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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 2-1678-M
Luminaire: 92.70.122.00
Report No: NATA0100
Test No: GC2018100705
LampCAT: BRIDGELUX V4-HD
Lamp flux(lm): 723.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 37.3000
Current(A): 0.1900
Power (W): 7.0870
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 646.45
Efficiency(%): 89.42%
Lumens(lm)/Power(W): 91.97
Central intensity(cd): 22459.220
Maximum intensity(cd): 22459.220
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=5.9
[C90/270]Total=5.9
Field angle(10%Imax): [C0/180]Total=11.5
[C90/270]Total=11.5
Maximum s/h(1/2): C0_180=0.10 C90_270=0.10
Maximum s/h(1/4): C0_180=0.11 C90_270=0.11
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.16%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.999%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	22459.219	5.373	5.373	.743%	.831%
1.0	20750.625	39.714	45.087	5.493%	6.974%
2.0	15851.109	60.664	105.751	8.391%	16.359%
3.0	10975.852	62.993	168.743	8.713%	26.103%
4.0	6587.578	50.392	219.135	6.970%	33.898%
5.0	3509.016	33.538	252.673	4.639%	39.086%
6.0	1843.376	21.130	273.803	2.923%	42.355%
7.0	1010.918	13.510	287.313	1.869%	44.444%
8.0	725.252	11.069	298.382	1.531%	46.157%
9.0	567.077	9.728	308.11	1.346%	47.662%
10.0	481.978	9.178	317.288	1.269%	49.081%
11.0	436.240	9.128	326.416	1.263%	50.493%
12.0	403.066	9.190	335.606	1.271%	51.915%
13.0	370.870	9.149	344.755	1.265%	53.330%
14.0	346.627	9.196	353.95	1.272%	54.753%
15.0	327.832	9.305	363.255	1.287%	56.192%
16.0	310.859	9.396	372.651	1.300%	57.645%
17.0	298.969	9.585	382.237	1.326%	59.128%
18.0	289.589	9.813	392.05	1.357%	60.646%
19.0	281.665	10.056	402.106	1.391%	62.202%
20.0	275.393	10.329	412.435	1.429%	63.800%
21.0	268.903	10.568	423.003	1.462%	65.434%
22.0	264.347	10.859	433.862	1.502%	67.114%
23.0	260.691	11.170	445.032	1.545%	68.842%
24.0	257.196	11.472	456.504	1.587%	70.617%
25.0	253.751	11.760	468.264	1.627%	72.436%
26.0	250.713	12.052	480.316	1.667%	74.300%
27.0	247.648	12.329	492.645	1.705%	76.207%
28.0	244.455	12.585	505.23	1.741%	78.154%
29.0	240.159	12.768	517.998	1.766%	80.129%
30.0	236.194	12.951	530.949	1.791%	82.132%
31.0	232.938	13.156	544.105	1.820%	84.168%
32.0	229.493	13.336	557.441	1.845%	86.231%
33.0	225.520	13.469	570.911	1.863%	88.314%
34.0	219.902	13.485	584.396	1.865%	90.400%
35.0	214.854	13.514	597.91	1.869%	92.491%
36.0	204.258	13.166	611.075	1.821%	94.527%
37.0	162.795	10.744	621.819	1.486%	96.189%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	92.644	6.255	628.074	.865%	97.157%
39.0	37.188	2.566	630.64	.355%	97.554%
40.0	14.252	1.005	631.645	.139%	97.709%
41.0	11.306	0.813	632.458	.113%	97.835%
42.0	9.513	0.698	633.156	.097%	97.943%
43.0	7.622	0.570	633.727	.079%	98.031%
44.0	6.370	0.485	634.212	.067%	98.106%
45.0	5.098	0.395	634.607	.055%	98.167%
46.0	3.881	0.306	634.913	.042%	98.215%
47.0	3.663	0.294	635.207	.041%	98.260%
48.0	3.572	0.291	635.498	.040%	98.305%
49.0	3.452	0.286	635.784	.040%	98.349%
50.0	3.361	0.282	636.066	.039%	98.393%
51.0	3.277	0.279	636.345	.039%	98.436%
52.0	3.213	0.278	636.623	.038%	98.479%
53.0	3.143	0.275	636.898	.038%	98.522%
54.0	3.066	0.272	637.17	.038%	98.564%
55.0	3.009	0.270	637.441	.037%	98.606%
56.0	2.939	0.267	637.708	.037%	98.647%
57.0	2.883	0.265	637.973	.037%	98.688%
58.0	2.834	0.264	638.237	.036%	98.729%
59.0	2.798	0.263	638.5	.036%	98.769%
60.0	2.742	0.260	638.76	.036%	98.810%
61.0	2.721	0.261	639.021	.036%	98.850%
62.0	2.686	0.260	639.281	.036%	98.890%
63.0	2.658	0.260	639.541	.036%	98.931%
64.0	2.630	0.259	639.8	.036%	98.971%
65.0	2.609	0.259	640.059	.036%	99.011%
66.0	2.580	0.259	640.318	.036%	99.051%
67.0	2.566	0.259	640.577	.036%	99.091%
68.0	2.545	0.259	640.836	.036%	99.131%
69.0	2.531	0.259	641.095	.036%	99.171%
70.0	2.517	0.259	641.354	.036%	99.211%
71.0	2.503	0.260	641.614	.036%	99.251%
72.0	2.489	0.260	641.873	.036%	99.291%
73.0	2.461	0.258	642.131	.036%	99.331%
74.0	2.468	0.260	642.391	.036%	99.372%
75.0	2.454	0.260	642.651	.036%	99.412%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.447	0.260	642.912	.036%	99.452%
77.0	2.461	0.263	643.175	.036%	99.493%
78.0	2.447	0.262	643.437	.036%	99.533%
79.0	2.426	0.261	643.698	.036%	99.574%
80.0	2.419	0.261	643.959	.036%	99.614%
81.0	2.419	0.262	644.221	.036%	99.655%
82.0	2.419	0.263	644.484	.036%	99.695%
83.0	2.419	0.263	644.747	.036%	99.736%
84.0	2.419	0.264	645.011	.036%	99.777%
85.0	2.405	0.263	645.274	.036%	99.817%
86.0	2.405	0.263	645.537	.036%	99.858%
87.0	2.398	0.263	645.799	.036%	99.899%
88.0	2.405	0.264	646.063	.036%	99.939%
89.0	2.377	0.261	646.324	.036%	99.980%
90.0	2.384	0.131	646.454	.018%	100.000%

