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: CT01D03510CH
Luminaire: 92.70.183.00
Report No: NATA0100 Voltage(V): 9.4600
Test No: GC2019082932 Current(A): 0.3570
LampCAT: EDSION 2PHM10WW38P55020 LES 3MM Power (W): 3.3700
Lamp flux(lm): 381.0 PF: 0.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 45 Width(mm): 45
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 352.08
Efficiency(%): 92.41%
Lumens(lm)/Power(W): 104.48
Central intensity(cd): 5748.750
Maximum intensity(cd): 5748.750
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=10.3
[C90/270]Total=10.3
Field angle(10%Imax): [C0/180]Total=19.9
[C90/270]Total=19.9
Maximum s/h(1/2): C0_180=0.18 C90_270=0.18
Maximum s/h(1/4): C0_180=0.18 C90_270=0.18
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.41%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.099%

Equipment: GMS1980 Date: 2019/8/29 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	5748.750	0.000	0	.000%	.000%
1.0	5614.805	5.437	5.437	1.427%	1.544%
2.0	5211.492	15.539	20.976	4.078%	5.958%
3.0	4563.422	23.378	44.355	6.136%	12.598%
4.0	3818.742	28.058	72.412	7.364%	20.567%
5.0	3002.063	29.343	101.755	7.702%	28.901%
6.0	2189.250	27.282	129.037	7.161%	36.650%
7.0	1535.288	23.118	152.155	6.068%	43.216%
8.0	1097.473	18.842	170.997	4.945%	48.568%
9.0	783.366	15.243	186.24	4.001%	52.897%
10.0	557.993	12.139	198.379	3.186%	56.345%
11.0	424.673	9.819	208.198	2.577%	59.134%
12.0	331.179	8.263	216.461	2.169%	61.480%
13.0	260.459	7.021	223.482	1.843%	63.475%
14.0	231.729	6.300	229.782	1.654%	65.264%
15.0	185.393	5.726	235.508	1.503%	66.890%
16.0	159.251	5.050	240.558	1.325%	68.325%
17.0	139.268	4.649	245.207	1.220%	69.645%
18.0	122.520	4.316	249.523	1.133%	70.871%
19.0	107.698	4.005	253.528	1.051%	72.009%
20.0	95.892	3.726	257.255	.978%	73.067%
21.0	85.655	3.486	260.741	.915%	74.057%
22.0	76.816	3.265	264.006	.857%	74.984%
23.0	70.123	3.083	267.089	.809%	75.860%
24.0	64.069	2.934	270.023	.770%	76.693%
25.0	58.613	2.790	272.812	.732%	77.486%
26.0	54.120	2.661	275.473	.698%	78.242%
27.0	50.006	2.547	278.021	.669%	78.965%
28.0	45.668	2.422	280.443	.636%	79.653%
29.0	42.180	2.298	282.741	.603%	80.306%
30.0	39.185	2.197	284.938	.577%	80.930%
31.0	35.775	2.086	287.024	.548%	81.522%
32.0	33.159	1.975	288.999	.518%	82.083%
33.0	30.888	1.887	290.886	.495%	82.619%
34.0	28.561	1.799	292.685	.472%	83.130%
35.0	26.803	1.719	294.405	.451%	83.618%
36.0	25.298	1.659	296.064	.435%	84.090%
37.0	23.906	1.605	297.668	.421%	84.545%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	22.859	1.561	299.229	.410%	84.989%
39.0	21.945	1.529	300.759	.401%	85.423%
40.0	21.143	1.503	302.261	.394%	85.850%
41.0	20.644	1.488	303.749	.391%	86.273%
42.0	20.201	1.484	305.233	.389%	86.694%
43.0	19.821	1.483	306.716	.389%	87.115%
44.0	19.547	1.486	308.202	.390%	87.537%
45.0	19.322	1.494	309.695	.392%	87.961%
46.0	18.970	1.498	311.193	.393%	88.387%
47.0	18.717	1.499	312.692	.393%	88.813%
48.0	18.436	1.502	314.194	.394%	89.239%
49.0	18.134	1.502	315.696	.394%	89.666%
50.0	17.754	1.496	317.192	.393%	90.091%
51.0	17.445	1.489	318.681	.391%	90.514%
52.0	17.128	1.484	320.165	.389%	90.935%
53.0	16.770	1.475	321.639	.387%	91.354%
54.0	16.369	1.461	323.1	.383%	91.769%
55.0	15.982	1.444	324.544	.379%	92.179%
56.0	15.469	1.421	325.965	.373%	92.582%
57.0	14.934	1.390	327.355	.365%	92.977%
58.0	14.428	1.358	328.713	.356%	93.363%
59.0	13.795	1.319	330.032	.346%	93.738%
60.0	13.148	1.273	331.305	.334%	94.099%
61.0	12.354	1.217	332.522	.319%	94.445%
62.0	11.616	1.155	333.677	.303%	94.773%
63.0	10.913	1.096	334.773	.288%	95.084%
64.0	10.174	1.035	335.808	.272%	95.378%
65.0	9.555	0.976	336.784	.256%	95.655%
66.0	9.021	0.927	337.711	.243%	95.919%
67.0	8.487	0.880	338.591	.231%	96.169%
68.0	8.058	0.838	339.429	.220%	96.407%
69.0	7.699	0.804	340.233	.211%	96.635%
70.0	7.362	0.774	341.007	.203%	96.855%
71.0	7.073	0.746	341.753	.196%	97.067%
72.0	6.792	0.721	342.474	.189%	97.271%
73.0	6.525	0.696	343.17	.183%	97.469%
74.0	6.307	0.675	343.845	.177%	97.661%
75.0	6.068	0.654	344.499	.172%	97.846%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.850	0.633	345.131	.166%	98.026%
77.0	5.646	0.613	345.744	.161%	98.200%
78.0	5.456	0.594	346.338	.156%	98.369%
79.0	5.273	0.577	346.915	.151%	98.533%
80.0	5.077	0.558	347.473	.146%	98.691%
81.0	4.915	0.540	348.013	.142%	98.845%
82.0	4.781	0.526	348.539	.138%	98.994%
83.0	4.662	0.513	349.052	.135%	99.140%
84.0	4.563	0.503	349.555	.132%	99.283%
85.0	4.465	0.493	350.048	.129%	99.423%
86.0	4.338	0.481	350.529	.126%	99.559%
87.0	4.064	0.460	350.989	.121%	99.690%
88.0	3.600	0.420	351.409	.110%	99.809%
89.0	3.038	0.364	351.772	.095%	99.912%
90.0	2.588	0.308	352.081	.081%	100.000%

