NATA LIGHTING CO.,LTD.
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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: NA01D0201530CA
Luminaire:
Report No: 200402-B011
Test No: 200402-C011
LampCAT: CREE 3030
Lamp flux(lm): 141.9
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 6.2100
Current(A): 0.1600
Power (W): 0.9940
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 132.60
Efficiency(%): 93.47%
Lumens(lm)/Power(W): 133.40
Central intensity(cd): 234.844
Maximum intensity(cd): 434.700
Angle of maximum intensity: C=0.0 γ=9.0
Beam Angle(50%Imax): [C0/180]Total=19.5
[C90/270]Total=31.4
Field angle(10%Imax): [C0/180]Total=42.6
[C90/270]Total=61.0
Maximum s/h(1/2): C0_180=0.18 C90_270=0.49
Maximum s/h(1/4): C0_180=0.24 C90_270=0.51
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.47%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 92.883%

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

Nata NA01D0201530CA

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	242.578	0.000	0	.000%	.000%
1.0	241.706	0.232	0.232	.163%	.175%
2.0	241.488	0.694	0.925	.489%	.698%
3.0	242.304	1.157	2.082	.816%	1.570%
4.0	240.539	1.616	3.699	1.139%	2.789%
5.0	239.773	2.066	5.765	1.457%	4.347%
6.0	238.655	2.514	8.279	1.772%	6.244%
7.0	235.209	2.941	11.22	2.073%	8.462%
8.0	231.919	3.343	14.564	2.357%	10.983%
9.0	227.468	3.723	18.287	2.624%	13.790%
10.0	220.514	4.054	22.341	2.858%	16.848%
11.0	213.342	4.335	26.676	3.056%	20.117%
12.0	205.130	4.574	31.25	3.225%	23.567%
13.0	194.034	4.737	35.987	3.339%	27.139%
14.0	183.220	4.829	40.816	3.404%	30.781%
15.0	171.809	4.874	45.69	3.436%	34.456%
16.0	159.131	4.849	50.539	3.418%	38.113%
17.0	146.482	4.759	55.299	3.355%	41.702%
18.0	133.812	4.621	59.92	3.258%	45.187%
19.0	122.027	4.451	64.371	3.138%	48.544%
20.0	110.370	4.254	68.625	2.998%	51.752%
21.0	99.211	4.024	72.649	2.837%	54.787%
22.0	89.438	3.791	76.44	2.672%	57.646%
23.0	80.283	3.561	80.001	2.510%	60.331%
24.0	71.550	3.320	83.321	2.340%	62.835%
25.0	63.977	3.082	86.402	2.172%	65.159%
26.0	57.368	2.864	89.267	2.019%	67.319%
27.0	51.019	2.652	91.918	1.869%	69.318%
28.0	45.295	2.438	94.357	1.719%	71.157%
29.0	40.324	2.240	96.597	1.579%	72.847%
30.0	35.754	2.054	98.651	1.448%	74.396%
31.0	31.760	1.879	100.53	1.324%	75.813%
32.0	28.336	1.722	102.252	1.214%	77.111%
33.0	25.383	1.583	103.834	1.116%	78.304%
34.0	22.838	1.459	105.293	1.029%	79.405%
35.0	20.545	1.347	106.641	.950%	80.421%
36.0	18.471	1.242	107.883	.876%	81.358%
37.0	16.798	1.150	109.033	.811%	82.225%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	15.307	1.072	110.105	.755%	83.033%
39.0	13.795	0.993	111.098	.700%	83.783%
40.0	12.663	0.923	112.021	.650%	84.478%
41.0	11.644	0.866	112.887	.610%	85.131%
42.0	10.645	0.810	113.696	.571%	85.742%
43.0	9.837	0.759	114.455	.535%	86.314%
44.0	9.162	0.717	115.172	.505%	86.855%
45.0	8.508	0.679	115.851	.479%	87.367%
46.0	7.924	0.643	116.494	.453%	87.851%
47.0	7.397	0.609	117.103	.430%	88.311%
48.0	6.961	0.580	117.684	.409%	88.749%
49.0	6.532	0.554	118.238	.391%	89.167%
50.0	6.145	0.529	118.766	.373%	89.565%
51.0	5.815	0.506	119.272	.357%	89.947%
52.0	5.505	0.486	119.758	.342%	90.313%
53.0	5.231	0.467	120.225	.329%	90.665%
54.0	4.999	0.451	120.676	.318%	91.005%
55.0	4.802	0.438	121.114	.308%	91.335%
56.0	4.634	0.426	121.54	.301%	91.657%
57.0	4.479	0.417	121.957	.294%	91.971%
58.0	4.359	0.409	122.365	.288%	92.279%
59.0	4.254	0.403	122.768	.284%	92.583%
60.0	4.163	0.398	123.166	.280%	92.883%
61.0	4.078	0.393	123.559	.277%	93.179%
62.0	4.029	0.391	123.949	.275%	93.474%
63.0	3.973	0.389	124.339	.274%	93.767%
64.0	3.895	0.386	124.725	.272%	94.059%
65.0	3.804	0.381	125.106	.269%	94.346%
66.0	3.741	0.376	125.482	.265%	94.630%
67.0	3.649	0.372	125.854	.262%	94.910%
68.0	3.572	0.366	126.22	.258%	95.186%
69.0	3.572	0.364	126.584	.257%	95.461%
70.0	3.523	0.364	126.948	.257%	95.736%
71.0	3.424	0.359	127.307	.253%	96.006%
72.0	3.312	0.350	127.658	.247%	96.270%
73.0	3.241	0.343	128	.242%	96.529%
74.0	3.185	0.338	128.338	.238%	96.784%
75.0	3.143	0.334	128.673	.236%	97.036%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.094	0.331	129.004	.233%	97.285%
77.0	3.059	0.328	129.332	.231%	97.533%
78.0	3.023	0.326	129.657	.230%	97.778%
79.0	2.981	0.323	129.98	.227%	98.022%
80.0	2.946	0.320	130.299	.225%	98.263%
81.0	2.876	0.315	130.614	.222%	98.500%
82.0	2.820	0.309	130.923	.218%	98.733%
83.0	2.693	0.300	131.223	.211%	98.959%
84.0	2.566	0.287	131.509	.202%	99.175%
85.0	2.419	0.272	131.781	.192%	99.380%
86.0	1.997	0.241	132.023	.170%	99.562%
87.0	1.645	0.199	132.222	.141%	99.713%
88.0	1.245	0.158	132.38	.112%	99.832%
89.0	1.027	0.124	132.505	.088%	99.926%
90.0	0.766	0.098	132.603	.069%	100.000%