Zonal flux distribution table

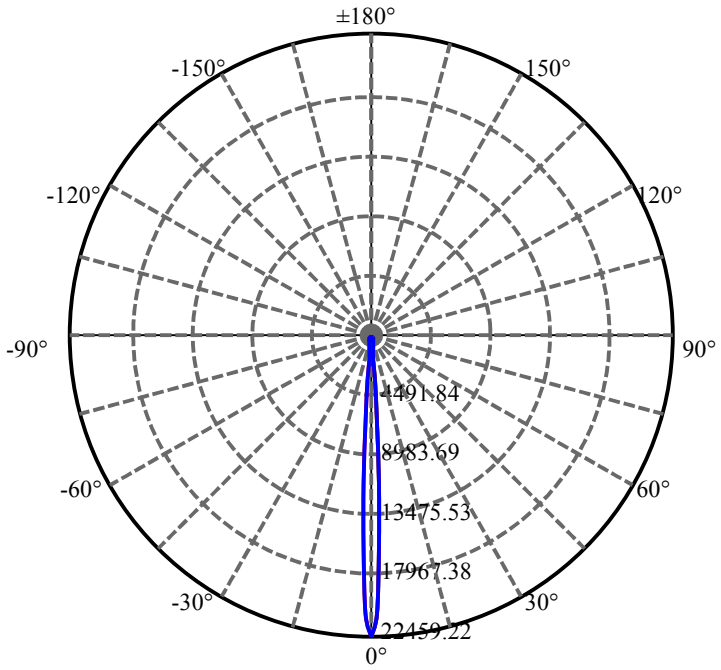
ZONAL LUMEN SUMMARY

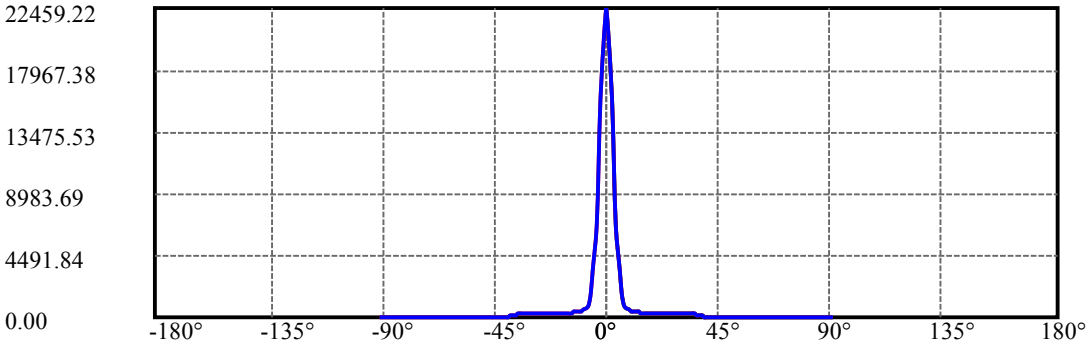
Zone	Lumens	%Lamp	%Fixt
0-30	530.95	73.44%	82.13%
0-40	631.65	87.37%	97.71%
0-60	638.76	88.35%	98.81%
0-90	646.32	89.40%	99.98%
0-120	646.32	89.40%	99.98%
0-180	646.45	89.42%	100.00%
60-90	7.82	1.08%	1.21%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.93	517.16	71.53%	80.00%

ZONAL LUMEN SUMMARY

0-10	317.29
10-20	95.15
20-30	118.51
30-40	100.70
40-50	4.42
50-60	2.69
60-70	2.59
70-80	2.61
80-90	2.36
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

Light Distribution Curve [Unit:cd]





C0(Max):

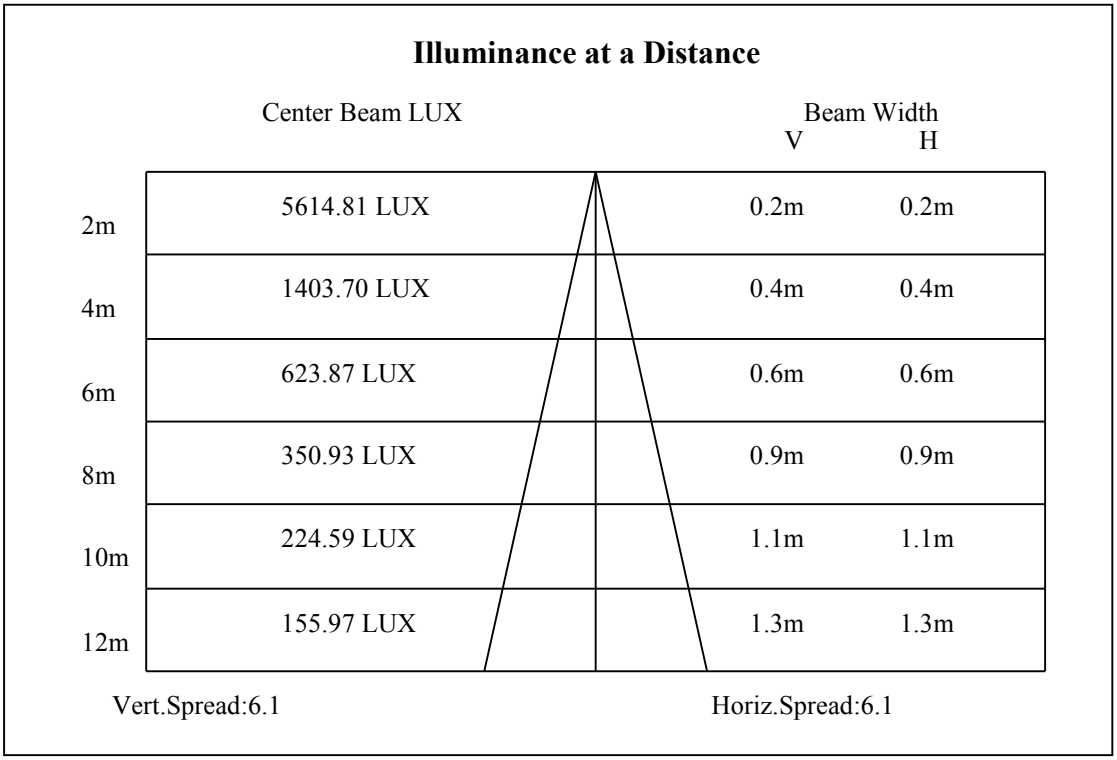
C0/C180:

C90/C270:

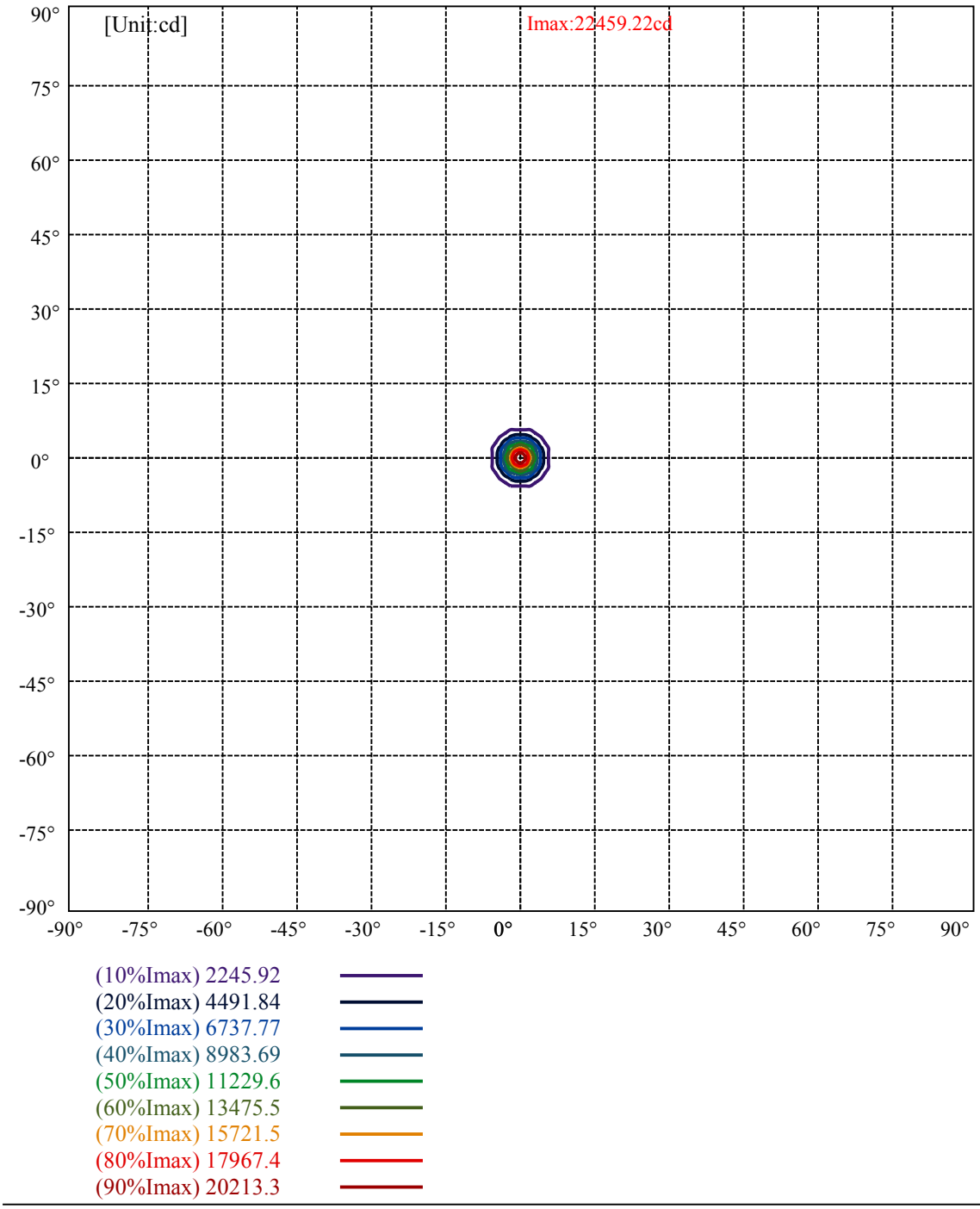
Field angle(10%Imax):C0/180Left:5.8 Right:5.8
:C90/270Left:5.8 Right:5.8

Beam Angle(50%Imax):C0/180Left:2.9 Right:2.9
:C90/270Left:2.9 Right:2.9

Lux distance Curve



ISO-Intensity(V-H)



