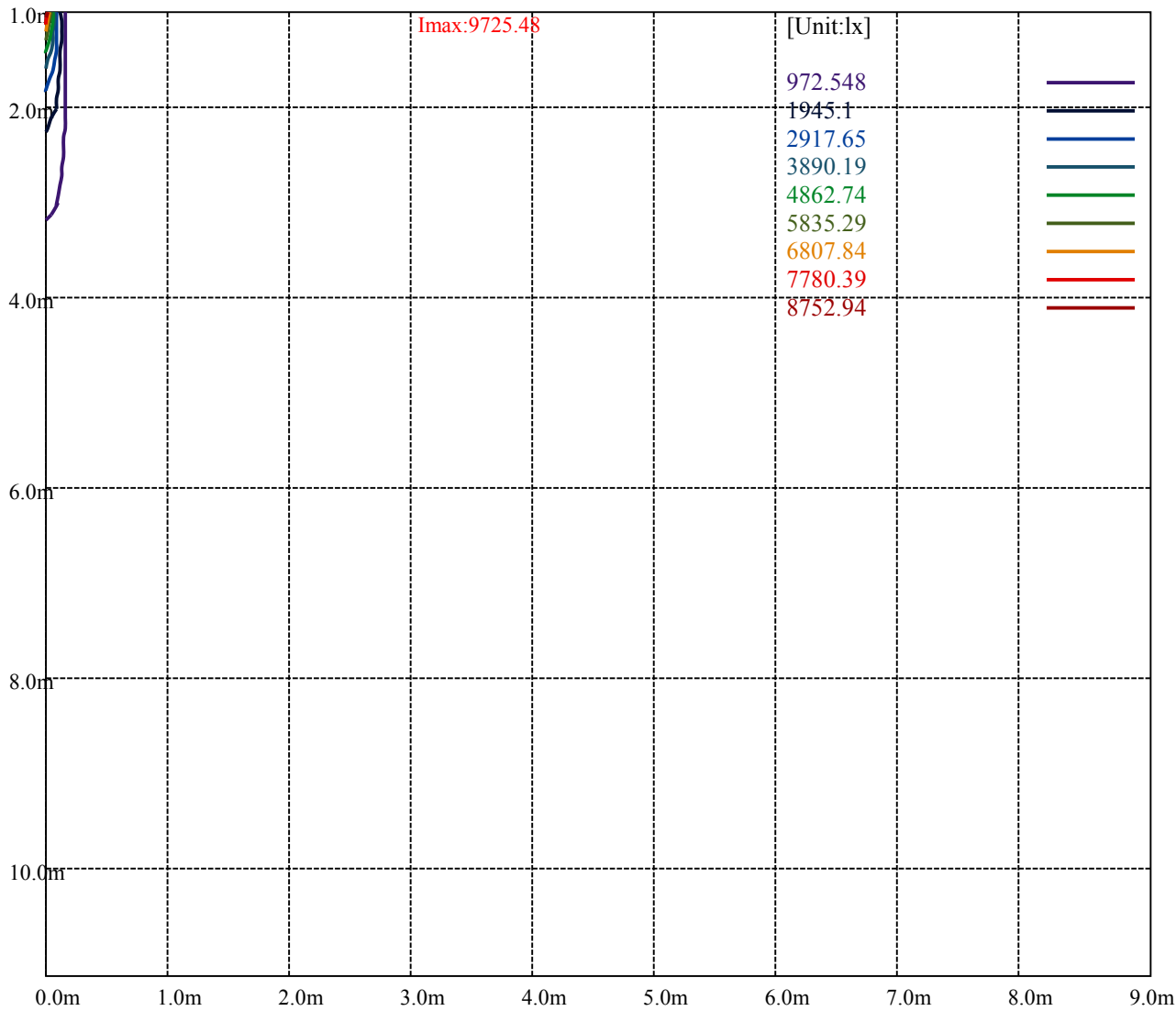
[Unit:cd]

Road

Imax:9725.48	
(10%Imax) 972.548	—
(20%Imax) 1945.1	—
(30%Imax) 2917.65	—
(40%Imax) 3890.19	—
(50%Imax) 4862.74	—
(60%Imax) 5835.29	—
(70%Imax) 6807.84	—
(80%Imax) 7780.39	—
(90%Imax) 8752.94	—



