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Nata

LumCAT: NA01D0201530CA
Luminaire:

Report No: 200402-B019	Voltage(V): 6.5600
Test No: 200402-C019	Current(A): 0.1570
LampCAT: OSRAM 3030 DURIS S5	Power (W): 1.0300
Lamp flux(lm): 126.0	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): 115.18
Efficiency(%): 91.41%
Lumens(lm)/Power(W): 111.83
Central intensity(cd): 216.281
Maximum intensity(cd): 373.331
Angle of maximum intensity: C=0.0 γ=8.0
Beam Angle(50%Imax): [C0/180]Total=19.6
[C90/270]Total=31.6
Field angle(10%Imax): [C0/180]Total=44.1
[C90/270]Total=61.4
Maximum s/h(1/2): C0_180=0.19 C90_270=0.50
Maximum s/h(1/4): C0_180=0.26 C90_270=0.52
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.41%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 93.022%

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

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	222.159	0.000	0	.000%	.000%
1.0	222.701	0.213	0.213	.169%	.185%
2.0	222.813	0.639	0.852	.507%	.740%
3.0	221.541	1.063	1.915	.843%	1.663%
4.0	221.428	1.483	3.398	1.177%	2.950%
5.0	220.247	1.900	5.298	1.508%	4.600%
6.0	217.716	2.302	7.599	1.827%	6.598%
7.0	214.973	2.686	10.285	2.132%	8.929%
8.0	210.930	3.048	13.333	2.419%	11.576%
9.0	205.102	3.372	16.705	2.676%	14.503%
10.0	198.127	3.649	20.354	2.896%	17.671%
11.0	190.153	3.880	24.234	3.079%	21.040%
12.0	181.259	4.060	28.294	3.222%	24.564%
13.0	170.395	4.173	32.467	3.312%	28.188%
14.0	159.616	4.224	36.691	3.352%	31.855%
15.0	148.845	4.235	40.926	3.361%	35.531%
16.0	136.997	4.188	45.114	3.324%	39.168%
17.0	125.951	4.095	49.209	3.250%	42.723%
18.0	114.877	3.971	53.18	3.151%	46.170%
19.0	104.583	3.818	56.998	3.030%	49.485%
20.0	94.099	3.636	60.634	2.886%	52.642%
21.0	84.762	3.434	64.069	2.726%	55.624%
22.0	76.395	3.239	67.307	2.570%	58.436%
23.0	68.477	3.040	70.347	2.413%	61.075%
24.0	61.207	2.835	73.183	2.250%	63.536%
25.0	54.633	2.634	75.816	2.090%	65.823%
26.0	48.832	2.442	78.259	1.938%	67.943%
27.0	43.566	2.261	80.519	1.794%	69.906%
28.0	38.820	2.086	82.605	1.655%	71.717%
29.0	34.376	1.915	84.52	1.520%	73.380%
30.0	30.755	1.759	86.279	1.396%	74.906%
31.0	27.274	1.615	87.893	1.282%	76.308%
32.0	24.272	1.477	89.37	1.172%	77.590%
33.0	21.839	1.358	90.729	1.078%	78.770%
34.0	19.547	1.252	91.981	.994%	79.857%
35.0	17.571	1.153	93.134	.915%	80.858%
36.0	15.848	1.064	94.198	.845%	81.782%
37.0	14.379	0.986	95.184	.782%	82.638%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	13.015	0.914	96.098	.726%	83.431%
39.0	11.791	0.847	96.945	.672%	84.167%
40.0	10.772	0.787	97.732	.625%	84.850%
41.0	9.886	0.736	98.467	.584%	85.488%
42.0	9.056	0.688	99.156	.546%	86.086%
43.0	8.346	0.645	99.8	.512%	86.646%
44.0	7.727	0.607	100.407	.481%	87.172%
45.0	7.179	0.573	100.98	.455%	87.670%
46.0	6.687	0.542	101.522	.430%	88.140%
47.0	6.237	0.514	102.036	.408%	88.587%
48.0	5.850	0.489	102.525	.388%	89.011%
49.0	5.477	0.465	102.99	.369%	89.415%
50.0	5.154	0.443	103.433	.352%	89.800%
51.0	4.894	0.425	103.858	.337%	90.169%
52.0	4.655	0.410	104.268	.325%	90.524%
53.0	4.430	0.395	104.663	.314%	90.867%
54.0	4.219	0.381	105.044	.303%	91.198%
55.0	4.050	0.369	105.413	.293%	91.519%
56.0	3.895	0.359	105.772	.285%	91.831%
57.0	3.790	0.351	106.124	.279%	92.136%
58.0	3.670	0.345	106.469	.274%	92.435%
59.0	3.600	0.340	106.809	.270%	92.730%
60.0	3.509	0.336	107.144	.267%	93.022%
61.0	3.431	0.331	107.476	.263%	93.309%
62.0	3.368	0.328	107.803	.260%	93.594%
63.0	3.291	0.324	108.127	.257%	93.875%
64.0	3.199	0.318	108.446	.253%	94.151%
65.0	3.143	0.314	108.759	.249%	94.424%
66.0	3.066	0.310	109.069	.246%	94.693%
67.0	2.974	0.304	109.373	.241%	94.956%
68.0	2.918	0.298	109.671	.237%	95.216%
69.0	2.981	0.301	109.972	.239%	95.477%
70.0	2.995	0.307	110.279	.244%	95.743%
71.0	2.932	0.306	110.586	.243%	96.009%
72.0	2.834	0.300	110.885	.238%	96.270%
73.0	2.777	0.293	111.179	.233%	96.524%
74.0	2.749	0.291	111.469	.231%	96.777%
75.0	2.735	0.290	111.759	.230%	97.028%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.721	0.290	112.049	.230%	97.280%
77.0	2.693	0.289	112.337	.229%	97.530%
78.0	2.658	0.286	112.624	.227%	97.779%
79.0	2.623	0.284	112.908	.225%	98.025%
80.0	2.609	0.282	113.19	.224%	98.270%
81.0	2.538	0.278	113.468	.221%	98.512%
82.0	2.468	0.271	113.739	.215%	98.747%
83.0	2.363	0.263	114.002	.208%	98.975%
84.0	2.236	0.251	114.253	.199%	99.193%
85.0	2.081	0.236	114.488	.187%	99.397%
86.0	1.695	0.206	114.695	.164%	99.577%
87.0	1.378	0.168	114.863	.133%	99.723%
88.0	1.048	0.133	114.996	.105%	99.838%
89.0	0.844	0.104	115.099	.082%	99.928%
90.0	0.668	0.083	115.182	.066%	100.000%

