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Nata

LumCAT: NA01D020024BW
Luminaire:

Report No: 200402-B006	Voltage(V): 6.2100
Test No: 200402-C006	Current(A): 0.1600
LampCAT: CREE 3030	Power (W): 0.9940
Lamp flux(lm): 141.9	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): 135.22
Efficiency(%): 95.32%
Lumens(lm)/Power(W): 136.04
Central intensity(cd): 385.045
Maximum intensity(cd): 385.045
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=26.6
[C90/270]Total=26.6
Field angle(10%Imax): [C0/180]Total=57.1
[C90/270]Total=57.1
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.47 C90_270=0.47
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 95.32%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 93.781%

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

Nata NA01D020024BW

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	385.045	0.000	0	.000%	.000%
1.0	383.484	0.368	0.368	.259%	.272%
2.0	378.105	1.093	1.461	.771%	1.080%
3.0	370.477	1.790	3.251	1.262%	2.404%
4.0	360.555	2.447	5.698	1.725%	4.214%
5.0	348.075	3.048	8.747	2.149%	6.468%
6.0	330.870	3.568	12.315	2.515%	9.107%
7.0	314.170	4.004	16.318	2.822%	12.068%
8.0	296.571	4.371	20.689	3.081%	15.301%
9.0	276.694	4.646	25.335	3.275%	18.736%
10.0	256.577	4.826	30.161	3.402%	22.305%
11.0	237.361	4.935	35.097	3.479%	25.955%
12.0	217.913	4.977	40.074	3.508%	29.636%
13.0	197.402	4.929	45.002	3.474%	33.281%
14.0	179.986	4.831	49.833	3.405%	36.853%
15.0	163.167	4.711	54.544	3.321%	40.337%
16.0	148.240	4.563	59.107	3.217%	43.711%
17.0	131.963	4.364	63.47	3.076%	46.938%
18.0	118.568	4.131	67.601	2.912%	49.993%
19.0	106.931	3.923	71.524	2.766%	52.895%
20.0	95.428	3.704	75.228	2.611%	55.634%
21.0	85.352	3.471	78.699	2.447%	58.201%
22.0	77.020	3.263	81.962	2.300%	60.614%
23.0	69.272	3.070	85.032	2.164%	62.884%
24.0	61.488	2.859	87.891	2.015%	64.998%
25.0	55.688	2.664	90.555	1.878%	66.969%
26.0	50.217	2.500	93.055	1.762%	68.817%
27.0	45.253	2.336	95.391	1.646%	70.545%
28.0	40.641	2.175	97.565	1.533%	72.153%
29.0	36.816	2.026	99.592	1.429%	73.651%
30.0	33.202	1.890	101.482	1.333%	75.050%
31.0	30.023	1.759	103.242	1.240%	76.351%
32.0	27.084	1.636	104.878	1.153%	77.561%
33.0	24.539	1.521	106.399	1.072%	78.685%
34.0	22.458	1.422	107.821	1.003%	79.737%
35.0	20.257	1.327	109.147	.935%	80.718%
36.0	18.464	1.233	110.38	.869%	81.630%
37.0	17.009	1.157	111.537	.816%	82.486%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	15.673	1.091	112.628	.769%	83.292%
39.0	14.309	1.023	113.651	.721%	84.049%
40.0	13.303	0.963	114.614	.679%	84.761%
41.0	12.417	0.916	115.53	.646%	85.439%
42.0	11.496	0.869	116.399	.612%	86.081%
43.0	10.737	0.824	117.223	.581%	86.690%
44.0	10.048	0.784	118.007	.553%	87.270%
45.0	9.401	0.747	118.755	.527%	87.823%
46.0	8.782	0.711	119.466	.501%	88.349%
47.0	8.297	0.679	120.145	.479%	88.851%
48.0	7.833	0.652	120.797	.460%	89.333%
49.0	7.376	0.625	121.422	.440%	89.795%
50.0	6.947	0.597	122.019	.421%	90.237%
51.0	6.560	0.571	122.59	.403%	90.660%
52.0	6.202	0.548	123.138	.386%	91.065%
53.0	5.878	0.525	123.663	.370%	91.453%
54.0	5.541	0.503	124.167	.355%	91.825%
55.0	5.280	0.483	124.65	.341%	92.183%
56.0	5.034	0.466	125.116	.329%	92.527%
57.0	4.767	0.448	125.564	.316%	92.859%
58.0	4.549	0.431	125.995	.304%	93.177%
59.0	4.338	0.415	126.41	.293%	93.485%
60.0	4.155	0.401	126.811	.283%	93.781%
61.0	3.973	0.388	127.199	.273%	94.068%
62.0	3.825	0.376	127.575	.265%	94.346%
63.0	3.691	0.366	127.941	.258%	94.616%
64.0	3.544	0.355	128.296	.250%	94.879%
65.0	3.438	0.346	128.641	.244%	95.134%
66.0	3.305	0.336	128.978	.237%	95.383%
67.0	3.220	0.328	129.306	.231%	95.626%
68.0	3.122	0.321	129.627	.226%	95.863%
69.0	3.052	0.315	129.942	.222%	96.096%
70.0	2.974	0.309	130.251	.218%	96.325%
71.0	2.925	0.305	130.556	.215%	96.551%
72.0	2.862	0.301	130.857	.212%	96.773%
73.0	2.820	0.297	131.154	.209%	96.993%
74.0	2.798	0.295	131.45	.208%	97.211%
75.0	2.784	0.295	131.745	.208%	97.430%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.777	0.295	132.04	.208%	97.648%
77.0	2.756	0.295	132.335	.208%	97.866%
78.0	2.728	0.294	132.628	.207%	98.083%
79.0	2.707	0.292	132.921	.206%	98.299%
80.0	2.693	0.291	133.212	.205%	98.514%
81.0	2.672	0.290	133.502	.205%	98.729%
82.0	2.630	0.287	133.789	.203%	98.942%
83.0	2.538	0.281	134.07	.198%	99.149%
84.0	2.419	0.270	134.34	.190%	99.349%
85.0	2.208	0.253	134.593	.178%	99.536%
86.0	1.786	0.218	134.811	.154%	99.697%
87.0	1.245	0.166	134.977	.117%	99.820%
88.0	0.759	0.110	135.087	.077%	99.901%
89.0	0.584	0.074	135.16	.052%	99.956%
90.0	0.513	0.060	135.22	.042%	100.000%

