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Nata

LumCAT: NA01D020038BW
Luminaire:

Report No: 200402-B015	Voltage(V): 6.5600
Test No: 200402-C015	Current(A): 0.1610
LampCAT: OSRAM 3030 DURIS S5	Power (W): 1.0560
Lamp flux(lm): 126.4	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 118.37
Efficiency(%): 93.68%
Lumens(lm)/Power(W): 112.09
Central intensity(cd): 202.781
Maximum intensity(cd): 202.781
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=35.0
[C90/270]Total=35.0
Field angle(10%Imax): [C0/180]Total=76.4
[C90/270]Total=76.4
Maximum s/h(1/2): C0_180=0.57 C90_270=0.57
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.68%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 92.654%

Equipment: GMS1980	Date: 2020/4/2	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Nata NA01D020038BW

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	202.781	0.000	0	.000%	.000%
1.0	202.148	0.194	0.194	.153%	.164%
2.0	200.777	0.578	0.772	.458%	.652%
3.0	198.752	0.956	1.728	.756%	1.459%
4.0	195.588	1.320	3.048	1.045%	2.575%
5.0	191.545	1.665	4.713	1.318%	3.982%
6.0	187.052	1.990	6.703	1.575%	5.662%
7.0	181.097	2.285	8.988	1.808%	7.593%
8.0	175.155	2.550	11.537	2.018%	9.747%
9.0	168.420	2.784	14.322	2.204%	12.099%
10.0	160.833	2.980	17.301	2.358%	14.616%
11.0	153.246	3.138	20.44	2.484%	17.267%
12.0	145.287	3.263	23.703	2.583%	20.024%
13.0	137.046	3.351	27.054	2.652%	22.855%
14.0	128.510	3.399	30.453	2.690%	25.726%
15.0	120.734	3.422	33.875	2.708%	28.617%
16.0	112.852	3.423	37.297	2.709%	31.509%
17.0	105.342	3.398	40.695	2.689%	34.379%
18.0	97.784	3.349	44.044	2.650%	37.208%
19.0	91.090	3.286	47.33	2.601%	39.984%
20.0	84.157	3.208	50.538	2.538%	42.694%
21.0	77.913	3.112	53.65	2.463%	45.323%
22.0	72.141	3.015	56.665	2.386%	47.871%
23.0	66.368	2.906	59.571	2.300%	50.326%
24.0	61.559	2.797	62.368	2.213%	52.689%
25.0	56.770	2.691	65.059	2.129%	54.962%
26.0	52.460	2.578	67.637	2.041%	57.140%
27.0	48.459	2.469	70.106	1.954%	59.226%
28.0	44.817	2.362	72.468	1.869%	61.221%
29.0	41.203	2.251	74.718	1.781%	63.122%
30.0	38.194	2.144	76.862	1.697%	64.933%
31.0	35.198	2.042	78.905	1.616%	66.658%
32.0	32.414	1.937	80.842	1.533%	68.295%
33.0	29.995	1.839	82.68	1.455%	69.848%
34.0	27.823	1.750	84.43	1.385%	71.326%
35.0	25.713	1.663	86.093	1.316%	72.731%
36.0	23.787	1.576	87.669	1.247%	74.062%
37.0	22.198	1.500	89.168	1.187%	75.329%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	20.573	1.428	90.596	1.130%	76.535%
39.0	19.111	1.355	91.951	1.072%	77.679%
40.0	17.902	1.291	93.241	1.022%	78.770%
41.0	16.763	1.234	94.476	.977%	79.813%
42.0	15.673	1.178	95.654	.933%	80.808%
43.0	14.660	1.124	96.778	.889%	81.758%
44.0	13.774	1.073	97.851	.849%	82.664%
45.0	12.923	1.026	98.877	.812%	83.531%
46.0	12.171	0.981	99.858	.777%	84.360%
47.0	11.384	0.937	100.795	.741%	85.151%
48.0	10.737	0.894	101.69	.708%	85.907%
49.0	10.076	0.855	102.544	.676%	86.629%
50.0	9.464	0.815	103.359	.645%	87.317%
51.0	8.909	0.777	104.136	.615%	87.974%
52.0	8.381	0.742	104.878	.587%	88.601%
53.0	7.882	0.707	105.586	.560%	89.198%
54.0	7.383	0.673	106.258	.532%	89.767%
55.0	6.961	0.640	106.899	.507%	90.308%
56.0	6.546	0.610	107.509	.483%	90.823%
57.0	6.166	0.581	108.09	.460%	91.314%
58.0	5.801	0.553	108.644	.438%	91.782%
59.0	5.498	0.528	109.172	.418%	92.228%
60.0	5.182	0.505	109.676	.399%	92.654%
61.0	4.901	0.481	110.158	.381%	93.061%
62.0	4.641	0.460	110.617	.364%	93.449%
63.0	4.402	0.440	111.057	.348%	93.821%
64.0	4.177	0.421	111.478	.333%	94.176%
65.0	3.966	0.403	111.881	.319%	94.517%
66.0	3.776	0.386	112.267	.306%	94.843%
67.0	3.600	0.371	112.638	.294%	95.156%
68.0	3.445	0.357	112.995	.282%	95.458%
69.0	3.305	0.344	113.339	.273%	95.749%
70.0	3.164	0.332	113.672	.263%	96.029%
71.0	3.030	0.320	113.992	.253%	96.300%
72.0	2.932	0.310	114.302	.245%	96.562%
73.0	2.848	0.302	114.604	.239%	96.817%
74.0	2.763	0.295	114.899	.233%	97.066%
75.0	2.707	0.289	115.188	.229%	97.310%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.644	0.284	115.472	.225%	97.550%
77.0	2.580	0.279	115.751	.220%	97.786%
78.0	2.524	0.273	116.024	.216%	98.017%
79.0	2.468	0.268	116.292	.212%	98.243%
80.0	2.447	0.265	116.557	.210%	98.467%
81.0	2.398	0.262	116.819	.207%	98.688%
82.0	2.370	0.259	117.078	.205%	98.907%
83.0	2.278	0.253	117.33	.200%	99.120%
84.0	2.159	0.242	117.572	.191%	99.324%
85.0	1.997	0.227	117.799	.179%	99.516%
86.0	1.610	0.197	117.996	.156%	99.682%
87.0	1.139	0.150	118.146	.119%	99.810%
88.0	0.717	0.102	118.248	.080%	99.895%
89.0	0.548	0.069	118.317	.055%	99.954%
90.0	0.443	0.054	118.372	.043%	100.000%