Zonal flux distribution table

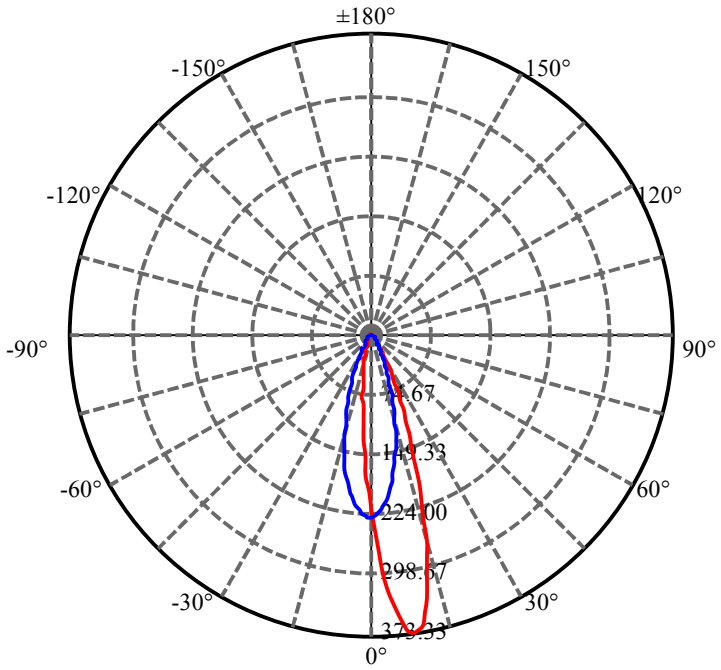
ZONAL LUMEN SUMMARY

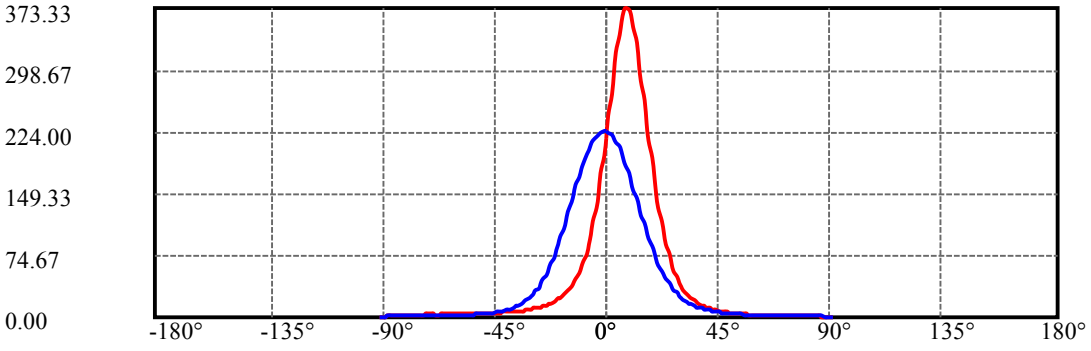
Zone	Lumens	%Lamp	%Fixt
0-30	86.28	68.48%	74.91%
0-40	97.73	77.56%	84.85%
0-60	107.14	85.04%	93.02%
0-90	115.10	91.35%	99.93%
0-120	115.10	91.35%	99.93%
0-180	115.18	91.41%	100.00%
60-90	8.29	6.58%	7.20%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.14	92.15	73.13%	80.00%

ZONAL LUMEN SUMMARY

0-10	20.35
10-20	40.28
20-30	25.64
30-40	11.45
40-50	5.70
50-60	3.71
60-70	3.13
70-80	2.91
80-90	1.91
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]





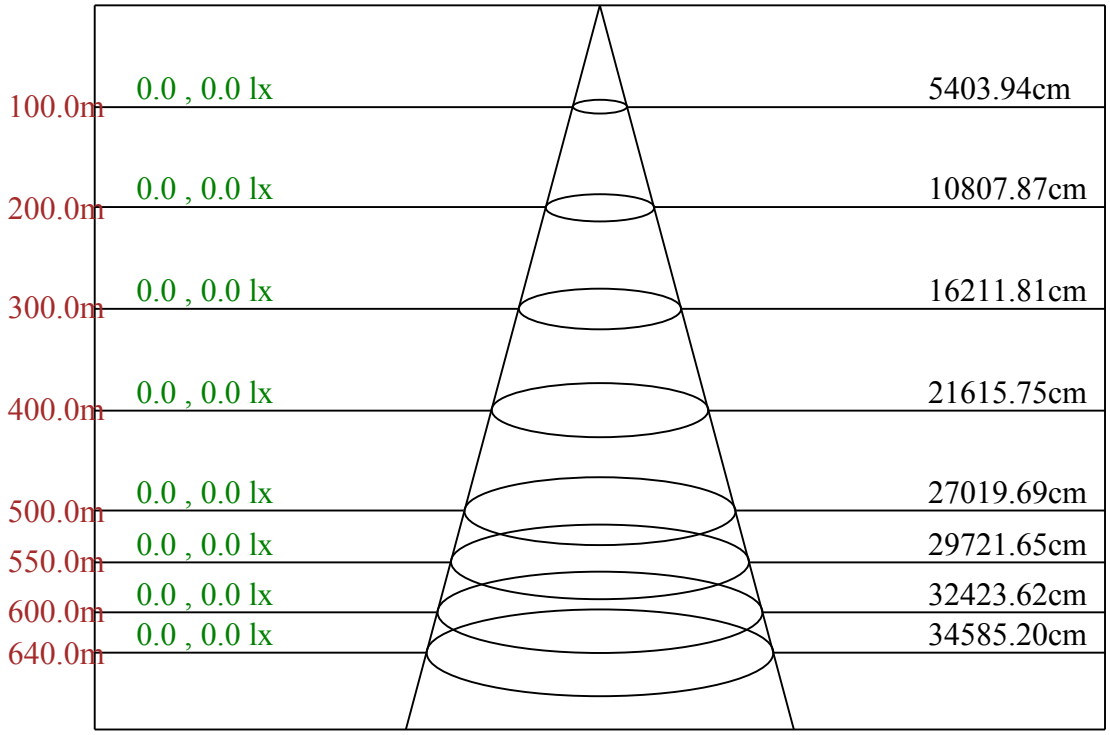
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:22.1 Right:22.1
:C90/270Left:30.0 Right:31.4