Zonal flux distribution table

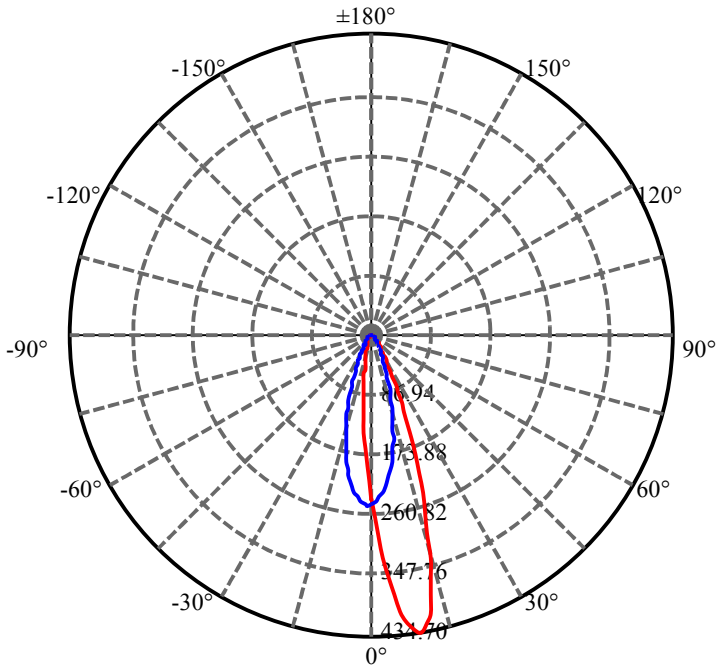
ZONAL LUMEN SUMMARY

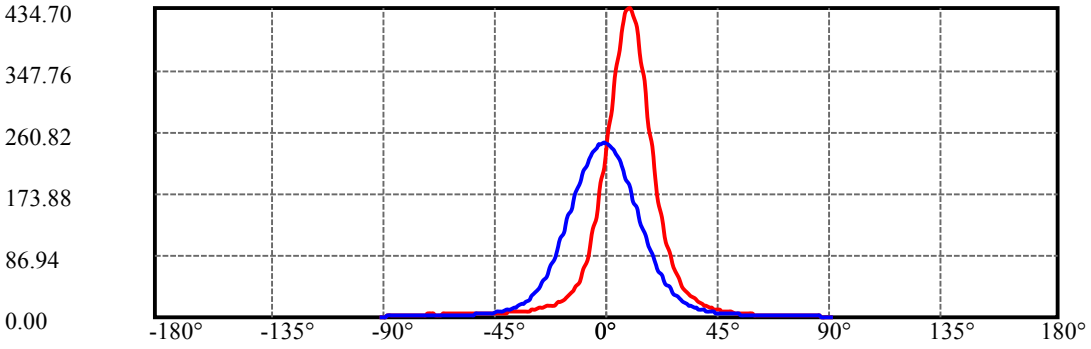
Zone	Lumens	%Lamp	%Fixt
0-30	98.65	69.54%	74.40%
0-40	112.02	78.97%	84.48%
0-60	123.17	86.82%	92.88%
0-90	132.50	93.41%	99.93%
0-120	132.50	93.41%	99.93%
0-180	132.60	93.47%	100.00%
60-90	9.74	6.86%	7.34%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.59	106.08	74.78%	80.00%

ZONAL LUMEN SUMMARY

0-10	22.34
10-20	46.28
20-30	30.03
30-40	13.37
40-50	6.75
50-60	4.40
60-70	3.78
70-80	3.35
80-90	2.21
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:21.1 Right:21.5

:C90/270Left:30.3 Right:30.7

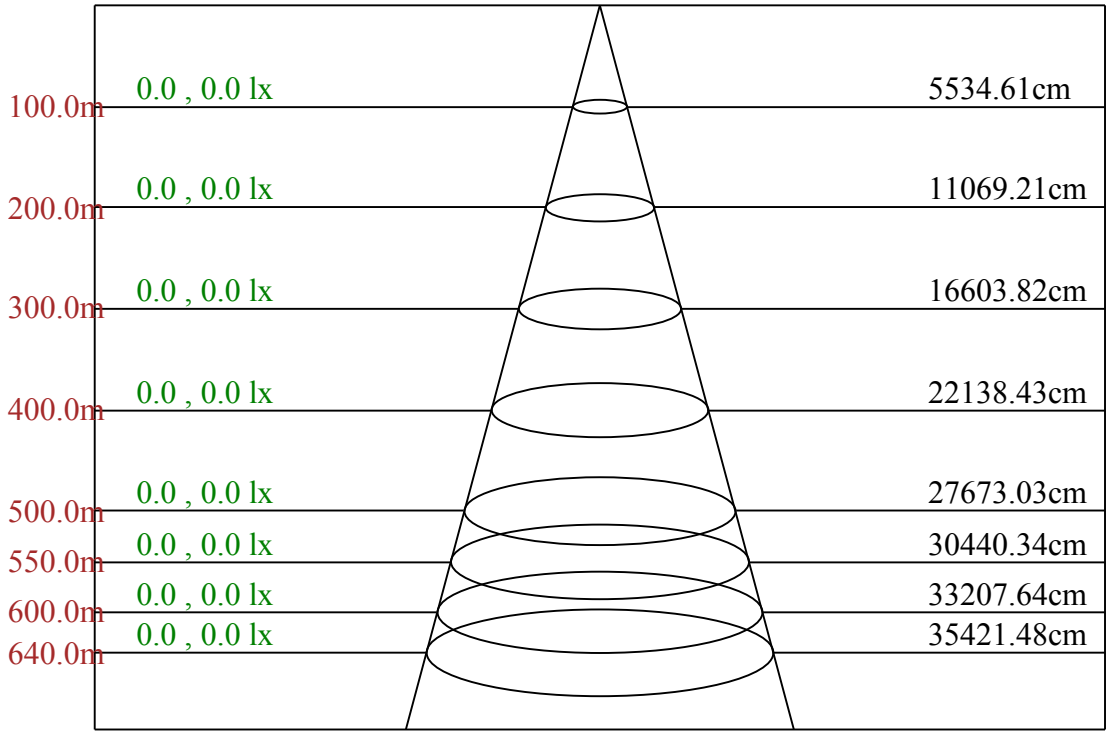
Beam Angle(50%Imax):C0/180Left:9.8 Right:9.7