(10%Emax)	243.1362	—
(20%Emax)	486.2725	—
(30%Emax)	729.41	—
(40%Emax)	972.545	—
(50%Emax)	1215.682	—
(60%Emax)	1458.818	—
(70%Emax)	1701.955	—
(80%Emax)	1945.09	—
(90%Emax)	2188.228	—



Luminance Table

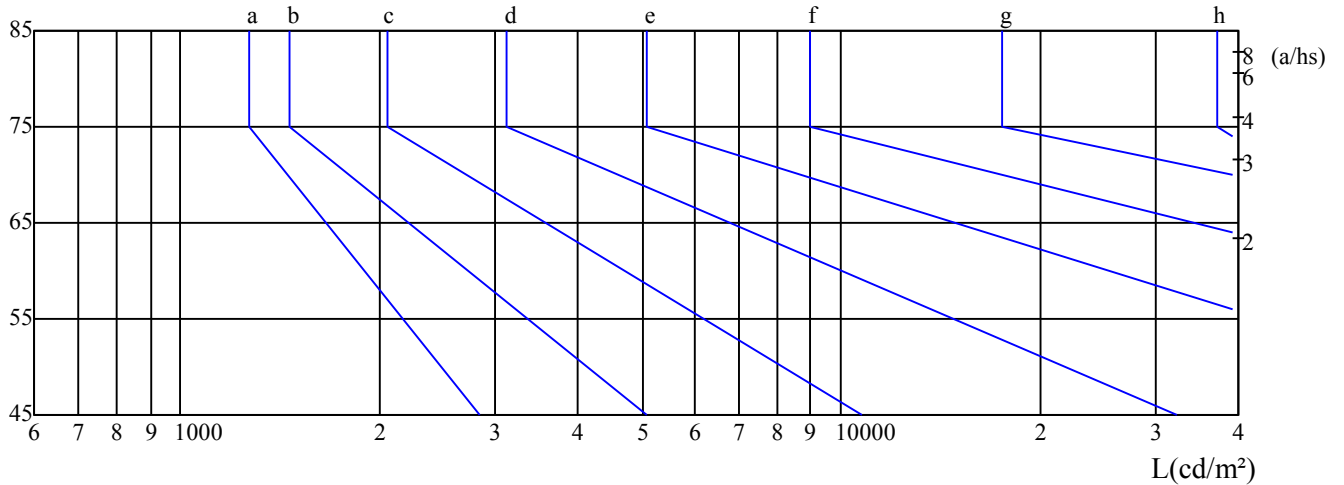
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