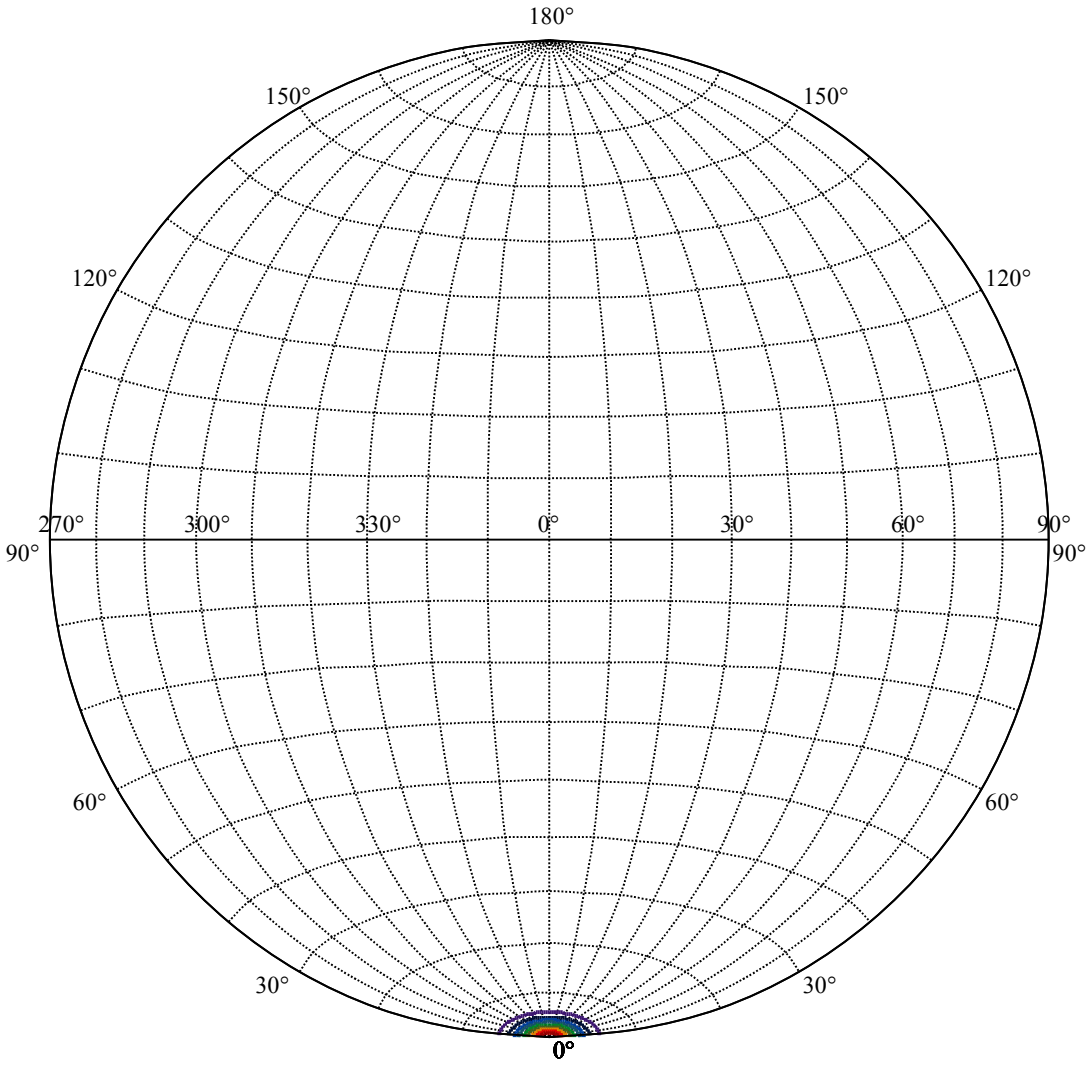
(10%Imax) 2245.92
(20%Imax) 4491.84
(30%Imax) 6737.77
(40%Imax) 8983.69
(50%Imax) 11229.6
(60%Imax) 13475.5
(70%Imax) 15721.5
(80%Imax) 17967.4
(90%Imax) 20213.3

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/10/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



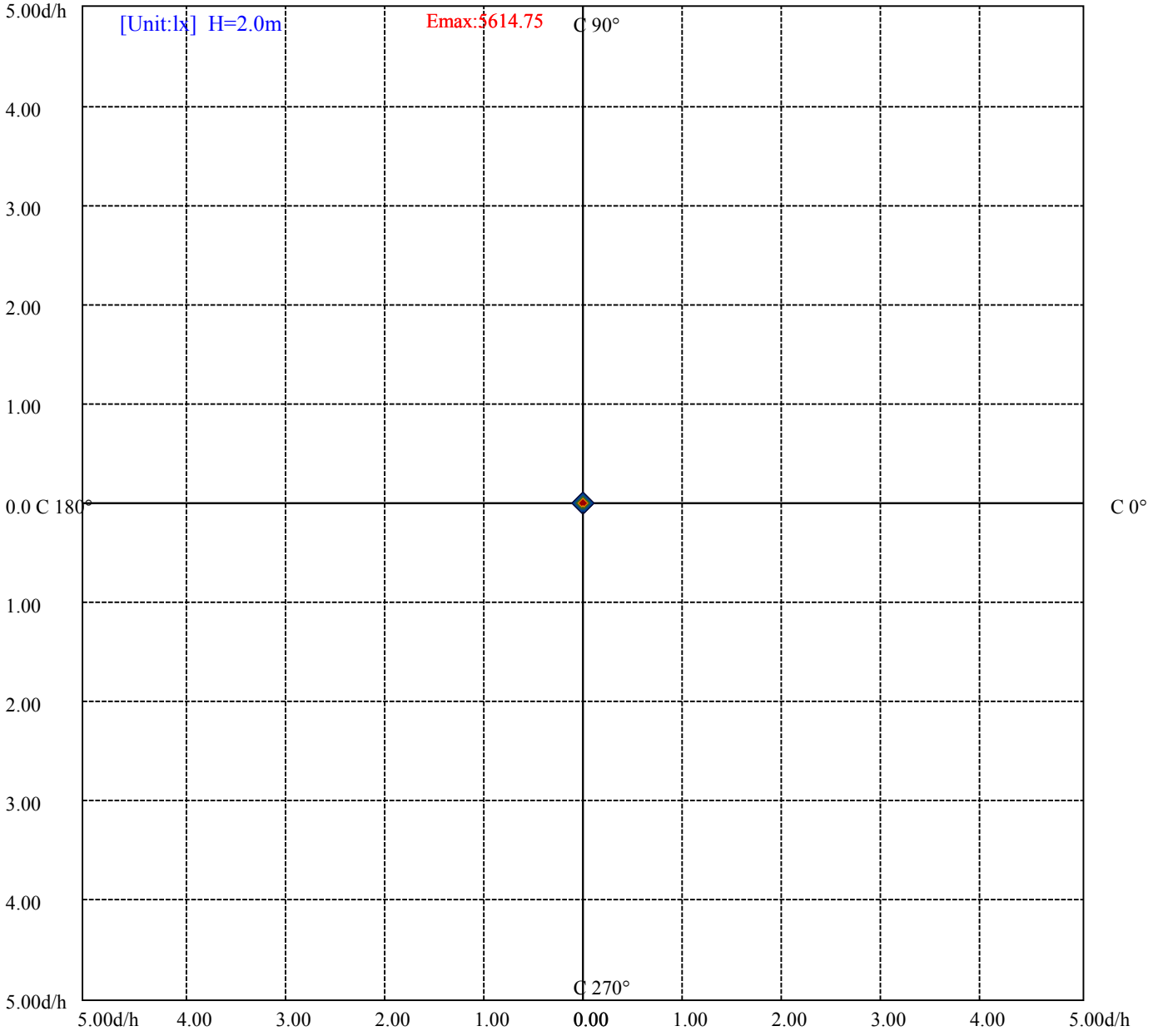
House [Unit:cd] Road

Imax:22459.22

(10%Imax) 2245.92
(20%Imax) 4491.84
(30%Imax) 6737.77
(40%Imax) 8983.69
(50%Imax) 11229.6
(60%Imax) 13475.5
(70%Imax) 15721.5
(80%Imax) 17967.4
(90%Imax) 20213.3

