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Nata

LumCAT: LN01D03515DA-N
Luminaire: 97.70.267.00

Report No: 200623-B012	Voltage(V): 9.0400
Test No: 200623-C012	Current(A): 0.3000
LampCAT: EDISON 2PHM10WW38P55020	Power (W): 2.7120
Lamp flux(lm): 274.6	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): 239.40
Efficiency(%): 87.18%
Lumens(lm)/Power(W): 88.28
Central intensity(cd): 2418.188
Maximum intensity(cd): 2418.188
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=15.1
[C90/270]Total=15.1
Field angle(10%Imax): [C0/180]Total=28.2
[C90/270]Total=28.2
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.27 C90_270=0.27
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.18%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.024%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2418.188	0.000	0	.000%	.000%
1.0	2392.945	2.302	2.302	.838%	.962%
2.0	2306.742	6.745	9.047	2.456%	3.779%
3.0	2166.188	10.698	19.745	3.896%	8.248%
4.0	1996.453	13.934	33.679	5.074%	14.068%
5.0	1796.203	16.316	49.995	5.942%	20.883%
6.0	1564.031	17.659	67.654	6.431%	28.259%
7.0	1327.134	17.945	85.599	6.535%	35.755%
8.0	1112.723	17.462	103.061	6.359%	43.049%
9.0	928.610	16.544	119.605	6.025%	49.960%
10.0	743.358	15.131	134.735	5.510%	56.280%
11.0	585.394	13.277	148.012	4.835%	61.826%
12.0	450.738	11.326	159.339	4.125%	66.557%
13.0	345.938	9.455	168.793	3.443%	70.506%
14.0	248.449	7.608	176.401	2.771%	73.684%
15.0	189.042	6.006	182.407	2.187%	76.193%
16.0	141.413	4.842	187.249	1.763%	78.215%
17.0	105.743	3.849	191.098	1.402%	79.823%
18.0	84.818	3.142	194.24	1.144%	81.135%
19.0	70.341	2.699	196.94	.983%	82.263%
20.0	58.127	2.351	199.291	.856%	83.245%
21.0	48.853	2.054	201.345	.748%	84.103%
22.0	42.574	1.837	203.183	.669%	84.871%
23.0	37.181	1.673	204.856	.609%	85.570%
24.0	32.808	1.530	206.386	.557%	86.209%
25.0	29.489	1.416	207.803	.516%	86.801%
26.0	26.712	1.327	209.129	.483%	87.355%
27.0	24.244	1.247	210.376	.454%	87.875%
28.0	22.191	1.176	211.552	.428%	88.366%
29.0	20.299	1.112	212.663	.405%	88.831%
30.0	18.527	1.048	213.712	.382%	89.269%
31.0	16.938	0.987	214.699	.359%	89.681%
32.0	15.370	0.926	215.624	.337%	90.068%
33.0	14.013	0.866	216.49	.315%	90.429%
34.0	12.973	0.817	217.306	.297%	90.770%
35.0	11.813	0.770	218.076	.280%	91.092%
36.0	11.011	0.727	218.803	.265%	91.395%
37.0	10.357	0.697	219.5	.254%	91.686%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	9.703	0.670	220.169	.244%	91.966%
39.0	9.091	0.642	220.811	.234%	92.234%
40.0	8.627	0.618	221.429	.225%	92.492%
41.0	8.121	0.596	222.025	.217%	92.741%
42.0	7.629	0.572	222.597	.208%	92.980%
43.0	7.186	0.549	223.146	.200%	93.210%
44.0	6.708	0.524	223.671	.191%	93.429%
45.0	6.279	0.499	224.17	.182%	93.637%
46.0	5.878	0.475	224.645	.173%	93.836%
47.0	5.555	0.455	225.1	.166%	94.026%
48.0	5.273	0.438	225.538	.159%	94.209%
49.0	5.013	0.422	225.96	.154%	94.385%
50.0	4.795	0.409	226.369	.149%	94.556%
51.0	4.584	0.397	226.766	.145%	94.722%
52.0	4.388	0.385	227.151	.140%	94.882%
53.0	4.219	0.374	227.525	.136%	95.039%
54.0	4.043	0.364	227.889	.133%	95.191%
55.0	3.881	0.354	228.243	.129%	95.339%
56.0	3.755	0.345	228.588	.126%	95.483%
57.0	3.614	0.337	228.925	.123%	95.623%
58.0	3.488	0.328	229.253	.120%	95.761%
59.0	3.354	0.320	229.573	.116%	95.894%
60.0	3.234	0.311	229.885	.113%	96.024%
61.0	3.136	0.304	230.189	.111%	96.151%
62.0	3.038	0.297	230.486	.108%	96.275%
63.0	2.939	0.291	230.777	.106%	96.397%
64.0	2.862	0.285	231.061	.104%	96.516%
65.0	2.791	0.280	231.341	.102%	96.633%
66.0	2.707	0.274	231.615	.100%	96.747%
67.0	2.665	0.270	231.886	.098%	96.860%
68.0	2.728	0.273	232.159	.099%	96.974%
69.0	2.988	0.292	232.45	.106%	97.096%
70.0	3.157	0.316	232.766	.115%	97.228%
71.0	3.551	0.347	233.113	.126%	97.373%
72.0	4.071	0.396	233.509	.144%	97.538%
73.0	4.479	0.447	233.956	.163%	97.725%
74.0	4.781	0.487	234.443	.177%	97.928%
75.0	5.055	0.520	234.963	.189%	98.145%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.020	0.535	235.498	.195%	98.369%
77.0	4.802	0.524	236.021	.191%	98.588%
78.0	4.430	0.494	236.515	.180%	98.794%
79.0	4.050	0.456	236.971	.166%	98.984%
80.0	3.698	0.418	237.389	.152%	99.159%
81.0	3.333	0.380	237.769	.138%	99.318%
82.0	2.784	0.332	238.101	.121%	99.456%
83.0	2.236	0.273	238.374	.099%	99.570%
84.0	1.779	0.219	238.592	.080%	99.662%
85.0	1.420	0.175	238.767	.064%	99.734%
86.0	1.308	0.149	238.916	.054%	99.797%
87.0	1.181	0.136	239.052	.050%	99.854%
88.0	1.083	0.124	239.176	.045%	99.905%
89.0	1.027	0.116	239.292	.042%	99.954%
90.0	0.991	0.111	239.403	.040%	100.000%