Zonal flux distribution table

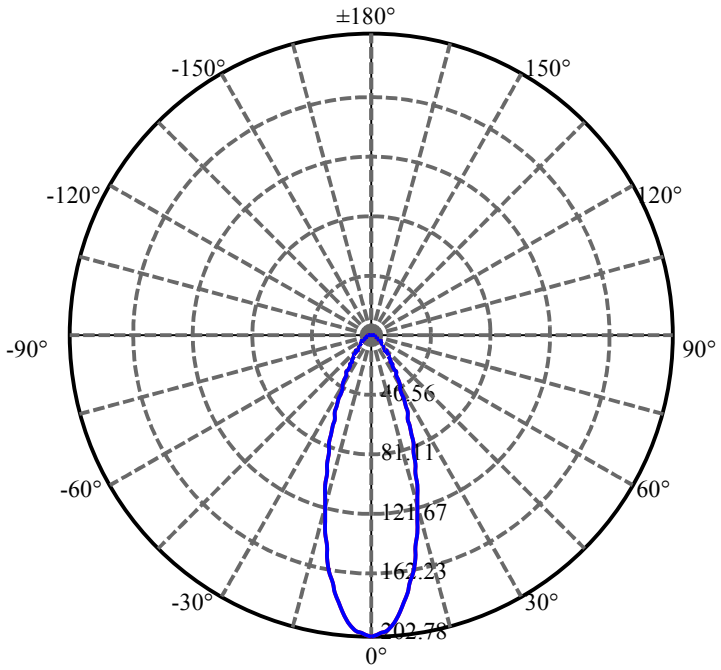
ZONAL LUMEN SUMMARY

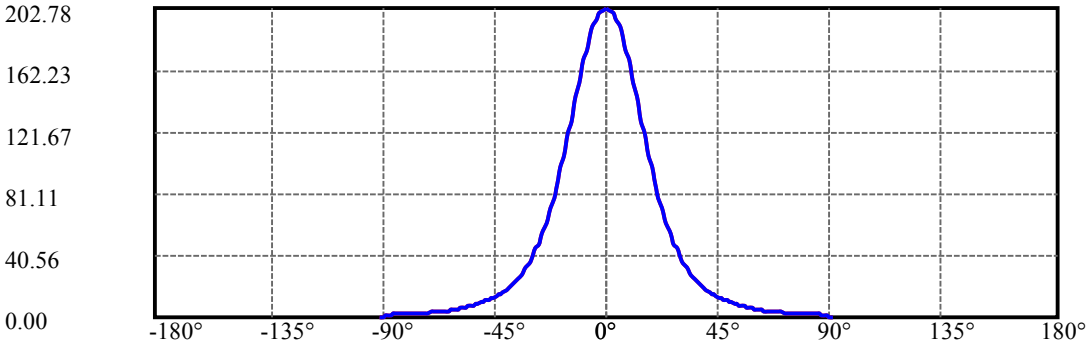
Zone	Lumens	%Lamp	%Fixt
0-30	76.86	60.83%	64.93%
0-40	93.24	73.79%	78.77%
0-60	109.68	86.80%	92.65%
0-90	118.32	93.64%	99.95%
0-120	118.32	93.64%	99.95%
0-180	118.37	93.68%	100.00%
60-90	9.15	7.24%	7.73%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-41.19	94.70	74.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	17.30
10-20	33.24
20-30	26.32
30-40	16.38
40-50	10.12
50-60	6.32
60-70	4.00
70-80	2.89
80-90	1.76
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/C180:

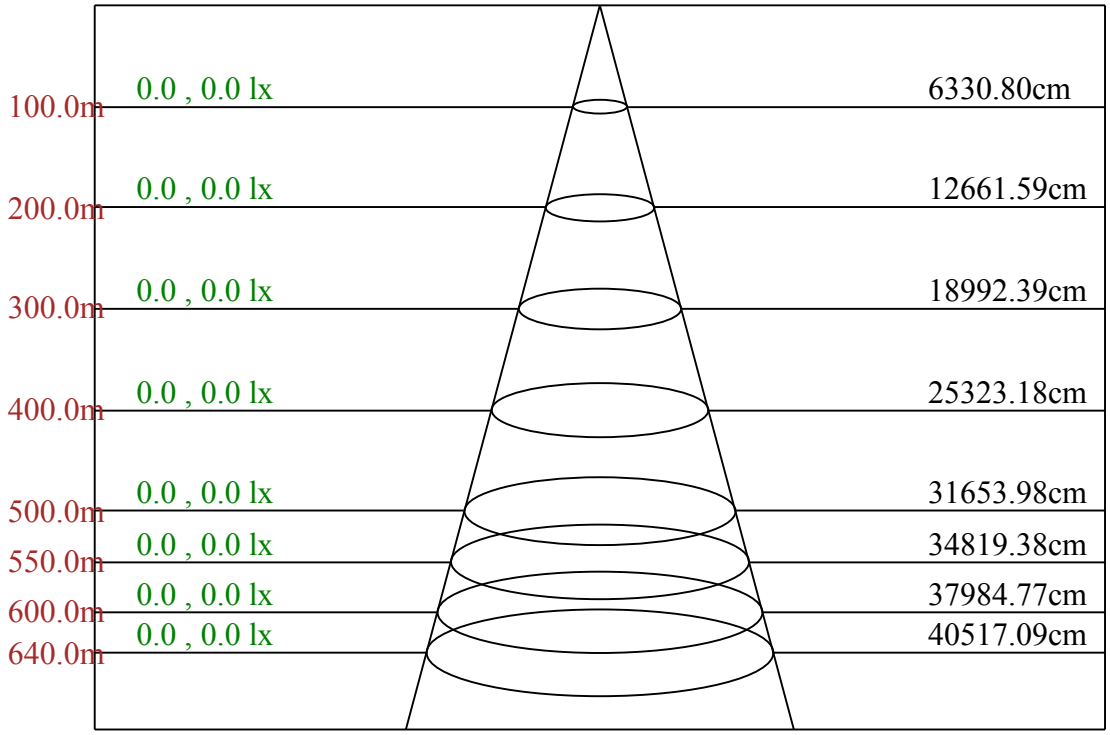
C90/C270:

Field angle(10%Imax):C0/180Left:38.2 Right:38.2
:C90/270Left:38.2 Right:38.2

Beam Angle(50%Imax):C0/180Left:17.5 Right:17.5
:C90/270Left:17.5 Right:17.5

Equipment: GMS1980 Date: 2020/4/2 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

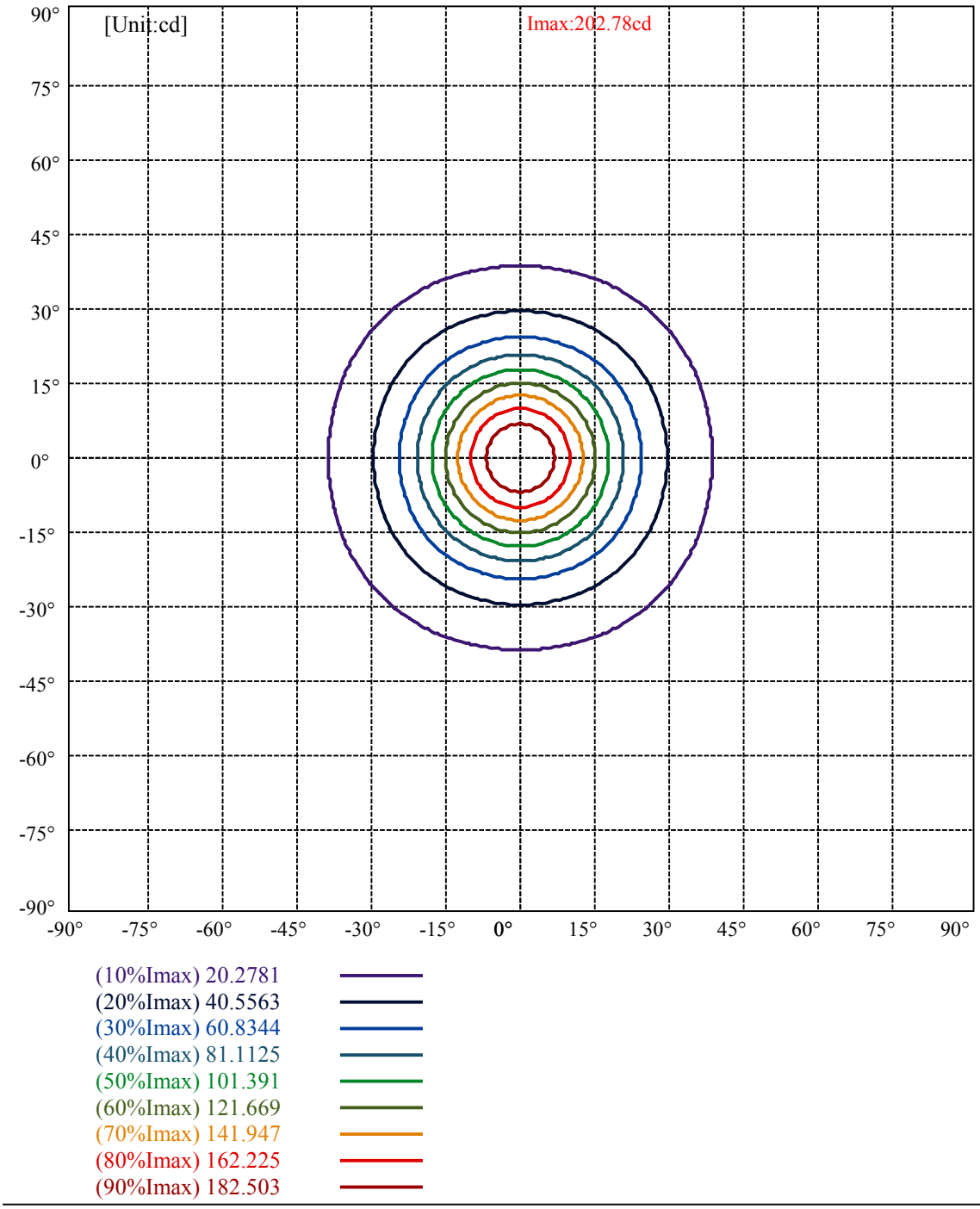
Lux distance Curve



Max , Ave

Beam angle of C0 plane 35.13

ISO-Intensity(V-H)