Zonal flux distribution table

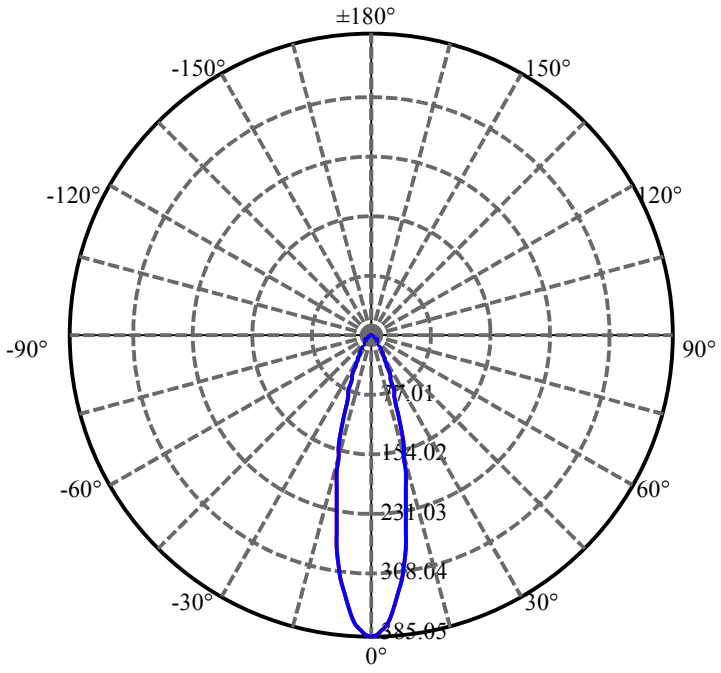
ZONAL LUMEN SUMMARY

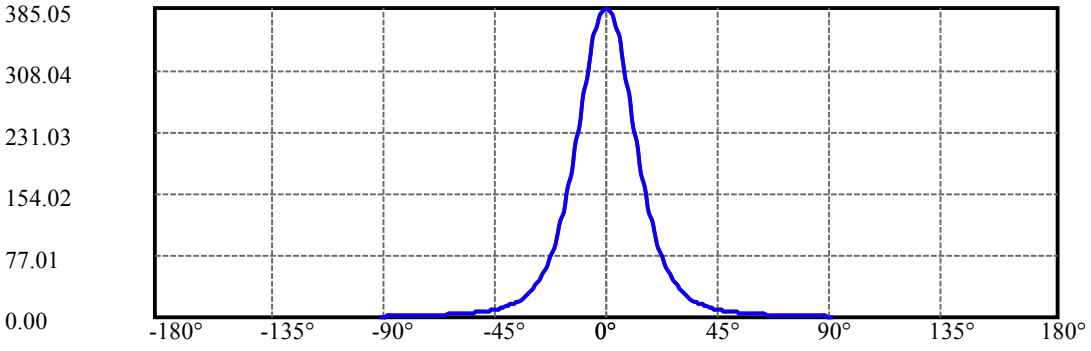
Zone	Lumens	%Lamp	%Fixt
0-30	101.48	71.54%	75.05%
0-40	114.61	80.79%	84.76%
0-60	126.81	89.39%	93.78%
0-90	135.16	95.28%	99.96%
0-120	135.16	95.28%	99.96%
0-180	135.22	95.32%	100.00%
60-90	8.75	6.17%	6.47%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.27	108.18	76.26%	80.00%

ZONAL LUMEN SUMMARY

0-10	30.16
10-20	45.07
20-30	26.25
30-40	13.13
40-50	7.40
50-60	4.79
60-70	3.44
70-80	2.96
80-90	1.95
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

Light Distribution Curve [Unit:cd]





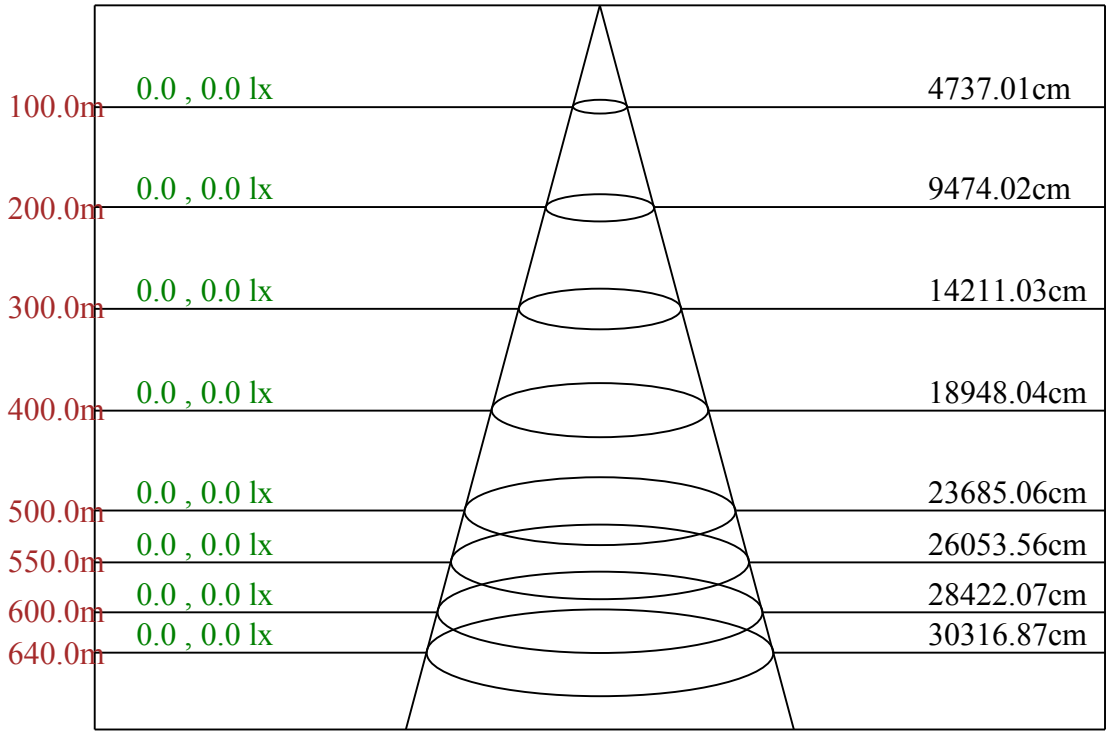
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:28.6 Right:28.6
:C90/270Left:28.6 Right:28.6