Zonal flux distribution table

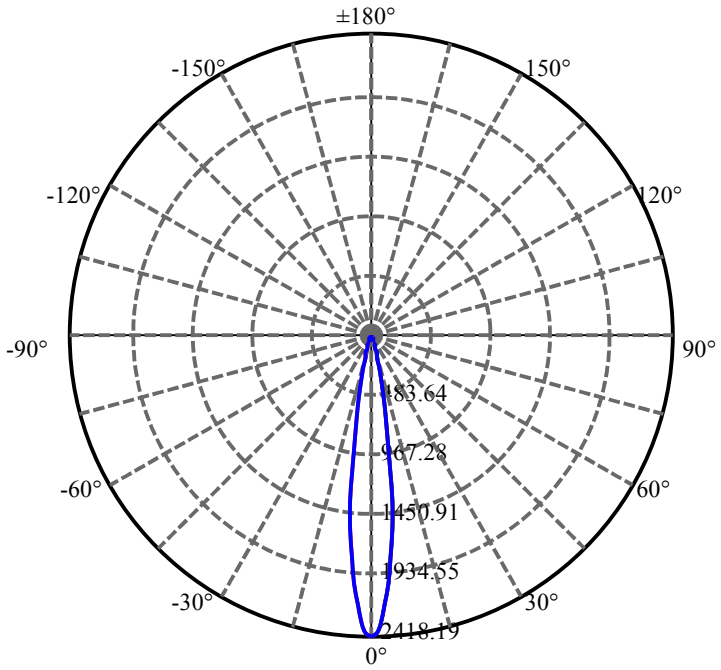
ZONAL LUMEN SUMMARY

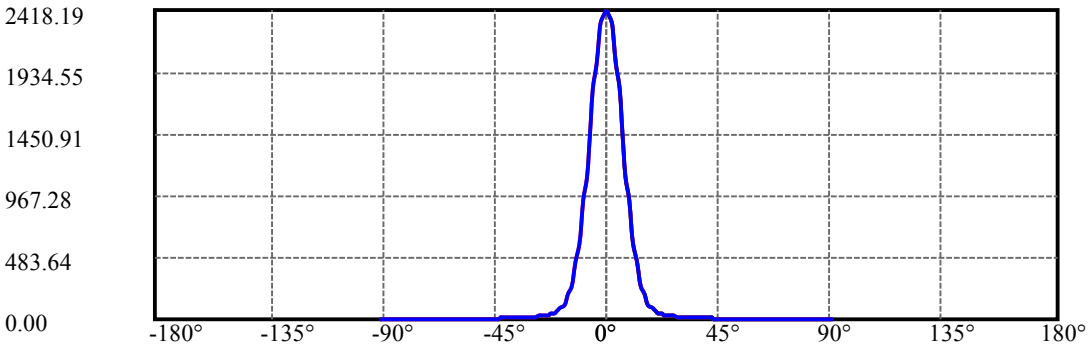
Zone	Lumens	%Lamp	%Fixt
0-30	213.71	77.83%	89.27%
0-40	221.43	80.64%	92.49%
0-60	229.88	83.72%	96.02%
0-90	239.29	87.14%	99.95%
0-120	239.29	87.14%	99.95%
0-180	239.40	87.18%	100.00%
60-90	9.72	3.54%	4.06%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-17.13	191.52	69.75%	80.00%

ZONAL LUMEN SUMMARY

0-10	134.74
10-20	64.56
20-30	14.42
30-40	7.72
40-50	4.94
50-60	3.52
60-70	2.88
70-80	4.62
80-90	1.90
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:

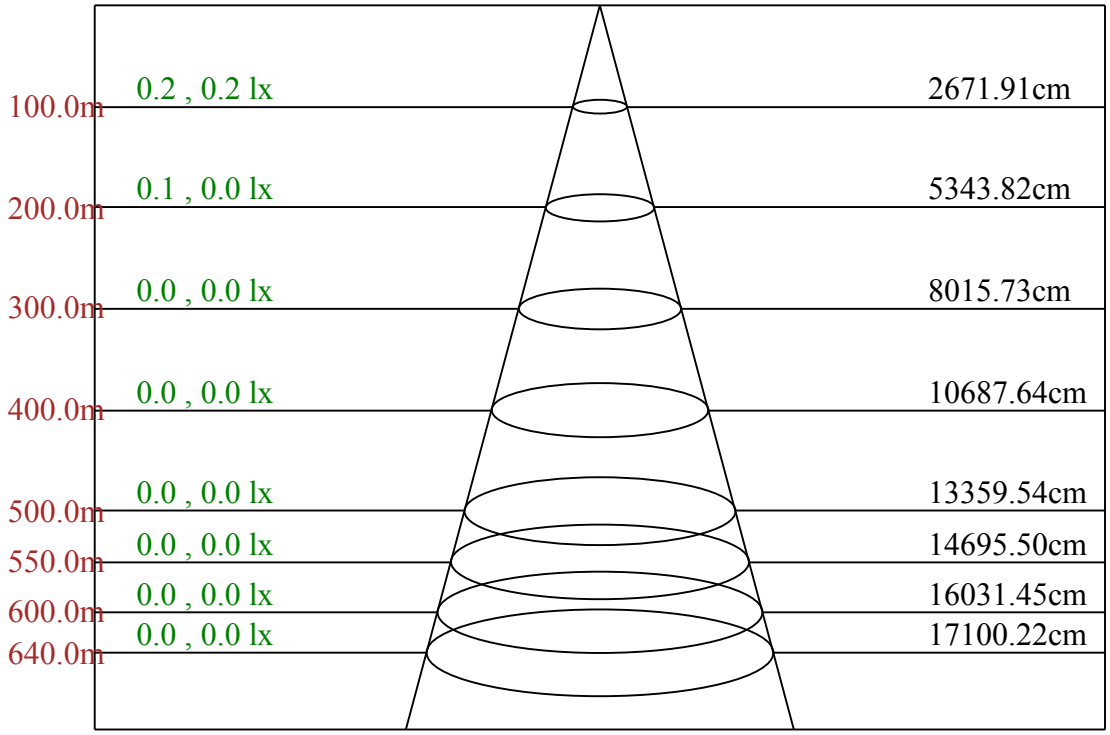
C90/C270:

Field angle(10%Imax):C0/180Left:14.1 Right:14.1
:C90/270Left:14.1 Right:14.1

Beam Angle(50%Imax):C0/180Left:7.6 Right:7.6
:C90/270Left:7.6 Right:7.6

Equipment: GMS1980 Date: 2020/6/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

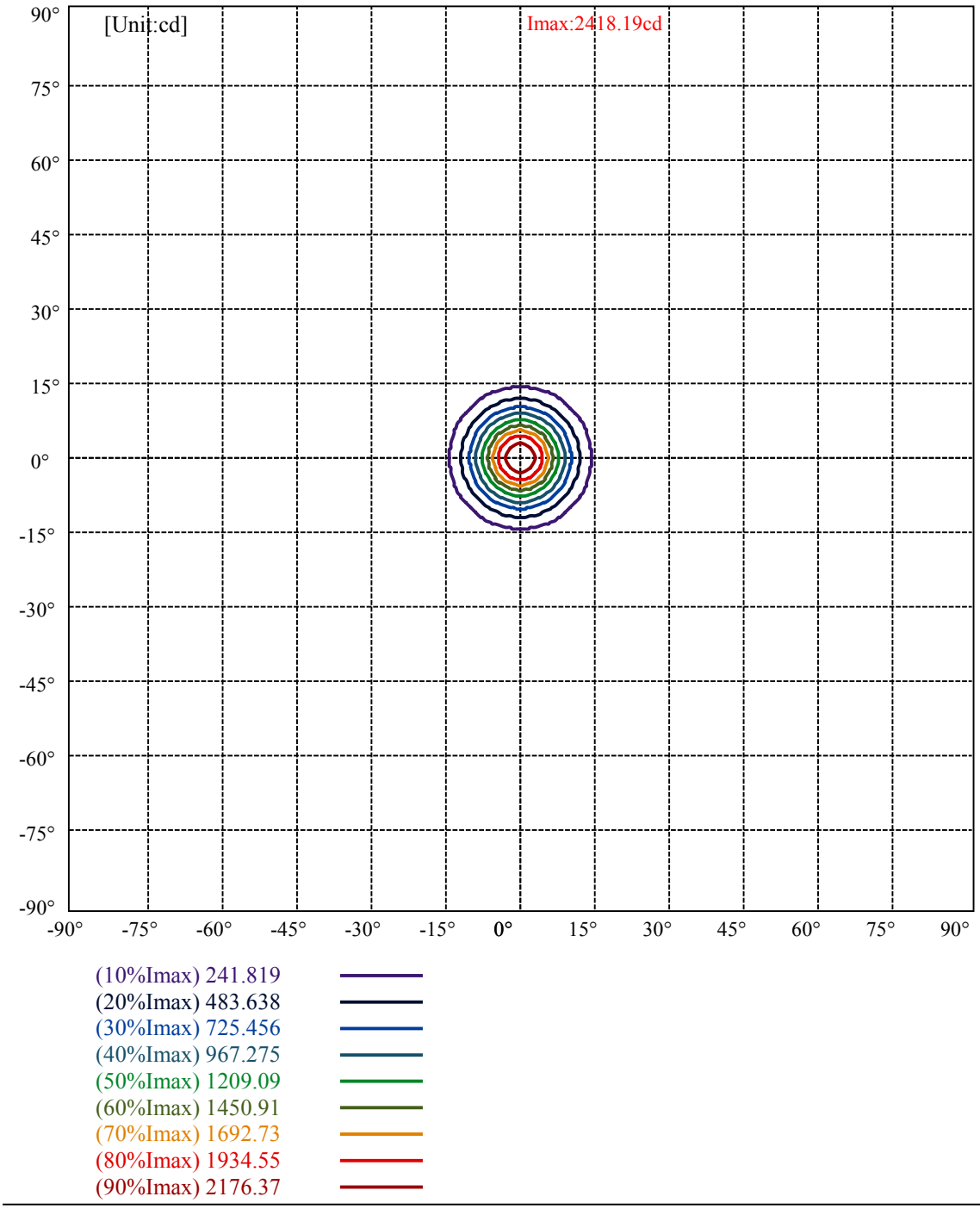
Lux distance Curve



Max , Ave

Beam angle of C0 plane 15.22

ISO-Intensity(V-H)