:C90/270Left:15.7 Right:15.8

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

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

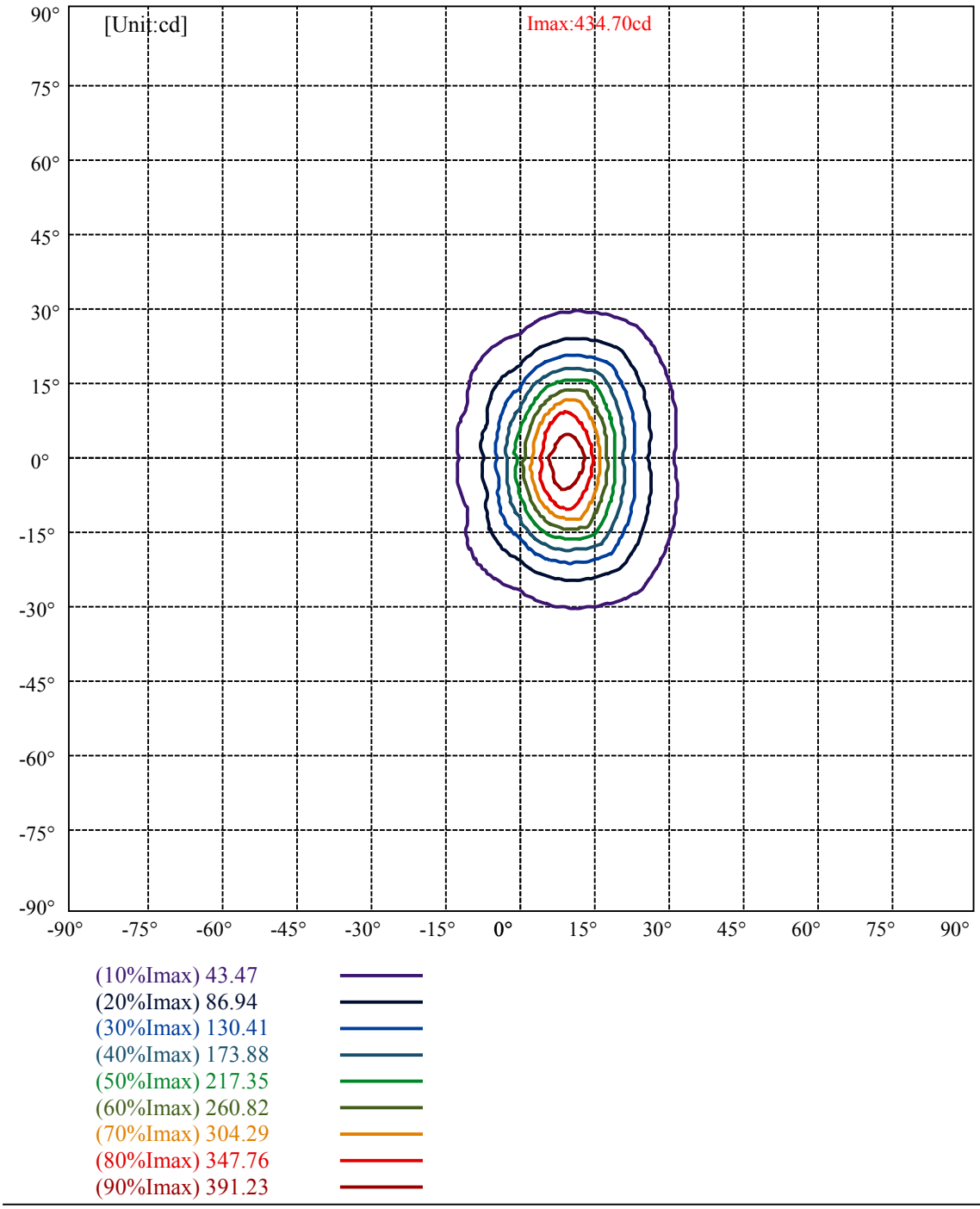
Lux distance Curve



Max , Ave

Beam angle of C0 plane 30.17

ISO-Intensity(V-H)

