NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: LM01D05515BH
Luminaire: 92.70.124.00

Report No: NATA0100	Voltage(V): 33.5400
Test No: GC20190601	Current(A): 0.2970
LampCAT: XICATO XOB LES 9.8MM	Power (W): 9.9600
Lamp flux(lm): 997.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 55	Width(mm):55
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 924.04
Efficiency(%): 92.68%
Lumens(lm)/Power(W): 92.77
Central intensity(cd): 7848.633
Maximum intensity(cd): 7848.633
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=15.7
[C90/270]Total=15.7
Field angle(10%Imax): [C0/180]Total=31.6
[C90/270]Total=31.6
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.28 C90_270=0.28
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.68%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.313%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7848.633	0.000	0	.000%	.000%
1.0	7781.203	7.479	7.479	.750%	.809%
2.0	7585.664	22.056	29.535	2.212%	3.196%
3.0	7220.180	35.411	64.945	3.552%	7.028%
4.0	6708.727	46.625	111.57	4.676%	12.074%
5.0	6087.516	55.049	166.619	5.521%	18.032%
6.0	5348.461	60.099	226.718	6.028%	24.536%
7.0	4541.766	61.388	288.106	6.157%	31.179%
8.0	3830.625	59.920	348.026	6.010%	37.664%
9.0	3149.156	56.567	404.593	5.674%	43.785%
10.0	2553.539	51.607	456.2	5.176%	49.370%
11.0	2085.398	46.353	502.553	4.649%	54.387%
12.0	1648.266	40.814	543.367	4.094%	58.804%
13.0	1334.763	35.401	578.768	3.551%	62.635%
14.0	1110.066	31.294	610.062	3.139%	66.021%
15.0	918.436	27.848	637.91	2.793%	69.035%
16.0	754.355	24.511	662.421	2.458%	71.688%
17.0	636.047	21.652	684.073	2.172%	74.031%
18.0	535.359	19.314	703.387	1.937%	76.121%
19.0	439.397	16.959	720.346	1.701%	77.956%
20.0	368.684	14.790	735.136	1.483%	79.557%
21.0	306.788	12.970	748.107	1.301%	80.961%
22.0	247.845	11.146	759.252	1.118%	82.167%
23.0	212.133	9.652	768.904	.968%	83.211%
24.0	173.236	8.426	777.329	.845%	84.123%
25.0	138.101	7.079	784.408	.710%	84.889%
26.0	117.879	6.042	790.451	.606%	85.543%
27.0	100.455	5.342	795.792	.536%	86.121%
28.0	86.013	4.721	800.513	.474%	86.632%
29.0	75.684	4.230	804.744	.424%	87.090%
30.0	67.170	3.857	808.601	.387%	87.507%
31.0	58.971	3.510	812.111	.352%	87.887%
32.0	52.748	3.201	815.312	.321%	88.234%
33.0	47.426	2.951	818.263	.296%	88.553%
34.0	42.237	2.713	820.976	.272%	88.847%
35.0	38.531	2.508	823.485	.252%	89.118%
36.0	35.888	2.370	825.854	.238%	89.374%
37.0	33.778	2.272	828.126	.228%	89.620%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	32.477	2.212	830.338	.222%	89.860%
39.0	31.570	2.186	832.524	.219%	90.096%
40.0	31.050	2.184	834.708	.219%	90.333%
41.0	30.762	2.201	836.909	.221%	90.571%
42.0	30.642	2.231	839.14	.224%	90.812%
43.0	30.600	2.269	841.409	.228%	91.058%
44.0	30.670	2.313	843.721	.232%	91.308%
45.0	30.698	2.358	846.08	.237%	91.563%
46.0	30.705	2.401	848.481	.241%	91.823%
47.0	30.621	2.439	850.92	.245%	92.087%
48.0	30.424	2.468	853.388	.248%	92.354%
49.0	30.094	2.485	855.873	.249%	92.623%
50.0	29.609	2.489	858.362	.250%	92.893%
51.0	28.962	2.478	860.84	.249%	93.161%
52.0	28.111	2.449	863.289	.246%	93.426%
53.0	27.281	2.410	865.699	.242%	93.686%
54.0	26.332	2.363	868.062	.237%	93.942%
55.0	25.207	2.301	870.363	.231%	94.191%
56.0	24.110	2.229	872.591	.224%	94.432%
57.0	23.020	2.155	874.746	.216%	94.666%
58.0	21.839	2.074	876.82	.208%	94.890%
59.0	20.798	1.993	878.814	.200%	95.106%
60.0	19.744	1.915	880.729	.192%	95.313%
61.0	18.626	1.831	882.56	.184%	95.511%
62.0	17.796	1.755	884.315	.176%	95.701%
63.0	17.114	1.698	886.013	.170%	95.885%
64.0	16.348	1.642	887.655	.165%	96.063%
65.0	15.673	1.585	889.24	.159%	96.234%
66.0	15.110	1.536	890.776	.154%	96.400%
67.0	14.555	1.492	892.267	.150%	96.562%
68.0	14.126	1.453	893.72	.146%	96.719%
69.0	13.802	1.425	895.145	.143%	96.873%
70.0	13.563	1.405	896.55	.141%	97.025%
71.0	13.331	1.390	897.94	.139%	97.176%
72.0	13.099	1.374	899.315	.138%	97.324%
73.0	12.860	1.357	900.672	.136%	97.471%
74.0	12.677	1.343	902.015	.135%	97.617%
75.0	12.544	1.333	903.347	.134%	97.761%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.417	1.325	904.672	.133%	97.904%
77.0	12.319	1.319	905.991	.132%	98.047%
78.0	12.248	1.315	907.306	.132%	98.189%
79.0	12.213	1.314	908.62	.132%	98.332%
80.0	12.284	1.321	909.941	.132%	98.474%
81.0	12.431	1.337	911.278	.134%	98.619%
82.0	12.727	1.364	912.642	.137%	98.767%
83.0	13.036	1.400	914.042	.140%	98.918%
84.0	13.310	1.435	915.478	.144%	99.074%
85.0	13.620	1.470	916.948	.147%	99.233%
86.0	13.830	1.500	918.448	.150%	99.395%
87.0	13.402	1.490	919.938	.149%	99.556%
88.0	12.895	1.440	921.379	.144%	99.712%
89.0	12.284	1.380	922.759	.138%	99.862%
90.0	11.046	1.279	924.038	.128%	100.000%