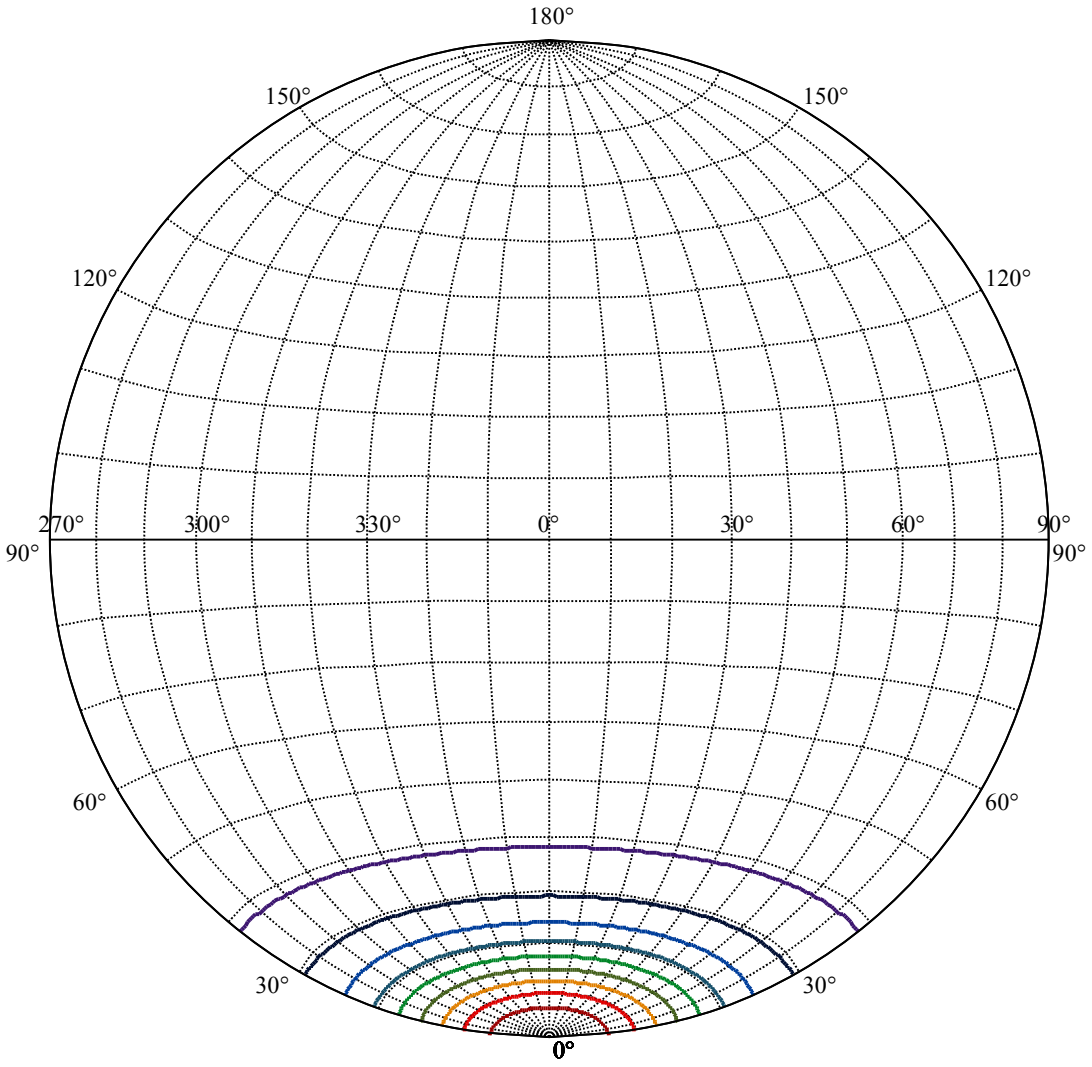


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/2
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:202.78

(10%Imax) 20.2781
(20%Imax) 40.5563
(30%Imax) 60.8344
(40%Imax) 81.1125
(50%Imax) 101.391
(60%Imax) 121.669
(70%Imax) 141.947
(80%Imax) 162.225
(90%Imax) 182.503

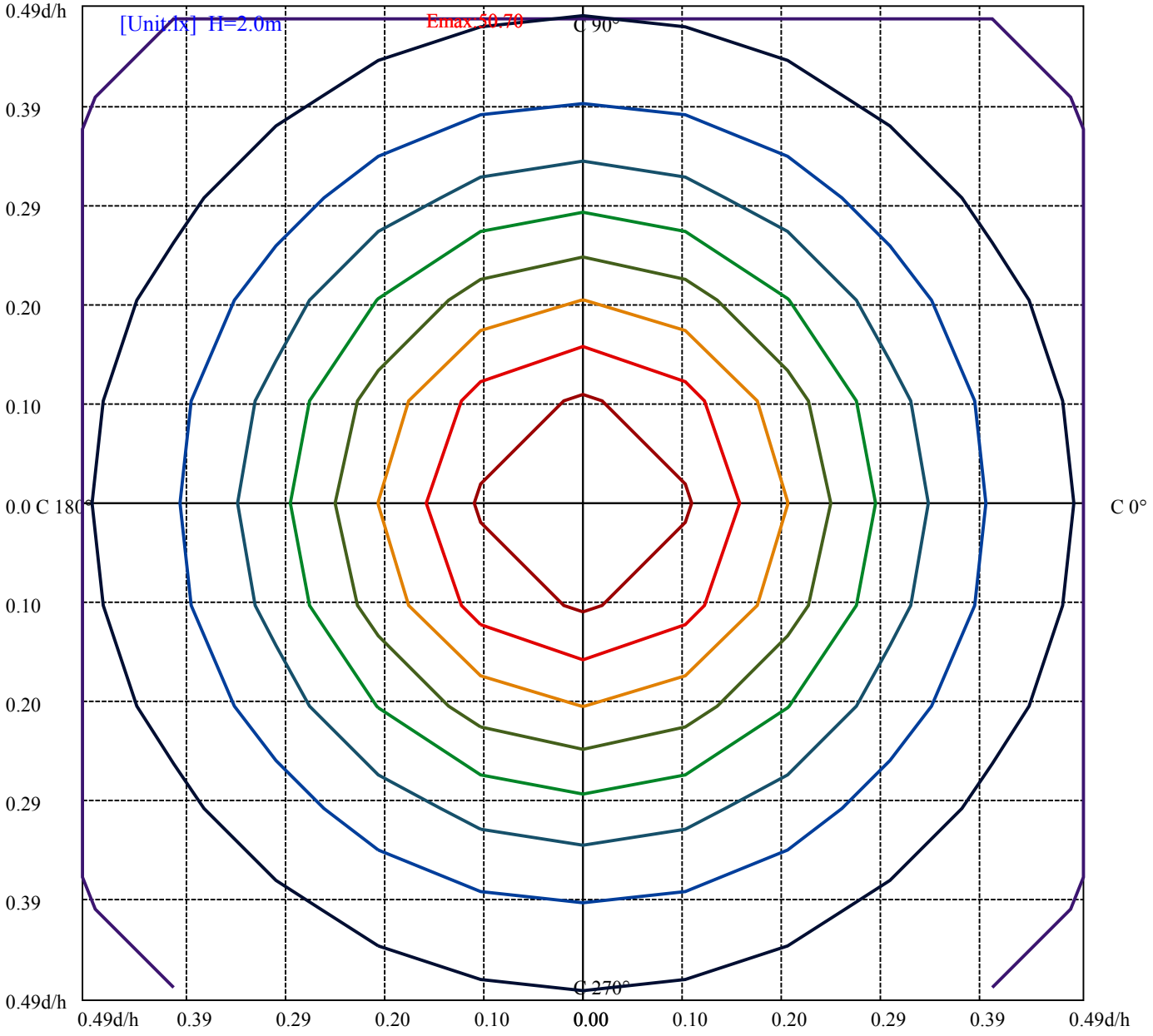
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/2
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata NA01D020038BW