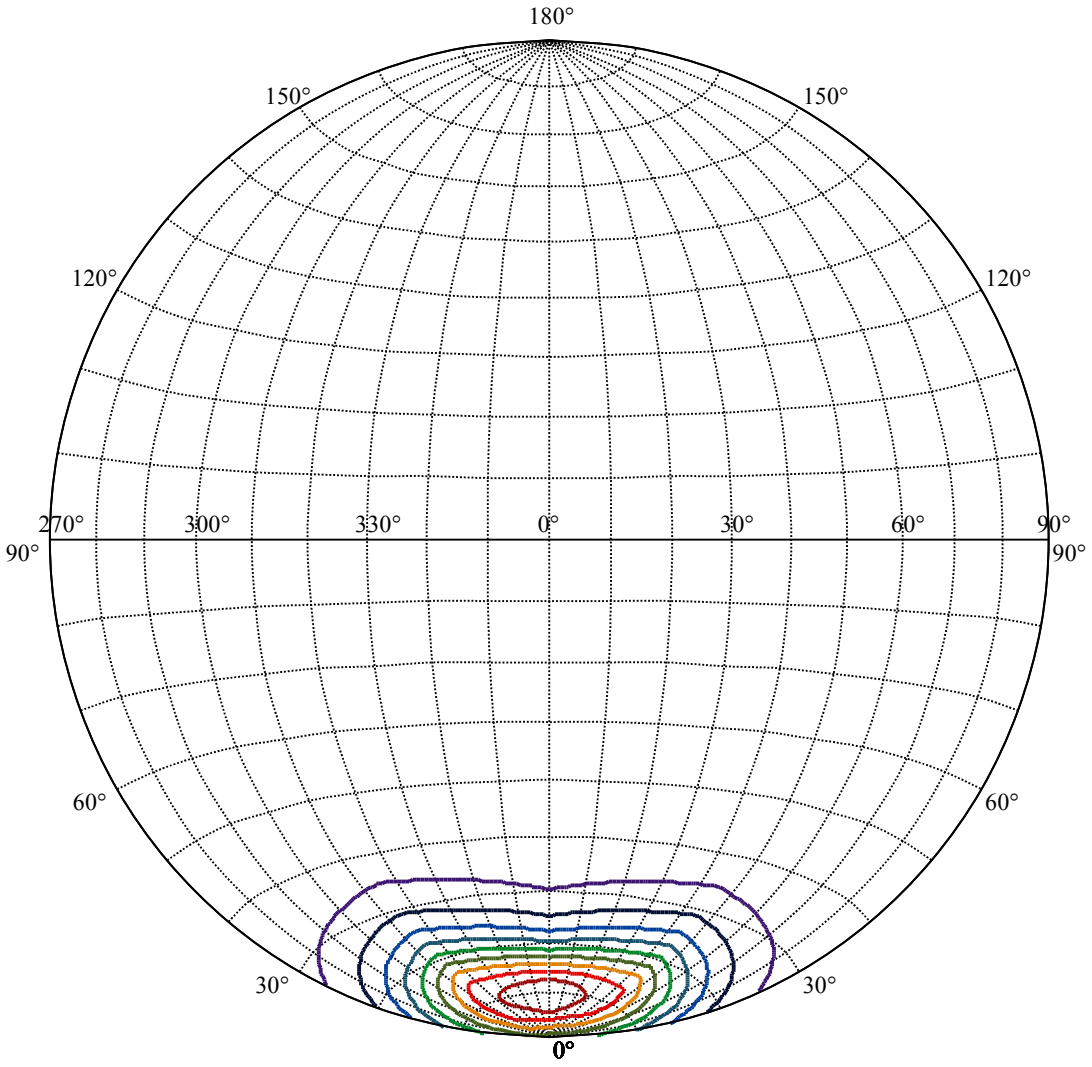


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:434.70

(10%Imax) 43.47
(20%Imax) 86.94
(30%Imax) 130.41
(40%Imax) 173.88
(50%Imax) 217.35
(60%Imax) 260.82
(70%Imax) 304.29
(80%Imax) 347.76
(90%Imax) 391.23

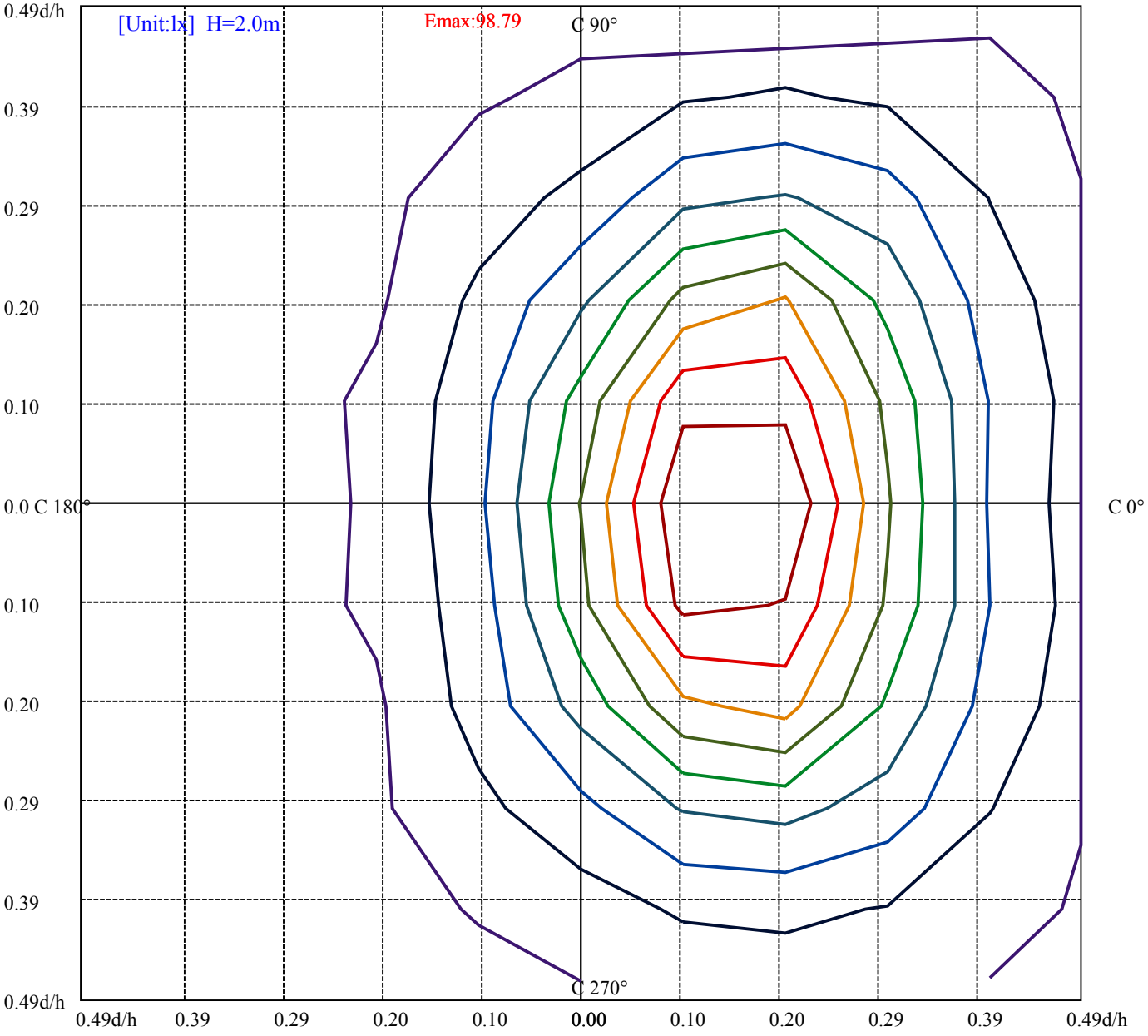
Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