Zonal flux distribution table

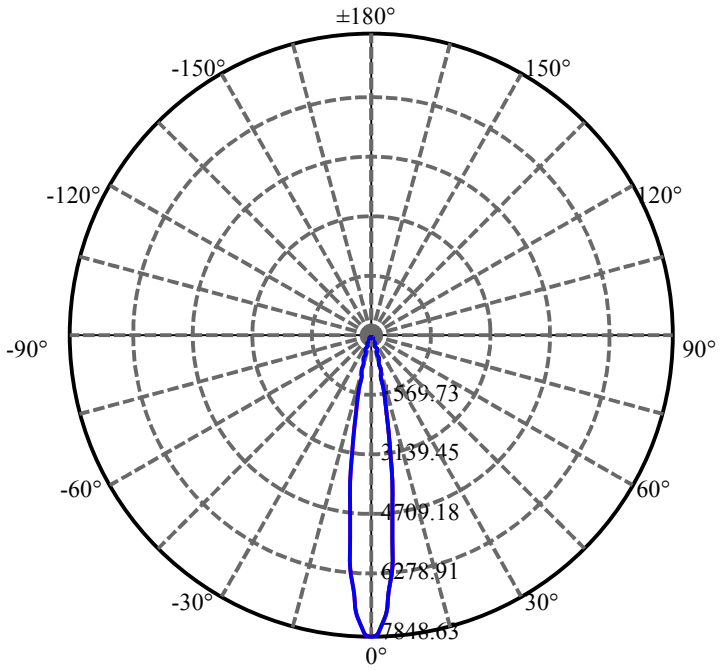
ZONAL LUMEN SUMMARY

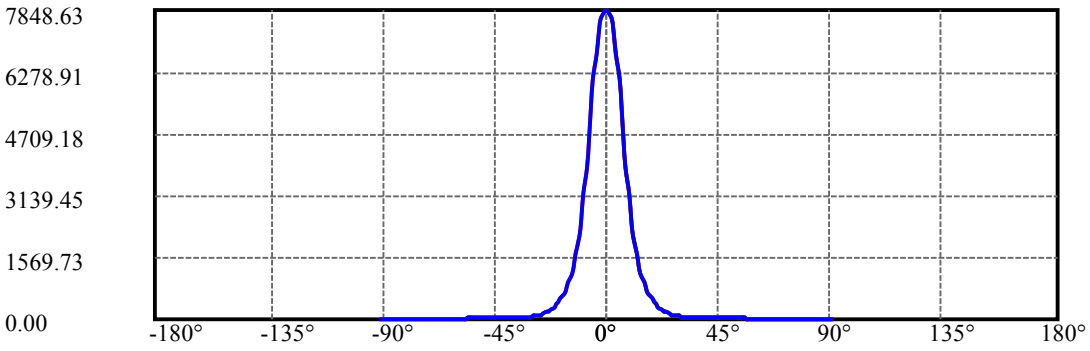
Zone	Lumens	%Lamp	%Fixt
0-30	808.60	81.10%	87.51%
0-40	834.71	83.72%	90.33%
0-60	880.73	88.34%	95.31%
0-90	922.76	92.55%	99.86%
0-120	922.76	92.55%	99.86%
0-180	924.04	92.68%	100.00%
60-90	43.95	4.41%	4.76%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-20.32	739.23	74.15%	80.00%

ZONAL LUMEN SUMMARY

0-10	456.20
10-20	278.94
20-30	73.46
30-40	26.11
40-50	23.65
50-60	22.37
60-70	15.82
70-80	13.39
80-90	12.82
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):

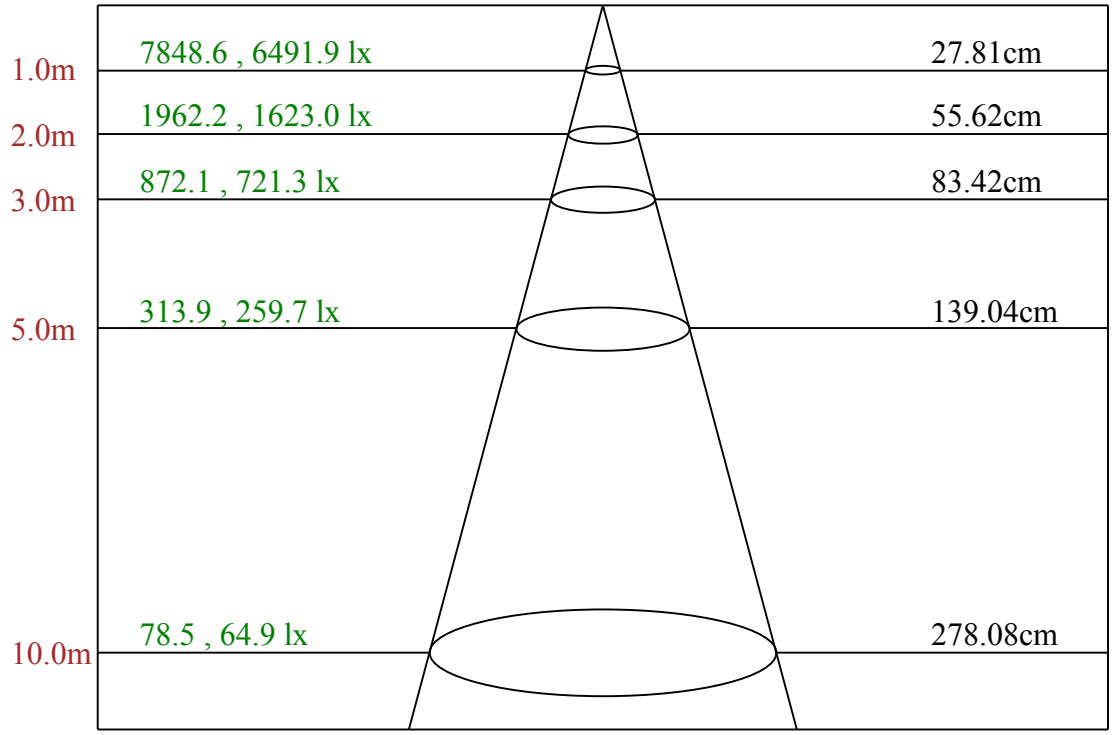
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:15.8 Right:15.8
:C90/270Left:15.8 Right:15.8