Beam Angle(50%Imax):C0/180Left:9.3 Right:10.2
:C90/270Left:15.4 Right:16.2

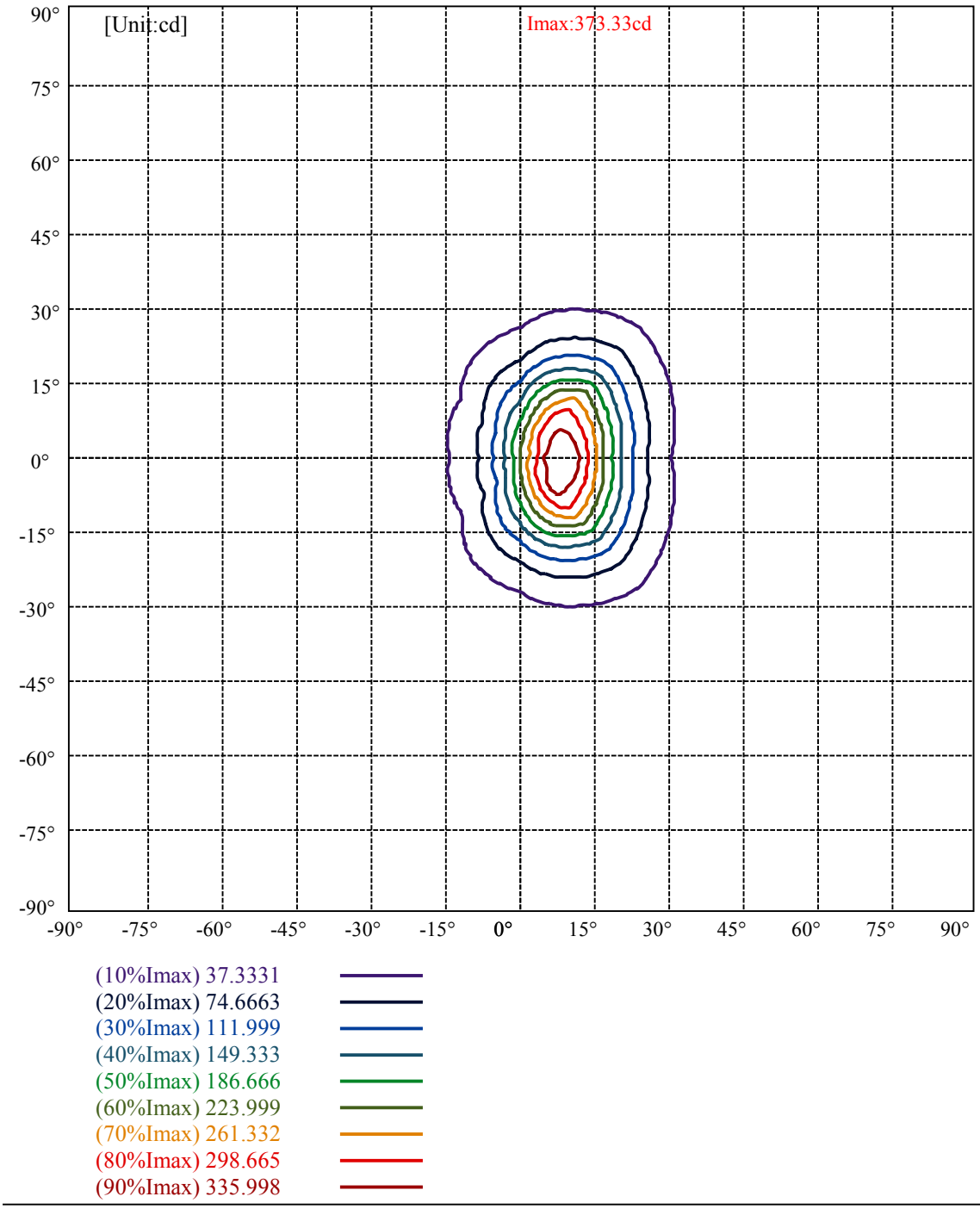
Lux distance Curve



Max , Ave

Beam angle of C0 plane 29.56

ISO-Intensity(V-H)