Zonal flux distribution table

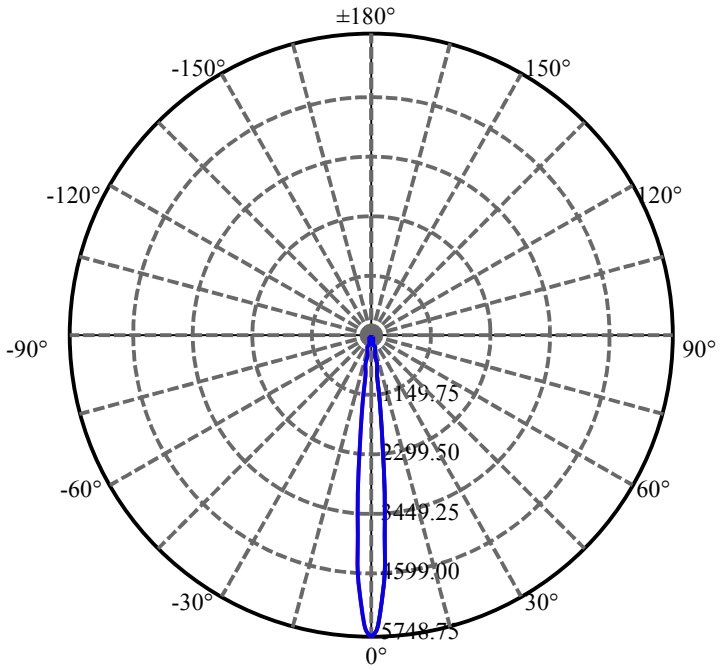
ZONAL LUMEN SUMMARY

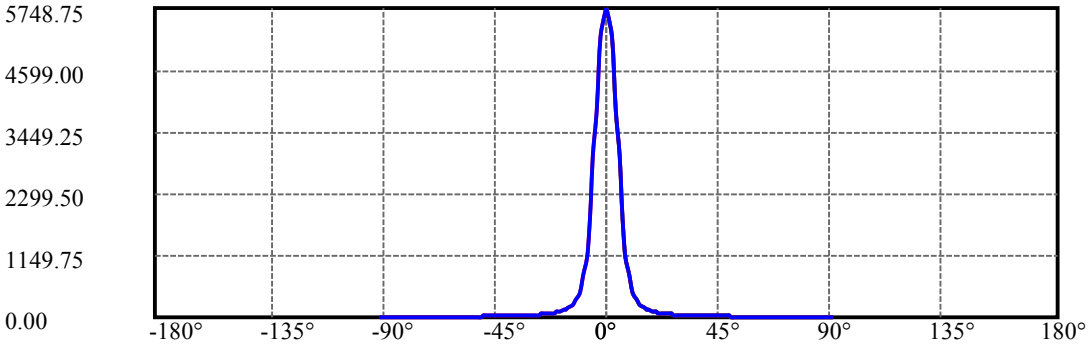
Zone	Lumens	%Lamp	%Fixt
0-30	284.94	74.79%	80.93%
0-40	302.26	79.33%	85.85%
0-60	331.31	86.96%	94.10%
0-90	351.77	92.33%	99.91%
0-120	351.77	92.33%	99.91%
0-180	352.08	92.41%	100.00%
60-90	21.74	5.71%	6.17%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.53	281.66	73.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	198.38
10-20	58.88
20-30	27.68
30-40	17.32
40-50	14.93
50-60	14.11
60-70	9.70
70-80	6.47
80-90	4.30
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):

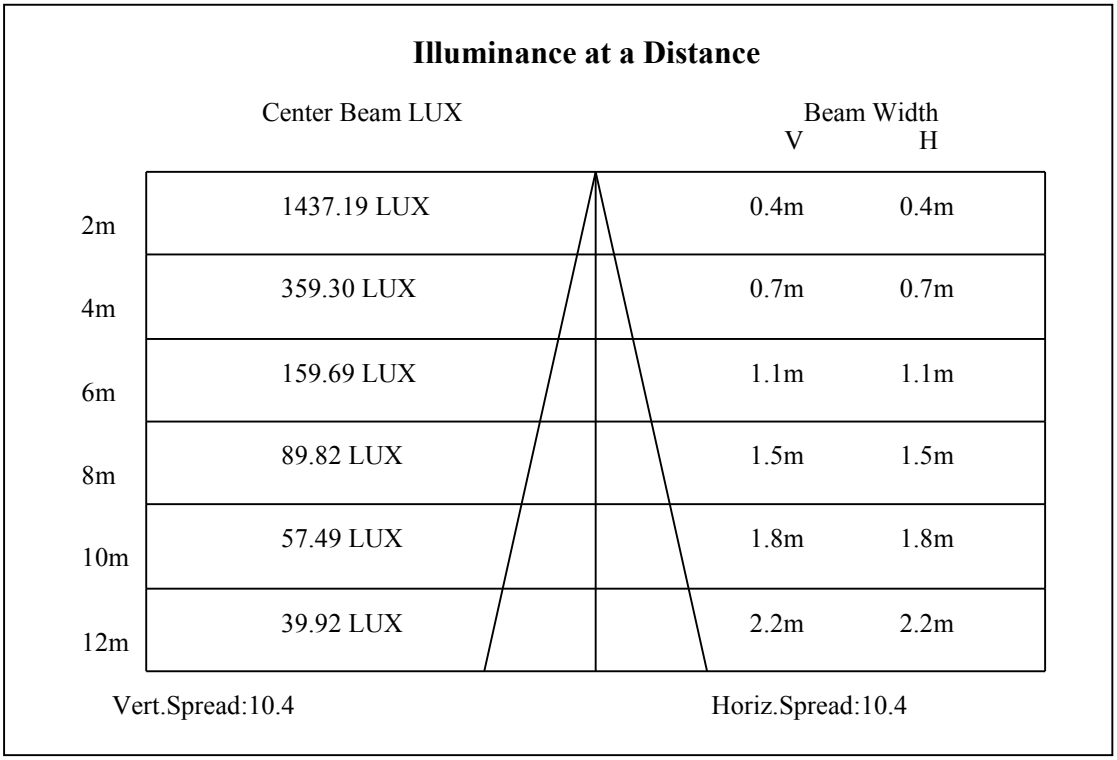
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:9.9 Right:9.9
:C90/270Left:9.9 Right:9.9