Beam Angle(50%Imax):C0/180Left:7.9 Right:7.9
:C90/270Left:7.9 Right:7.9

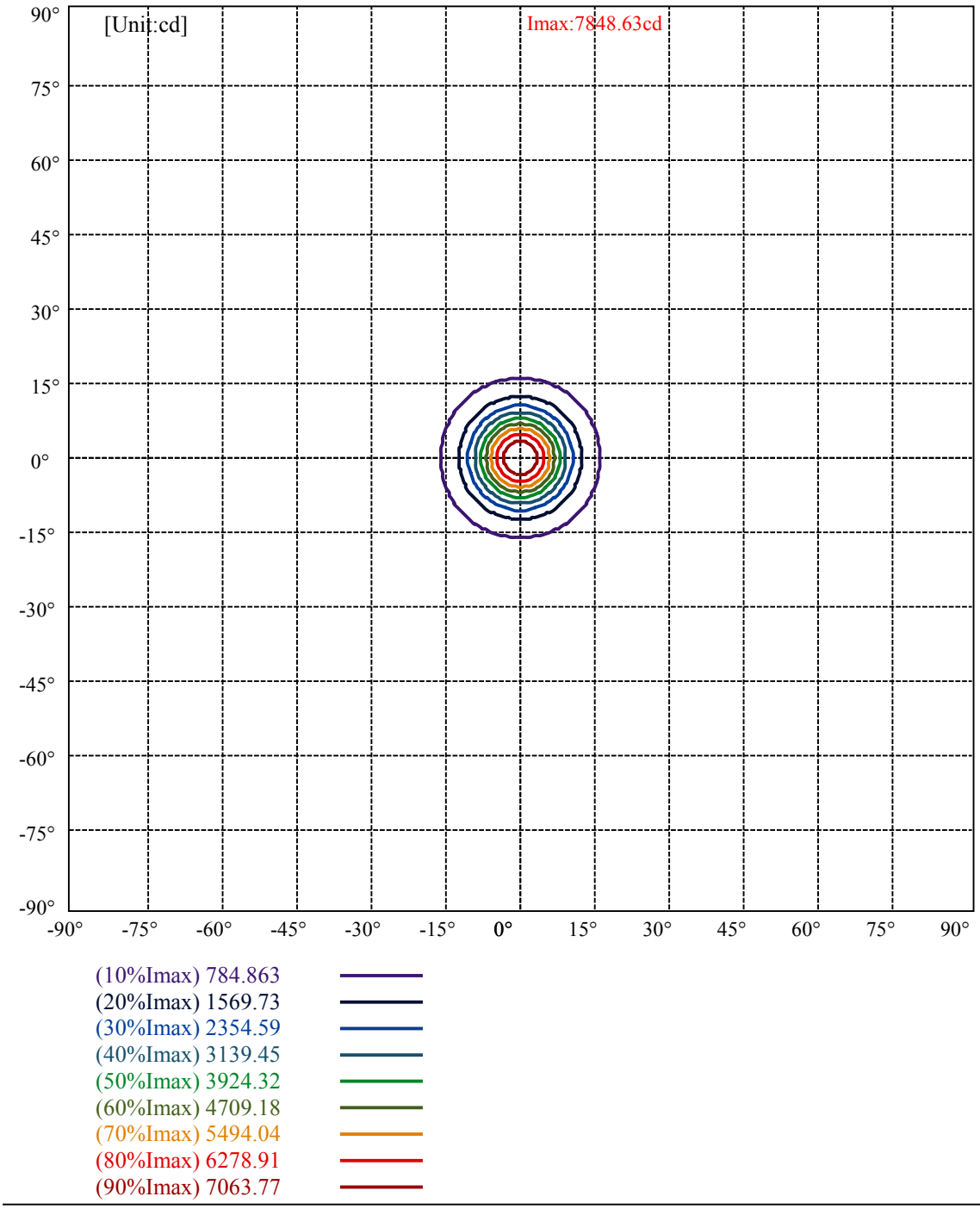
Lux distance Curve



Max , Ave

Beam angle of C0 plane 15.83

ISO-Intensity(V-H)