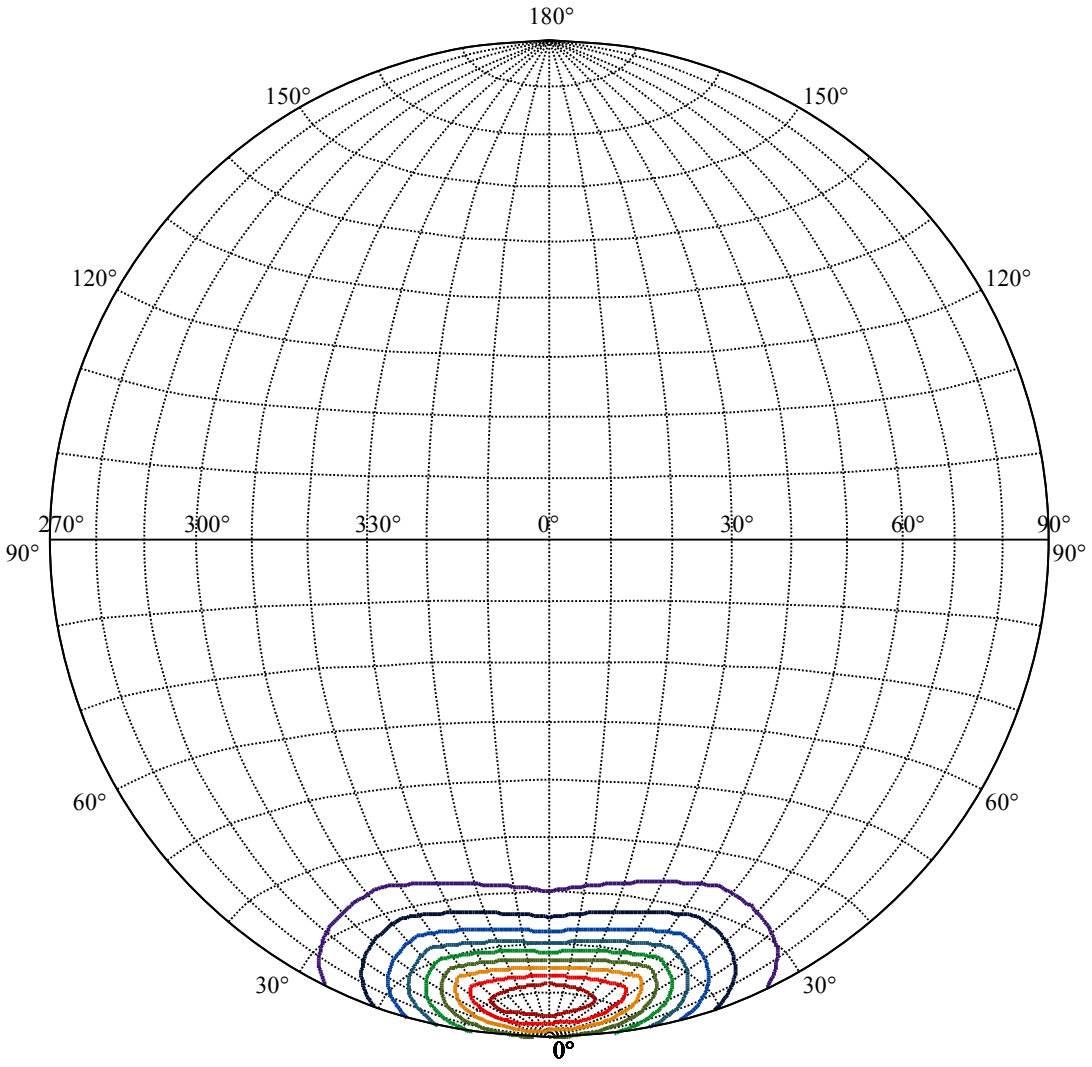


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:373.33

(10%Imax) 37.3331
(20%Imax) 74.6663
(30%Imax) 111.999
(40%Imax) 149.333
(50%Imax) 186.666
(60%Imax) 223.999
(70%Imax) 261.332
(80%Imax) 298.665
(90%Imax) 335.998

Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

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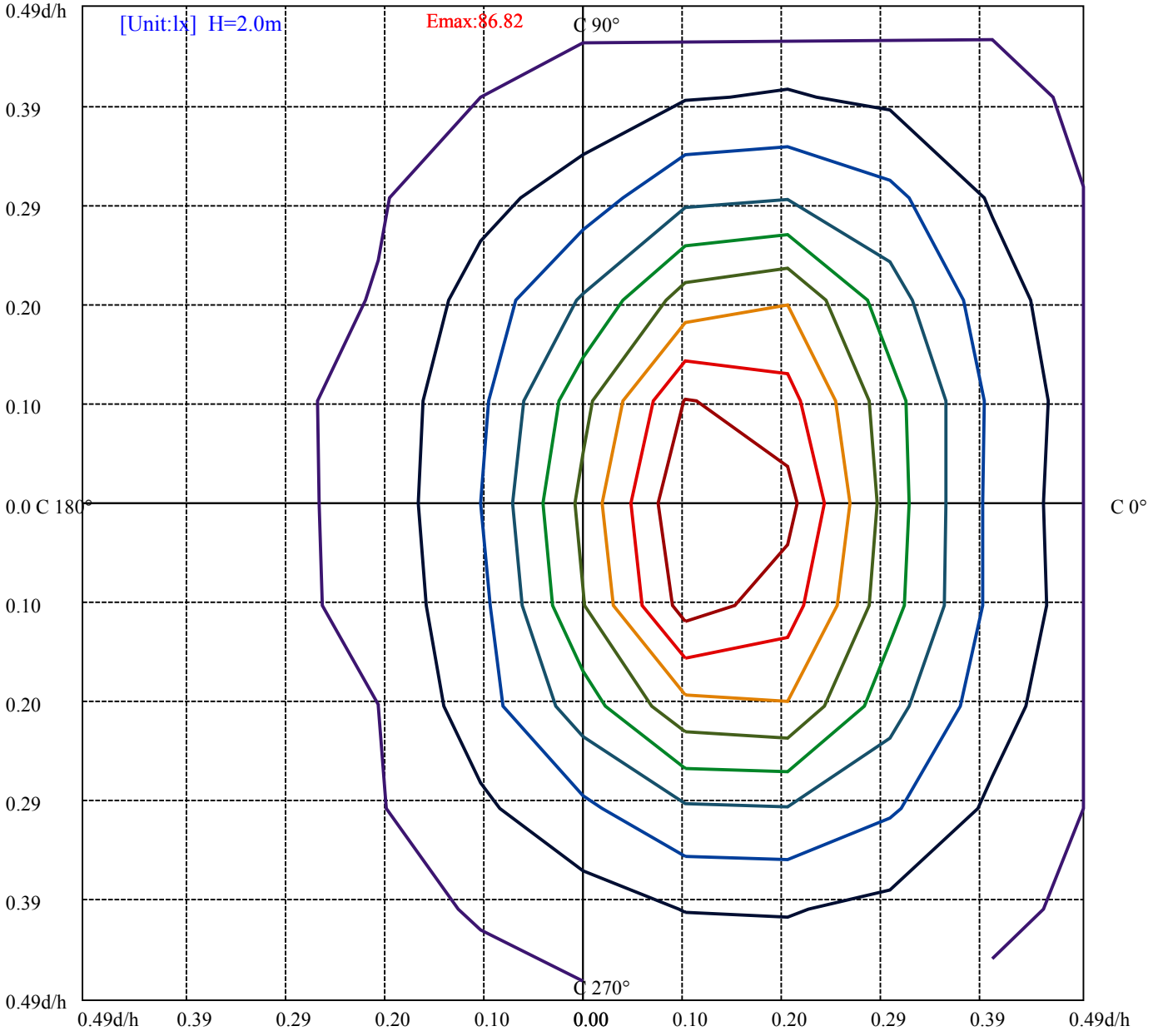
ISO illuminance diagram