Equipment: GMS1980 Date: 2018/10/7 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.50

ISO illuminance diagram

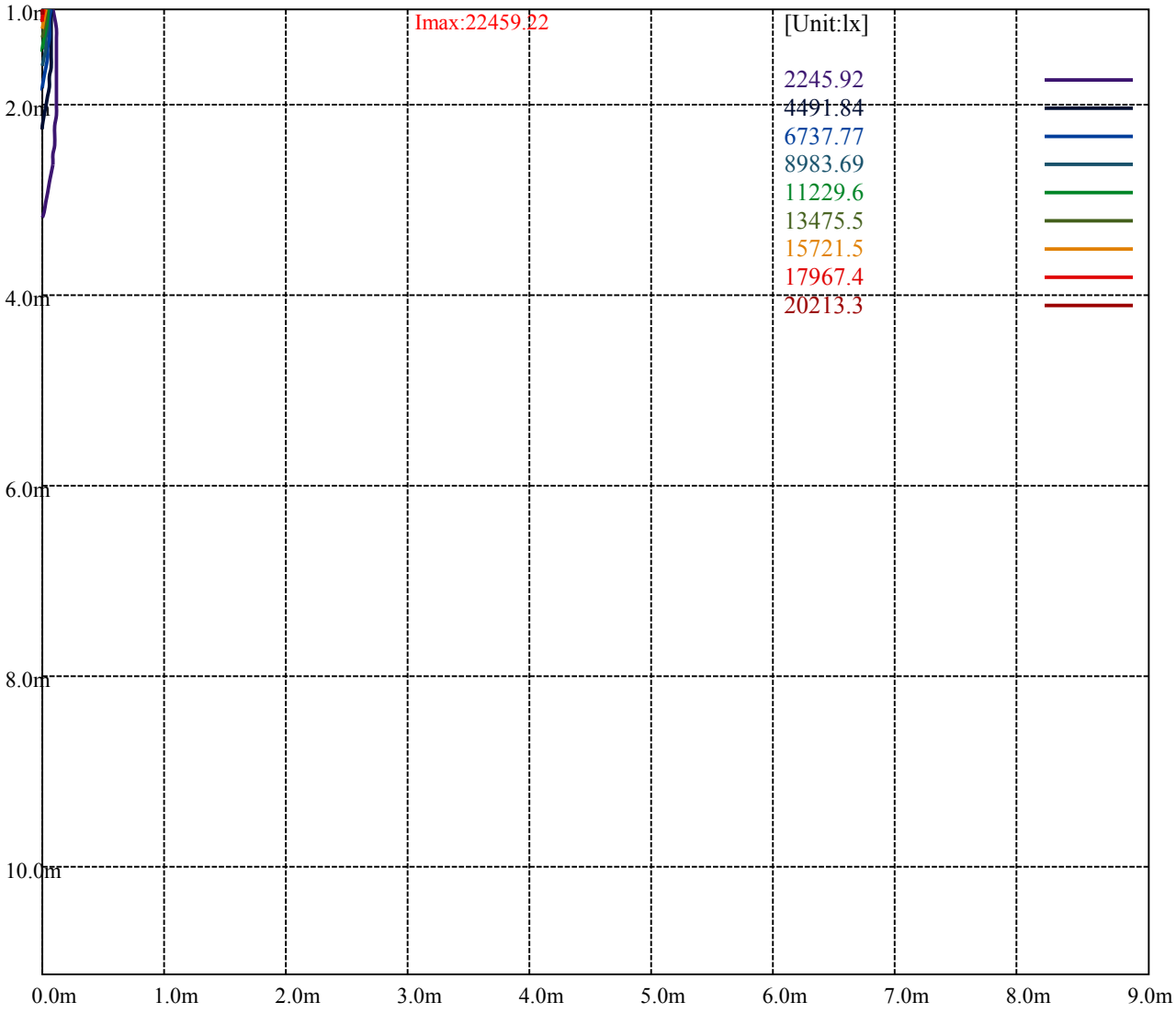


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/10/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/10/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

Nata 2-1678-M

Luminance Limitting Curve(no luminous side)