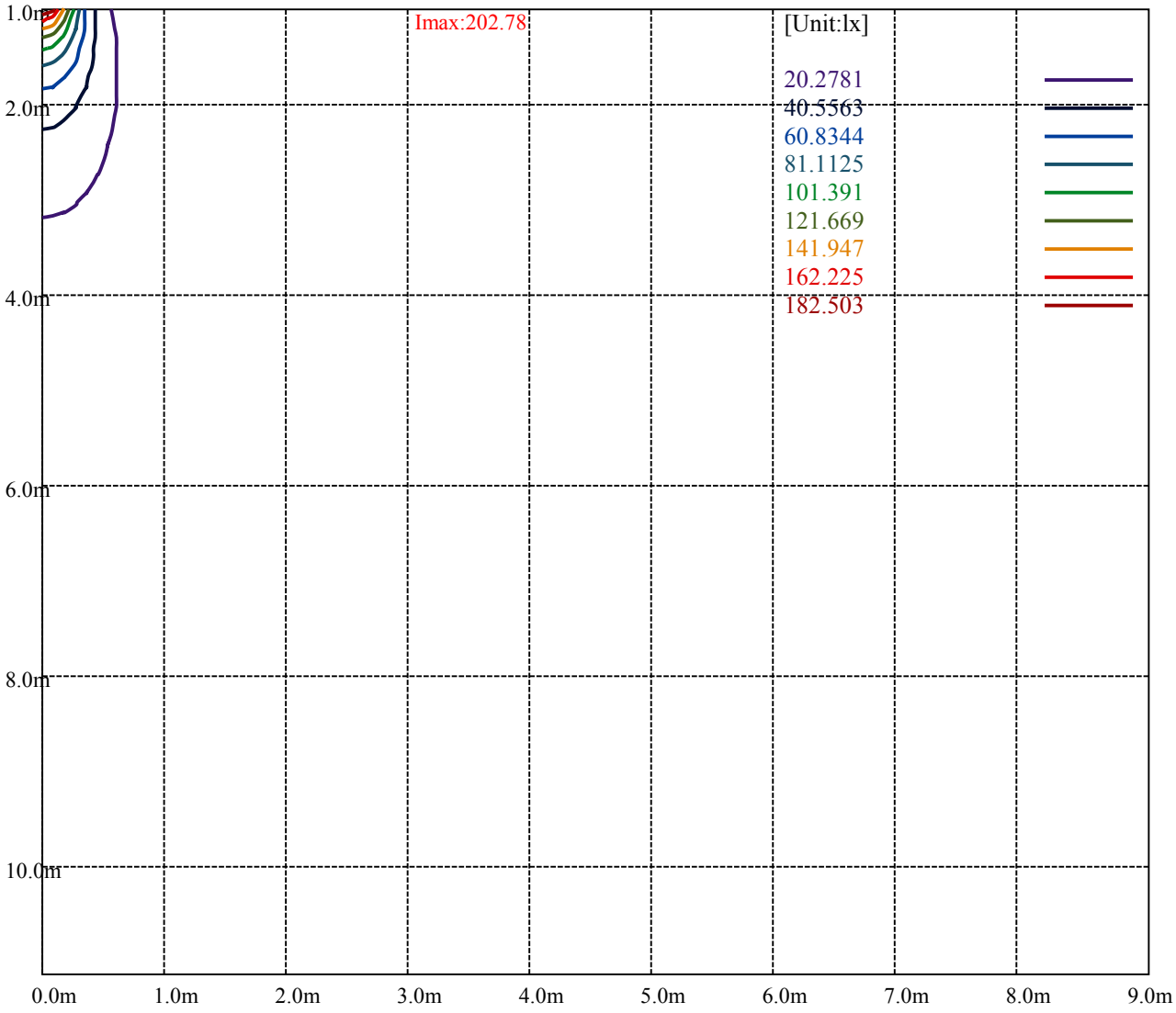
ISO illuminance diagram



Equipment: GMS1980 Date: 2020/4/2 Operator: NT07

Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/2
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata NA01D020038BW

Luminance Limitting Curve(no luminous side)

Luminance Table

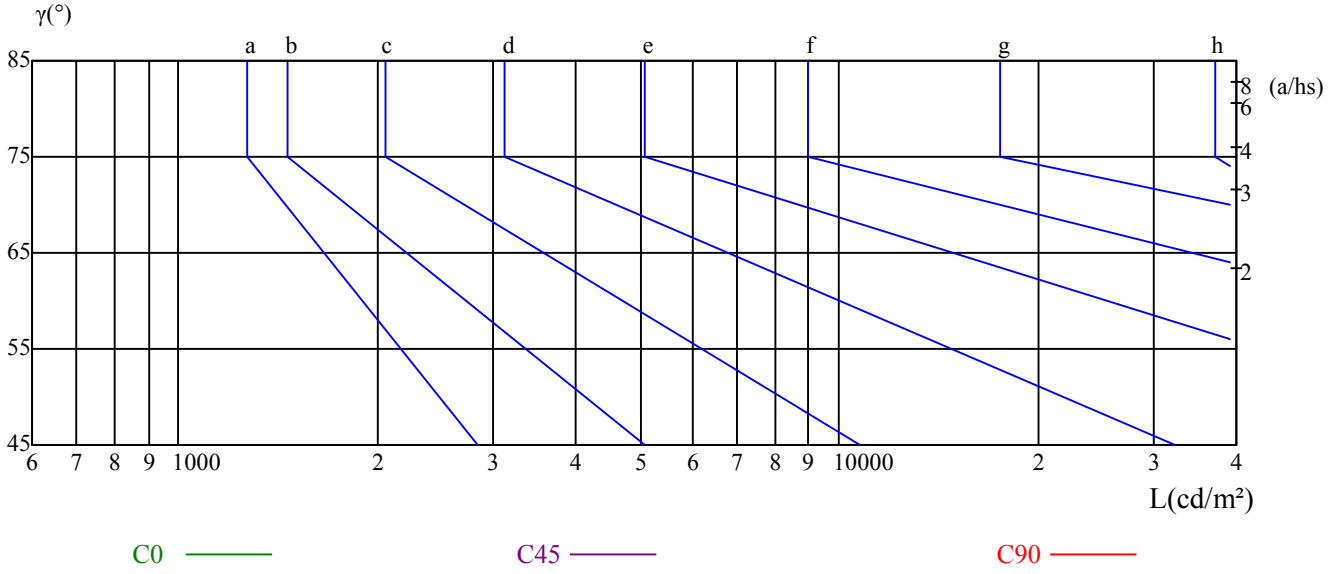
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