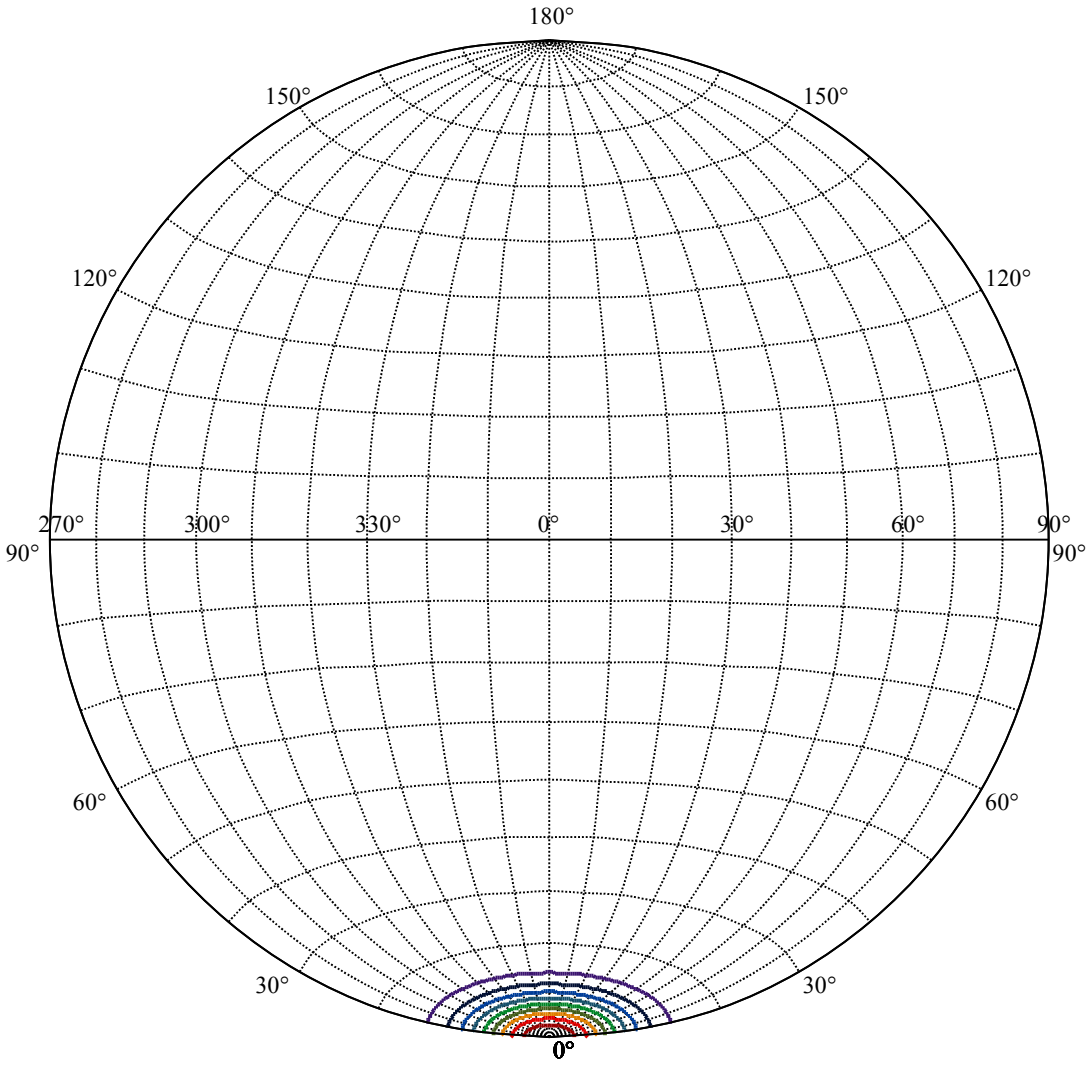


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:2418.19

(10%Imax) 241.819
(20%Imax) 483.638
(30%Imax) 725.456
(40%Imax) 967.275
(50%Imax) 1209.09
(60%Imax) 1450.91
(70%Imax) 1692.73
(80%Imax) 1934.55
(90%Imax) 2176.37

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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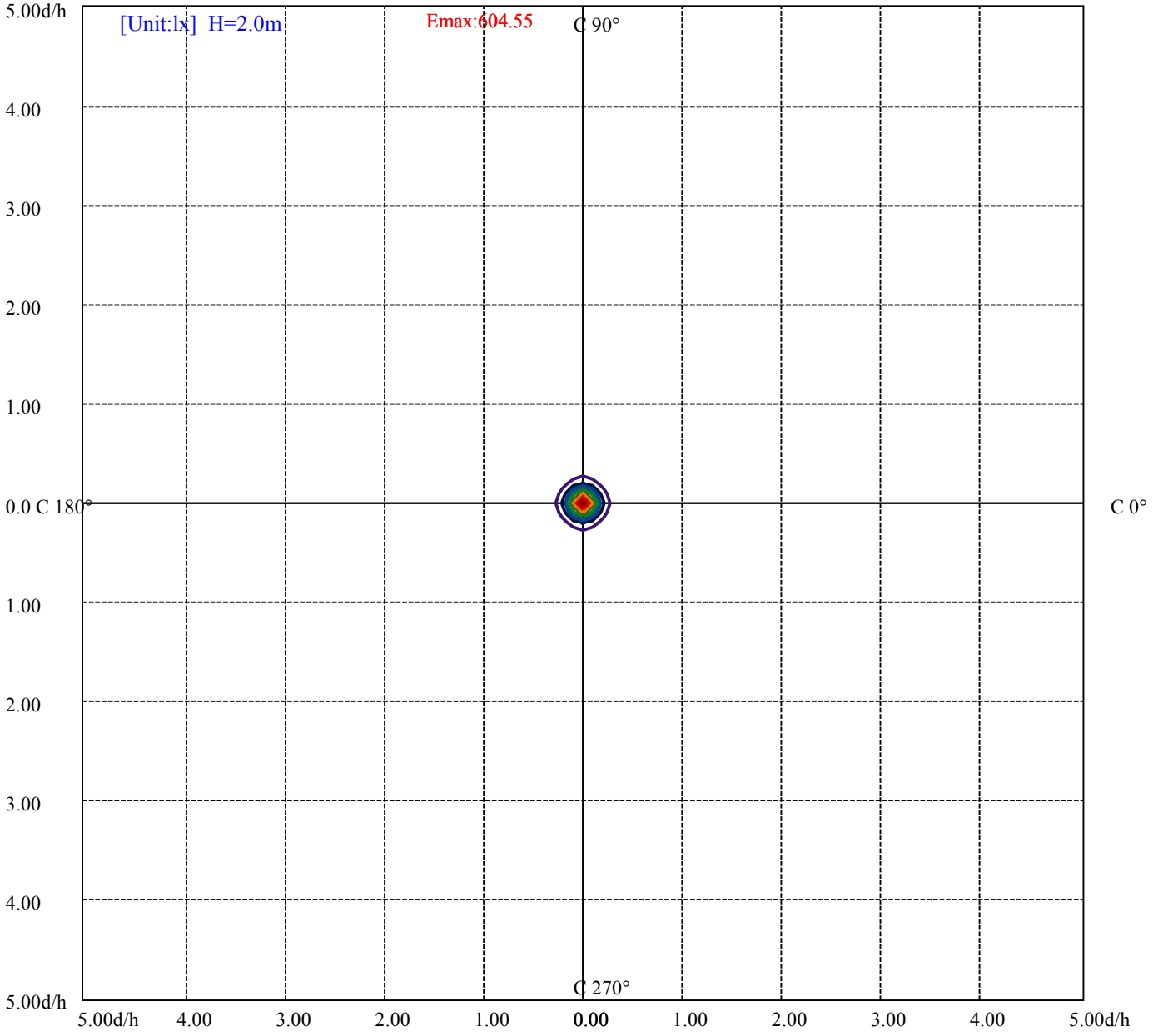
ISO illuminance diagram