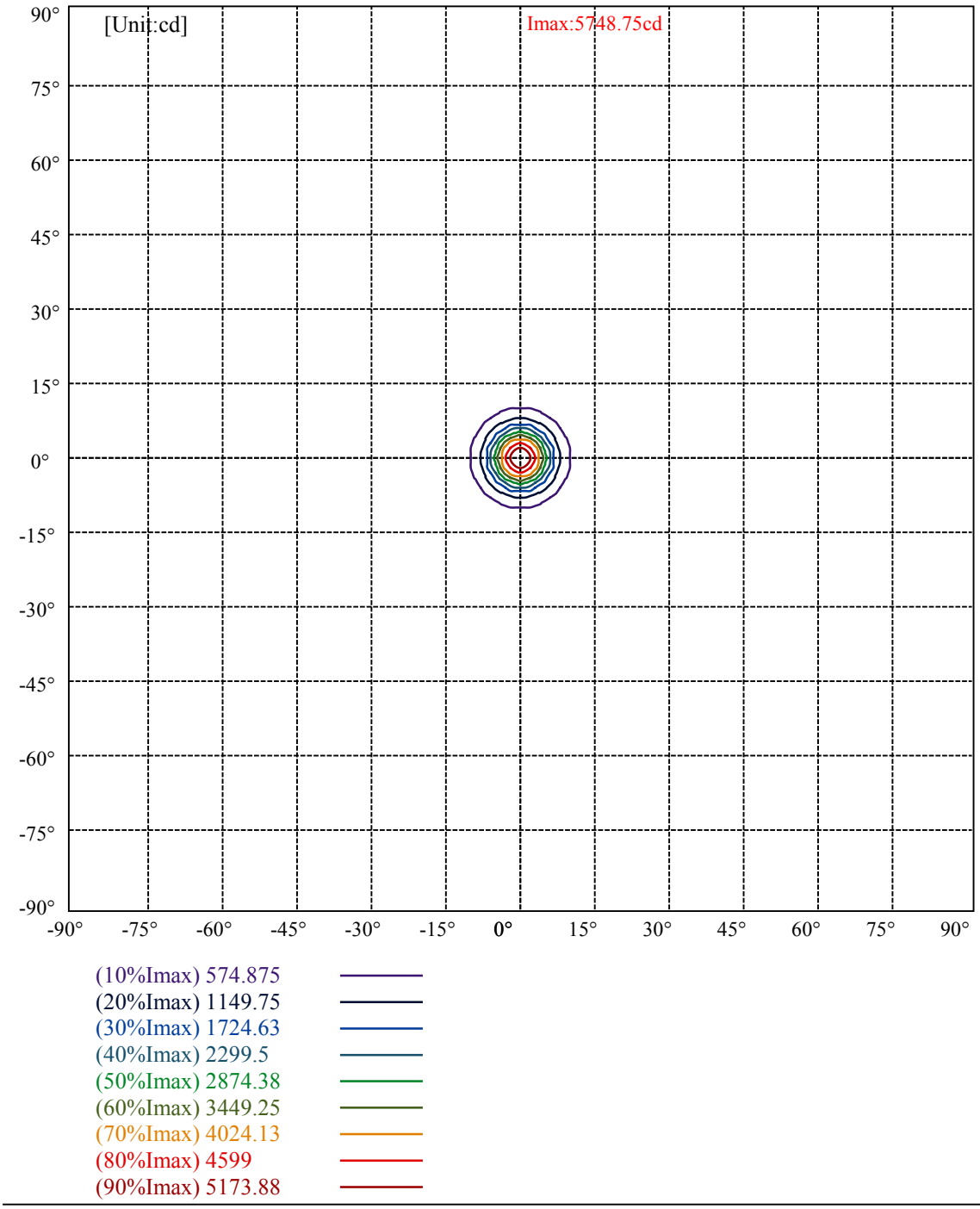
Beam Angle(50%Imax):C0/180Left:5.2 Right:5.2
:C90/270Left:5.2 Right:5.2

Lux distance Curve



Equipment: GMS1980 Date: 2019/8/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)