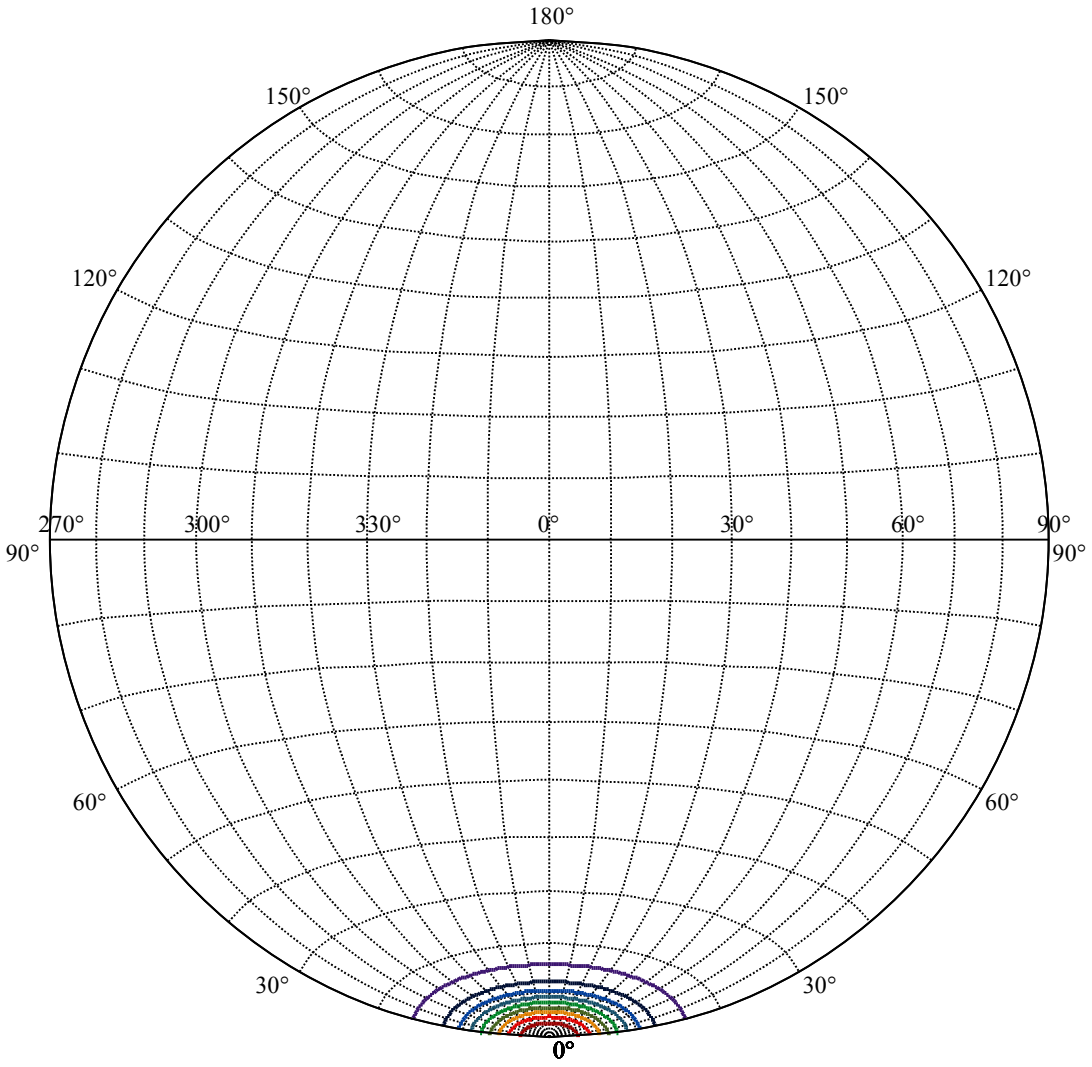


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/6
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:7848.63

(10%Imax) 784.863
(20%Imax) 1569.73
(30%Imax) 2354.59
(40%Imax) 3139.45
(50%Imax) 3924.32
(60%Imax) 4709.18
(70%Imax) 5494.04
(80%Imax) 6278.91
(90%Imax) 7063.77

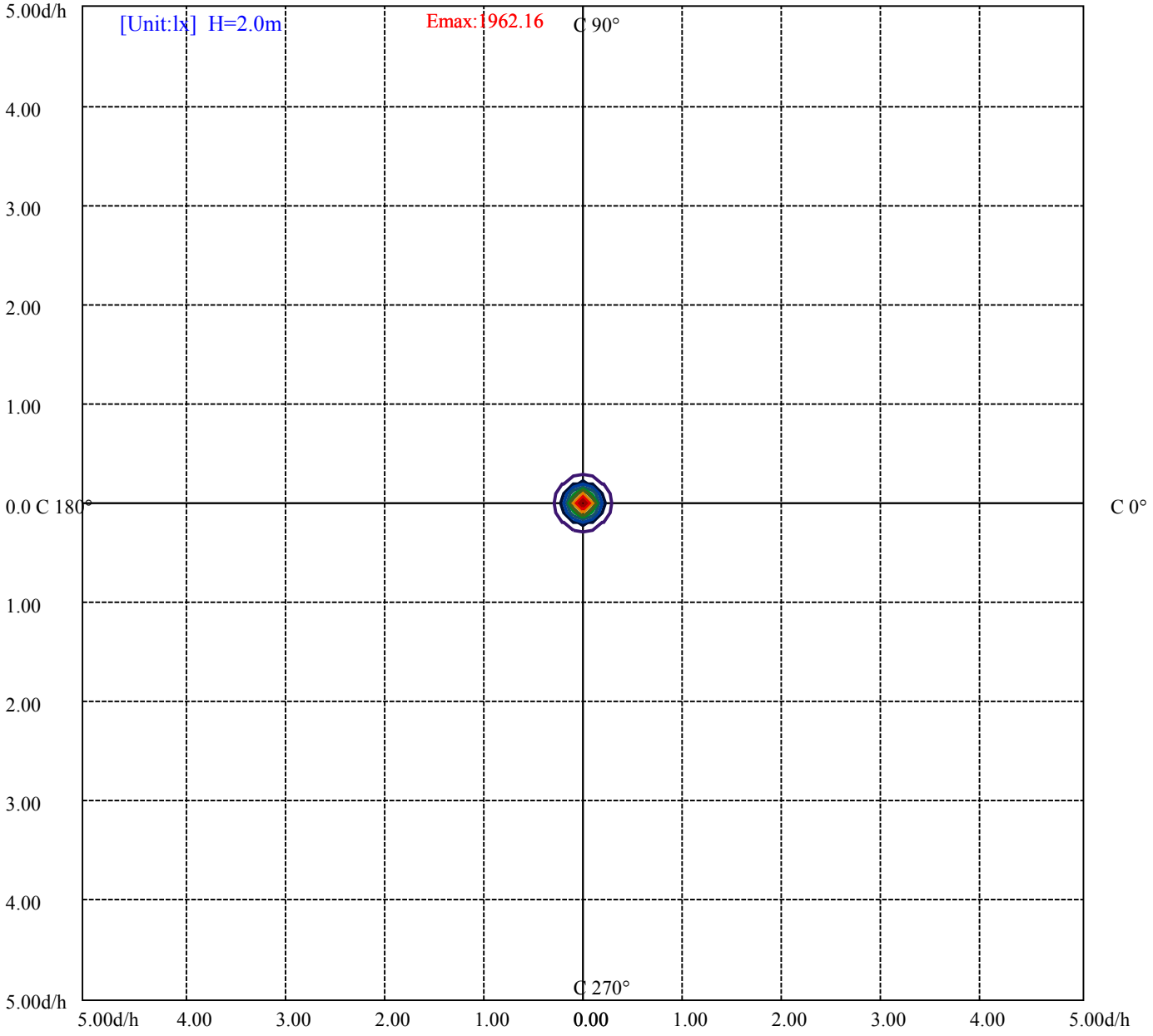
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/6
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata 62.0028.000