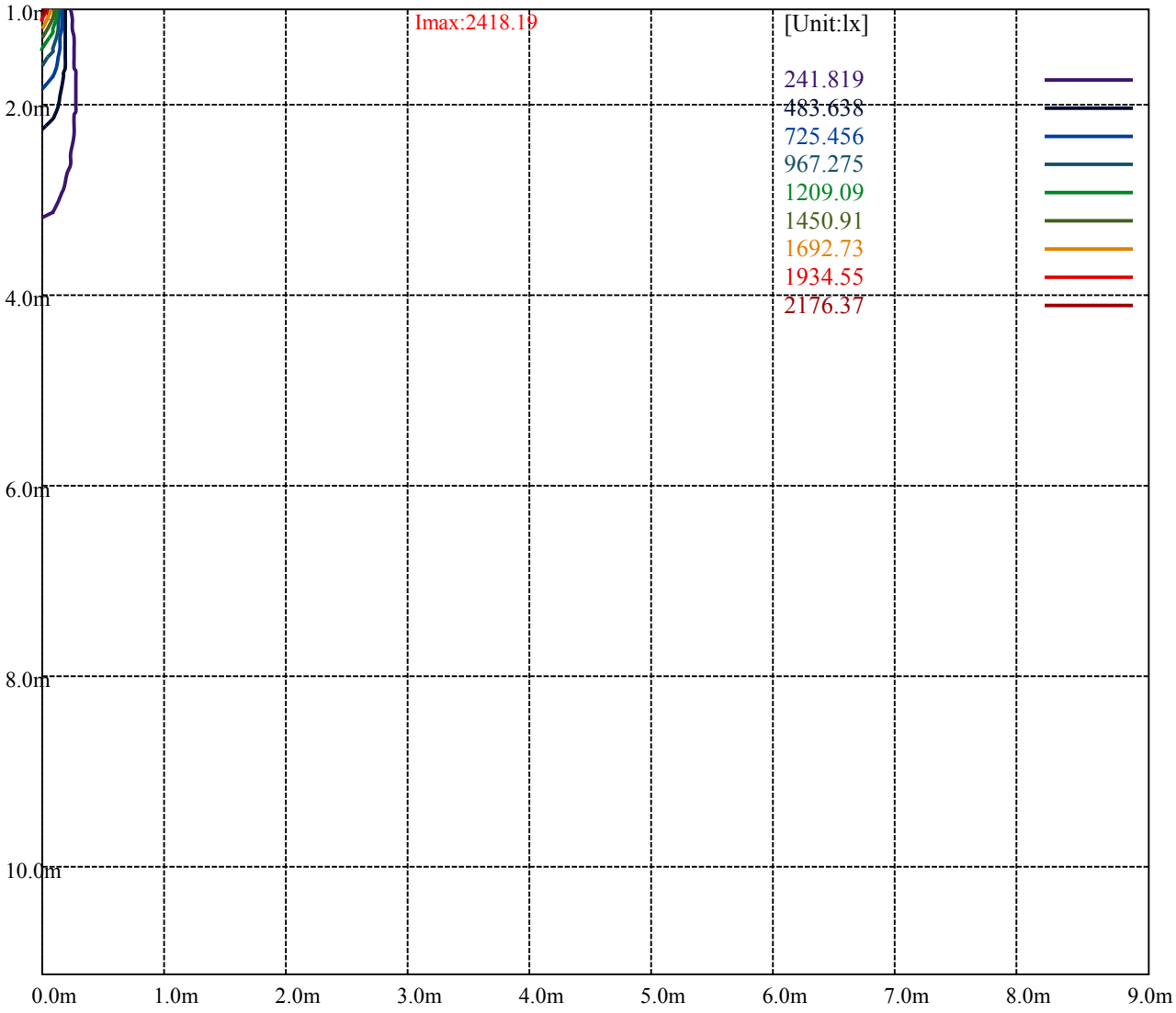


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

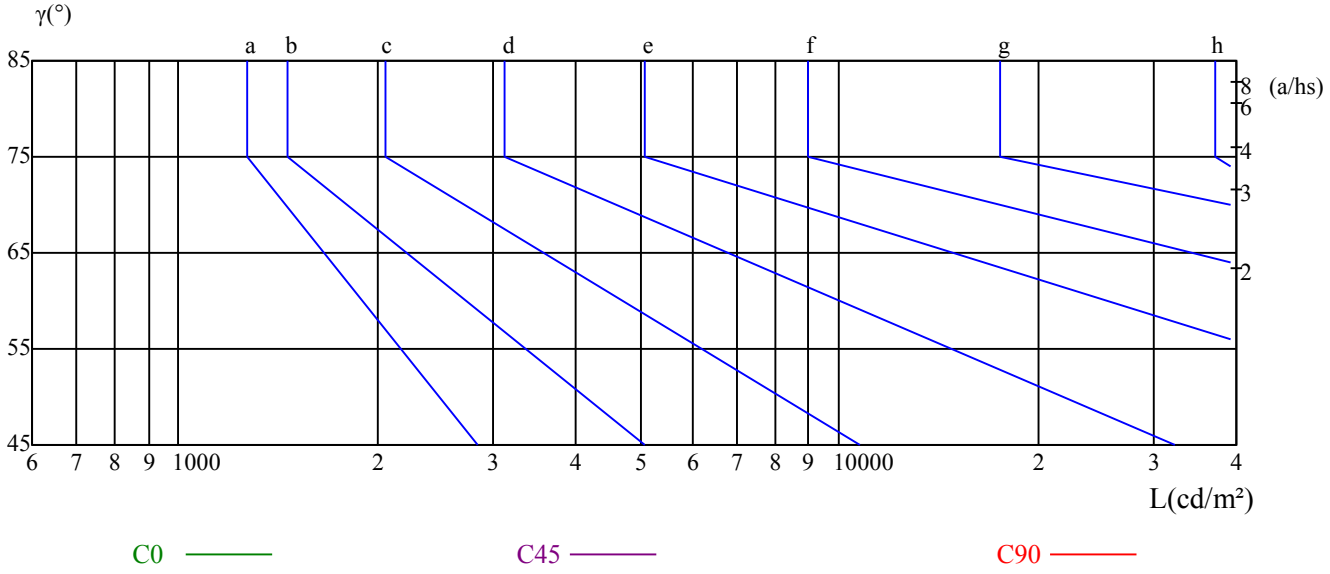
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