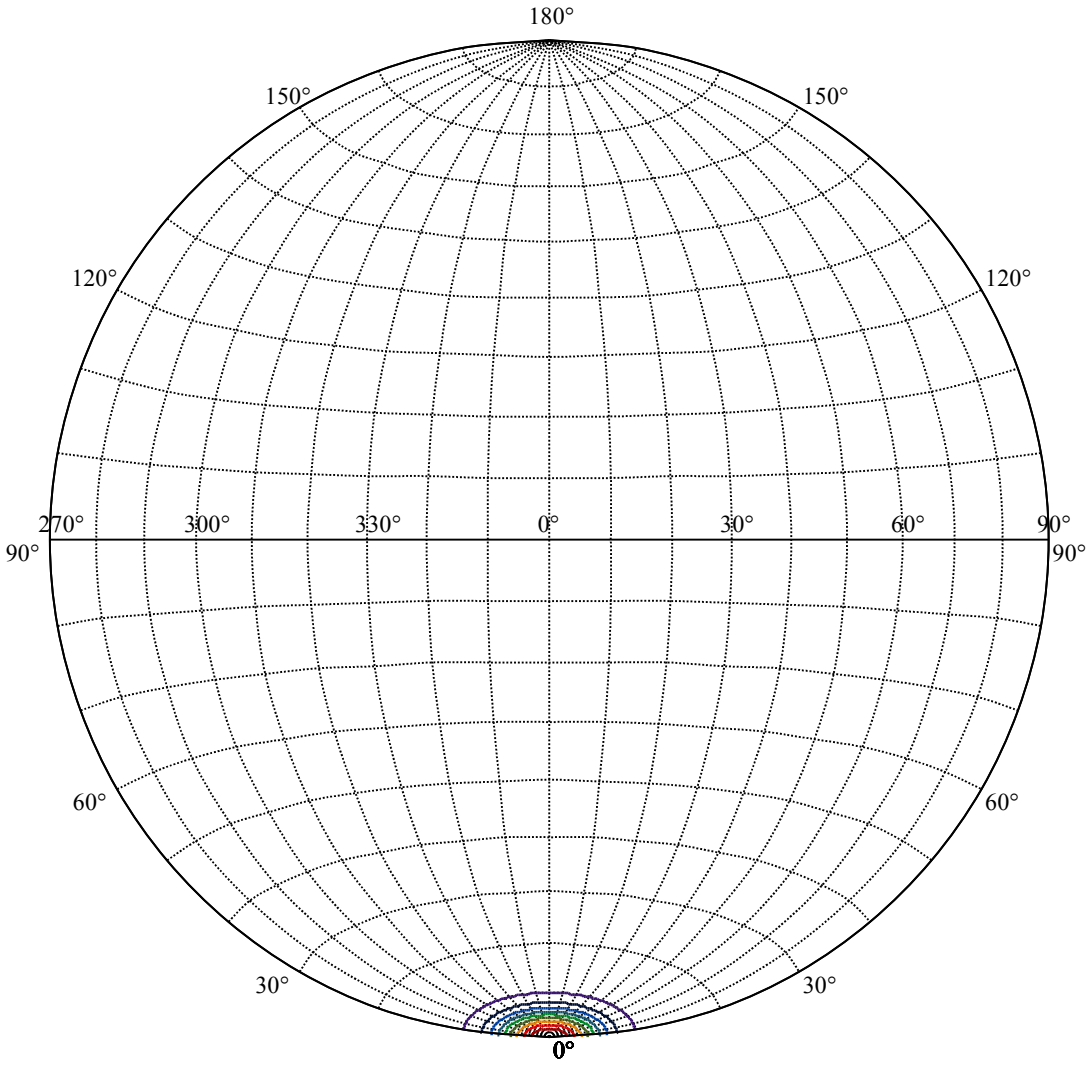
(10%Imax) 574.875
(20%Imax) 1149.75
(30%Imax) 1724.63
(40%Imax) 2299.5
(50%Imax) 2874.38
(60%Imax) 3449.25
(70%Imax) 4024.13
(80%Imax) 4599
(90%Imax) 5173.88

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/29
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:5748.75

(10%Imax) 574.875
(20%Imax) 1149.75
(30%Imax) 1724.63
(40%Imax) 2299.5
(50%Imax) 2874.38
(60%Imax) 3449.25
(70%Imax) 4024.13
(80%Imax) 4599
(90%Imax) 5173.88

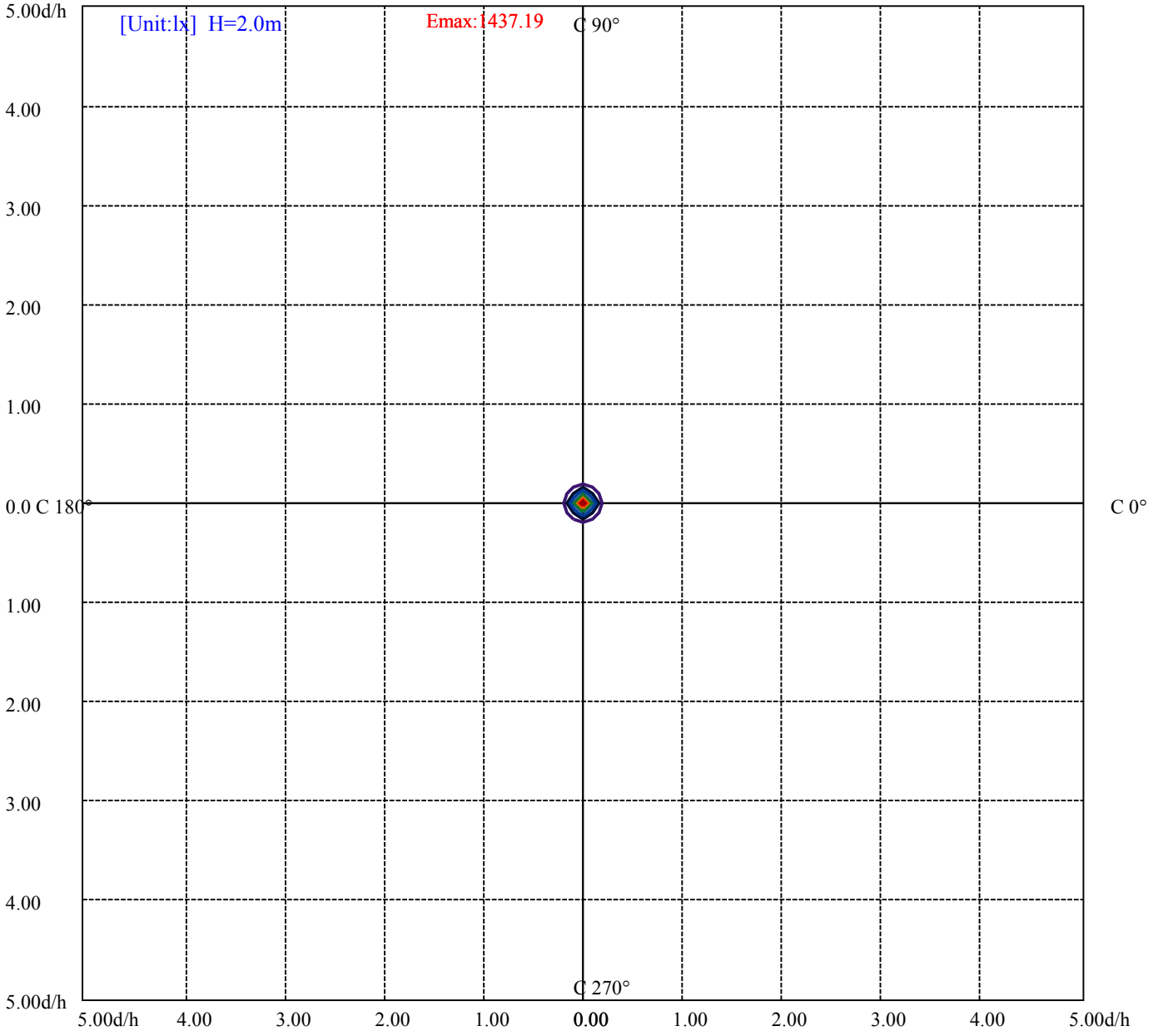
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/29
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata CT01D04508CH