Beam Angle(50%Imax):C0/180Left:13.3 Right:13.3
:C90/270Left:13.3 Right:13.3

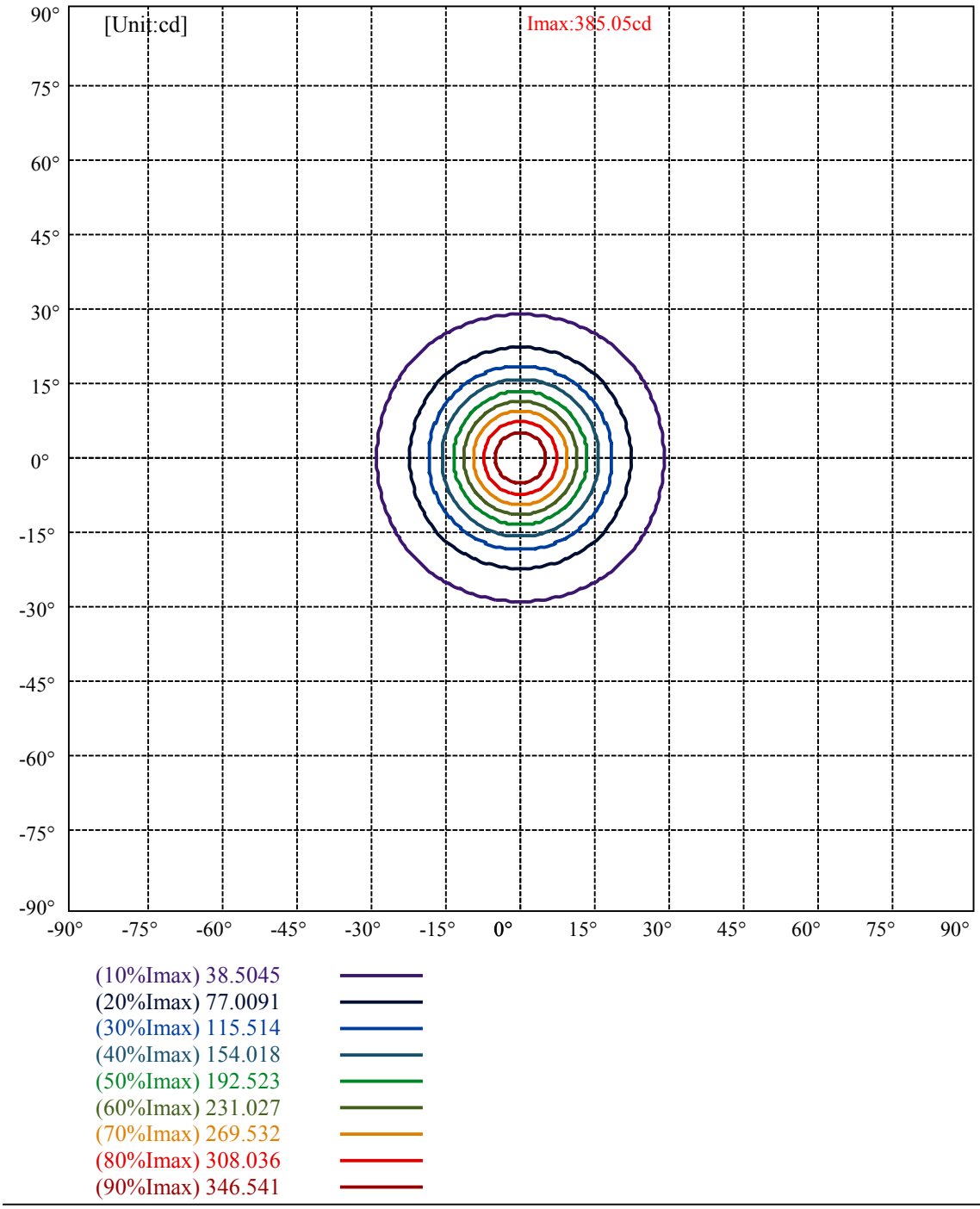
Lux distance Curve



Max , Ave

Beam angle of C0 plane 26.65

ISO-Intensity(V-H)