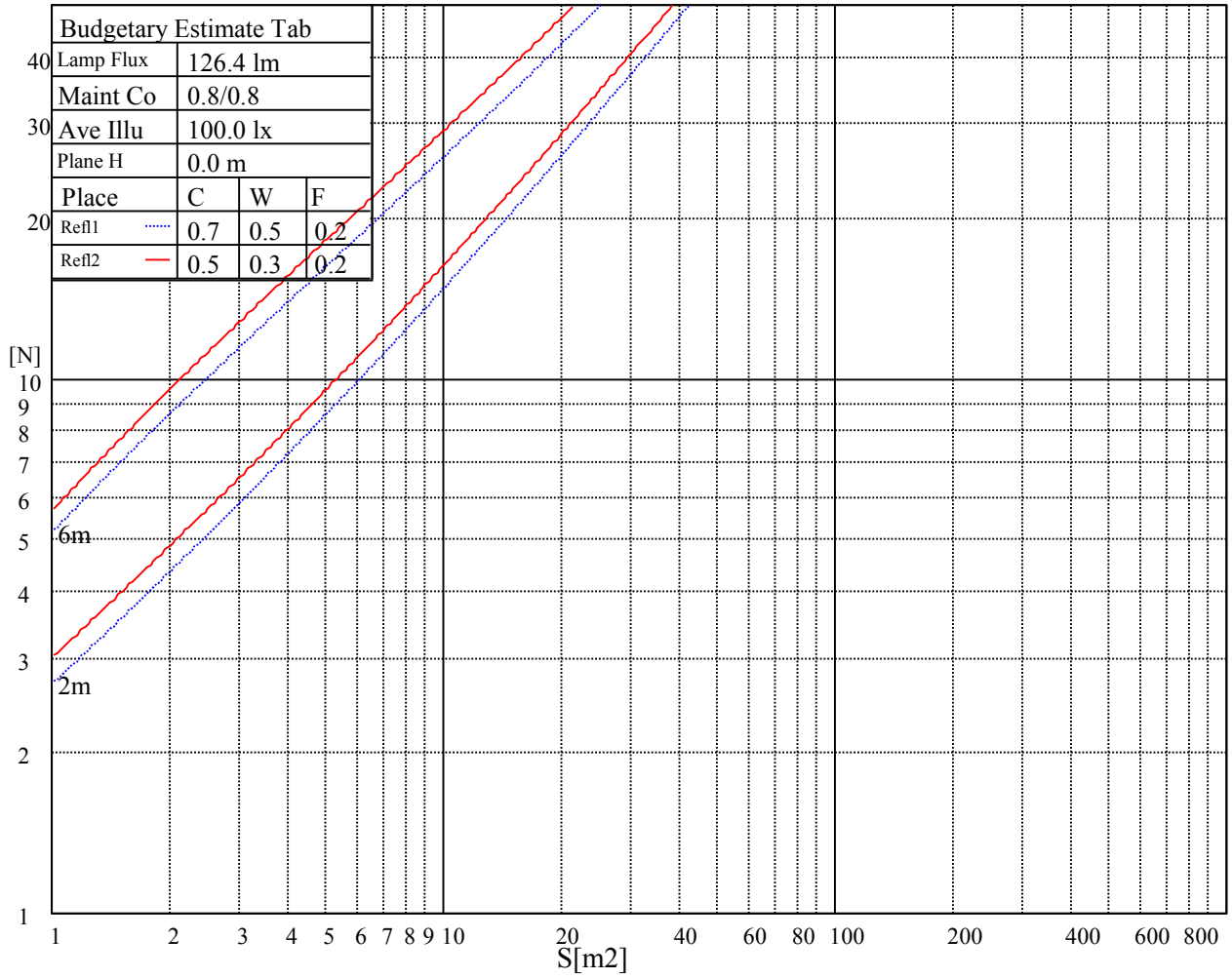
Glare Table

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 Limitting Curve



Budgetary Estimate Table

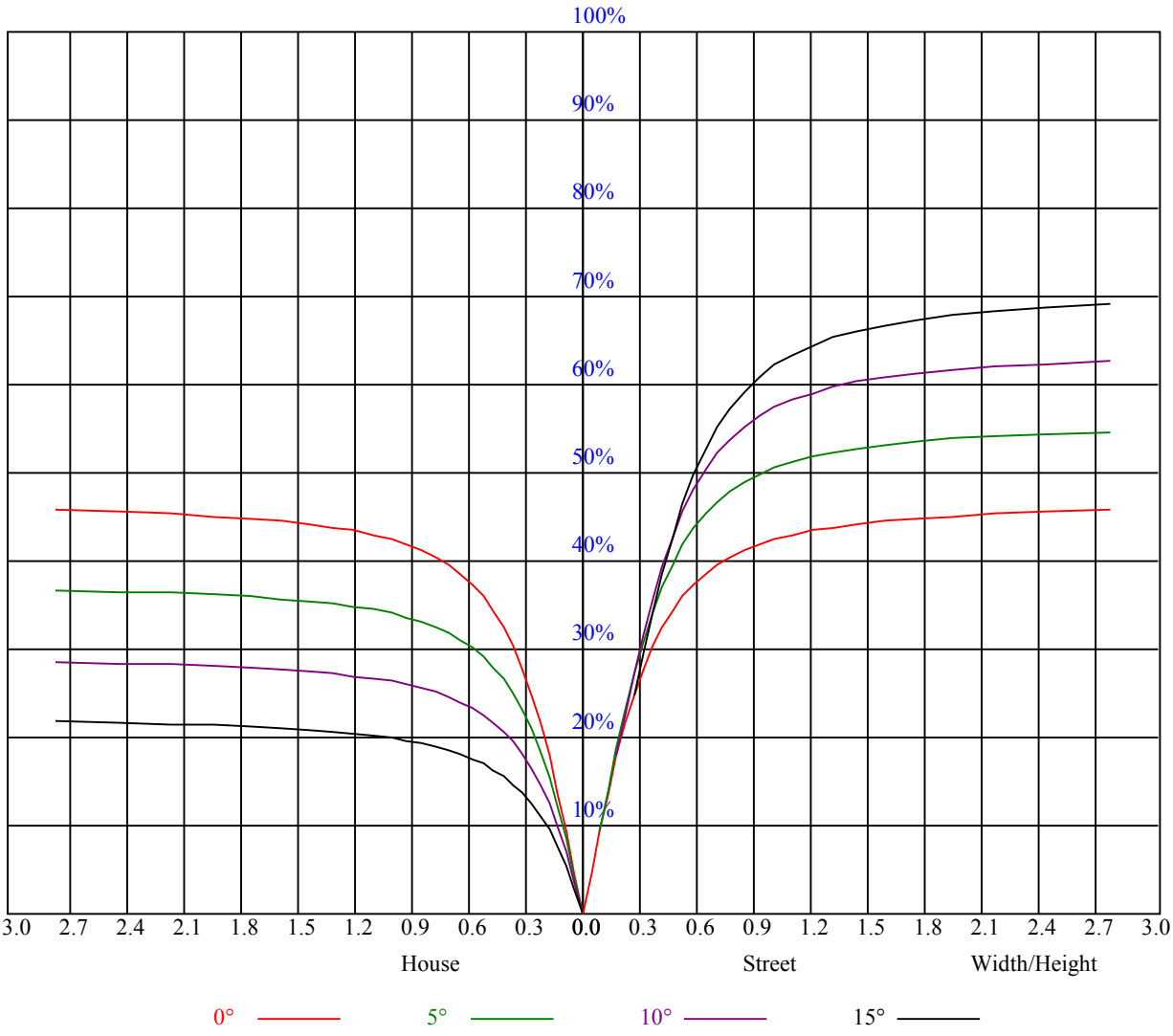


Equipment: GMS1980	Date: 2020/4/2	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.02	0.99	0.97	1.00	0.97	0.95	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.85
2	0.94	0.89	0.86	0.92	0.88	0.85	0.89	0.86	0.83	0.86	0.83	0.81	0.83	0.81	0.79	0.78
3	0.87	0.81	0.77	0.85	0.80	0.76	0.83	0.79	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.71
4	0.81	0.75	0.70	0.80	0.74	0.70	0.77	0.73	0.69	0.75	0.72	0.68	0.74	0.70	0.68	0.66
5	0.75	0.69	0.65	0.74	0.69	0.65	0.73	0.68	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.61
6	0.71	0.65	0.60	0.70	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.57
7	0.67	0.61	0.56	0.66	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.58	0.55	0.54
8	0.63	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.52	0.59	0.55	0.52	0.51
9	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.57	0.53	0.49	0.48
10	0.57	0.51	0.47	0.56	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.46

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/4/2	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	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	201.54	199.35	195.30	191.70	186.98	180.17	174.09	167.85	160.20
45.0	202.89	202.11	200.48	198.17	195.24	190.29	185.63	179.66	173.70
90.0	204.30	204.81	205.09	203.74	202.22	199.52	195.64	190.52	185.12
135.0	202.39	204.53	206.16	206.72	206.61	205.31	202.50	198.96	194.51
180.0	201.54	202.78	203.34	203.06	201.83	199.69	196.71	192.26	186.98
225.0	202.89	202.78	201.26	199.58	196.88	192.66	188.27	182.70	176.29
270.0	204.30	202.39	199.46	196.88	191.64	186.24	181.52	173.87	167.68
315.0	202.39	198.45	195.13	190.18	183.32	178.48	172.07	162.96	156.77