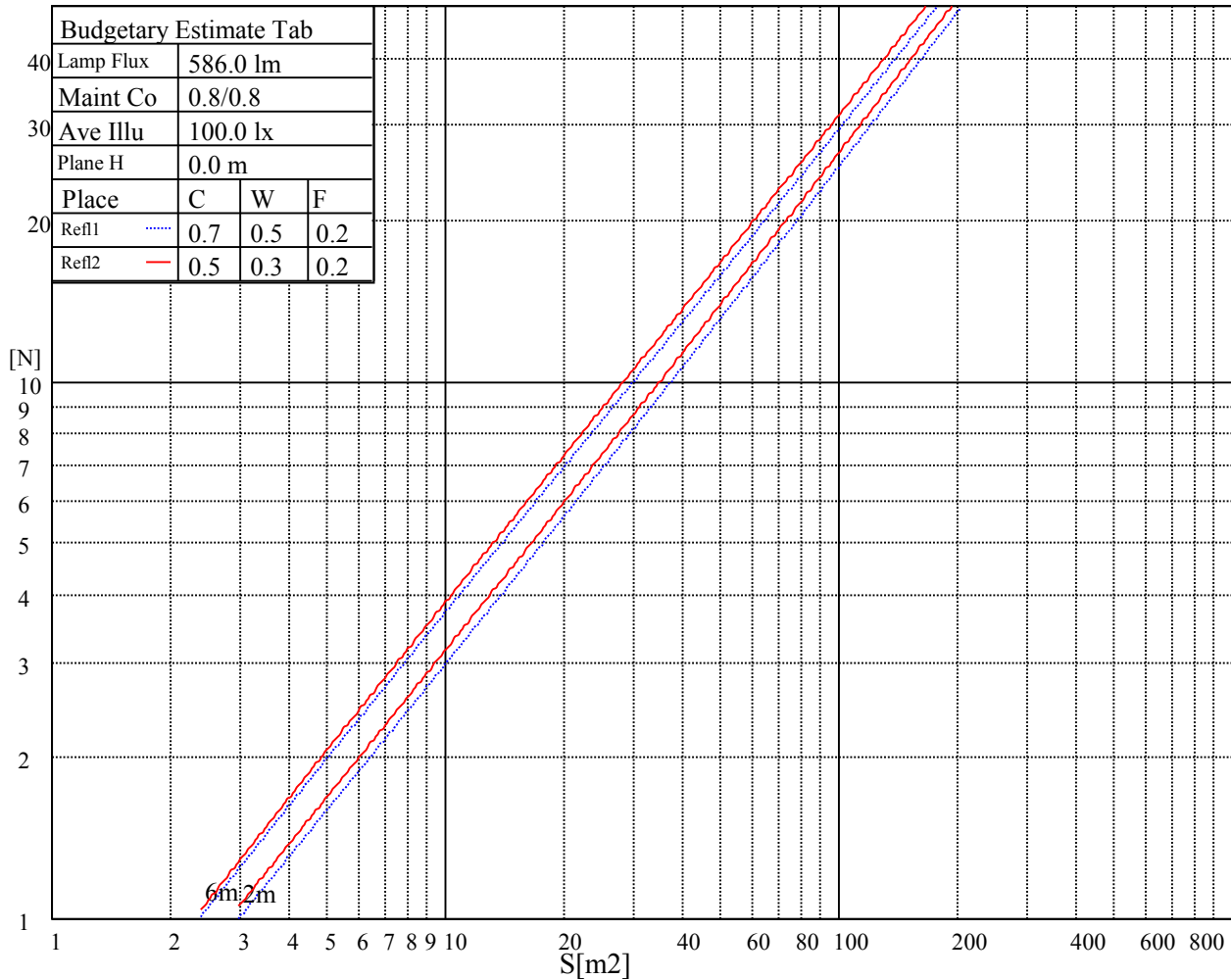
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