Luminance Table

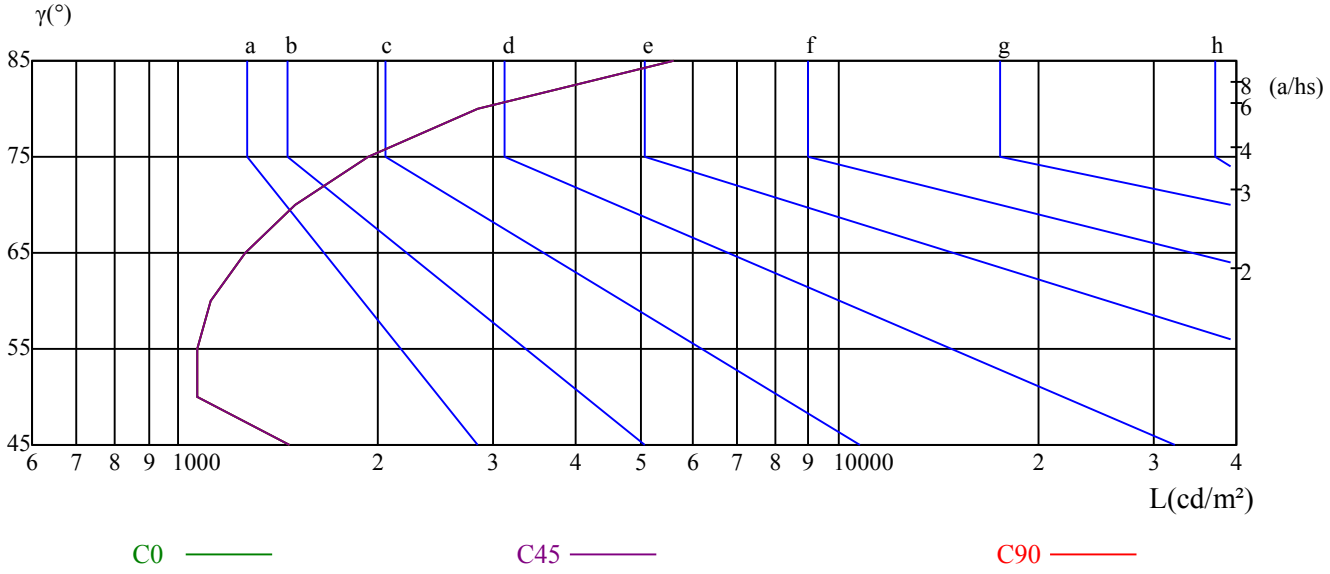
γ	45	50	55	60	65	70	75	80	85
C0	1471	1067	1071	1119	1260	1502	1935	2843	5631
C45	1471	1067	1071	1119	1260	1502	1935	2843	5631
C90	1471	1067	1071	1119	1260	1502	1935	2843	5631

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1260	1260	1260	1935	1935	1935	5631	5631	5631