ISO illuminance diagram

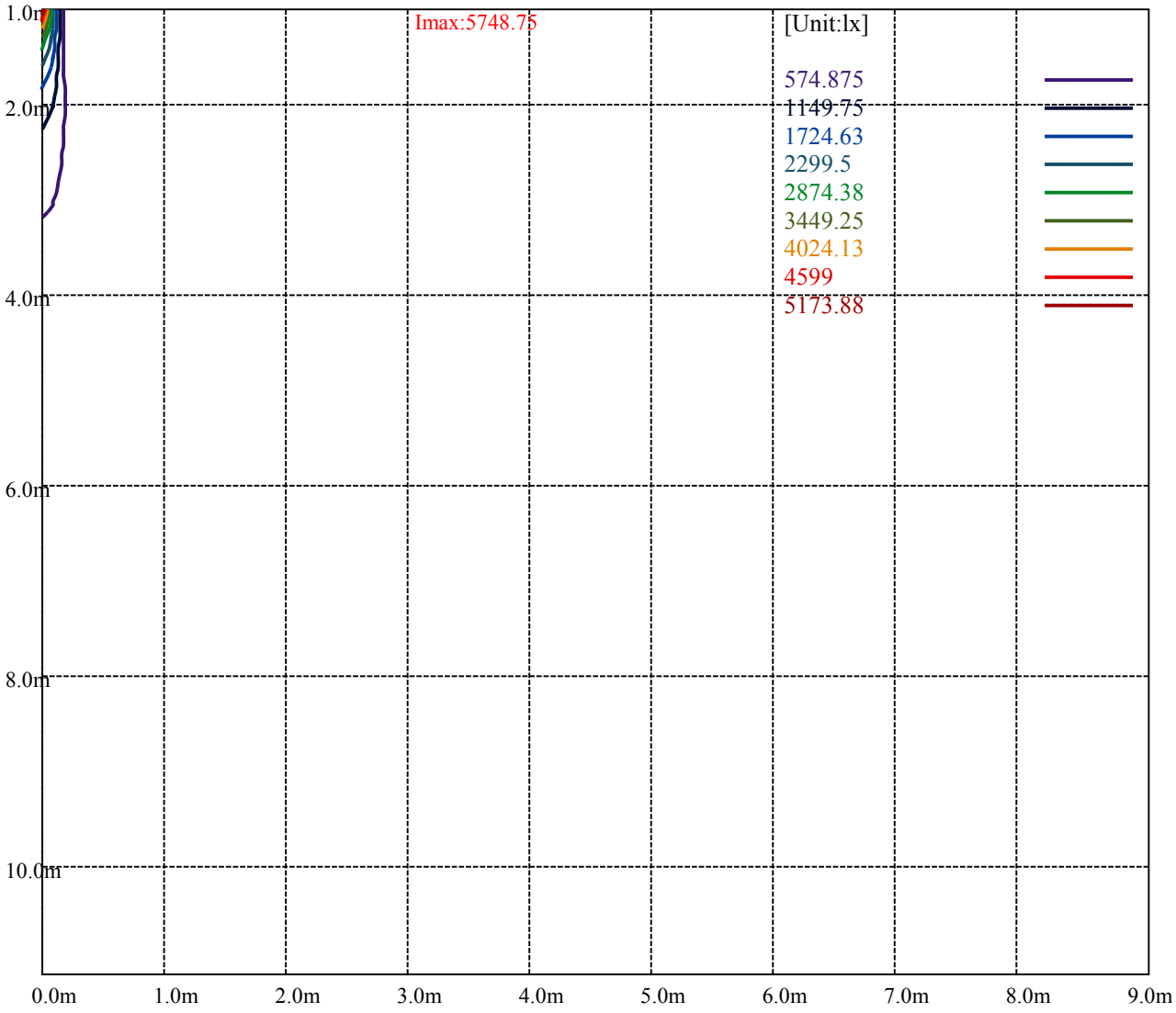


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/29
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/29
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata CT01D04508CH

Luminance Limitting Curve(no luminous side)

Luminance Table

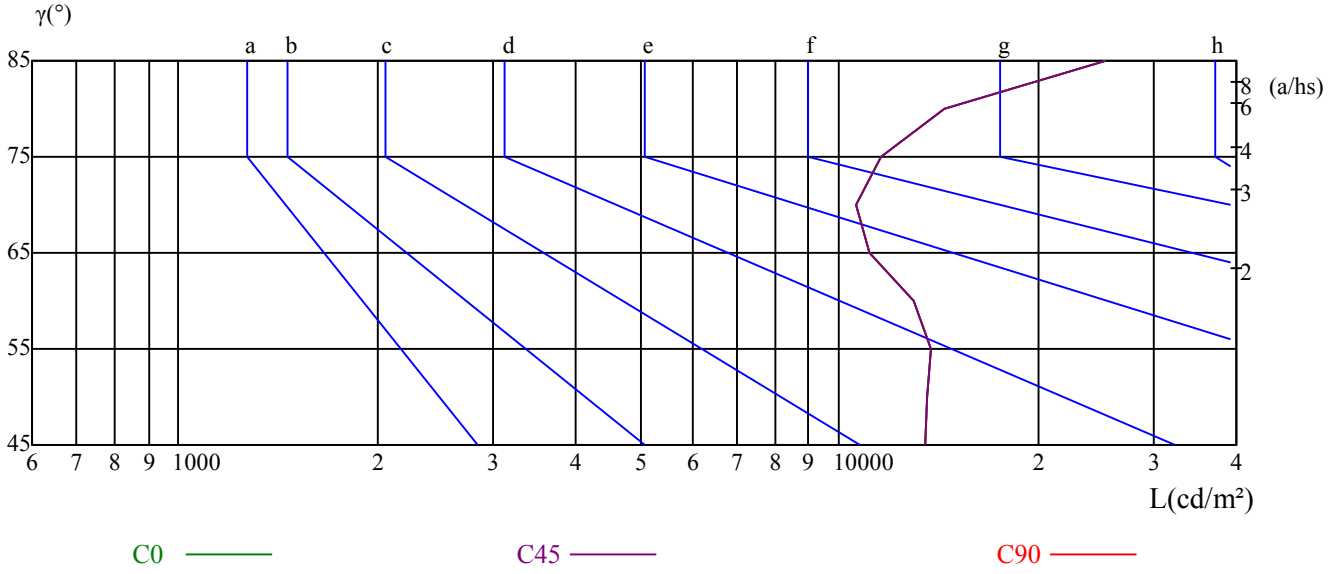
γ	45	50	55	60	65	70	75	80	85
C0	13494	13640	13760	12986	11166	10629	11578	14437	25298
C45	13494	13640	13760	12986	11166	10629	11578	14437	25298
C90	13494	13640	13760	12986	11166	10629	11578	14437	25298