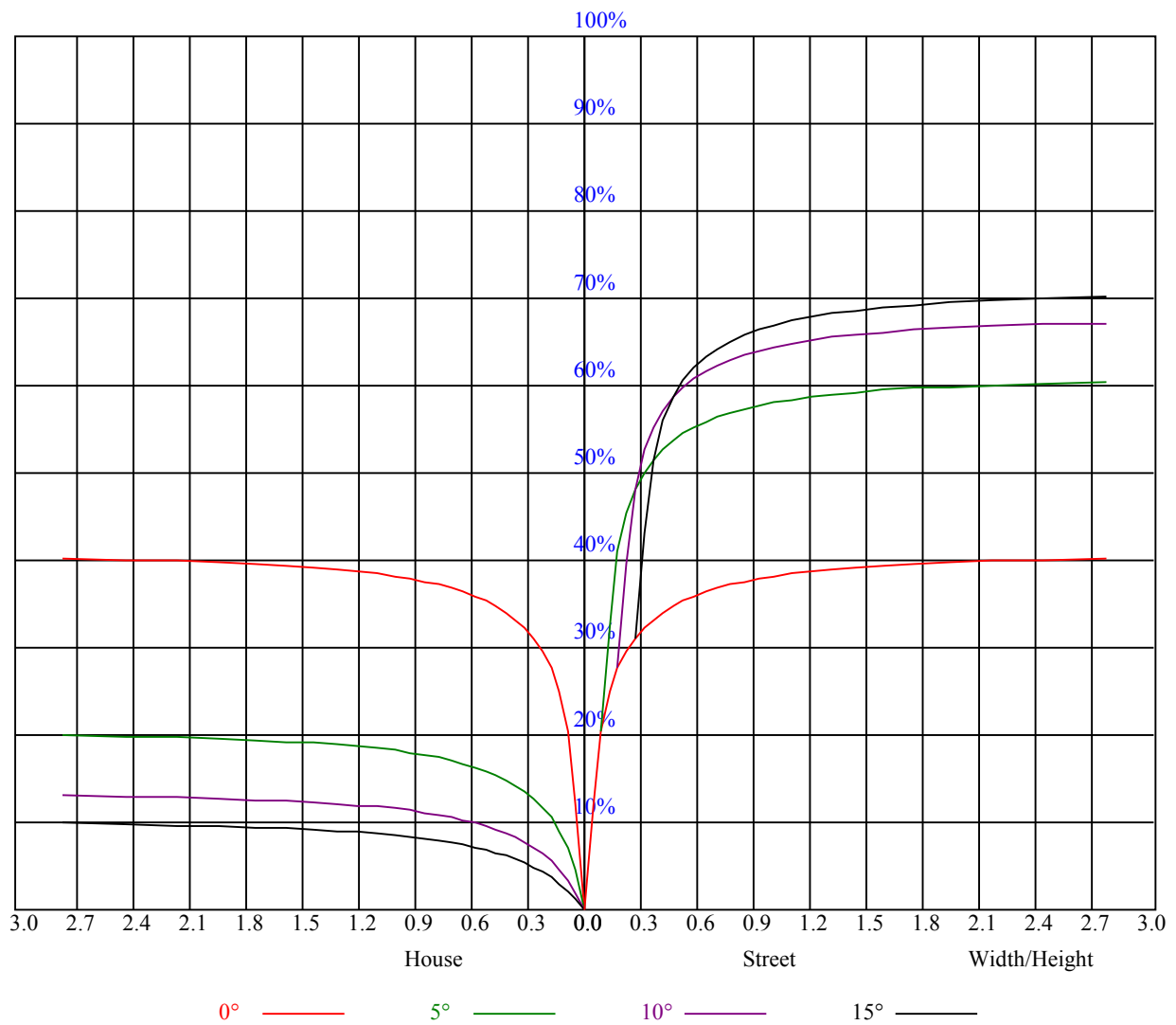
C0 ———

C45 ———

C90 ———



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	0.99	0.99	0.99	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.83
1	0.92	0.90	0.88	0.90	0.88	0.87	0.87	0.85	0.84	0.84	0.82	0.81	0.81	0.80	0.79	0.78
2	0.87	0.84	0.81	0.85	0.83	0.80	0.83	0.80	0.78	0.80	0.78	0.77	0.78	0.76	0.75	0.74
3	0.82	0.79	0.76	0.81	0.78	0.76	0.79	0.77	0.74	0.77	0.75	0.73	0.75	0.74	0.72	0.71
4	0.79	0.75	0.72	0.78	0.75	0.72	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.70	0.68
5	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.69	0.67	0.66
6	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.65
7	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.63
8	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.62
9	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.63	0.61	0.61
10	0.66	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.65	0.62	0.60	0.60