ISO illuminance diagram

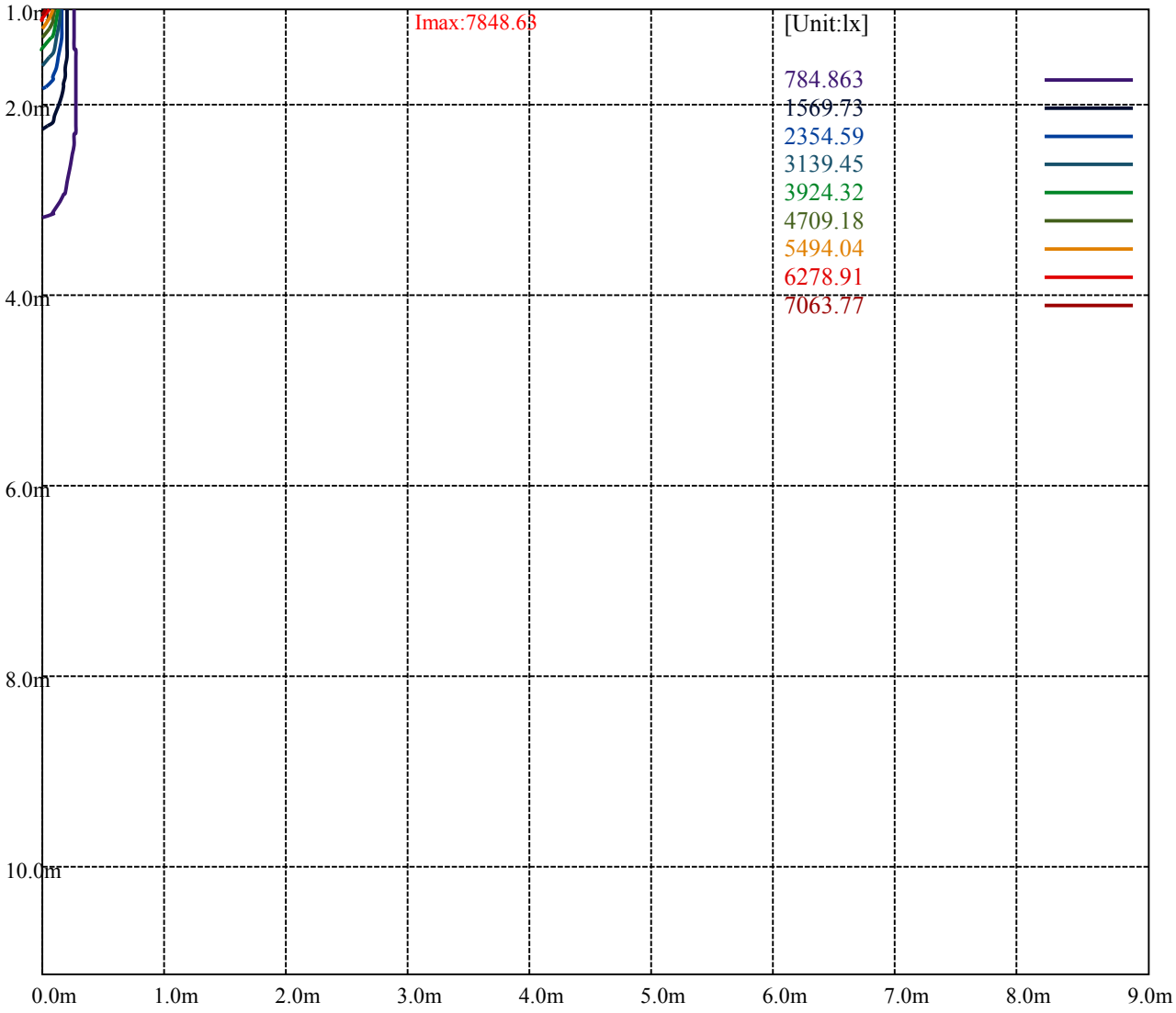


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/6
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/6
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

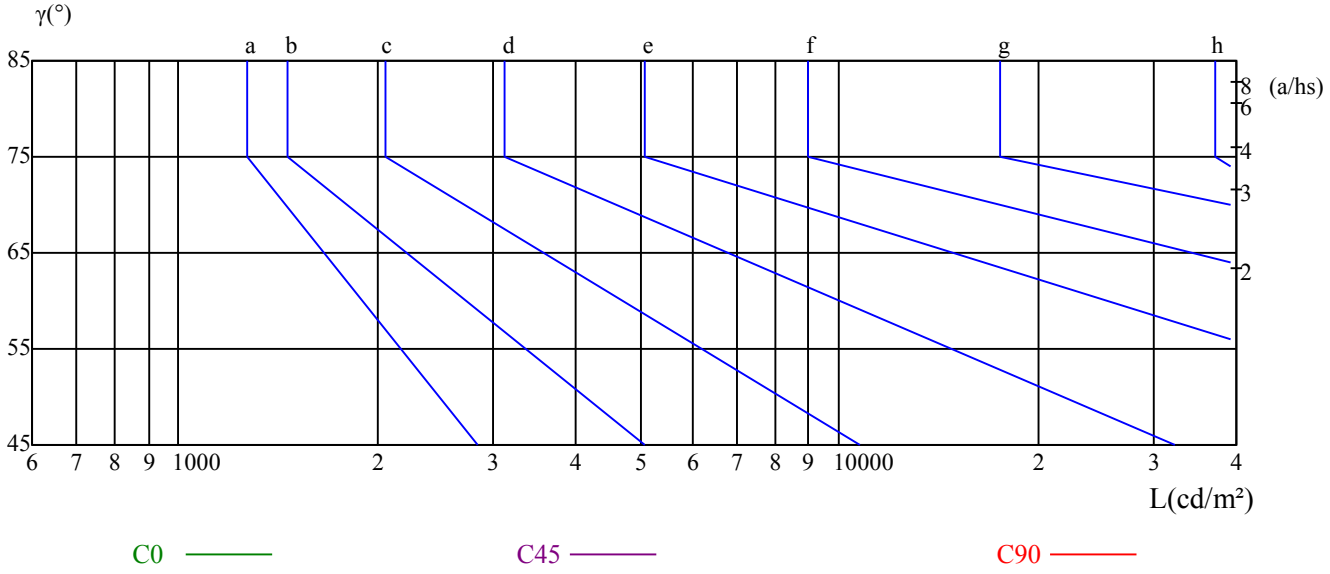
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