360.0	201.54	199.35	195.30	191.70	186.98	180.17	174.09	167.85	160.20

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	152.44	145.18	137.08	129.43	121.16	113.23	106.31	98.83	91.80
45.0	166.28	160.26	150.81	142.20	134.66	126.28	118.97	111.49	104.29
90.0	178.43	170.89	163.80	155.19	147.60	138.60	129.77	122.12	114.69
135.0	188.38	182.53	175.56	167.57	158.79	151.09	141.81	132.58	124.43
180.0	181.07	174.38	166.73	159.53	151.99	142.26	134.27	126.51	117.56
225.0	169.93	162.23	155.19	146.70	138.77	128.87	121.22	113.91	105.75
270.0	161.16	152.04	144.39	136.91	126.90	119.14	111.66	103.05	96.36
315.0	149.68	139.16	132.41	124.76	116.49	108.62	101.87	94.33	87.86
360.0	152.44	145.18	137.08	129.43	121.16	113.23	106.31	98.83	91.80

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	85.84	80.33	73.91	68.79	64.13	58.61	54.56	50.74	46.69
45.0	97.71	90.84	83.64	77.74	72.06	65.81	61.31	56.87	52.54
90.0	105.53	98.38	91.69	83.87	77.96	72.45	66.83	61.37	56.98
135.0	114.86	107.38	99.56	91.69	85.11	78.08	71.94	66.83	62.33
180.0	108.79	101.59	92.81	86.46	80.49	73.46	68.91	63.56	58.16
225.0	98.38	91.91	85.11	79.14	72.79	67.56	62.16	57.21	52.71
270.0	90.00	83.25	76.73	71.21	65.36	60.08	55.86	51.30	47.42
315.0	81.17	75.04	69.81	64.41	59.23	54.90	50.91	46.29	42.86
360.0	85.84	80.33	73.91	68.79	64.13	58.61	54.56	50.74	46.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	42.81	39.66	36.51	33.81	31.16	28.63	26.61	24.58	22.73
45.0	48.21	44.66	41.06	37.97	34.82	32.01	29.64	27.73	24.98
90.0	52.88	48.66	44.66	41.34	37.91	34.82	31.89	29.70	27.62
135.0	56.76	52.76	49.11	44.89	41.40	38.59	35.33	32.63	30.21
180.0	54.73	50.85	45.90	43.09	39.99	36.34	34.14	31.78	29.36
225.0	48.94	45.62	41.68	38.81	36.17	33.30	30.66	28.58	26.55
270.0	43.65	40.22	37.35	34.82	31.89	29.64	27.56	25.26	23.51
315.0	39.71	36.11	33.36	30.83	28.24	25.99	24.13	22.33	20.76
360.0	42.81	39.66	36.51	33.81	31.16	28.63	26.61	24.58	22.73