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
11166	11166	11166	11578	11578	11578	25298	25298	25298

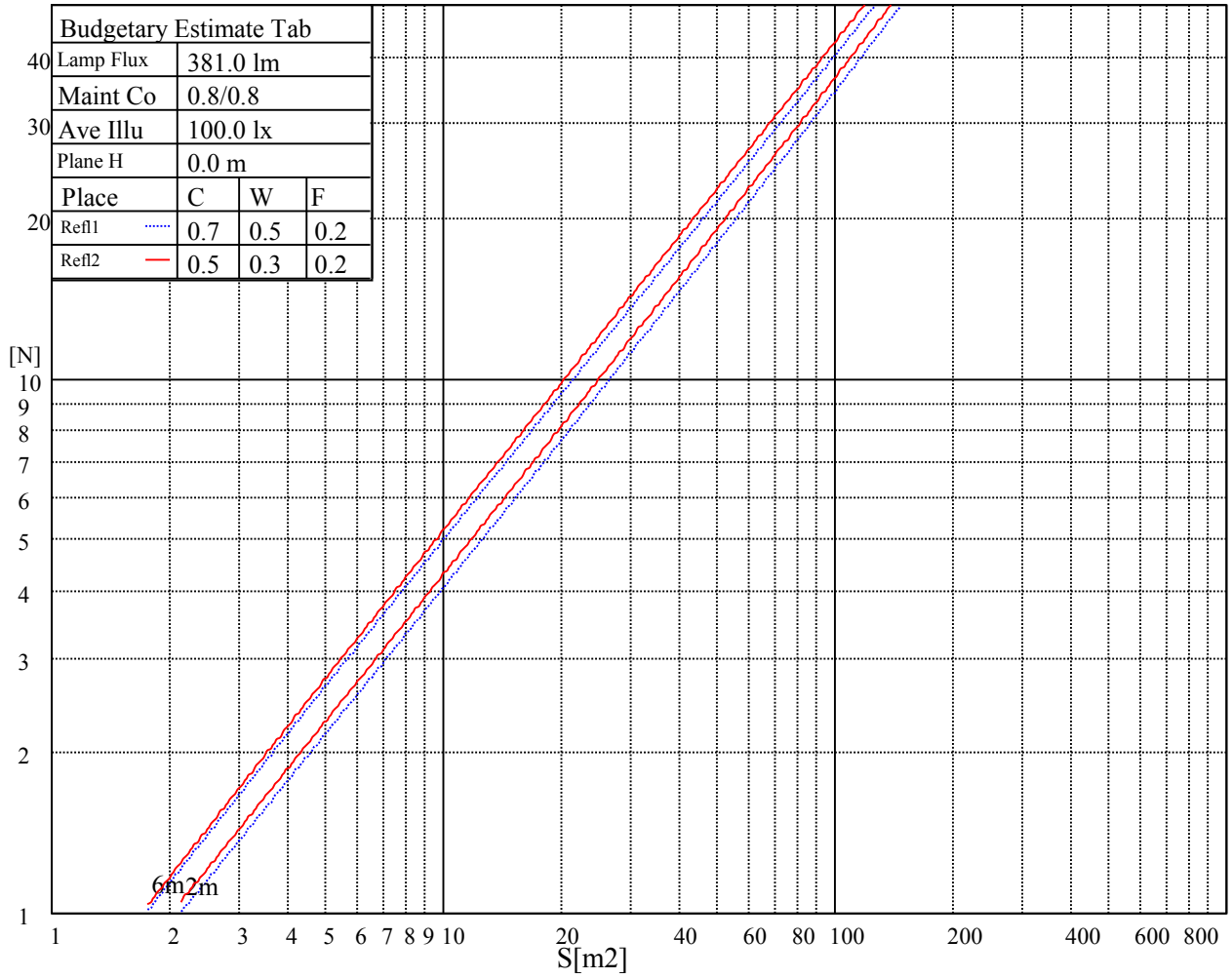
Glare Table

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

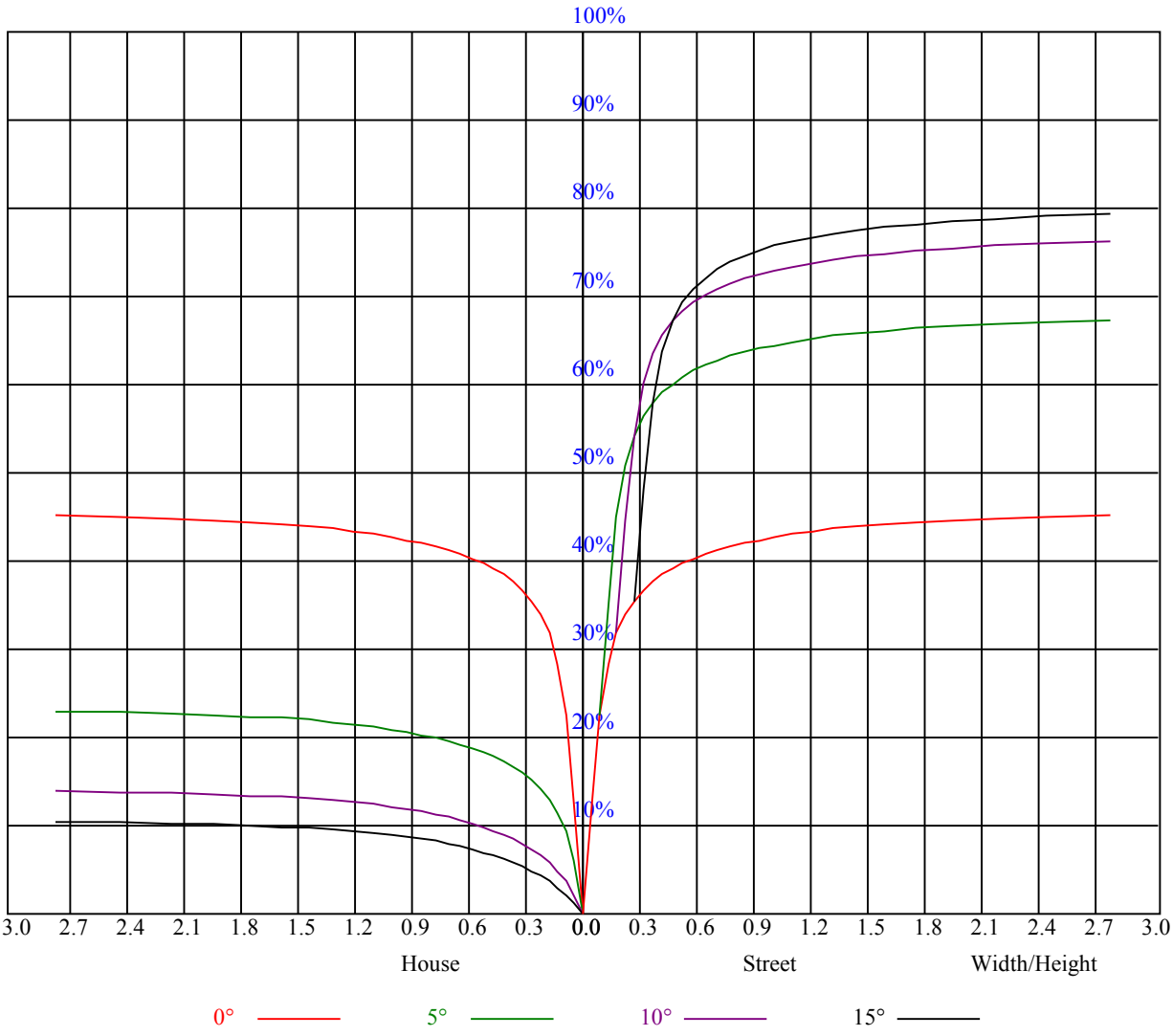


Equipment: GMS1980 Date: 2019/8/29 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.07	1.07	1.07	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.97	0.97	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.87
2	0.97	0.94	0.91	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.85	0.83
3	0.93	0.89	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.87	0.84	0.82	0.85	0.83	0.81	0.80
4	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.77
5	0.86	0.81	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
6	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
7	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
8	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.76	0.73	0.71	0.70
9	0.77	0.73	0.70	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
10	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.69	0.68

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/8/29	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	5736.38	5902.88	5700.38	5265.00	4667.06	3732.19	2908.69	2166.75	1557.00
45.0	5652.00	5770.13	5563.13	5128.88	4433.63	3715.88	2859.19	2041.31	1478.81
90.0	5738.06	5464.69	4975.88	4136.63	3384.00	2615.06	1931.63	1082.14	919.97
135.0	5868.56	5576.06	5003.44	4242.94	3467.81	2685.94	1829.81	1298.81	929.25
180.0	5736.38	5288.06	4713.19	3899.81	3102.19	2251.13	1621.13	1101.15	754.76