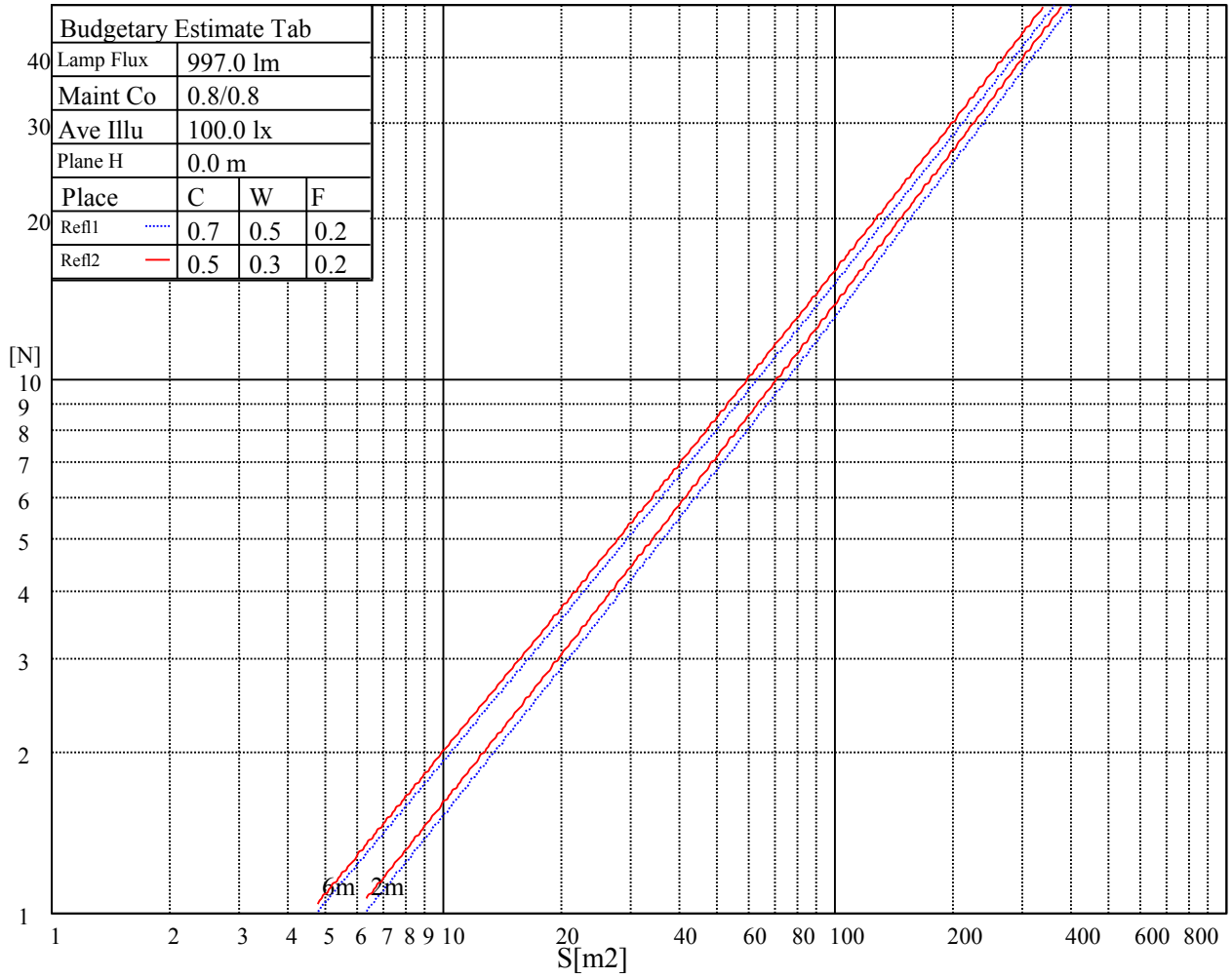
Glare Table

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

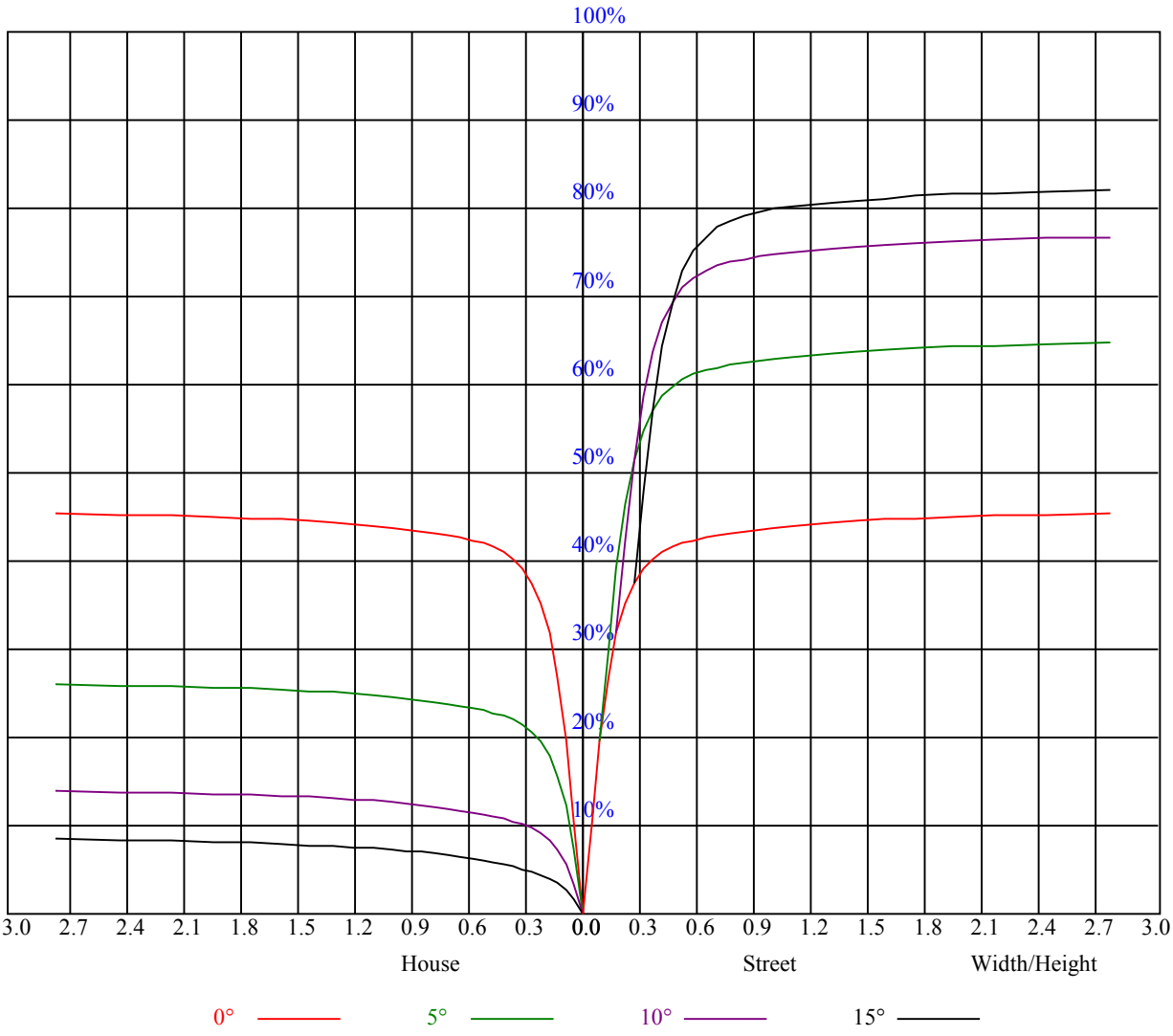


Equipment: GMS1980 Date: 2019/9/6 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.10	1.10	1.10	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.03	1.01	0.99	1.01	1.00	0.98	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.98	0.95	0.92	0.97	0.94	0.91	0.94	0.91	0.89	0.91	0.89	0.88	0.88	0.87	0.86	0.84
3	0.94	0.90	0.87	0.93	0.89	0.87	0.90	0.88	0.85	0.88	0.86	0.84	0.86	0.84	0.83	0.81
4	0.90	0.86	0.83	0.89	0.86	0.83	0.87	0.84	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.79
5	0.87	0.83	0.80	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.81	0.79	0.82	0.80	0.78	0.77
6	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.79	0.76	0.80	0.78	0.76	0.75
7	0.82	0.78	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
8	0.80	0.76	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.75	0.73	0.72
9	0.78	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.76	0.73	0.71	0.70
10	0.77	0.73	0.71	0.76	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/6
Humidity(%): 65.0%

Operator: NT07
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	7833.38	7886.25	7804.69	7571.81	7241.06	6717.38	6052.50	5389.31	4691.25
45.0	7862.63	7788.94	7592.63	7214.63	6689.81	6120.00	5452.31	4548.38	3851.44
90.0	7819.88	7560.56	7201.69	6636.38	5918.63	5209.88	4473.00	3593.25	2980.69
135.0	7890.75	7704.56	7354.13	6877.69	6186.94	5478.19	4633.88	3808.69	3088.13
180.0	7833.38	7638.19	7317.56	6788.25	6069.94	5343.19	4574.25	3661.88	3020.06
225.0	7862.63	7810.88	7642.69	7241.63	6801.75	6061.50	5120.44	4442.06	3632.63