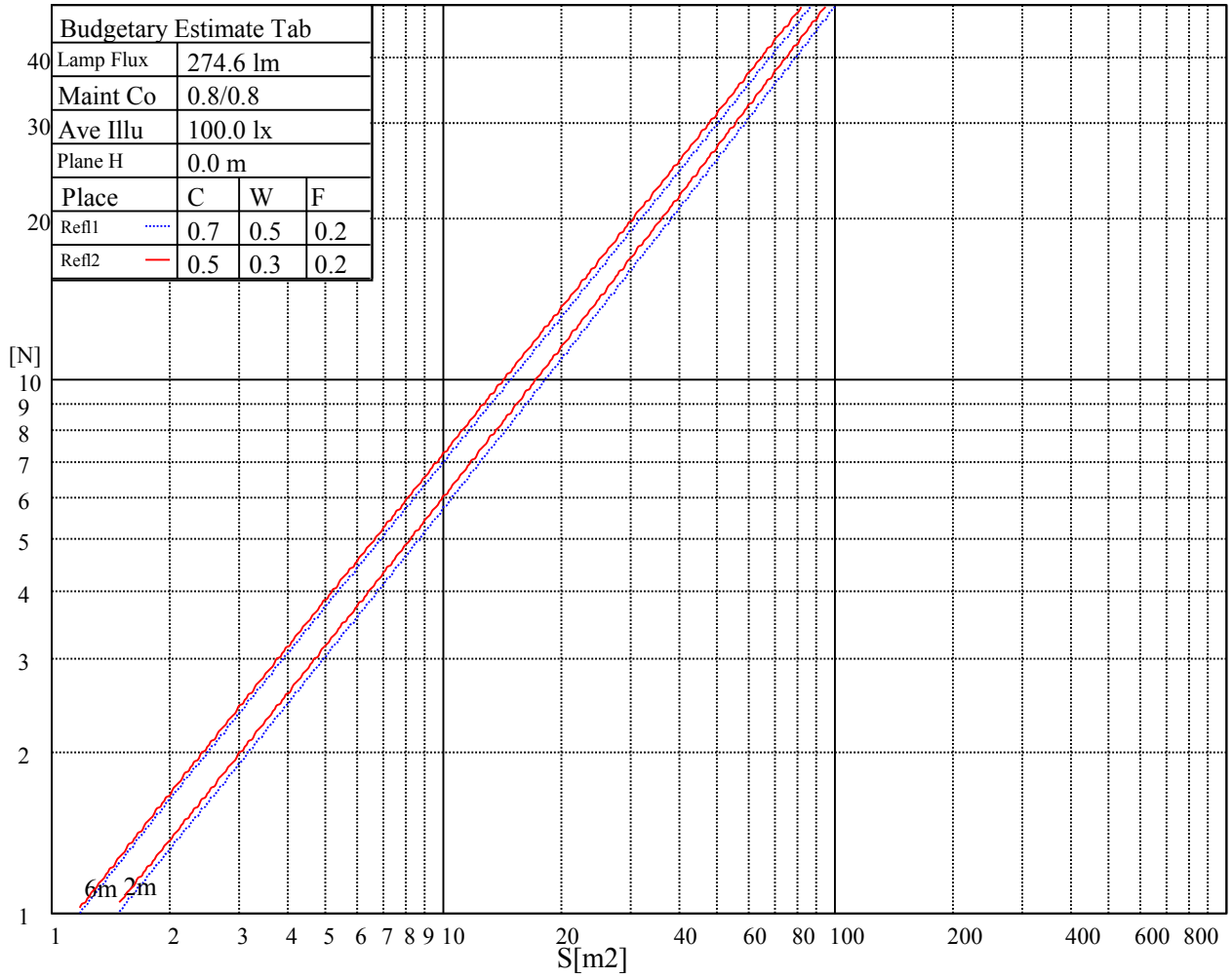


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

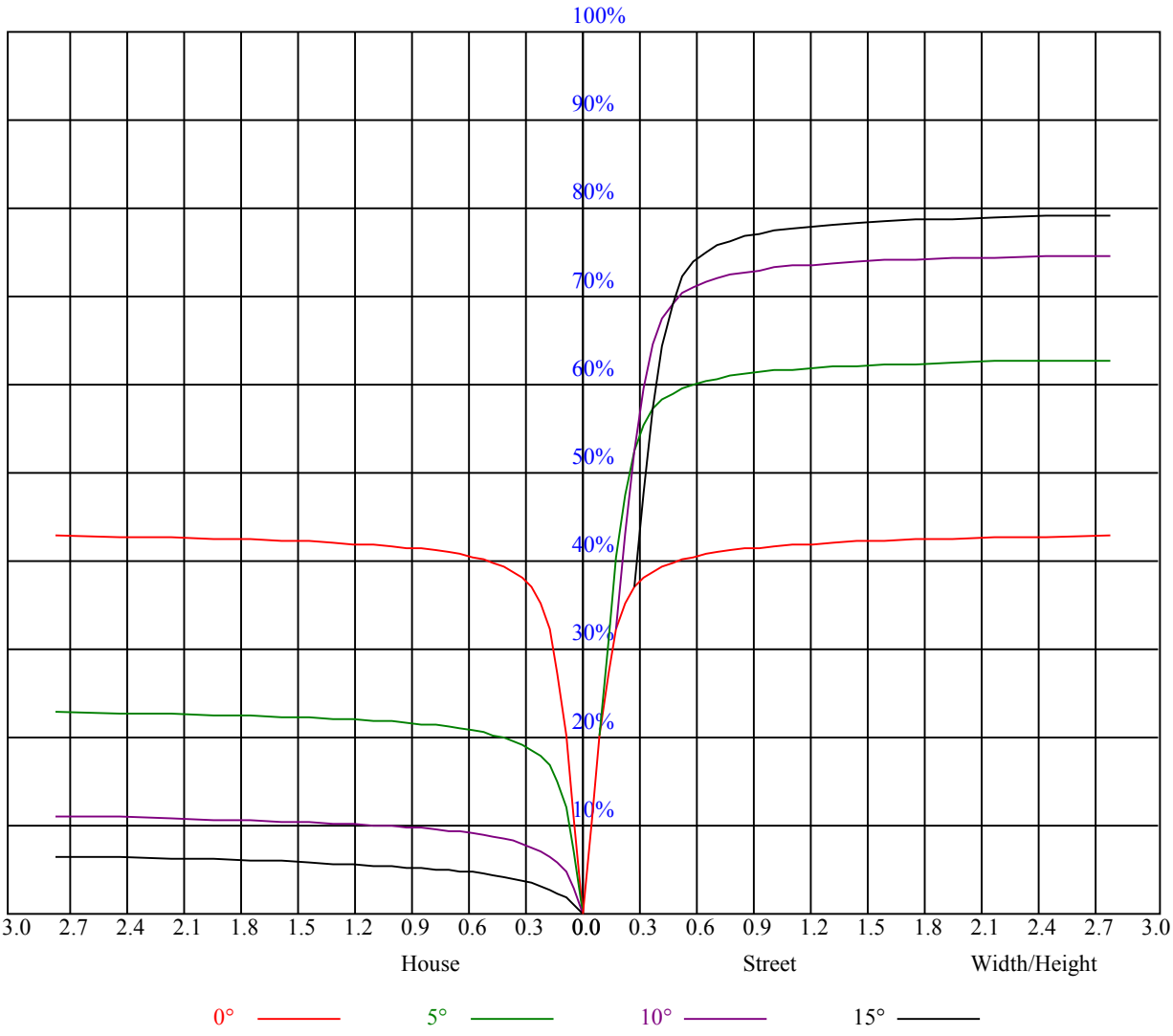


Equipment: GMS1980 Date: 2020/6/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.94	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.83
2	0.93	0.91	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.84	0.83	0.82	0.81
3	0.90	0.86	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.82	0.81	0.79	0.78
4	0.86	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.76	0.75
6	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.73
7	0.80	0.76	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.76	0.74	0.73	0.72
8	0.78	0.75	0.72	0.77	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.72	0.75	0.73	0.71	0.71
9	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.69
10	0.75	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.73	0.71	0.69	0.68

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/6/23	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	2432.25	2370.94	2266.31	2076.75	1893.38	1690.88	1428.75	1224.56	1028.81
45.0	2425.50	2341.69	2179.13	2014.88	1823.06	1585.13	1348.31	1145.81	930.94
90.0	2400.75	2324.25	2193.19	2013.19	1821.94	1586.81	1347.75	1116.06	950.40
135.0	2414.25	2414.25	2351.25	2238.75	2070.00	1891.13	1662.75	1431.56	1226.25
180.0	2432.25	2437.88	2387.25	2269.69	2077.88	1914.19	1688.06	1427.06	1112.40
225.0	2425.50	2458.13	2418.19	2328.75	2202.75	1996.88	1798.31	1587.38	1249.31