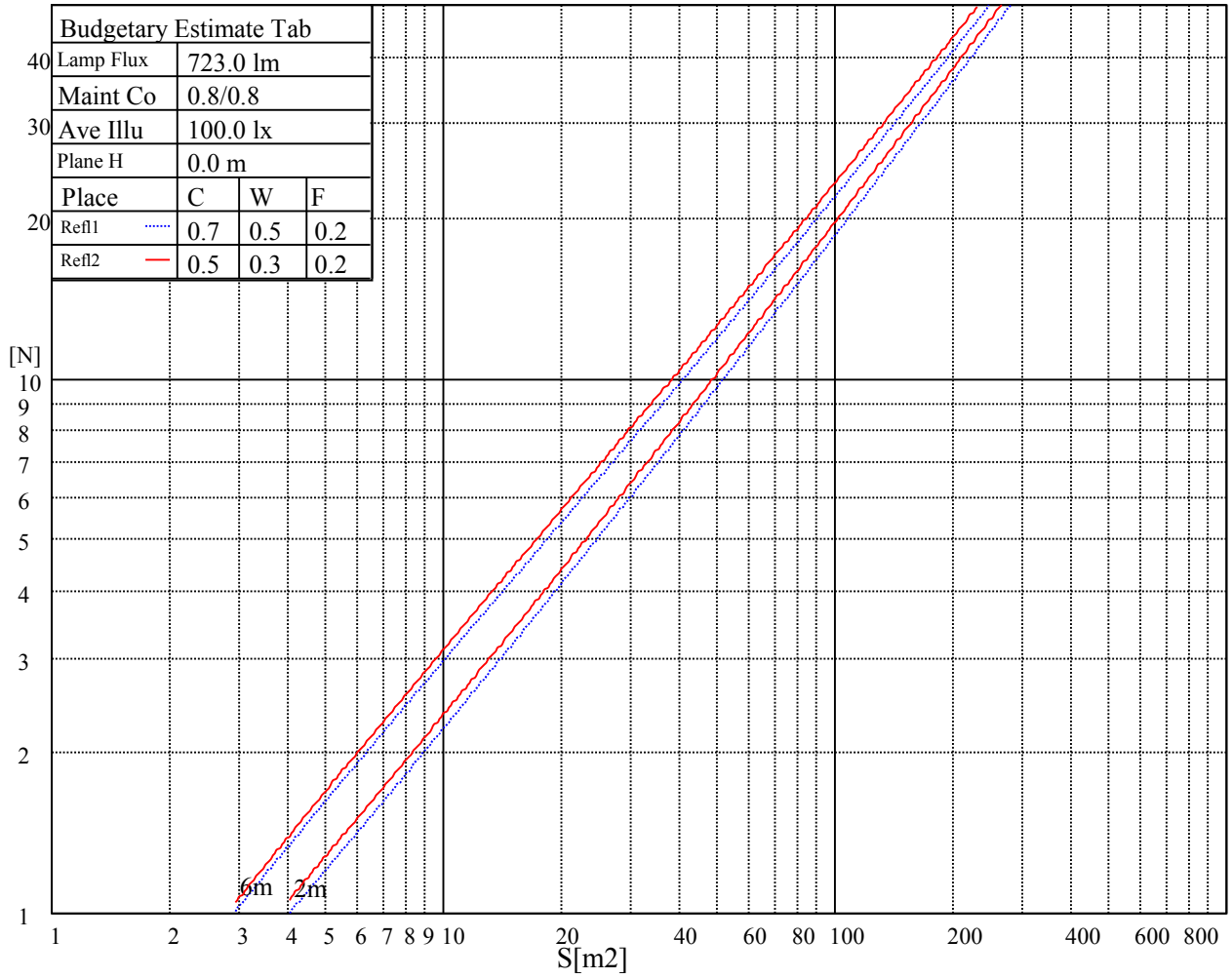
Glare Table

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 Limitting Curve



Budgetary Estimate Table

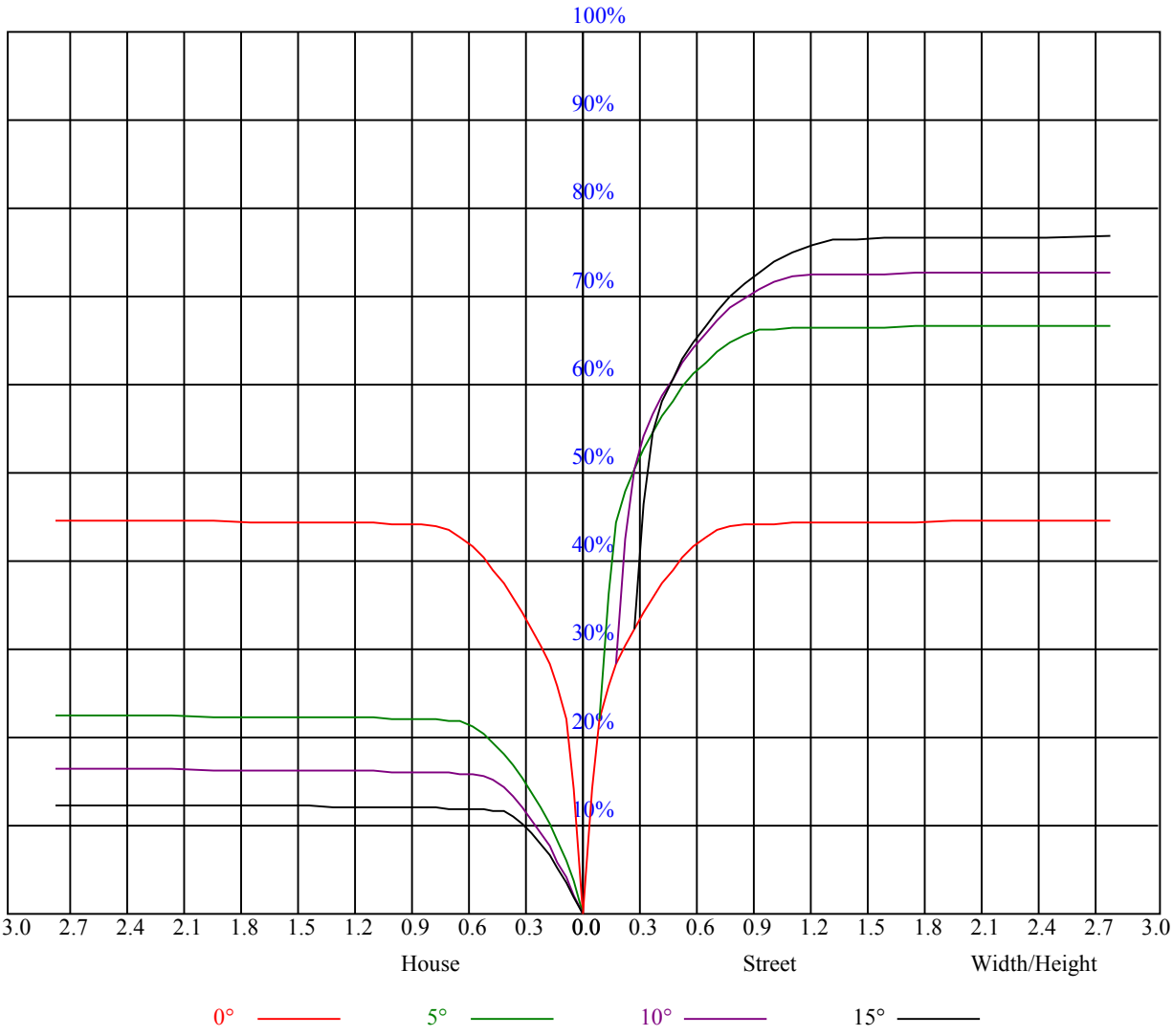


Equipment: GMS1980 Date: 2018/10/7 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.50

Utilization factor table for indoor luminaire

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	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.07	1.07	1.07	1.05	1.05	1.05	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	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.85
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.75	0.72	0.76	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69
8	0.75	0.71	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/10/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

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	22702.50	21155.63	16644.38	11019.38	6541.88	3161.25	2017.13	961.31	708.19
45.0	22156.88	22567.50	19434.38	14220.00	9393.75	5400.00	2840.63	1331.44	857.81
90.0	22713.75	21256.88	17308.13	11170.69	6792.19	3675.94	1423.13	950.91	702.79
135.0	22263.75	22370.63	19012.50	13753.13	9084.38	4899.38	2851.88	1383.75	896.63
180.0	22702.50	20857.50	16751.25	10767.94	6567.19	3594.38	1955.25	999.51	735.98
225.0	22156.88	18331.88	11052.00	8224.88	4209.75	2221.31	1104.24	807.81	621.73
270.0	22713.75	20756.25	15834.38	10203.75	5850.00	2986.88	1479.38	897.19	675.56
315.0	22263.75	18708.75	10771.88	8447.06	4261.50	2133.00	1075.39	755.44	603.34
360.0	22702.50	21155.63	16644.38	11019.38	6541.88	3161.25	2017.13	961.31	708.19

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	573.19	491.63	443.25	414.00	375.19	352.13	335.81	313.88	302.63
45.0	613.69	520.31	458.44	412.88	379.13	354.94	333.00	317.81	304.31
90.0	558.84	461.14	423.73	391.78	362.42	339.08	322.37	306.90	296.44
135.0	628.88	524.25	461.25	420.75	380.81	356.06	333.00	315.56	303.19
180.0	575.61	468.17	428.68	395.44	364.44	339.47	320.79	303.53	291.77
225.0	519.92	457.59	414.96	386.38	359.55	335.19	317.87	304.48	292.16
270.0	549.00	479.81	440.44	412.31	378.00	354.94	336.38	315.00	303.75
315.0	517.50	452.93	419.18	390.99	367.43	341.21	323.44	309.71	297.51
360.0	573.19	491.63	443.25	414.00	375.19	352.13	335.81	313.88	302.63

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	294.19	284.06	274.56	268.59	263.31	259.54	255.54	252.17	248.63
45.0	293.06	284.63	278.21	269.33	263.87	260.27	257.23	254.14	251.55
90.0	287.21	280.35	275.18	269.66	265.05	261.06	257.91	254.31	252.06
135.0	291.94	284.63	275.34	270.34	265.56	261.84	258.64	254.81	251.94
180.0	282.66	275.46	270.45	266.18	262.24	259.31	256.11	252.79	250.20
225.0	284.63	278.10	272.08	267.13	263.19	259.26	255.32	251.94	248.34
270.0	295.88	286.31	284.63	272.76	268.03	264.54	260.55	257.06	253.74
315.0	287.16	279.79	272.70	267.24	263.53	259.71	256.28	252.79	249.24
360.0	294.19	284.06	274.56	268.59	263.31	259.54	255.54	252.17	248.63