270.0	7795.69	7922.25	7911.56	7767.56	7468.88	6955.31	6348.94	5545.13	4771.13
315.0	7890.75	7938.00	7860.38	7663.50	7292.81	6814.69	6132.38	5345.44	4609.69
360.0	7833.38	7886.25	7804.69	7571.81	7241.06	6717.38	6052.50	5389.31	4691.25

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3852.00	3240.56	2711.25	2166.75	1810.13	1520.44	1261.13	1054.13	905.06
45.0	3237.19	2632.50	2129.63	1765.69	1441.69	1185.75	1006.31	842.63	722.81
90.0	2457.00	1913.06	1568.25	1091.81	1041.98	851.51	715.44	590.29	496.46
135.0	2485.69	2021.06	1621.13	1302.75	995.63	814.50	669.94	541.69	438.19
180.0	2477.25	1950.75	1522.69	1093.50	932.46	759.83	622.97	491.12	416.19
225.0	2858.63	2395.69	1944.56	1447.31	1107.68	974.25	802.07	633.32	527.91
270.0	3929.63	3173.63	2619.00	2198.81	1670.63	1371.94	1159.88	898.88	757.13
315.0	3895.88	3101.06	2566.69	2119.50	1677.94	1402.31	1109.76	982.80	824.63
360.0	3852.00	3240.56	2711.25	2166.75	1810.13	1520.44	1261.13	1054.13	905.06

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	777.94	656.44	551.25	468.00	385.88	316.69	289.13	210.09	173.53
45.0	604.13	502.88	419.63	358.31	286.31	251.72	192.26	150.53	126.73
90.0	403.31	327.71	271.29	218.36	177.02	147.99	125.55	104.74	92.36
135.0	362.81	292.50	250.14	193.16	158.18	133.82	116.04	96.69	85.78
180.0	333.79	260.61	220.56	182.03	141.86	122.74	105.58	88.20	79.31
225.0	441.45	351.06	290.48	239.68	193.33	156.09	131.01	110.19	96.75
270.0	653.06	532.69	442.13	377.44	299.81	285.75	197.33	159.08	132.92
315.0	706.39	591.30	504.00	417.32	340.37	282.26	228.99	185.29	155.64
360.0	777.94	656.44	551.25	468.00	385.88	316.69	289.13	210.09	173.53