270.0	2400.75	2432.25	2396.25	2307.38	2178.00	1992.38	1778.63	1573.31	1338.75
315.0	2414.25	2364.19	2262.38	2080.13	1904.63	1712.25	1459.69	1111.33	1064.93
360.0	2432.25	2370.94	2266.31	2076.75	1893.38	1690.88	1428.75	1224.56	1028.81

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	804.94	642.94	503.44	371.81	290.81	199.69	145.01	111.21	85.05
45.0	735.75	582.19	435.94	331.31	286.31	169.71	128.36	100.01	76.73
90.0	753.02	581.29	451.74	333.45	251.66	182.93	135.23	106.37	84.43
135.0	1005.19	798.19	637.88	498.94	357.75	291.38	204.19	157.50	117.23
180.0	1037.14	808.37	645.92	506.70	389.19	276.13	209.19	160.43	117.56
225.0	1119.83	930.60	736.82	580.84	449.72	322.99	246.83	187.65	136.80
270.0	1116.56	931.50	740.81	587.81	442.69	326.81	284.06	185.18	133.93
315.0	856.46	671.79	530.61	395.04	299.36	217.97	159.47	122.96	94.22
360.0	804.94	642.94	503.44	371.81	290.81	199.69	145.01	111.21	85.05

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	67.39	56.64	47.19	40.16	35.61	31.95	28.58	26.44	24.53
45.0	63.23	53.94	45.11	39.43	34.99	31.16	28.18	25.76	23.51
90.0	68.74	58.28	50.40	43.03	38.19	34.31	30.83	27.79	25.54
135.0	93.54	77.91	62.94	53.10	46.29	39.88	34.93	31.39	28.18
180.0	93.94	76.89	62.49	51.98	44.55	38.31	33.92	30.21	27.11
225.0	110.59	90.51	75.26	60.98	52.14	44.21	38.48	33.24	29.81
270.0	106.31	86.46	68.68	58.33	50.79	43.99	38.08	34.20	30.38
315.0	74.81	62.10	52.93	43.82	38.03	33.64	29.48	26.89	24.64
360.0	67.39	56.64	47.19	40.16	35.61	31.95	28.58	26.44	24.53