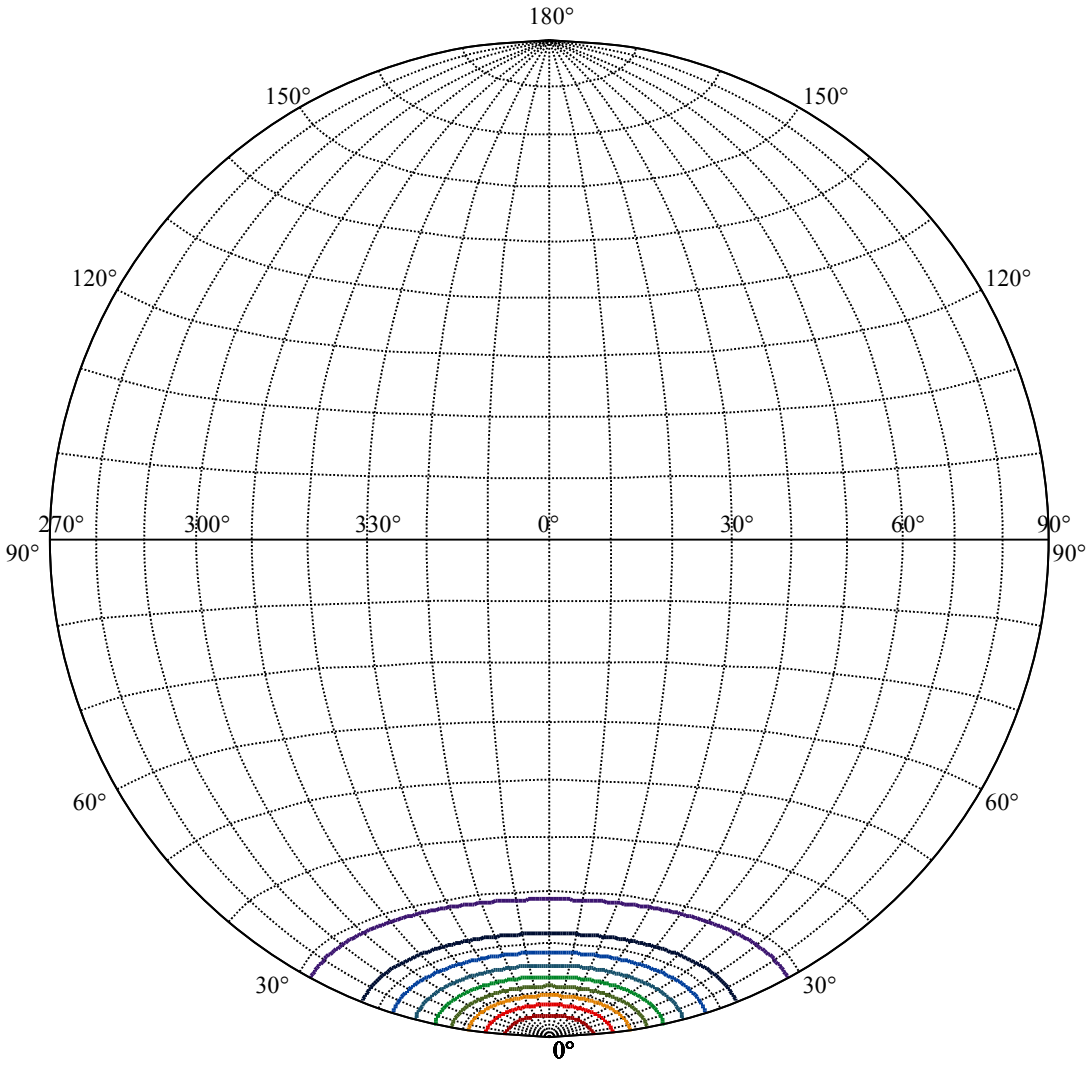


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:385.05

(10%Imax) 38.5045
(20%Imax) 77.0091
(30%Imax) 115.514
(40%Imax) 154.018
(50%Imax) 192.523
(60%Imax) 231.027
(70%Imax) 269.532
(80%Imax) 308.036
(90%Imax) 346.541

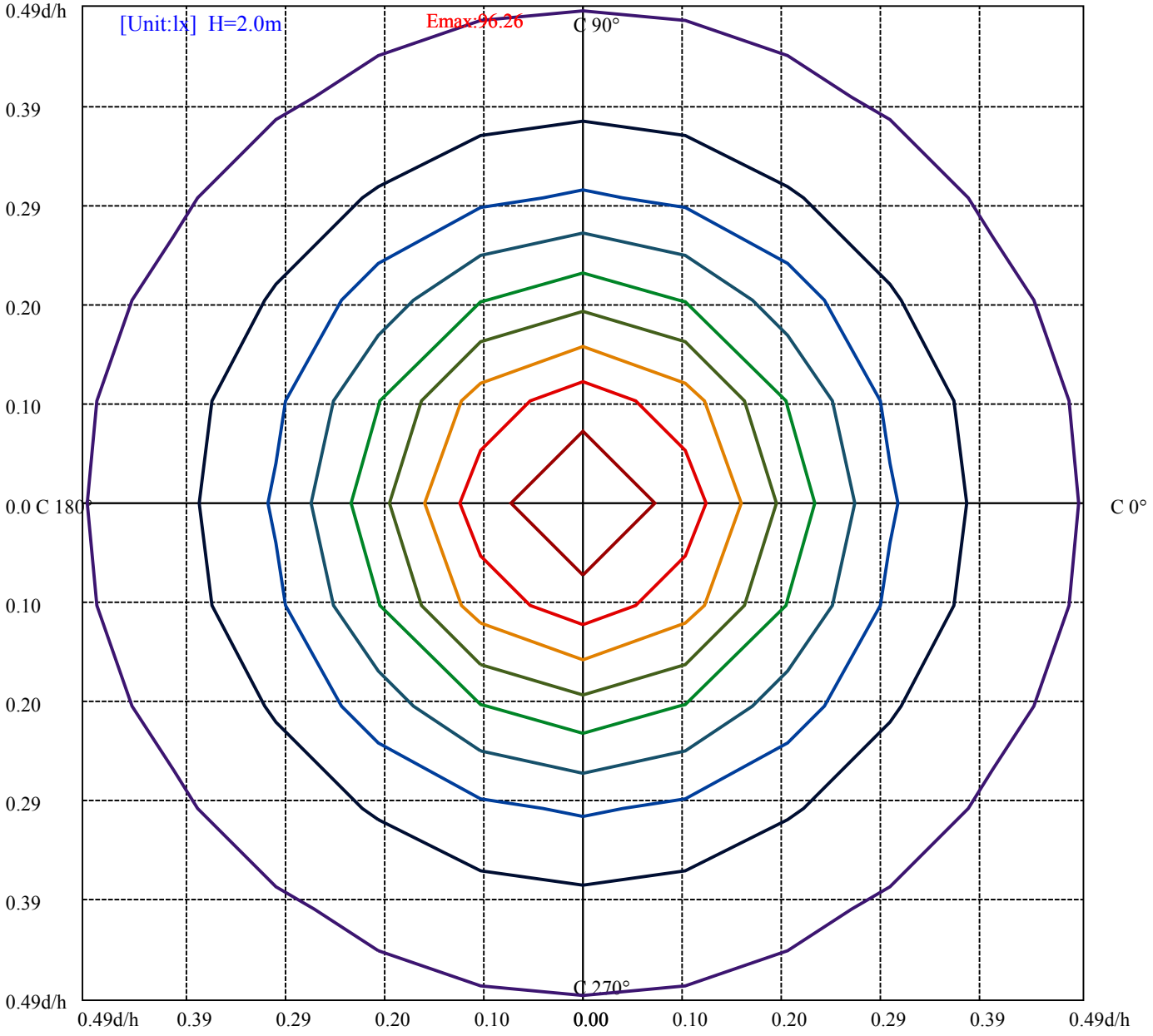
Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