225.0	5652.00	5276.25	4727.25	3855.94	3064.50	2298.38	1356.19	1111.95	812.19
270.0	5738.06	5761.13	5464.13	4947.75	4166.44	3267.56	2471.06	1720.69	1229.63
315.0	5868.56	5879.25	5544.56	5030.44	4264.31	3450.38	2536.31	1759.50	1098.17
360.0	5736.38	5902.88	5700.38	5265.00	4667.06	3732.19	2908.69	2166.75	1557.00

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1025.44	740.25	548.44	406.69	314.44	290.81	210.83	178.48	157.73
45.0	1029.94	722.25	534.94	406.13	302.06	286.31	204.58	174.54	150.53
90.0	675.45	473.63	365.63	289.91	232.82	191.93	165.94	142.26	126.00
135.0	628.88	470.25	360.00	284.63	221.79	190.69	166.28	146.08	127.29
180.0	555.08	406.69	311.57	255.26	217.52	182.19	161.78	144.34	126.90
225.0	606.60	435.43	345.32	282.49	226.69	194.46	169.26	147.66	129.88
270.0	855.56	611.44	471.94	364.50	290.81	284.06	205.14	170.89	149.85
315.0	889.99	604.01	459.56	359.83	277.54	233.38	199.35	169.76	145.97
360.0	1025.44	740.25	548.44	406.69	314.44	290.81	210.83	178.48	157.73

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	137.48	121.50	107.16	94.39	84.99	76.61	69.41	63.51	58.56
45.0	133.14	116.04	102.54	91.86	81.62	75.21	68.23	62.72	58.11
90.0	110.08	96.47	86.79	77.79	70.26	64.63	59.91	54.28	49.95
135.0	112.84	98.89	87.13	79.09	70.48	65.03	59.34	54.28	50.23
180.0	112.44	100.07	88.76	79.26	72.23	65.25	60.41	56.42	52.03
225.0	114.24	102.66	93.21	83.31	75.43	69.36	63.00	57.66	53.27
270.0	131.34	115.31	101.70	91.35	81.34	73.46	67.50	61.14	56.31
315.0	128.59	110.64	99.84	88.20	78.19	71.44	64.74	58.89	54.51
360.0	137.48	121.50	107.16	94.39	84.99	76.61	69.41	63.51	58.56