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	140.79	116.49	99.23	84.83	73.97	65.81	59.46	51.47	46.24
45.0	108.68	92.53	81.62	72.90	63.73	57.09	50.51	45.23	40.50
90.0	81.62	71.89	63.23	56.64	49.73	44.04	39.83	36.11	33.92
135.0	76.16	66.32	59.40	53.83	47.08	43.03	39.32	35.72	33.53
180.0	70.65	62.66	55.74	50.34	44.89	40.78	37.01	34.31	32.63
225.0	83.19	74.59	66.83	59.01	52.26	47.08	42.30	37.46	34.59
270.0	110.81	95.06	84.60	75.83	66.43	59.63	53.49	46.74	41.96
315.0	131.74	108.56	94.84	83.98	73.69	64.52	57.49	50.85	44.89
360.0	140.79	116.49	99.23	84.83	73.97	65.81	59.46	51.47	46.24

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	42.41	38.59	36.28	34.99	33.92	33.47	33.30	33.41	33.53
45.0	37.29	35.49	34.26	33.24	32.63	32.46	32.34	32.34	32.34
90.0	32.57	31.50	30.88	30.43	30.38	30.21	30.21	30.15	30.21
135.0	32.23	31.16	30.49	29.87	29.64	29.48	29.42	29.36	29.48
180.0	31.44	30.60	30.15	29.76	29.53	29.48	29.42	29.42	29.59
225.0	32.68	31.33	30.54	29.81	29.48	29.19	28.91	28.69	28.69
270.0	37.91	34.59	32.46	31.33	30.66	30.04	29.87	29.70	29.70
315.0	40.56	36.96	34.76	33.13	32.18	31.78	31.67	31.73	31.84
360.0	42.41	38.59	36.28	34.99	33.92	33.47	33.30	33.41	33.53

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	33.64	33.81	33.92	33.98	33.92	33.64	33.02	32.06	31.33
45.0	32.40	32.29	32.12	31.67	31.22	30.60	29.70	28.86	27.79
90.0	30.15	30.09	29.76	29.42	28.91	28.18	27.39	26.38	25.43
135.0	29.42	29.42	29.25	28.91	28.46	27.90	27.23	26.33	25.37
180.0	29.70	29.64	29.64	29.31	28.80	28.07	27.34	26.55	25.82
225.0	28.69	28.52	28.29	28.18	27.68	27.23	26.66	25.71	24.75
270.0	29.59	29.70	29.76	29.64	29.53	29.36	28.97	28.41	27.68
315.0	32.01	32.18	32.23	32.29	32.23	31.89	31.39	30.60	30.09
360.0	33.64	33.81	33.92	33.98	33.92	33.64	33.02	32.06	31.33

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	30.32	29.08	27.79	26.55	25.20	24.02	22.61	21.15	20.19
45.0	26.78	25.37	24.24	23.06	21.71	20.53	19.58	18.51	17.55
90.0	24.30	23.18	22.16	21.21	19.91	19.01	18.11	17.16	16.48
135.0	24.47	23.40	22.44	21.26	20.25	19.41	18.39	17.33	16.71
180.0	24.98	23.91	22.84	21.94	20.76	19.86	18.90	18.00	17.04
225.0	23.79	22.95	21.71	20.76	19.74	18.79	17.89	16.93	16.20
270.0	26.89	25.88	24.81	23.79	22.61	21.71	20.53	19.52	18.62
315.0	29.14	27.90	26.89	25.59	24.53	23.06	21.94	20.42	19.58
360.0	30.32	29.08	27.79	26.55	25.20	24.02	22.61	21.15	20.19

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	19.24	18.28	17.49	16.82	16.03	15.47	15.19	15.08	14.96
45.0	16.82	16.14	15.30	14.57	14.12	13.78	13.50	13.39	13.11
90.0	15.92	15.13	14.51	14.06	13.67	13.39	13.16	12.99	12.77
135.0	16.14	15.36	14.79	14.29	14.01	13.61	13.33	13.11	12.88
180.0	16.43	15.81	15.30	14.91	14.46	14.06	13.78	13.61	13.39
225.0	15.64	14.96	14.29	13.84	13.33	12.94	12.66	12.38	12.26
270.0	17.89	17.16	16.54	15.92	15.08	14.63	14.18	13.73	13.33
315.0	18.84	17.94	17.16	16.48	15.75	15.13	14.63	14.23	13.95
360.0	19.24	18.28	17.49	16.82	16.03	15.47	15.19	15.08	14.96

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	14.91	14.57	14.46	14.40	14.34	14.18	13.89	13.67	13.44
45.0	12.88	12.71	12.49	12.32	12.21	12.09	11.93	11.98	12.04
90.0	12.54	12.32	12.09	11.98	11.76	11.59	11.53	11.42	11.59
135.0	12.66	12.43	12.26	12.04	11.93	11.87	11.87	11.87	12.15
180.0	13.16	13.11	12.99	12.99	12.88	12.94	12.99	13.11	13.33
225.0	11.98	11.76	11.59	11.53	11.53	11.48	11.59	11.59	11.64
270.0	12.99	12.66	12.43	12.21	12.04	11.93	11.87	11.87	11.87
315.0	13.67	13.33	13.11	12.88	12.66	12.49	12.32	12.21	12.21
360.0	14.91	14.57	14.46	14.40	14.34	14.18	13.89	13.67	13.44

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.28	13.56	14.01	14.51	14.96	14.96	14.63	14.68	14.46
45.0	12.32	12.43	12.83	12.99	13.22	13.28	13.39	12.99	12.38
90.0	11.81	12.49	12.88	13.28	13.67	13.84	12.88	12.09	11.70
135.0	12.71	13.33	13.67	13.84	13.89	13.95	13.22	12.94	12.26
180.0	13.56	13.73	13.50	13.11	13.11	13.33	12.88	12.38	10.74
225.0	11.59	11.64	11.81	12.15	12.43	12.88	11.93	11.64	10.80
270.0	11.98	12.09	12.43	12.60	12.88	13.33	13.50	11.93	11.70
315.0	12.21	12.54	13.16	14.01	14.79	15.08	14.79	14.51	14.23
360.0	13.28	13.56	14.01	14.51	14.96	14.96	14.63	14.68	14.46

Intensity data(cd)

C/γ(°)	90.0
0.0	13.95
45.0	12.04
90.0	10.41
135.0	10.01
180.0	9.11
225.0	9.34
270.0	10.63
315.0	12.88
360.0	13.95