Nata NA01D020024BW

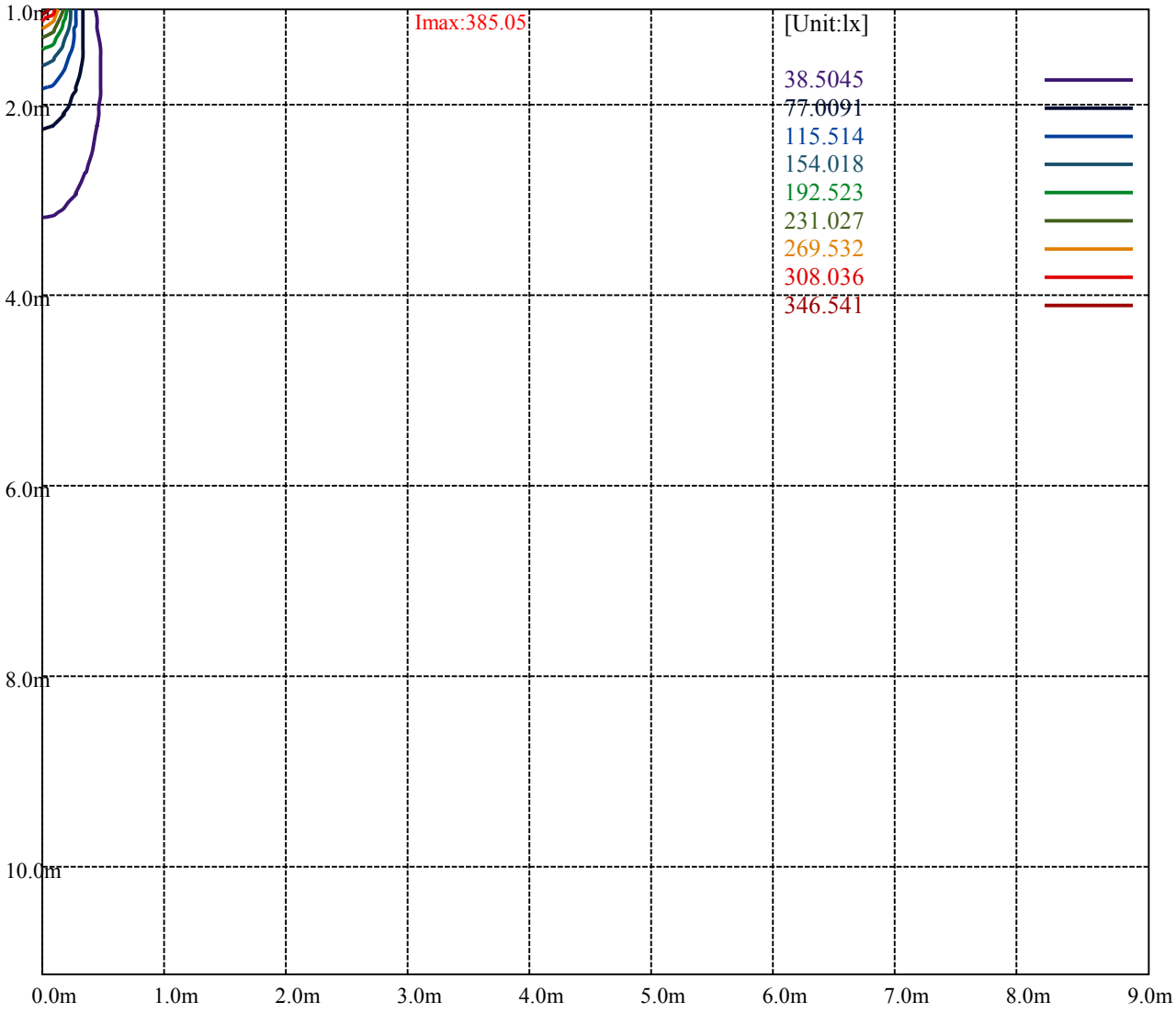
ISO illuminance diagram



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 NA01D020024BW

Luminance Limitting Curve(no luminous side)