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	9775.13	9524.25	8564.06	7230.38	5502.94	3593.25	2151.56	1386.00	946.69
45.0	9761.63	9457.88	8553.38	7245.00	5320.69	3670.31	2230.88	1365.19	975.94
90.0	9688.50	9328.50	8385.19	6798.38	5045.63	3225.94	1882.69	1115.04	830.98
135.0	9676.69	9706.50	9297.56	8256.38	6584.06	4864.50	3106.69	1830.38	1206.56
180.0	9775.13	9685.13	9087.19	7789.50	6157.13	4175.44	2526.19	1118.81	1029.94
225.0	9761.63	9681.19	9108.56	7736.63	6086.81	4345.88	2564.44	1650.94	1082.25
270.0	9688.50	9671.06	9045.56	8049.94	6512.06	4561.31	2868.75	1811.25	1143.00
315.0	9676.69	9139.50	8186.63	6762.38	5046.75	3062.81	1932.75	1104.13	842.46
360.0	9775.13	9524.25	8564.06	7230.38	5502.94	3593.25	2151.56	1386.00	946.69
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	725.63	606.38	510.75	441.56	376.31	321.75	286.31	245.42	211.33
45.0	745.31	603.56	514.69	444.94	372.38	325.69	286.31	242.83	215.33
90.0	685.35	565.31	473.63	420.81	368.10	306.96	274.56	242.33	205.14
135.0	851.06	676.69	552.38	469.69	409.50	352.13	306.56	288.00	236.48
180.0	785.14	630.90	531.34	461.42	401.34	338.68	296.72	260.78	223.43
225.0	835.03	635.85	537.53	461.98	393.69	337.67	295.65	255.32	222.41
270.0	808.31	643.50	527.63	452.81	385.88	330.75	289.69	261.79	219.77
315.0	664.20	550.18	461.19	394.03	344.70	298.13	262.52	228.26	199.58
360.0	725.63	606.38	510.75	441.56	376.31	321.75	286.31	245.42	211.33
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	188.49	168.75	146.76	131.23	118.29	105.69	94.84	86.68	78.75
45.0	190.63	167.79	147.43	131.91	117.23	105.81	94.95	85.78	78.98
90.0	184.89	164.81	145.24	128.93	116.10	103.73	94.39	85.50	77.96
135.0	202.73	180.51	162.34	143.38	125.33	112.73	100.80	90.56	82.91
180.0	197.89	176.74	160.03	138.77	124.26	112.05	99.11	90.39	82.97
225.0	197.49	173.42	155.36	137.76	121.28	109.01	98.44	87.47	80.16
270.0	192.94	172.41	152.04	133.65	120.26	108.34	95.34	86.74	79.31
315.0	177.92	156.66	137.76	123.86	111.43	98.16	89.38	81.90	74.08
360.0	188.49	168.75	146.76	131.23	118.29	105.69	94.84	86.68	78.75
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	72.84	67.33	62.89	59.79	56.98	54.73	52.71	51.13	48.49
45.0	72.45	66.99	63.23	59.96	56.70	54.62	52.48	50.29	48.21
90.0	72.23	66.83	62.27	58.84	56.08	53.16	50.96	48.94	46.69
135.0	75.54	69.98	64.80	60.30	57.04	53.94	51.13	48.88	46.86
180.0	75.71	69.58	65.03	60.86	58.05	55.63	53.27	51.41	49.44
225.0	73.63	66.88	62.33	58.61	55.24	52.59	50.51	48.21	46.52
270.0	71.27	65.98	61.54	57.43	54.11	51.69	49.50	47.76	45.96
315.0	68.74	64.35	60.36	57.09	54.84	52.65	50.85	48.99	47.14
360.0	72.84	67.33	62.89	59.79	56.98	54.73	52.71	51.13	48.49
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	46.63	44.61	41.74	39.66	37.52	35.55	33.13	31.28	29.36
45.0	46.24	43.99	41.63	39.66	37.52	35.55	33.41	31.22	29.64
90.0	44.49	42.47	40.22	38.08	36.17	34.31	32.63	30.77	29.14
135.0	44.44	42.58	40.73	38.59	36.51	34.76	33.08	31.16	29.70
180.0	47.42	45.62	43.54	40.89	38.76	36.51	34.20	32.01	30.26
225.0	44.78	43.14	41.51	39.77	37.97	36.39	34.71	32.79	31.22
270.0	44.38	42.98	41.29	39.38	37.74	36.06	33.86	32.29	30.71
315.0	45.39	43.65	41.18	39.09	37.01	34.43	32.40	30.54	28.52
360.0	46.63	44.61	41.74	39.66	37.52	35.55	33.13	31.28	29.36