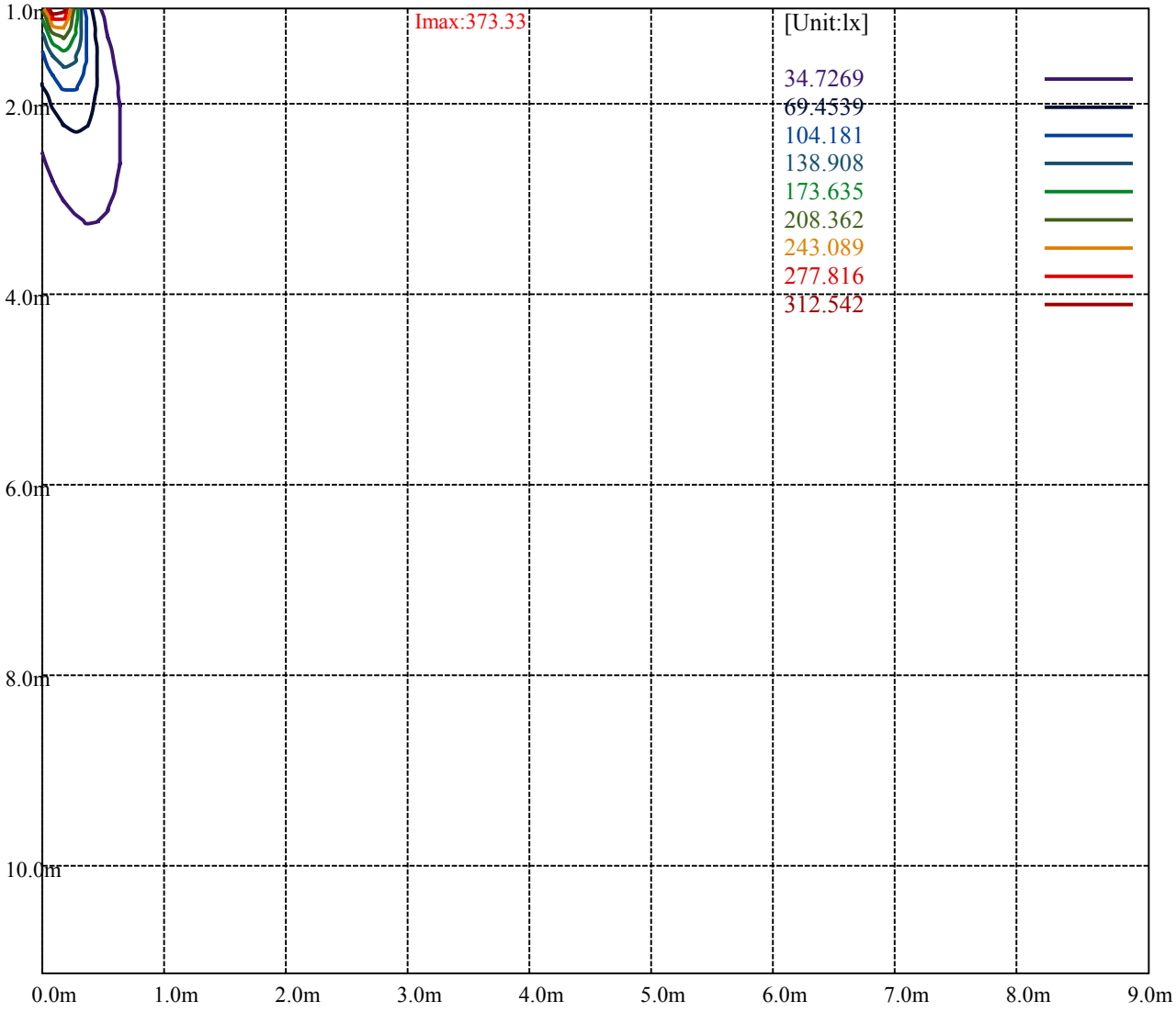
(10%Emax) 8.68175
(20%Emax) 17.3635
(30%Emax) 26.04525
(40%Emax) 34.727
(50%Emax) 43.40875
(60%Emax) 52.0905
(70%Emax) 60.77225
(80%Emax) 69.454
(90%Emax) 78.13575

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

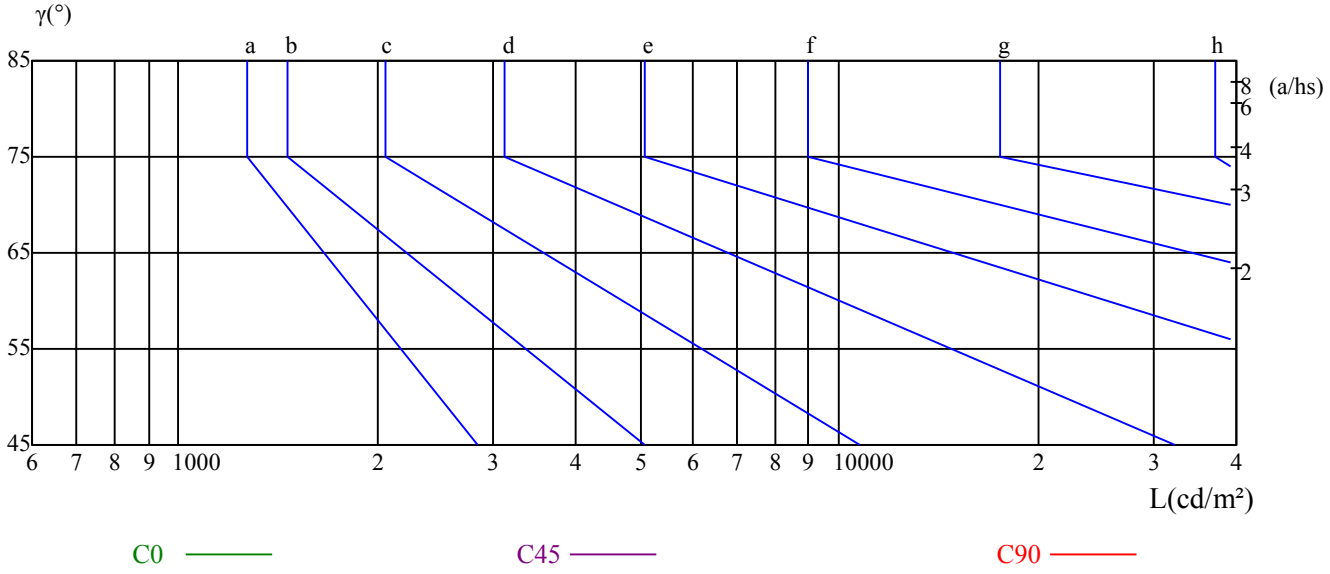
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