Luminance Table

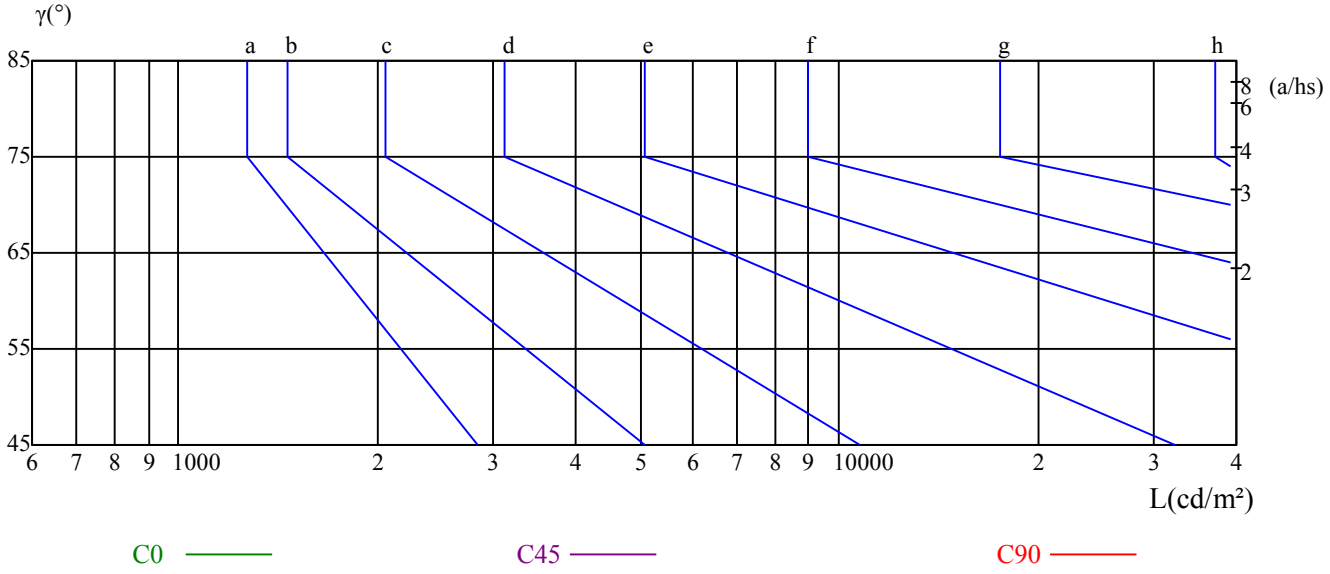
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