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	27.84	26.21	24.86	23.51	22.28	21.15	20.25	19.46	18.51
45.0	28.01	26.27	24.98	23.85	22.44	21.43	20.53	19.52	18.68
90.0	27.90	26.55	25.31	24.30	23.23	21.94	20.98	20.03	19.13
135.0	28.24	27.00	25.71	24.53	23.46	22.39	21.21	20.19	19.29
180.0	28.46	26.83	25.43	24.02	22.84	21.60	20.48	19.63	18.79
225.0	29.70	28.35	27.39	26.21	24.24	22.78	21.60	20.31	19.46
270.0	29.14	27.62	26.38	24.98	23.68	22.44	21.15	20.08	19.01
315.0	27.06	25.76	24.36	23.23	21.99	20.76	19.86	18.90	18.06
360.0	27.84	26.21	24.86	23.51	22.28	21.15	20.25	19.46	18.51
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	17.83	17.16	16.54	15.86	15.36	14.79	14.23	13.67	13.22
45.0	18.00	17.33	16.71	16.09	15.53	15.02	14.40	13.84	13.39
90.0	18.34	17.66	16.93	16.43	15.92	15.36	14.96	14.57	14.23
135.0	18.45	17.61	16.99	16.37	15.86	15.47	14.85	14.34	13.95
180.0	17.89	17.16	16.59	15.86	15.36	14.85	14.34	13.78	13.39
225.0	18.51	17.49	16.93	16.20	15.41	14.91	14.40	13.78	13.39
270.0	18.06	17.21	16.54	15.81	15.30	14.85	14.23	13.89	13.50
315.0	17.27	16.65	16.03	15.41	14.85	14.34	13.84	13.33	13.11
360.0	17.83	17.16	16.54	15.86	15.36	14.79	14.23	13.67	13.22
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	12.66	12.26	11.81	11.48	11.08	10.74	10.46	10.24	10.01
45.0	12.88	12.32	11.87	11.48	11.03	10.63	10.29	10.07	9.84
90.0	13.95	13.61	13.16	12.83	12.32	11.76	11.25	10.74	10.29
135.0	13.44	12.99	12.71	12.21	11.87	11.48	11.14	10.63	10.24
180.0	12.83	12.38	11.93	11.53	11.19	10.91	10.52	10.24	9.96
225.0	12.88	12.32	11.81	11.48	10.97	10.69	10.29	9.96	9.68
270.0	13.22	12.94	12.94	12.49	12.38	11.36	9.90	9.73	9.96
315.0	12.94	12.71	12.43	12.15	11.70	11.25	10.69	10.18	9.84
360.0	12.66	12.26	11.81	11.48	11.08	10.74	10.46	10.24	10.01
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.73	9.62	9.51	9.45	9.39	9.39	9.17	9.00	8.83
45.0	9.56	9.45	9.34	9.28	9.23	9.11	8.83	8.61	8.38
90.0	9.84	9.51	9.28	9.23	9.45	9.28	8.83	8.38	8.10
135.0	9.68	9.23	9.00	8.78	8.66	8.78	8.72	8.38	8.10
180.0	9.73	9.56	9.45	9.39	9.45	9.51	9.39	9.17	8.89
225.0	9.39	9.17	9.11	9.06	9.17	9.17	9.00	8.61	8.27
270.0	9.45	9.06	8.83	8.66	8.66	8.66	8.33	7.88	7.59
315.0	9.45	9.11	8.89	8.78	8.78	8.55	8.21	8.04	7.88
360.0	9.73	9.62	9.51	9.45	9.39	9.39	9.17	9.00	8.83
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.94	9.11	9.28	9.28	9.00	8.89	8.55	8.16	7.71
45.0	8.61	8.83	8.94	9.00	8.83	8.94	8.72	8.27	7.76
90.0	8.04	7.99	8.10	8.16	8.10	8.27	8.21	7.99	7.43
135.0	7.82	7.71	7.76	7.88	7.93	7.99	7.99	7.54	7.14
180.0	8.61	8.72	8.83	8.94	8.78	8.55	7.59	7.26	6.86
225.0	8.10	8.27	8.49	8.55	8.61	8.55	7.76	7.48	6.98
270.0	7.31	7.37	7.37	7.43	7.43	7.59	7.43	6.86	6.13
315.0	7.76	7.76	7.76	7.76	7.71	7.88	7.59	7.31	6.81
360.0	8.94	9.11	9.28	9.28	9.00	8.89	8.55	8.16	7.71

61.0081.000

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	7.14
45.0	7.31
90.0	6.92
135.0	6.64
180.0	6.47
225.0	6.58
270.0	5.40
315.0	6.36
360.0	7.14