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	245.25	242.21	237.83	233.10	229.84	226.91	222.41	217.13	212.57
45.0	249.24	246.21	243.90	239.34	235.86	233.21	230.23	225.23	219.38
90.0	249.24	246.04	243.06	238.78	236.03	232.43	228.66	223.14	217.52
135.0	249.24	245.93	243.39	238.89	235.63	233.10	230.34	224.38	218.81
180.0	247.61	245.03	240.41	236.81	233.94	230.46	226.63	221.46	216.34
225.0	244.86	241.37	235.52	232.43	229.44	225.11	220.89	215.72	211.22
270.0	249.81	246.15	240.98	237.15	232.93	229.73	224.33	217.18	212.57
315.0	245.93	242.72	236.19	233.04	229.84	225.00	220.67	214.99	210.43
360.0	245.25	242.21	237.83	233.10	229.84	226.91	222.41	217.13	212.57

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	207.17	158.12	85.61	32.18	12.66	11.19	9.23	7.31	6.08
45.0	214.93	195.47	135.00	63.06	17.78	11.76	9.90	7.88	6.30
90.0	212.96	179.44	105.24	37.52	12.88	10.86	9.06	6.81	5.46
135.0	214.71	195.47	130.67	68.01	19.13	11.03	9.11	7.09	5.63
180.0	211.84	174.77	105.30	41.18	13.22	11.70	10.13	8.10	6.86
225.0	186.92	126.79	54.39	16.31	12.88	11.25	9.51	7.88	6.81
270.0	204.69	149.46	70.76	23.91	12.26	11.03	9.23	7.59	6.58
315.0	180.84	122.85	54.17	15.36	13.22	11.64	9.96	8.33	7.26
360.0	207.17	158.12	85.61	32.18	12.66	11.19	9.23	7.31	6.08

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	5.29	3.83	3.66	3.60	3.43	3.38	3.26	3.21	3.09
45.0	5.34	4.16	3.71	3.60	3.49	3.43	3.32	3.26	3.21
90.0	4.78	3.77	3.66	3.54	3.49	3.38	3.26	3.21	3.15
135.0	4.73	4.22	3.77	3.66	3.54	3.49	3.38	3.32	3.21
180.0	6.13	3.88	3.66	3.60	3.49	3.38	3.32	3.26	3.21
225.0	4.16	3.71	3.60	3.54	3.43	3.32	3.21	3.15	3.09
270.0	5.85	3.77	3.66	3.54	3.38	3.26	3.26	3.15	3.09
315.0	4.50	3.71	3.60	3.49	3.38	3.26	3.21	3.15	3.09
360.0	5.29	3.83	3.66	3.60	3.43	3.38	3.26	3.21	3.09

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.04	3.04	2.93	2.87	2.81	2.81	2.76	2.70	2.70
45.0	3.15	3.04	2.98	2.93	2.87	2.81	2.76	2.76	2.70
90.0	3.04	2.98	2.93	2.87	2.87	2.81	2.76	2.76	2.70
135.0	3.15	3.09	3.04	2.93	2.87	2.87	2.81	2.76	2.76
180.0	3.09	3.04	2.98	2.93	2.87	2.81	2.76	2.76	2.70
225.0	3.04	2.98	2.87	2.87	2.81	2.76	2.70	2.70	2.64
270.0	3.04	2.98	2.93	2.87	2.81	2.76	2.70	2.70	2.64
315.0	2.98	2.93	2.87	2.81	2.76	2.76	2.70	2.64	2.64
360.0	3.04	3.04	2.93	2.87	2.81	2.81	2.76	2.70	2.70

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.64	2.64	2.64	2.59	2.59	2.53	2.48	2.53	2.48
45.0	2.70	2.64	2.59	2.59	2.59	2.59	2.53	2.53	2.53
90.0	2.64	2.64	2.64	2.59	2.59	2.53	2.53	2.53	2.53
135.0	2.70	2.70	2.64	2.64	2.59	2.59	2.59	2.53	2.53
180.0	2.64	2.64	2.64	2.59	2.59	2.53	2.53	2.53	2.53
225.0	2.64	2.59	2.59	2.53	2.53	2.53	2.53	2.48	2.48
270.0	2.64	2.59	2.59	2.59	2.53	2.53	2.53	2.53	2.48
315.0	2.64	2.59	2.53	2.53	2.53	2.53	2.53	2.48	2.48
360.0	2.64	2.64	2.64	2.59	2.59	2.53	2.48	2.53	2.48

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.48	2.48	2.48	2.48	2.42	2.42	2.42	2.42	2.42
45.0	2.53	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.42
90.0	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.42	2.42
135.0	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.42	2.42
180.0	2.53	2.48	2.48	2.48	2.48	2.48	2.42	2.42	2.42
225.0	2.48	2.42	2.48	2.42	2.42	2.48	2.48	2.42	2.42
270.0	2.48	2.48	2.48	2.42	2.42	2.48	2.42	2.48	2.42
315.0	2.48	2.42	2.42	2.42	2.42	2.42	2.42	2.36	2.42
360.0	2.48	2.48	2.48	2.48	2.42	2.42	2.42	2.42	2.42

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.42	2.42	2.42	2.42	2.42	2.42	2.36	2.36	2.42
45.0	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
90.0	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.36
135.0	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.36	2.36
180.0	2.42	2.42	2.42	2.42	2.36	2.36	2.36	2.42	2.36
225.0	2.42	2.42	2.42	2.42	2.36	2.42	2.36	2.42	2.36
270.0	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.36
315.0	2.42	2.42	2.42	2.42	2.42	2.36	2.42	2.42	2.36
360.0	2.42	2.42	2.42	2.42	2.42	2.42	2.36	2.36	2.42

Intensity data(cd)

C/γ(°)	90.0
0.0	2.36
45.0	2.42
90.0	2.42
135.0	2.36
180.0	2.42
225.0	2.36
270.0	2.36
315.0	2.36
360.0	2.36