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	22.44	20.81	19.18	17.44	15.86	14.63	13.33	12.43	11.42
45.0	21.60	19.74	18.00	16.43	14.85	13.44	12.32	11.36	10.35
90.0	23.23	21.04	19.35	17.38	15.86	14.23	12.83	11.81	10.86
135.0	25.54	23.68	21.49	19.69	17.72	16.09	14.57	13.61	12.15
180.0	24.98	22.95	21.15	19.46	17.89	16.14	14.85	13.73	12.66
225.0	26.55	23.96	21.77	20.14	18.73	17.04	15.53	14.29	12.99
270.0	27.34	24.75	22.56	20.76	18.90	17.16	15.86	14.57	13.05
315.0	22.28	20.59	18.90	16.93	15.69	14.23	12.83	11.98	11.03
360.0	22.44	20.81	19.18	17.44	15.86	14.63	13.33	12.43	11.42

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	10.74	10.13	9.56	9.00	8.55	8.10	7.59	7.20	6.75
45.0	9.73	9.28	8.66	8.16	7.76	7.26	6.81	6.47	6.08
90.0	10.07	9.45	8.94	8.33	7.82	7.37	6.92	6.41	6.02
135.0	11.31	10.63	9.79	9.17	8.72	8.16	7.65	7.31	6.69
180.0	11.87	11.19	10.52	9.96	9.45	8.83	8.38	7.82	7.31
225.0	12.04	11.25	10.63	9.90	9.39	8.89	8.38	7.88	7.37
270.0	12.15	11.25	10.35	9.79	9.23	8.66	8.10	7.59	7.09
315.0	10.18	9.68	9.17	8.44	8.10	7.71	7.20	6.81	6.36
360.0	10.74	10.13	9.56	9.00	8.55	8.10	7.59	7.20	6.75

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	6.36	5.91	5.63	5.34	5.01	4.84	4.61	4.39	4.22
45.0	5.68	5.40	5.18	4.89	4.73	4.56	4.33	4.16	3.99
90.0	5.63	5.29	5.01	4.78	4.56	4.39	4.16	3.99	3.88
135.0	6.24	5.91	5.51	5.23	4.95	4.73	4.56	4.33	4.16
180.0	6.81	6.36	6.02	5.68	5.40	5.12	4.89	4.67	4.50
225.0	6.92	6.41	6.02	5.74	5.46	5.18	4.95	4.73	4.56
270.0	6.64	6.13	5.74	5.46	5.18	4.95	4.73	4.56	4.33
315.0	5.96	5.63	5.34	5.06	4.84	4.61	4.44	4.28	4.11
360.0	6.36	5.91	5.63	5.34	5.01	4.84	4.61	4.39	4.22

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.11	3.94	3.83	3.71	3.54	3.43	3.32	3.26	3.15
45.0	3.88	3.71	3.60	3.43	3.32	3.21	3.04	2.98	2.87
90.0	3.71	3.54	3.43	3.32	3.21	3.09	2.98	2.93	2.87
135.0	3.99	3.83	3.71	3.54	3.43	3.26	3.15	3.04	2.98
180.0	4.28	4.11	3.99	3.88	3.77	3.66	3.54	3.38	3.26
225.0	4.33	4.16	3.99	3.83	3.71	3.54	3.43	3.26	3.15
270.0	4.16	3.99	3.83	3.71	3.54	3.43	3.32	3.21	3.09
315.0	3.88	3.77	3.66	3.49	3.38	3.21	3.09	3.04	2.93
360.0	4.11	3.94	3.83	3.71	3.54	3.43	3.32	3.26	3.15

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.04	2.93	2.81	2.76	2.64	2.59	2.53	2.42	2.36
45.0	2.81	2.70	2.64	2.53	2.42	2.36	2.31	2.25	2.19
90.0	2.81	2.81	2.81	2.81	2.93	3.88	6.30	8.04	10.18
135.0	2.87	2.76	2.64	2.59	2.53	2.42	2.42	2.31	2.25
180.0	3.09	3.04	2.93	2.81	2.76	2.64	2.53	2.48	2.42
225.0	3.04	2.93	2.87	2.76	2.64	2.59	2.53	2.42	2.36
270.0	3.04	2.98	2.93	2.81	2.87	2.87	2.87	3.04	4.39
315.0	2.81	2.76	2.70	2.59	2.53	2.48	2.42	2.31	2.25
360.0	3.04	2.93	2.81	2.76	2.64	2.59	2.53	2.42	2.36

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.31	2.31	2.25	2.19	2.08	2.03	1.91	1.80	1.74
45.0	2.14	2.03	1.97	1.91	1.86	1.80	1.74	1.69	1.63
90.0	12.66	14.01	14.46	14.46	13.50	12.43	11.19	10.07	9.00
135.0	2.19	2.08	2.03	1.97	1.97	1.86	1.86	1.80	1.69
180.0	2.36	2.36	2.36	2.48	2.48	2.31	2.19	2.03	1.86
225.0	2.31	2.19	2.14	2.03	1.97	1.91	1.86	1.80	1.74
270.0	6.47	8.78	11.03	13.50	14.40	14.29	12.94	11.53	10.29
315.0	2.14	2.08	2.03	1.91	1.91	1.80	1.74	1.69	1.63
360.0	2.31	2.31	2.25	2.19	2.08	2.03	1.91	1.80	1.74

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.63	1.58	1.52	1.41	1.35	1.29	1.18	1.07	1.07
45.0	1.58	1.46	1.46	1.35	1.29	1.18	1.07	1.01	1.01
90.0	7.93	5.18	2.42	1.58	1.41	1.18	1.01	0.96	0.96
135.0	1.63	1.58	1.52	1.46	1.35	1.29	1.13	1.07	1.01
180.0	1.80	1.69	1.63	1.58	1.46	1.41	1.35	1.18	1.07
225.0	1.69	1.63	1.58	1.46	1.46	1.35	1.24	1.18	1.07
270.0	8.83	7.71	6.36	4.05	1.74	1.52	1.35	1.13	1.07
315.0	1.58	1.46	1.41	1.35	1.29	1.24	1.13	1.07	0.96
360.0	1.63	1.58	1.52	1.41	1.35	1.29	1.18	1.07	1.07

Intensity data(cd)

C/γ(°)	90.0
0.0	1.01
45.0	0.96
90.0	0.96
135.0	0.96
180.0	1.07
225.0	1.01
270.0	1.01
315.0	0.96
360.0	1.01