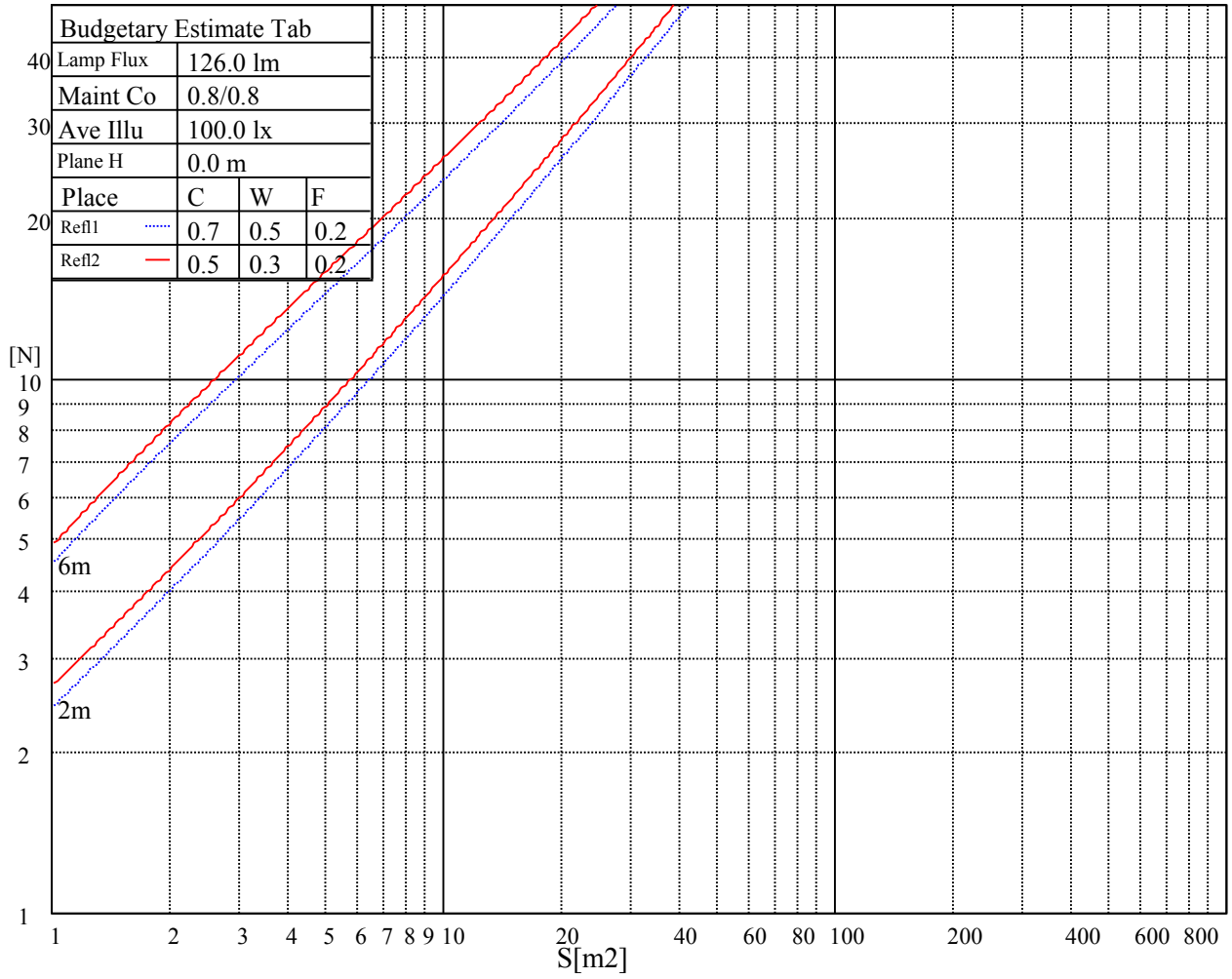
Glare Table

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
Temperature(°C): 25.0

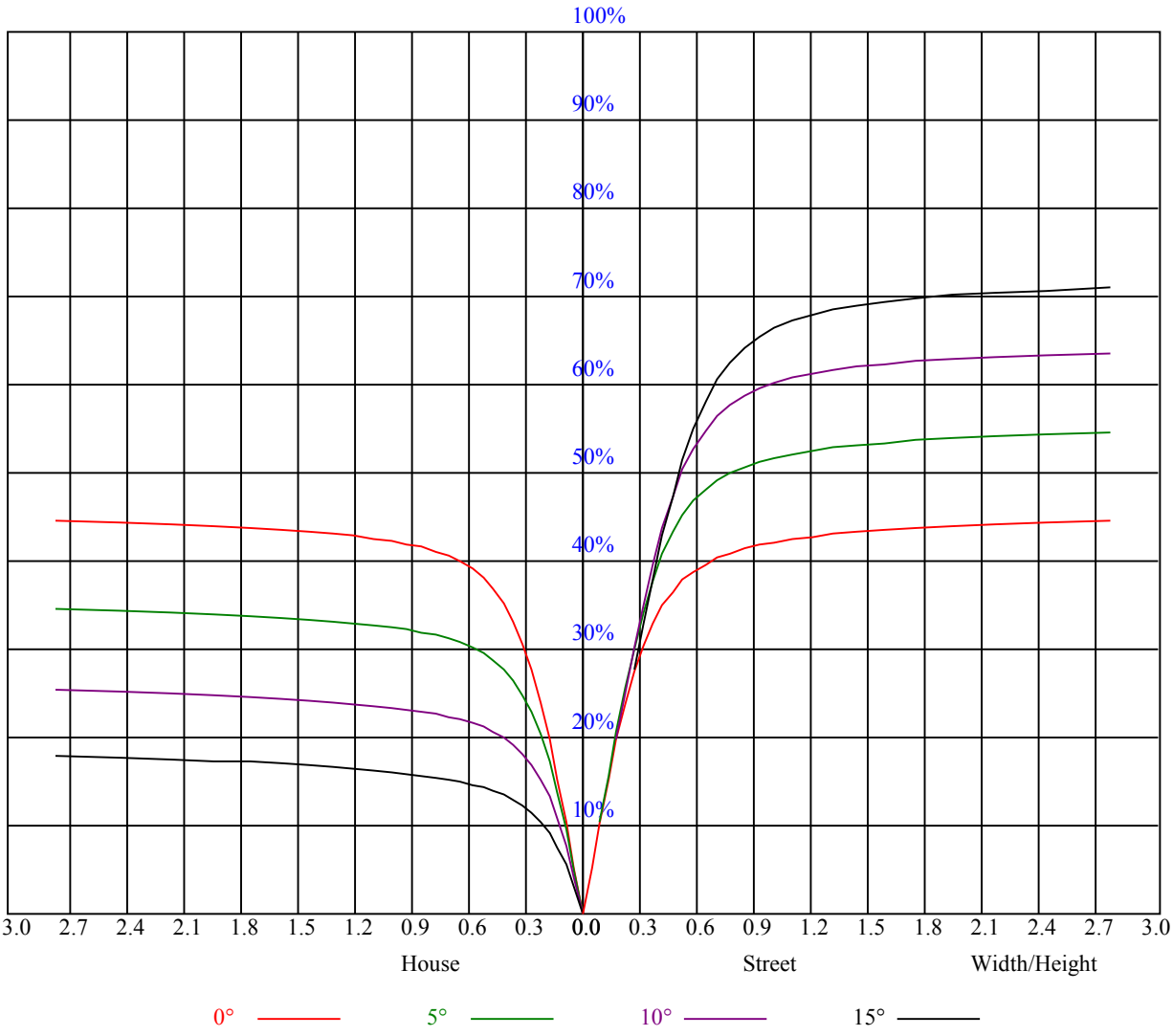
Date: 2020/4/2
Humidity(%): 65.0%

Operator: NT07
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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.86	0.85	0.84
2	0.93	0.89	0.85	0.91	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.77
3	0.87	0.82	0.78	0.85	0.81	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.72
4	0.81	0.76	0.72	0.80	0.76	0.72	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.69	0.68
5	0.77	0.71	0.68	0.76	0.71	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.64
6	0.73	0.67	0.63	0.72	0.67	0.63	0.71	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
7	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58
8	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.63	0.59	0.56	0.55
9	0.63	0.58	0.54	0.62	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.52
10	0.60	0.55	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.58	0.54	0.51	0.50

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	216.28	242.66	269.83	294.08	319.61	341.49	356.96	368.72	373.33
45.0	218.14	236.59	254.48	269.61	285.69	298.13	309.88	319.11	324.45
90.0	224.78	223.09	220.61	216.45	211.16	205.43	198.90	190.07	182.25
135.0	229.44	212.29	190.74	173.98	158.23	139.50	125.33	112.28	99.39
180.0	216.28	194.01	172.91	148.89	131.06	115.76	100.52	87.36	77.23
225.0	218.14	201.54	184.78	164.98	150.30	135.56	119.08	107.55	96.75