Nata NA01D0201530CA

ISO illuminance diagram

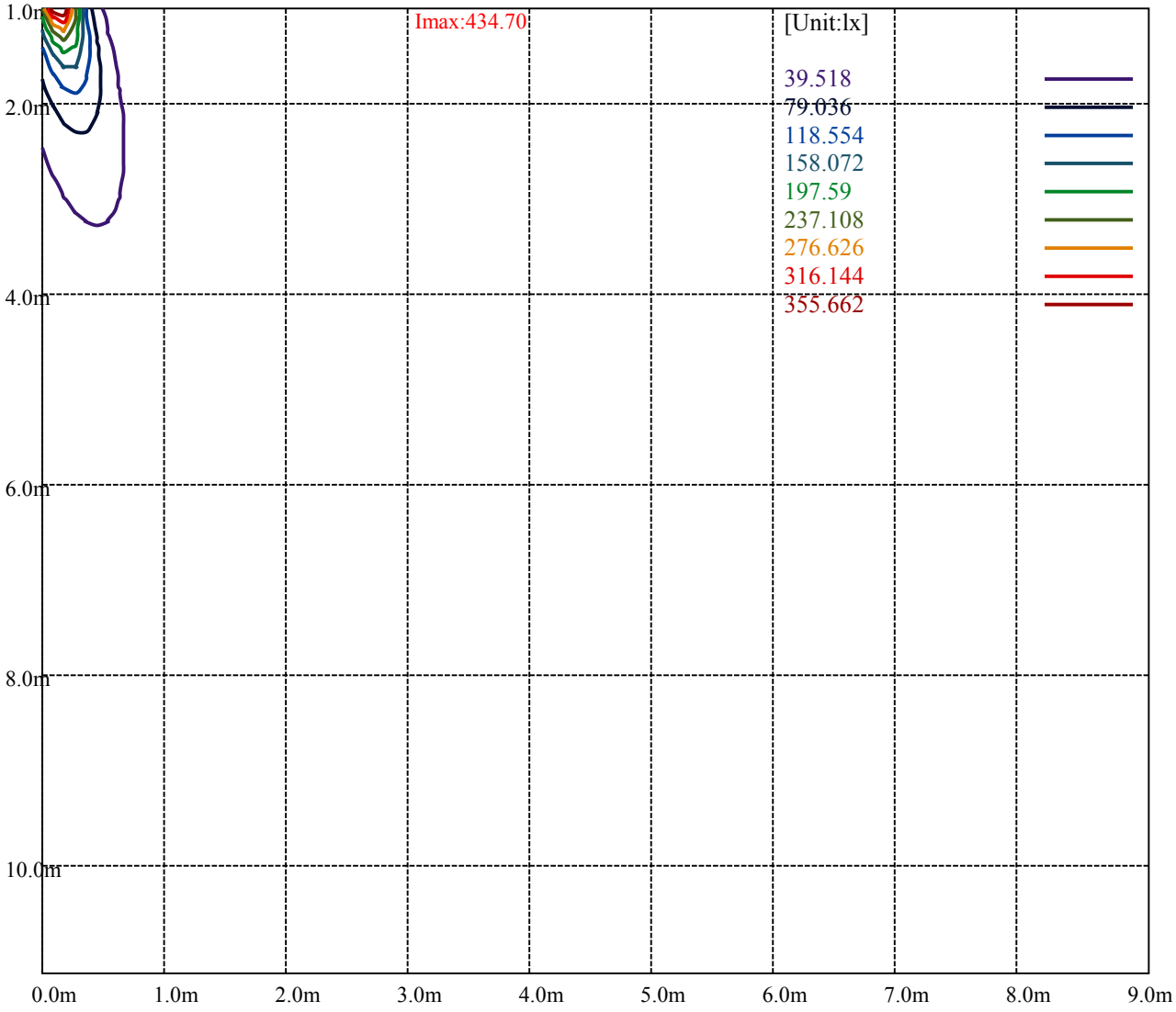


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
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

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Luminance Limitting Curve(no luminous side)

Luminance Table

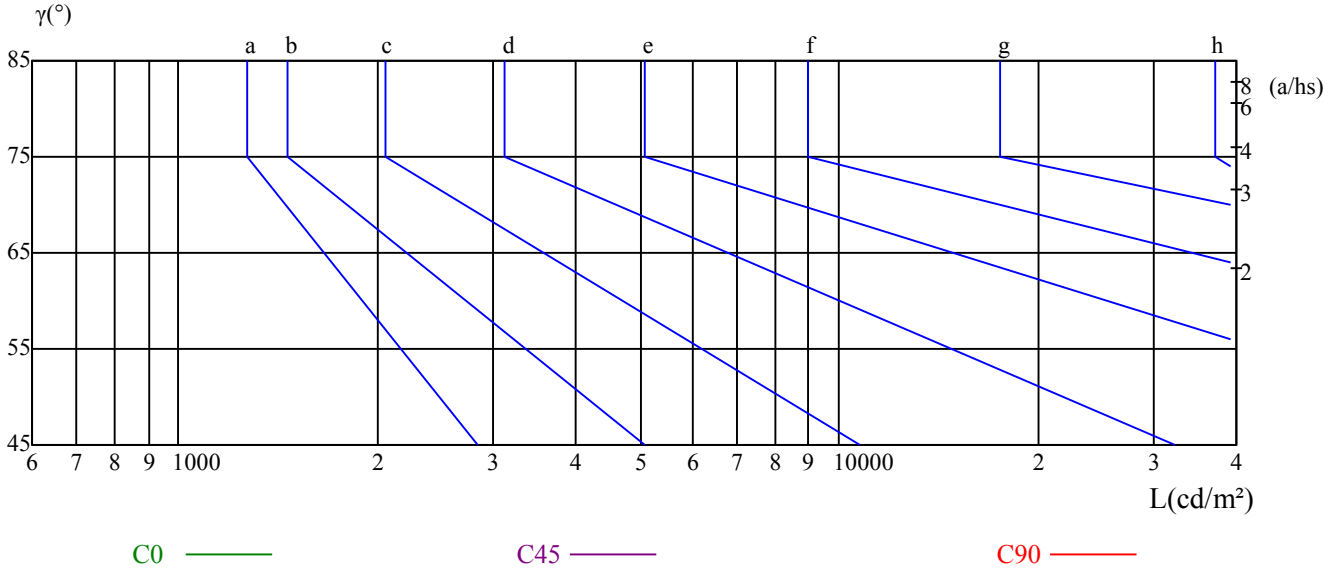
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