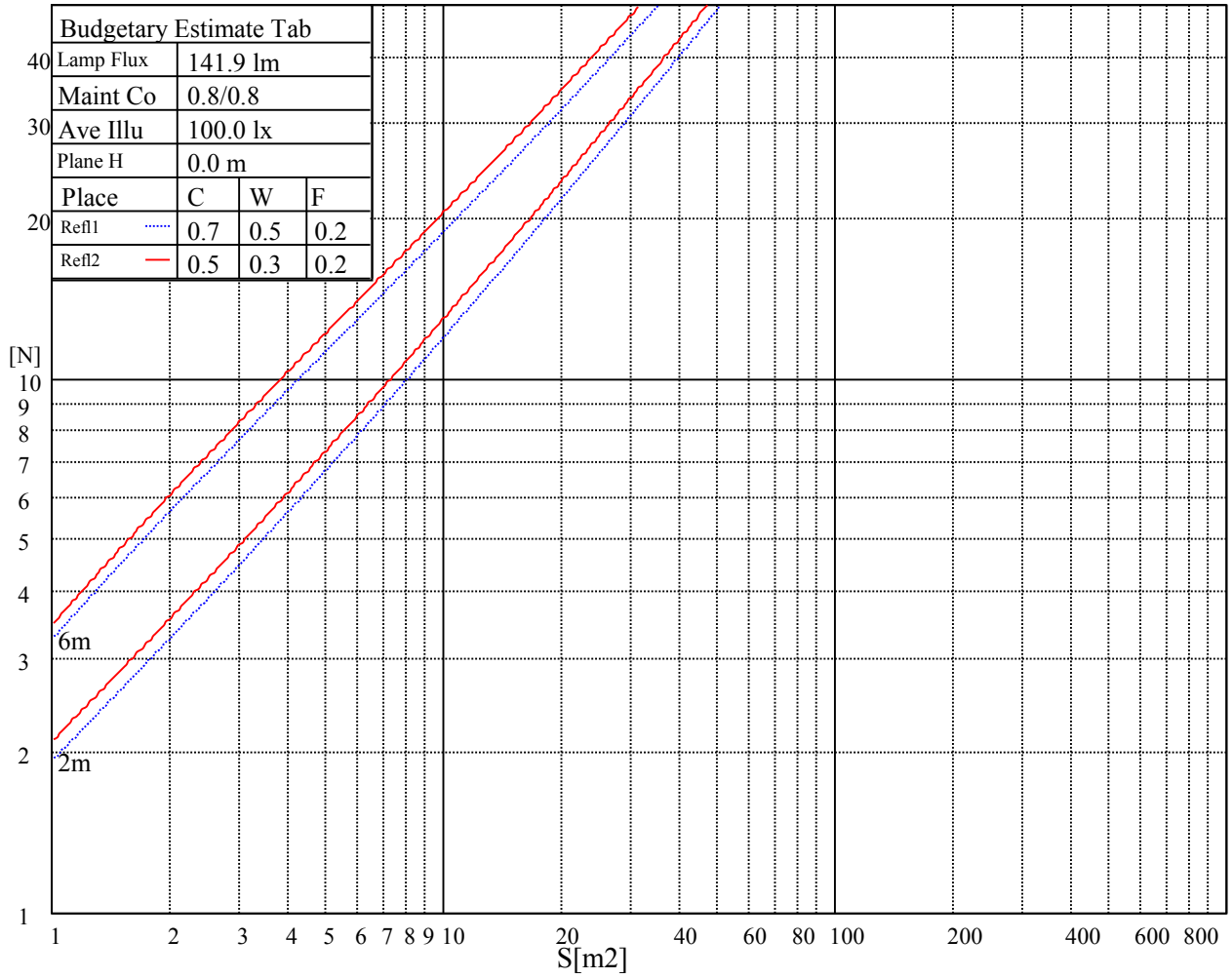
Glare Table

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

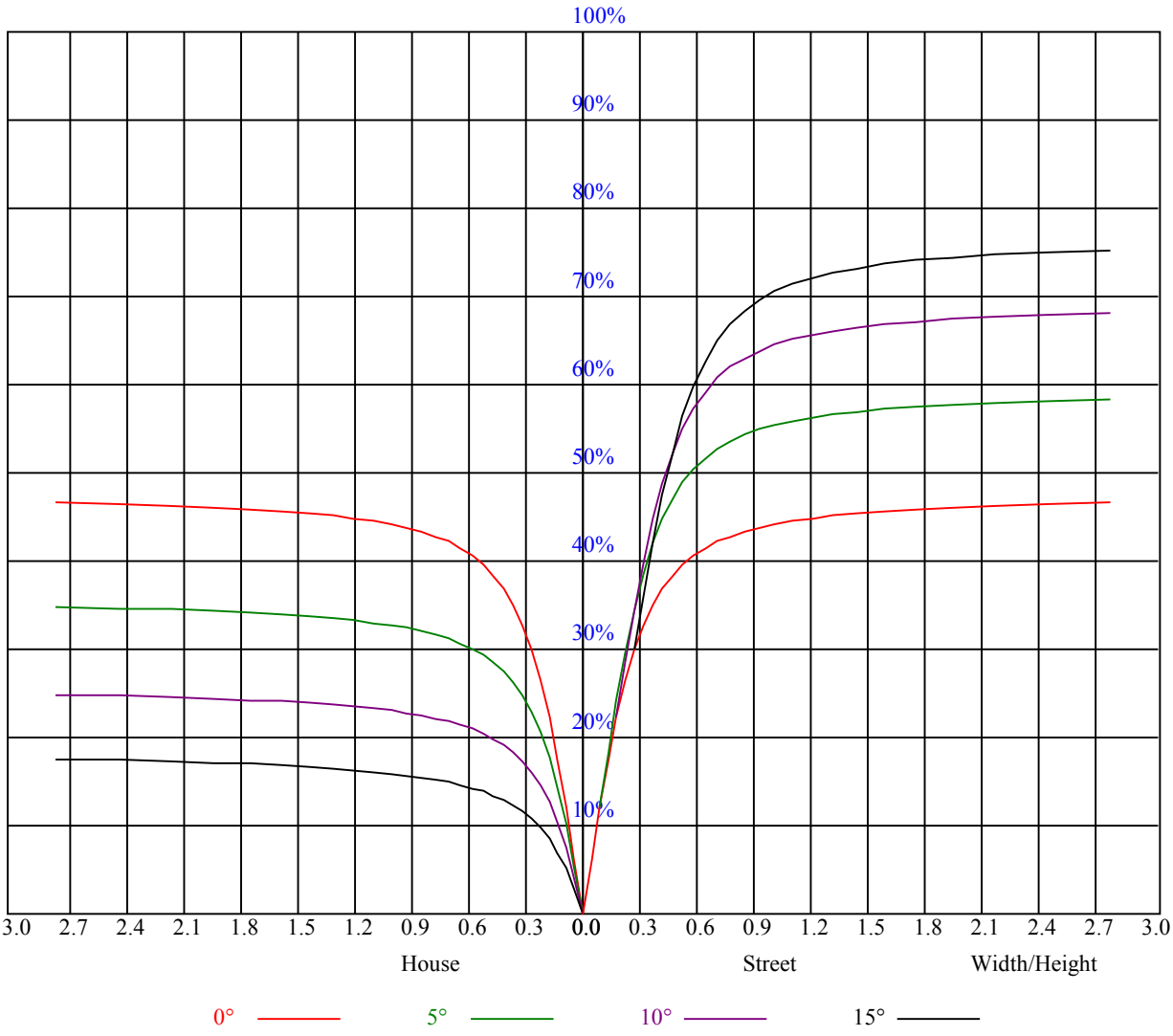


Equipment: GMS1980	Date: 2020/4/2	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	1.13	1.13	1.13	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.05	1.02	1.00	1.03	1.00	0.98	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.88
2	0.97	0.93	0.90	0.96	0.92	0.89	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.82
3	0.91	0.86	0.82	0.90	0.85	0.82	0.87	0.84	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.77
4	0.86	0.81	0.77	0.85	0.80	0.76	0.83	0.79	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.72
5	0.81	0.76	0.72	0.80	0.75	0.71	0.79	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.68
6	0.77	0.72	0.68	0.76	0.71	0.68	0.75	0.70	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.65
7	0.73	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
8	0.70	0.65	0.61	0.70	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.59
9	0.67	0.62	0.59	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.57
10	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.55

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	386.49	387.90	384.69	379.07	371.19	360.79	344.48	328.78	312.98
45.0	384.24	384.69	381.15	375.81	367.26	355.22	341.10	325.91	306.79
90.0	384.13	381.43	376.03	367.37	357.53	345.66	327.99	311.51	294.13
135.0	385.31	383.12	376.93	368.66	359.04	347.46	329.29	312.86	295.82
180.0	386.49	382.73	374.96	364.61	352.63	337.28	318.71	301.11	280.35
225.0	384.24	380.53	372.38	363.71	352.41	338.34	317.53	300.38	282.99
270.0	384.13	383.51	378.84	372.43	362.19	349.43	333.23	315.56	299.08
315.0	385.31	383.96	379.86	372.15	362.19	350.44	334.63	317.25	300.43
360.0	386.49	387.90	384.69	379.07	371.19	360.79	344.48	328.78	312.98

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	291.49	273.09	254.42	233.72	212.63	194.40	175.28	159.41	140.63
45.0	287.21	269.38	248.06	229.50	209.25	189.45	172.63	159.19	139.78
90.0	273.60	252.90	234.56	214.26	194.91	178.37	161.10	146.70	131.46
135.0	274.50	256.61	237.88	217.52	198.00	181.52	163.91	149.63	135.06
180.0	262.29	241.37	220.56	202.89	183.83	165.94	151.14	137.64	121.95
225.0	262.58	241.37	223.09	202.89	183.32	166.95	150.24	136.41	121.89
270.0	279.34	258.64	240.08	221.40	198.62	181.52	165.26	148.73	132.92
315.0	282.54	259.26	240.24	221.12	198.68	181.74	165.77	148.22	132.02
360.0	291.49	273.09	254.42	233.72	212.63	194.40	175.28	159.41	140.63