270.0	224.78	224.89	223.65	220.84	217.74	213.58	207.79	202.33	195.98
315.0	229.44	246.54	265.50	283.50	297.62	312.53	323.27	332.38	338.06
360.0	216.28	242.66	269.83	294.08	319.61	341.49	356.96	368.72	373.33

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	371.70	364.05	349.31	332.27	307.07	285.36	262.91	234.56	212.57
45.0	327.60	327.38	323.94	318.09	307.35	296.10	282.99	266.29	248.34
90.0	173.81	162.84	153.79	144.51	133.71	123.24	114.13	104.40	96.08
135.0	88.03	78.92	69.86	62.83	55.91	49.67	44.89	40.11	36.51
180.0	67.50	59.23	52.99	46.86	42.19	37.58	33.41	30.21	27.39
225.0	86.01	76.56	68.74	60.86	53.72	47.98	41.79	37.97	33.53
270.0	186.36	177.86	169.48	159.13	148.50	138.54	127.35	116.33	107.16
315.0	339.81	338.18	333.11	325.52	314.72	298.46	283.28	266.12	246.04
360.0	371.70	364.05	349.31	332.27	307.07	285.36	262.91	234.56	212.57

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	191.31	171.51	148.56	131.68	116.38	101.03	87.41	76.56	65.93
45.0	231.41	211.22	193.39	177.13	159.75	145.01	130.28	116.55	105.24
90.0	86.63	77.79	70.59	62.89	56.31	51.02	46.29	40.78	36.68
135.0	32.57	29.36	26.44	24.13	22.05	19.80	18.34	16.93	15.41
180.0	24.24	22.05	20.03	18.00	16.71	15.47	14.34	13.39	12.71
225.0	29.53	26.94	24.41	21.54	19.52	17.72	15.81	14.34	13.11
270.0	97.37	89.16	80.04	71.55	64.46	57.94	50.74	45.68	41.12
315.0	225.96	208.63	189.34	171.17	155.98	139.84	126.45	112.84	100.46
360.0	191.31	171.51	148.56	131.68	116.38	101.03	87.41	76.56	65.93