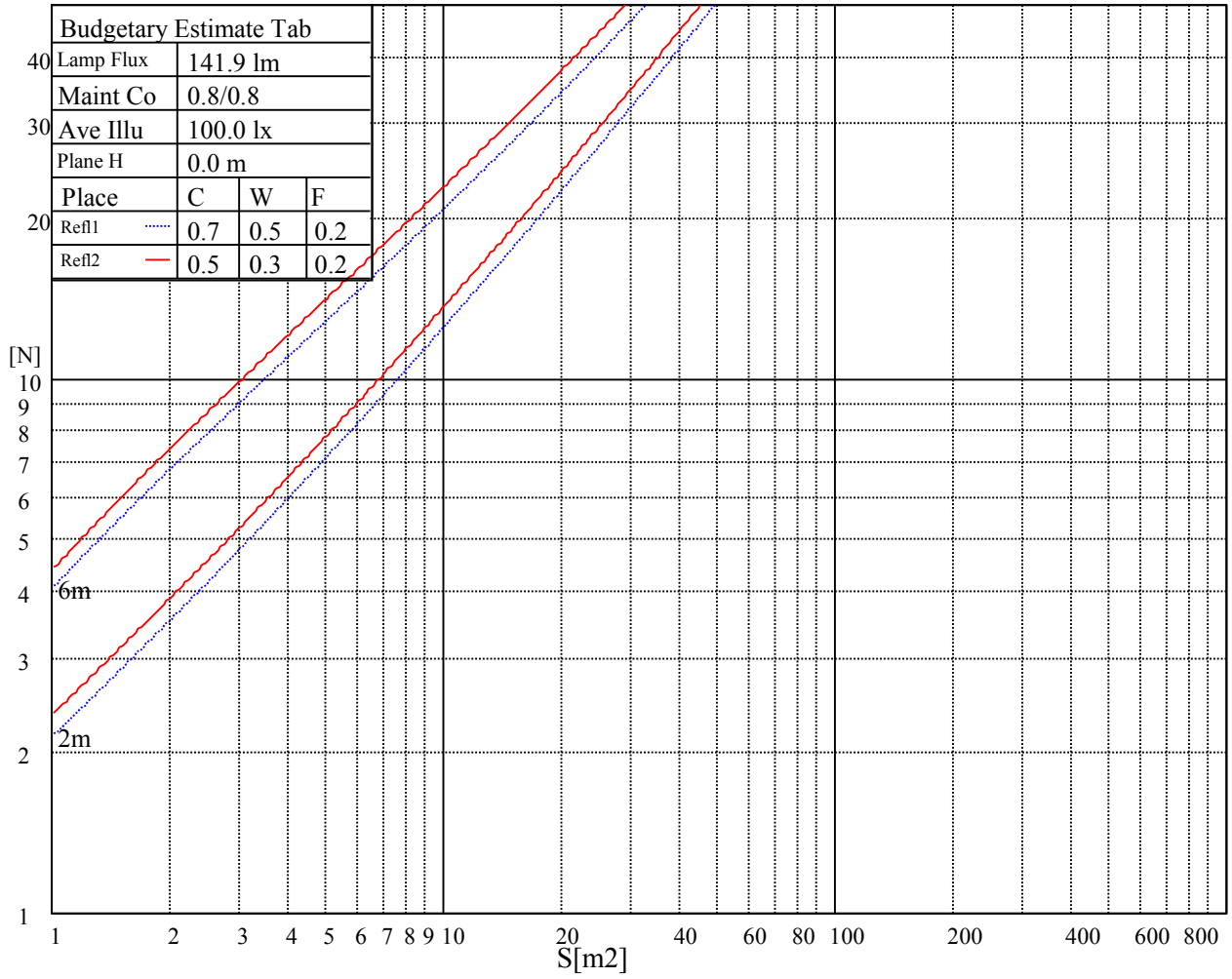
Glare Table

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

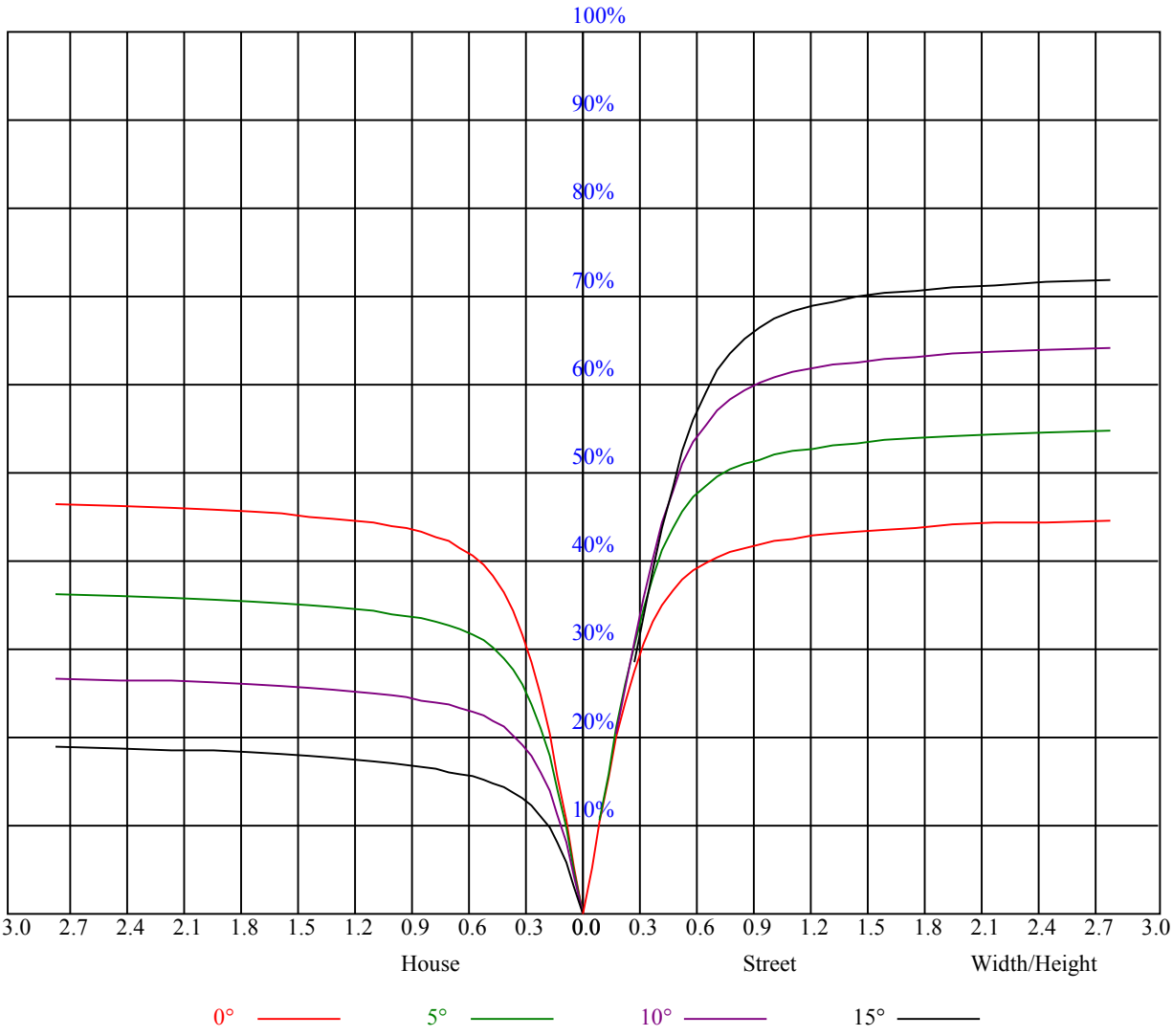


Equipment: GMS1980 Date: 2020/4/2 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	0.99	0.97	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.90	0.88	0.87	0.85
2	0.95	0.91	0.87	0.93	0.89	0.86	0.90	0.87	0.84	0.87	0.85	0.82	0.85	0.82	0.81	0.79
3	0.88	0.83	0.80	0.87	0.83	0.79	0.85	0.81	0.78	0.82	0.79	0.76	0.80	0.77	0.75	0.74
4	0.83	0.78	0.74	0.82	0.77	0.73	0.80	0.76	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.69
5	0.78	0.73	0.69	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.65
6	0.74	0.68	0.64	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.66	0.63	0.69	0.66	0.63	0.62
7	0.70	0.65	0.61	0.70	0.64	0.61	0.68	0.64	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.58
8	0.67	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.56
9	0.64	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.62	0.57	0.54	0.61	0.57	0.54	0.53
10	0.61	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.51

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	234.84	263.03	292.39	322.93	348.98	376.48	400.11	416.81	428.40
45.0	238.50	255.38	272.14	292.39	307.58	321.58	337.16	347.46	355.33
90.0	244.35	242.21	238.44	233.94	228.71	221.79	213.41	205.03	195.41
135.0	251.10	229.89	209.03	190.58	171.34	152.16	136.41	119.70	106.31
180.0	237.88	211.16	188.33	163.74	141.30	123.64	107.38	89.38	77.34