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	54.51	50.85	47.70	44.55	41.63	39.94	37.86	36.00	34.37
45.0	53.72	48.66	44.83	41.34	37.18	34.14	31.44	28.63	26.49
90.0	46.18	42.24	38.87	35.72	32.46	29.53	27.39	25.37	23.85
135.0	46.74	41.79	38.59	36.00	32.01	29.64	27.73	25.14	23.40
180.0	48.66	45.62	42.02	39.94	37.74	35.33	33.75	32.40	31.11
225.0	48.99	44.16	40.61	37.41	34.03	31.05	28.58	26.10	24.08
270.0	51.08	46.69	43.09	39.66	35.94	33.13	30.43	27.68	25.71
315.0	50.18	45.34	41.74	38.87	35.21	32.51	29.93	27.17	25.43
360.0	54.51	50.85	47.70	44.55	41.63	39.94	37.86	36.00	34.37

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	32.91	31.78	30.88	30.38	30.09	29.93	30.04	30.21	30.43
45.0	24.92	23.46	22.22	21.04	19.91	19.01	18.11	17.38	16.88
90.0	22.22	20.76	19.63	18.68	17.49	17.04	16.59	16.37	16.14
135.0	22.28	20.81	19.91	18.96	18.00	17.49	16.88	16.26	15.92
180.0	30.15	29.64	29.19	28.91	28.97	29.08	29.19	29.19	29.03
225.0	22.44	20.93	19.69	18.62	17.83	17.16	16.54	15.98	15.69
270.0	23.85	22.05	20.53	19.35	18.34	17.61	17.04	16.65	16.31
315.0	23.63	21.83	20.81	19.63	18.51	17.83	17.21	16.54	15.98
360.0	32.91	31.78	30.88	30.38	30.09	29.93	30.04	30.21	30.43

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	30.38	30.26	29.98	29.59	28.74	27.51	26.21	24.98	23.51
45.0	16.48	16.03	15.69	15.30	14.91	14.63	14.23	13.89	13.56
90.0	16.26	16.31	16.59	16.93	17.38	17.89	18.56	19.13	19.86
135.0	15.53	14.96	14.57	14.06	13.73	13.33	12.99	12.77	12.38
180.0	28.91	28.46	27.73	26.94	25.88	24.53	23.34	21.99	20.36
225.0	15.30	14.74	14.46	14.12	13.78	13.39	13.11	12.71	12.38
270.0	16.09	15.92	16.03	16.26	16.76	17.27	17.94	18.79	19.58
315.0	15.64	15.08	14.68	14.29	13.89	13.50	13.16	12.77	12.54
360.0	30.38	30.26	29.98	29.59	28.74	27.51	26.21	24.98	23.51

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.11	20.70	18.96	17.27	15.86	14.51	13.11	12.09	11.25
45.0	13.28	12.88	12.49	12.15	11.76	11.25	10.86	10.52	10.13
90.0	20.48	20.98	21.21	21.26	21.04	20.48	19.63	18.11	16.65
135.0	11.98	11.64	11.36	10.97	10.63	10.35	10.18	9.68	9.28
180.0	18.79	17.27	15.64	14.29	12.99	11.76	11.03	10.29	9.90
225.0	11.93	11.64	11.25	10.80	10.52	10.13	9.84	9.34	8.94
270.0	20.31	20.98	21.49	21.71	21.71	21.26	20.36	19.01	17.33
315.0	12.09	11.76	11.36	11.03	10.91	10.63	10.18	9.79	9.45
360.0	22.11	20.70	18.96	17.27	15.86	14.51	13.11	12.09	11.25

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.58	10.18	9.79	9.45	9.11	8.89	8.55	8.27	7.93
45.0	9.73	9.39	9.00	8.66	8.38	8.04	7.76	7.48	7.20
90.0	15.08	13.16	11.70	10.41	9.17	8.38	7.71	7.14	6.86
135.0	9.00	8.72	8.44	8.27	7.88	7.54	7.37	7.03	6.81
180.0	9.56	9.17	8.83	8.55	8.33	7.99	7.65	7.37	7.03
225.0	8.61	8.33	7.99	7.71	7.43	7.14	6.86	6.53	6.30
270.0	15.64	13.67	12.21	10.86	9.56	8.78	8.21	7.76	7.43
315.0	9.11	8.78	8.49	8.27	8.04	7.71	7.48	7.31	7.03
360.0	10.58	10.18	9.79	9.45	9.11	8.89	8.55	8.27	7.93

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.54	7.26	6.92	6.58	6.36	6.13	5.85	5.63	5.40
45.0	6.92	6.64	6.41	6.13	5.91	5.74	5.51	5.34	5.12
90.0	6.64	6.41	6.24	6.08	5.85	5.68	5.57	5.40	5.23
135.0	6.53	6.24	6.08	5.85	5.63	5.46	5.29	5.06	4.95
180.0	6.75	6.53	6.30	6.08	5.79	5.51	5.29	5.06	4.73
225.0	5.96	5.63	5.51	5.34	5.18	4.95	4.78	4.67	4.50
270.0	7.20	6.98	6.75	6.53	6.36	6.13	5.96	5.79	5.63
315.0	6.81	6.53	6.24	5.96	5.74	5.57	5.40	5.23	5.06
360.0	7.54	7.26	6.92	6.58	6.36	6.13	5.85	5.63	5.40

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.12	4.89	4.61	4.50	4.33	4.22	4.11	3.94	3.60
45.0	4.95	4.78	4.61	4.50	4.39	4.28	4.16	4.05	3.60
90.0	5.12	5.01	4.95	4.84	4.73	4.56	4.39	3.71	3.04
135.0	4.84	4.73	4.67	4.56	4.44	4.39	3.99	3.38	2.81
180.0	4.50	4.33	4.16	3.99	3.94	3.77	3.32	3.04	2.48
225.0	4.39	4.33	4.33	4.39	4.39	4.22	3.43	2.81	2.31
270.0	5.46	5.40	5.23	5.12	5.01	4.84	4.67	3.99	3.26
315.0	4.95	4.78	4.73	4.61	4.50	4.44	4.44	3.88	3.21
360.0	5.12	4.89	4.61	4.50	4.33	4.22	4.11	3.94	3.60

Intensity data(cd)

C/γ(°)	90.0
0.0	2.98
45.0	2.98
90.0	2.87
135.0	2.31
180.0	2.08
225.0	1.80
270.0	2.76
315.0	2.93
360.0	2.98