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	56.64	49.61	42.81	37.69	32.74	28.63	25.43	22.11	19.86
45.0	94.67	83.25	74.25	66.26	57.49	51.19	45.73	40.33	35.49
90.0	32.96	29.19	25.99	23.51	20.93	18.73	16.93	15.24	13.89
135.0	14.18	13.22	12.21	11.42	10.58	9.96	9.45	8.89	8.44
180.0	11.98	11.31	10.46	9.51	8.78	8.21	7.76	7.43	7.14
225.0	11.93	10.91	10.07	9.17	8.66	8.10	7.59	7.26	6.92
270.0	35.89	32.18	28.86	25.48	22.50	20.19	17.94	15.98	14.40
315.0	90.28	80.89	70.37	63.00	56.53	49.16	43.88	39.15	34.43
360.0	56.64	49.61	42.81	37.69	32.74	28.63	25.43	22.11	19.86

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	17.89	16.09	14.18	12.88	11.76	10.69	9.73	9.00	8.21
45.0	31.73	28.07	25.14	22.16	19.63	17.66	15.64	13.95	12.66
90.0	12.66	11.59	10.74	9.79	8.94	8.21	7.65	7.03	6.58
135.0	8.04	7.71	7.31	7.03	6.75	6.53	6.24	6.08	5.85
180.0	6.75	6.58	6.36	6.19	6.02	5.91	5.79	5.68	5.57
225.0	6.53	6.24	6.02	5.74	5.51	5.34	5.12	4.95	4.84
270.0	12.77	11.53	10.29	9.28	8.44	7.76	6.98	6.47	6.02
315.0	30.43	27.23	24.08	21.26	19.13	16.99	15.30	13.61	12.09
360.0	17.89	16.09	14.18	12.88	11.76	10.69	9.73	9.00	8.21

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	7.54	7.03	6.47	6.02	5.57	5.18	4.89	4.67	4.33
45.0	11.48	10.24	9.34	8.55	7.65	7.03	6.53	5.91	5.46
90.0	6.13	5.63	5.23	4.95	4.61	4.39	4.16	3.94	3.83
135.0	5.68	5.57	5.46	5.23	5.12	5.01	4.84	4.78	4.67
180.0	5.46	5.40	5.29	5.18	5.12	5.01	4.89	4.84	4.73
225.0	4.73	4.61	4.50	4.39	4.28	4.22	4.11	4.05	3.99
270.0	5.51	5.12	4.78	4.44	4.11	3.88	3.71	3.49	3.32
315.0	10.91	9.90	8.83	8.04	7.37	6.53	6.02	5.57	5.12
360.0	7.54	7.03	6.47	6.02	5.57	5.18	4.89	4.67	4.33

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.11	3.88	3.60	3.43	3.26	3.09	2.93	2.87	2.70
45.0	5.01	4.67	4.39	4.16	3.94	3.88	3.83	3.77	3.71
90.0	3.66	3.43	3.38	3.26	3.15	3.09	2.98	2.87	2.87
135.0	4.56	4.50	4.44	4.33	4.28	4.22	4.11	3.99	3.94
180.0	4.67	4.61	4.56	4.56	4.56	4.56	4.56	4.50	4.44
225.0	3.88	3.83	3.77	3.71	3.60	3.54	3.43	3.32	3.26
270.0	3.15	3.04	2.87	2.87	2.70	2.64	2.59	2.53	2.48
315.0	4.73	4.44	4.16	3.99	3.88	3.77	3.66	3.60	3.54
360.0	4.11	3.88	3.60	3.43	3.26	3.09	2.93	2.87	2.70

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.59	2.48	2.36	2.31	2.25	2.25	2.19	2.19	2.19
45.0	3.71	3.66	3.66	3.60	3.54	3.49	3.49	3.38	3.21
90.0	2.81	2.70	2.64	2.64	2.59	2.53	2.53	2.48	2.48
135.0	3.83	3.71	3.71	3.54	3.38	3.32	3.15	3.04	2.98
180.0	4.28	4.11	3.83	3.54	3.26	3.09	3.94	4.33	4.05
225.0	3.21	3.15	3.21	3.15	3.09	2.98	2.93	2.87	2.81
270.0	2.42	2.36	2.36	2.36	2.31	2.31	2.25	2.31	2.31
315.0	3.49	3.43	3.38	3.38	3.38	3.38	3.38	3.38	3.43
360.0	2.59	2.48	2.36	2.31	2.25	2.25	2.19	2.19	2.19

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19
45.0	3.09	3.04	3.04	3.09	3.09	3.04	2.98	2.87	2.87
90.0	2.42	2.42	2.36	2.36	2.36	2.31	2.31	2.25	2.25
135.0	2.93	2.87	2.81	2.70	2.64	2.64	2.59	2.53	2.48
180.0	3.49	3.15	2.98	2.87	2.76	2.70	2.59	2.53	2.42
225.0	2.81	2.76	2.76	2.76	2.76	2.70	2.64	2.64	2.64
270.0	2.31	2.31	2.31	2.31	2.31	2.31	2.25	2.31	2.31
315.0	3.43	3.49	3.54	3.60	3.66	3.66	3.71	3.66	3.71
360.0	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.19	2.14	2.03	1.91	1.80	1.07	0.84	0.79	0.56
45.0	2.81	2.76	2.64	2.42	2.19	1.58	1.41	1.35	1.13
90.0	2.14	2.14	2.08	1.91	1.74	1.18	0.90	0.68	0.45
135.0	2.36	2.31	2.25	2.19	2.03	1.80	1.35	0.96	0.79
180.0	2.36	2.31	2.25	2.14	2.03	1.91	1.58	1.07	0.84
225.0	2.59	2.53	2.48	2.36	2.19	1.97	1.69	1.01	0.79
270.0	2.25	2.19	2.14	2.08	2.08	1.91	1.63	0.96	0.79
315.0	3.60	3.38	3.04	2.87	2.59	2.14	1.63	1.58	1.41
360.0	2.19	2.14	2.03	1.91	1.80	1.07	0.84	0.79	0.56

Intensity data(cd)

C/γ(°)	90.0
0.0	0.45
45.0	0.45
90.0	0.39
135.0	0.62
180.0	0.79
225.0	0.73
270.0	0.56
315.0	1.35
360.0	0.45