225.0	238.50	216.96	199.41	182.81	161.83	147.71	131.18	114.13	103.16
270.0	244.35	245.08	244.01	241.76	238.16	233.55	227.59	221.18	213.19
315.0	251.10	269.94	288.17	310.28	326.42	341.27	356.01	367.99	376.20
360.0	234.84	263.03	292.39	322.93	348.98	376.48	400.11	416.81	428.40

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	434.70	432.45	423.68	409.05	383.29	358.37	331.48	295.76	267.08
45.0	361.35	363.09	362.19	358.03	349.93	339.81	325.69	310.50	291.66
90.0	185.85	174.60	163.18	153.28	141.53	130.16	120.04	110.76	99.23
135.0	92.87	80.61	71.10	62.78	53.94	47.81	42.41	36.84	33.08
180.0	66.99	56.48	49.61	43.88	38.64	34.20	30.83	27.56	25.09
225.0	91.69	77.79	70.03	62.10	52.54	47.14	41.91	36.84	32.46
270.0	204.41	195.64	185.46	175.67	164.19	152.38	141.81	131.34	118.63
315.0	381.88	383.46	381.49	376.26	368.21	355.89	340.31	323.44	304.65
360.0	434.70	432.45	423.68	409.05	383.29	358.37	331.48	295.76	267.08

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	239.06	209.76	182.93	161.21	139.73	121.05	106.54	91.86	80.55
45.0	270.17	250.99	230.57	209.81	191.25	173.14	153.28	138.43	124.48
90.0	90.23	81.73	72.90	65.03	58.89	52.59	47.03	42.36	37.46
135.0	29.76	26.61	24.13	22.11	20.03	18.28	16.93	15.69	14.51
180.0	22.61	20.53	18.96	17.49	16.37	15.58	14.85	14.12	13.44
225.0	29.31	26.16	23.79	21.43	19.35	17.72	16.14	14.68	13.61
270.0	109.41	100.41	89.38	80.89	72.96	64.74	57.32	51.64	45.79
315.0	279.96	260.04	240.30	215.72	196.93	179.16	160.31	143.04	129.09
360.0	239.06	209.76	182.93	161.21	139.73	121.05	106.54	91.86	80.55