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	21.21	19.80	18.11	16.93	15.92	14.85	13.84	12.99	12.15
45.0	23.29	21.71	19.91	18.62	17.44	16.26	15.13	14.23	13.33
90.0	25.31	23.63	22.11	20.31	19.01	17.83	16.76	15.53	14.63
135.0	27.96	26.21	24.19	22.44	21.04	19.69	18.17	17.10	16.09
180.0	27.17	25.48	23.63	21.99	20.64	19.18	18.06	16.88	15.81
225.0	24.36	22.73	21.26	19.52	18.34	17.27	16.14	15.08	14.12
270.0	21.77	20.14	18.62	17.44	16.20	15.24	14.23	13.33	12.54
315.0	19.24	17.89	16.76	15.64	14.63	13.78	13.05	12.15	11.53
360.0	21.21	19.80	18.11	16.93	15.92	14.85	13.84	12.99	12.15

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	11.36	10.69	10.01	9.39	8.72	8.16	7.65	7.26	6.81
45.0	12.49	11.76	11.03	10.35	9.73	9.11	8.61	8.10	7.54
90.0	13.78	12.88	12.04	11.36	10.69	9.96	9.45	8.78	8.33
135.0	14.96	14.12	13.28	12.49	11.76	11.08	10.41	9.79	9.17
180.0	14.91	14.12	13.16	12.43	11.76	10.97	10.35	9.79	9.23
225.0	13.28	12.54	11.70	11.08	10.41	9.90	9.17	8.66	8.16
270.0	11.81	11.03	10.41	9.84	9.17	8.66	8.21	7.71	7.20
315.0	10.80	10.24	9.45	8.94	8.38	7.88	7.43	6.98	6.64
360.0	11.36	10.69	10.01	9.39	8.72	8.16	7.65	7.26	6.81

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.41	6.08	5.68	5.34	5.12	4.84	4.56	4.33	4.16
45.0	7.09	6.75	6.24	5.91	5.63	5.29	5.01	4.73	4.50
90.0	7.76	7.26	6.86	6.47	6.02	5.68	5.40	5.01	4.73
135.0	8.55	8.10	7.54	7.09	6.64	6.30	5.85	5.57	5.23
180.0	8.55	8.10	7.65	7.20	6.75	6.36	5.96	5.63	5.34
225.0	7.65	7.20	6.81	6.36	5.96	5.74	5.40	5.06	4.78
270.0	6.81	6.41	6.02	5.74	5.40	5.12	4.84	4.61	4.33
315.0	6.24	5.79	5.57	5.23	4.89	4.67	4.44	4.28	4.05
360.0	6.41	6.08	5.68	5.34	5.12	4.84	4.56	4.33	4.16

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.94	3.71	3.54	3.38	3.26	3.15	3.04	2.87	2.76
45.0	4.28	4.05	3.83	3.66	3.49	3.32	3.15	3.04	2.98
90.0	4.50	4.22	3.99	3.83	3.60	3.49	3.32	3.15	3.04
135.0	4.95	4.67	4.44	4.22	3.99	3.77	3.60	3.43	3.26
180.0	5.01	4.78	4.56	4.28	4.11	3.88	3.71	3.49	3.32
225.0	4.61	4.39	4.16	3.94	3.77	3.60	3.49	3.38	3.21
270.0	4.11	3.88	3.71	3.60	3.38	3.26	3.15	3.04	2.87
315.0	3.83	3.71	3.49	3.32	3.21	3.09	2.98	2.93	2.81
360.0	3.94	3.71	3.54	3.38	3.26	3.15	3.04	2.87	2.76

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.70	2.64	2.59	2.59	2.53	2.48	2.42	2.36	2.31
45.0	2.87	2.81	2.70	2.70	2.64	2.59	2.53	2.48	2.48
90.0	2.87	2.81	2.70	2.64	2.53	2.48	2.42	2.36	2.31
135.0	3.15	3.04	2.93	2.81	2.76	2.70	2.59	2.53	2.48
180.0	3.21	3.09	2.98	2.87	2.76	2.70	2.64	2.59	2.59
225.0	3.09	2.98	2.93	2.87	2.81	2.70	2.64	2.64	2.64
270.0	2.81	2.70	2.64	2.53	2.53	2.48	2.42	2.31	2.31
315.0	2.76	2.70	2.64	2.64	2.59	2.53	2.53	2.48	2.48
360.0	2.70	2.64	2.59	2.59	2.53	2.48	2.42	2.36	2.31

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.25	2.19	2.08	1.97	1.80	1.13	0.73	0.56	0.45
45.0	2.42	2.36	2.31	2.03	1.74	1.13	0.73	0.62	0.45
90.0	2.25	2.25	2.19	2.03	1.80	1.29	0.73	0.56	0.45
135.0	2.48	2.42	2.31	2.31	2.14	1.86	1.35	0.79	0.62
180.0	2.53	2.48	2.36	2.25	2.14	1.97	1.52	0.84	0.68
225.0	2.59	2.64	2.53	2.42	2.31	2.08	1.74	0.90	0.68
270.0	2.25	2.25	2.14	2.14	2.08	1.97	1.52	0.84	0.62
315.0	2.42	2.36	2.31	2.14	1.97	1.46	0.79	0.62	0.45
360.0	2.25	2.19	2.08	1.97	1.80	1.13	0.73	0.56	0.45

Intensity data(cd)

C/γ(°)	90.0
0.0	0.39
45.0	0.39
90.0	0.39
135.0	0.45
180.0	0.51
225.0	0.51
270.0	0.51
315.0	0.39
360.0	0.39