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	127.13	114.75	102.32	90.90	81.90	73.69	64.69	58.56	52.93
45.0	126.00	114.75	99.79	89.83	82.07	71.94	64.24	59.01	52.14
90.0	117.23	105.81	95.46	83.93	76.05	69.08	61.03	55.29	50.18
135.0	120.21	109.13	97.43	86.85	78.64	71.33	62.89	56.93	51.58
180.0	110.14	99.62	88.99	79.88	72.51	65.03	58.33	53.10	47.76
225.0	108.73	98.44	88.20	79.09	71.55	64.63	56.87	51.75	46.97
270.0	119.93	106.76	95.12	86.51	77.23	69.69	62.33	55.97	50.51
315.0	119.19	106.20	96.13	85.84	76.22	68.79	61.54	54.90	49.67
360.0	127.13	114.75	102.32	90.90	81.90	73.69	64.69	58.56	52.93

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	47.14	41.96	37.91	34.03	30.66	28.01	25.26	23.40	21.21
45.0	47.08	42.53	37.69	34.26	31.16	27.68	25.26	23.06	20.76
90.0	44.61	40.67	37.07	33.02	30.38	27.39	24.36	22.56	20.36
135.0	46.58	42.19	38.93	34.93	31.33	28.52	25.88	23.79	21.43
180.0	43.71	39.32	35.66	32.18	29.25	26.21	24.02	22.05	19.74
225.0	42.30	37.97	34.20	31.16	28.24	25.37	22.84	20.98	18.79
270.0	45.68	40.84	37.13	33.47	29.81	27.06	24.69	22.16	20.14
315.0	44.94	39.66	35.94	32.57	29.36	26.44	24.02	21.66	19.63
360.0	47.14	41.96	37.91	34.03	30.66	28.01	25.26	23.40	21.21

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	19.18	17.66	16.48	14.79	13.78	13.05	12.04	11.36	10.80
45.0	18.96	17.44	15.98	14.74	13.78	12.83	11.87	11.08	10.35
90.0	18.34	17.10	15.86	14.34	13.50	12.54	11.59	10.69	10.01
135.0	19.29	17.78	16.31	14.91	13.89	13.05	11.98	11.19	10.41
180.0	18.23	16.76	15.19	14.01	12.94	11.93	11.14	10.41	9.68
225.0	17.21	15.81	14.63	13.11	12.38	11.53	10.63	10.01	9.34
270.0	18.39	16.93	15.64	14.34	13.11	12.21	11.25	10.58	9.96
315.0	18.11	16.59	15.30	14.23	13.05	12.21	11.48	10.58	9.84
360.0	19.18	17.66	16.48	14.79	13.78	13.05	12.04	11.36	10.80

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	10.01	9.34	8.89	8.33	7.88	7.43	6.98	6.64	6.30
45.0	9.84	9.23	8.72	8.27	7.76	7.37	6.98	6.58	6.19
90.0	9.28	8.72	8.27	7.76	7.31	6.92	6.53	6.19	5.85
135.0	9.68	9.00	8.49	8.04	7.54	7.14	6.69	6.30	5.91
180.0	9.11	8.55	8.04	7.65	7.20	6.69	6.30	6.02	5.68
225.0	8.78	8.27	7.82	7.31	6.98	6.53	6.19	5.85	5.63
270.0	9.28	8.61	8.10	7.65	7.14	6.69	6.36	6.02	5.68
315.0	9.23	8.55	8.04	7.65	7.20	6.81	6.47	6.02	5.79
360.0	10.01	9.34	8.89	8.33	7.88	7.43	6.98	6.64	6.30

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.91	5.68	5.40	5.06	4.84	4.67	4.44	4.28	4.11
45.0	5.85	5.63	5.34	5.06	4.84	4.56	4.33	4.22	3.99
90.0	5.51	5.23	5.01	4.73	4.50	4.33	4.16	3.94	3.83
135.0	5.63	5.34	5.12	4.84	4.61	4.39	4.16	3.99	3.88
180.0	5.34	5.06	4.84	4.61	4.44	4.16	3.99	3.83	3.66
225.0	5.29	5.01	4.78	4.61	4.33	4.16	3.99	3.83	3.71
270.0	5.34	5.12	4.89	4.56	4.39	4.16	3.99	3.83	3.66
315.0	5.46	5.18	4.89	4.67	4.44	4.28	4.16	3.88	3.77
360.0	5.91	5.68	5.40	5.06	4.84	4.67	4.44	4.28	4.11

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.94	3.77	3.66	3.49	3.38	3.32	3.21	3.15	3.09
45.0	3.88	3.71	3.60	3.43	3.38	3.21	3.15	3.09	3.04
90.0	3.71	3.49	3.43	3.32	3.21	3.15	3.09	2.98	2.98
135.0	3.77	3.60	3.49	3.38	3.26	3.21	3.15	3.04	2.98
180.0	3.49	3.38	3.26	3.15	3.09	2.93	2.87	2.81	2.76
225.0	3.60	3.49	3.32	3.21	3.15	3.04	2.98	2.93	2.87
270.0	3.54	3.43	3.32	3.21	3.09	3.04	2.93	2.87	2.76
315.0	3.60	3.49	3.43	3.26	3.21	3.09	3.04	2.93	2.93
360.0	3.94	3.77	3.66	3.49	3.38	3.32	3.21	3.15	3.09

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

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.87	2.87	2.81	2.76	2.64	2.48	2.25	1.07	0.73
45.0	2.98	2.93	2.93	2.93	2.81	2.59	2.31	1.13	0.73
90.0	2.64	2.53	2.48	2.48	2.31	2.08	1.13	0.73	0.62
135.0	2.76	2.76	2.70	2.53	2.31	1.97	0.96	0.68	0.56
180.0	2.36	2.36	2.19	2.14	1.91	0.90	0.68	0.56	0.45
225.0	2.64	2.59	2.48	2.25	1.97	0.96	0.68	0.56	0.51
270.0	2.36	2.25	2.03	1.69	1.35	1.13	0.84	0.62	0.51
315.0	2.76	2.76	2.70	2.59	2.36	2.19	1.13	0.73	0.56
360.0	2.87	2.87	2.81	2.76	2.64	2.48	2.25	1.07	0.73

Intensity data(cd)

C/γ(°)	90.0
0.0	0.56
45.0	0.56
90.0	0.51
135.0	0.45
180.0	0.51
225.0	0.51
270.0	0.51
315.0	0.51
360.0	0.56