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	69.47	60.08	52.99	46.80	40.39	36.11	32.34	28.46	25.76
45.0	110.59	97.48	87.13	75.88	66.49	59.29	51.81	46.18	40.61
90.0	33.64	29.87	26.44	23.74	21.38	18.62	17.16	15.58	13.89
135.0	13.50	12.66	11.87	11.19	10.58	10.01	9.56	9.11	8.78
180.0	12.83	11.98	10.91	9.96	9.17	8.66	8.33	7.99	7.71
225.0	12.66	11.59	10.86	10.24	9.62	9.06	8.66	8.21	7.88
270.0	40.95	36.17	31.95	28.63	25.26	22.33	20.08	18.06	15.92
315.0	114.53	102.54	90.45	79.59	71.21	62.61	55.13	49.11	43.82
360.0	69.47	60.08	52.99	46.80	40.39	36.11	32.34	28.46	25.76

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	23.40	21.04	19.01	17.38	15.81	14.51	13.22	12.04	11.14
45.0	35.89	32.18	28.97	25.31	22.78	20.42	17.94	16.31	14.85
90.0	12.83	11.81	10.86	9.90	9.17	8.44	7.88	7.26	6.75
135.0	8.38	8.04	7.65	7.37	7.14	6.92	6.64	6.53	6.36
180.0	7.37	7.14	6.98	6.81	6.64	6.53	6.47	6.36	6.30
225.0	7.54	7.14	6.92	6.58	6.30	6.13	5.91	5.74	5.63
270.0	14.34	12.99	11.64	10.46	9.56	8.72	7.99	7.43	6.86
315.0	38.03	34.03	30.43	26.55	23.91	21.49	19.13	17.04	15.41
360.0	23.40	21.04	19.01	17.38	15.81	14.51	13.22	12.04	11.14

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	10.18	9.34	8.66	8.16	7.37	6.86	6.53	5.96	5.57
45.0	13.44	12.15	11.08	10.18	9.34	8.61	7.82	7.31	6.64
90.0	6.36	5.96	5.57	5.29	5.06	4.78	4.56	4.39	4.22
135.0	6.19	6.02	5.91	5.74	5.63	5.51	5.40	5.29	5.18
180.0	6.24	6.13	6.02	5.91	5.79	5.74	5.63	5.51	5.46
225.0	5.51	5.34	5.18	5.06	4.95	4.78	4.67	4.56	4.50
270.0	6.41	5.96	5.57	5.23	4.89	4.56	4.33	4.11	3.94
315.0	13.73	12.49	11.19	10.13	9.23	8.33	7.59	6.92	6.36
360.0	10.18	9.34	8.66	8.16	7.37	6.86	6.53	5.96	5.57

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.34	5.01	4.73	4.50	4.22	3.99	3.77	3.49	3.38
45.0	6.19	5.85	5.57	5.29	5.12	4.95	4.84	4.78	4.73
90.0	4.05	3.88	3.77	3.66	3.60	3.43	3.38	3.32	3.26
135.0	5.06	5.06	4.95	4.84	4.78	4.67	4.56	4.50	4.44
180.0	5.46	5.40	5.34	5.40	5.40	5.46	5.51	5.46	5.34
225.0	4.39	4.28	4.28	4.16	4.11	4.05	3.99	3.88	3.88
270.0	3.77	3.66	3.49	3.38	3.26	3.21	3.09	3.04	2.98
315.0	5.74	5.29	4.95	4.61	4.39	4.28	4.16	4.16	4.22
360.0	5.34	5.01	4.73	4.50	4.22	3.99	3.77	3.49	3.38

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.21	3.04	2.93	2.87	2.70	2.64	2.59	2.59	2.59
45.0	4.73	4.73	4.56	4.44	4.39	4.28	4.11	3.94	3.77
90.0	3.21	3.09	3.04	2.98	2.98	2.93	2.93	2.93	2.87
135.0	4.39	4.39	4.28	4.28	4.11	3.99	3.83	3.71	3.54
180.0	5.06	4.73	4.33	3.99	3.66	3.54	4.39	4.50	4.28
225.0	3.88	3.83	3.83	3.77	3.71	3.60	3.49	3.43	3.38
270.0	2.98	2.93	2.87	2.81	2.81	2.81	2.81	2.81	2.81
315.0	4.33	4.44	4.61	4.78	4.84	4.78	4.44	4.28	4.16
360.0	3.21	3.04	2.93	2.87	2.70	2.64	2.59	2.59	2.59

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.53	2.53	2.59	2.59	2.59	2.59	2.53	2.59	2.59
45.0	3.66	3.60	3.49	3.43	3.38	3.32	3.32	3.26	3.26
90.0	2.81	2.81	2.81	2.81	2.76	2.70	2.70	2.59	2.48
135.0	3.43	3.43	3.32	3.26	3.21	3.15	3.04	2.98	2.93
180.0	3.88	3.60	3.43	3.38	3.21	3.21	3.09	3.04	2.98
225.0	3.32	3.26	3.26	3.26	3.21	3.15	3.15	3.04	2.98
270.0	2.81	2.81	2.87	2.87	2.87	2.87	2.87	2.87	2.87
315.0	4.05	3.88	3.71	3.54	3.54	3.49	3.49	3.49	3.49
360.0	2.53	2.53	2.59	2.59	2.59	2.59	2.53	2.59	2.59

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.53	2.53	2.42	2.25	2.08	1.29	1.01	0.90	0.73
45.0	3.26	3.26	3.04	2.70	2.53	1.80	1.69	1.63	1.41
90.0	2.19	1.91	1.58	1.46	1.41	1.13	1.01	0.73	0.51
135.0	2.81	2.76	2.70	2.64	2.48	2.25	1.58	1.13	0.90
180.0	2.98	2.87	2.81	2.64	2.53	2.36	1.91	1.24	1.01
225.0	2.93	2.93	2.81	2.81	2.64	2.36	1.97	1.18	0.96
270.0	2.81	2.76	2.70	2.70	2.59	2.31	1.86	1.07	0.90
315.0	3.49	3.54	3.49	3.32	3.09	2.48	2.14	2.08	1.80
360.0	2.53	2.53	2.42	2.25	2.08	1.29	1.01	0.90	0.73

Intensity data(cd)

C/γ(°)	90.0
0.0	0.56
45.0	0.51
90.0	0.51
135.0	0.68
180.0	0.84
225.0	0.84
270.0	0.68
315.0	1.52
360.0	0.56