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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1-0870-A
Luminaire: 92.70.043.00

Report No: NATA0100	Voltage(V): 8.9300
Test No: GC2019092607	Current(A): 0.2990
LampCAT: EDISON 2PHM10WW38P55020	Power (W): 2.6700
Lamp flux(lm): 327.2	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): 293.08
Efficiency(%): 89.57%
Lumens(lm)/Power(W): 109.77
Central intensity(cd): 4470.750
Maximum intensity(cd): 4470.750
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=9.5
[C90/270]Total=9.5
Field angle(10%Imax): [C0/180]Total=19.0
[C90/270]Total=19.0
Maximum s/h(1/2): C0_180=0.17 C90_270=0.17
Maximum s/h(1/4): C0_180=0.17 C90_270=0.17
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.57%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.428%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4470.750	0.000	0	.000%	.000%
1.0	4365.563	4.228	4.228	1.292%	1.443%
2.0	3975.398	11.972	16.2	3.659%	5.528%
3.0	3411.563	17.667	33.867	5.400%	11.556%
4.0	2780.227	20.726	54.593	6.334%	18.628%
5.0	2061.000	20.827	75.42	6.365%	25.734%
6.0	1469.292	18.553	93.972	5.670%	32.064%
7.0	1079.670	15.821	109.794	4.835%	37.463%
8.0	752.513	13.113	122.906	4.008%	41.937%
9.0	520.538	10.317	133.223	3.153%	45.457%
10.0	379.202	8.142	141.366	2.488%	48.235%
11.0	300.628	6.793	148.159	2.076%	50.553%
12.0	237.157	5.879	154.037	1.797%	52.559%
13.0	204.912	5.246	159.284	1.603%	54.349%
14.0	180.197	4.929	164.213	1.507%	56.031%
15.0	168.117	4.782	168.995	1.461%	57.663%
16.0	161.128	4.824	173.819	1.474%	59.309%
17.0	156.586	4.948	178.767	1.512%	60.997%
18.0	152.873	5.102	183.869	1.559%	62.738%
19.0	150.314	5.275	189.144	1.612%	64.538%
20.0	145.744	5.419	194.563	1.656%	66.387%
21.0	141.827	5.522	200.085	1.688%	68.271%
22.0	137.672	5.617	205.701	1.717%	70.187%
23.0	133.854	5.697	211.399	1.741%	72.131%
24.0	130.064	5.770	217.169	1.764%	74.100%
25.0	125.719	5.816	222.985	1.777%	76.084%
26.0	122.112	5.850	228.835	1.788%	78.081%
27.0	118.596	5.889	234.724	1.800%	80.090%
28.0	115.362	5.923	240.647	1.810%	82.111%
29.0	111.101	5.925	246.572	1.811%	84.133%
30.0	107.191	5.894	252.466	1.801%	86.144%
31.0	104.048	5.878	258.344	1.797%	88.149%
32.0	98.149	5.793	264.137	1.770%	90.126%
33.0	87.314	5.464	269.601	1.670%	91.990%
34.0	71.220	4.798	274.399	1.466%	93.627%
35.0	53.719	3.880	278.279	1.186%	94.951%
36.0	34.755	2.817	281.096	.861%	95.912%
37.0	20.348	1.797	282.893	.549%	96.526%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	9.548	0.998	283.891	.305%	96.866%
39.0	4.577	0.482	284.373	.147%	97.031%
40.0	3.586	0.285	284.658	.087%	97.128%
41.0	3.220	0.242	284.9	.074%	97.211%
42.0	2.981	0.225	285.125	.069%	97.287%
43.0	2.827	0.215	285.341	.066%	97.361%
44.0	2.672	0.208	285.548	.063%	97.432%
45.0	2.573	0.202	285.75	.062%	97.500%
46.0	2.538	0.200	285.95	.061%	97.569%
47.0	2.524	0.201	286.151	.062%	97.637%
48.0	2.461	0.202	286.352	.062%	97.706%
49.0	2.440	0.201	286.554	.062%	97.775%
50.0	2.370	0.201	286.754	.061%	97.843%
51.0	2.250	0.195	286.95	.060%	97.910%
52.0	2.130	0.188	287.138	.057%	97.974%
53.0	2.004	0.180	287.318	.055%	98.035%
54.0	1.920	0.173	287.49	.053%	98.094%
55.0	1.849	0.168	287.659	.051%	98.152%
56.0	1.779	0.164	287.823	.050%	98.208%
57.0	1.737	0.161	287.983	.049%	98.263%
58.0	1.737	0.161	288.144	.049%	98.317%
59.0	1.730	0.162	288.306	.050%	98.373%
60.0	1.737	0.164	288.47	.050%	98.429%
61.0	1.737	0.166	288.636	.051%	98.485%
62.0	1.779	0.169	288.805	.052%	98.543%
63.0	1.856	0.177	288.982	.054%	98.603%
64.0	1.927	0.186	289.167	.057%	98.667%
65.0	1.934	0.191	289.358	.058%	98.732%
66.0	1.814	0.187	289.545	.057%	98.796%
67.0	1.596	0.171	289.717	.052%	98.854%
68.0	1.498	0.157	289.874	.048%	98.908%
69.0	1.463	0.151	290.025	.046%	98.959%
70.0	1.463	0.150	290.175	.046%	99.010%
71.0	1.448	0.150	290.325	.046%	99.062%
72.0	1.420	0.149	290.474	.046%	99.113%
73.0	1.406	0.148	290.622	.045%	99.163%
74.0	1.406	0.148	290.77	.045%	99.213%
75.0	1.378	0.147	290.917	.045%	99.264%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.392	0.147	291.064	.045%	99.314%
77.0	1.392	0.148	291.213	.045%	99.364%
78.0	1.371	0.148	291.361	.045%	99.415%
79.0	1.364	0.147	291.508	.045%	99.465%
80.0	1.357	0.147	291.654	.045%	99.515%
81.0	1.336	0.146	291.8	.045%	99.565%
82.0	1.343	0.145	291.945	.044%	99.614%
83.0	1.322	0.145	292.09	.044%	99.664%
84.0	1.301	0.143	292.233	.044%	99.713%
85.0	1.301	0.142	292.375	.043%	99.761%
86.0	1.294	0.142	292.517	.043%	99.809%
87.0	1.294	0.142	292.658	.043%	99.858%
88.0	1.266	0.140	292.799	.043%	99.906%
89.0	1.266	0.139	292.937	.042%	99.953%
90.0	1.252	0.138	293.075	.042%	100.000%

Zonal flux distribution table

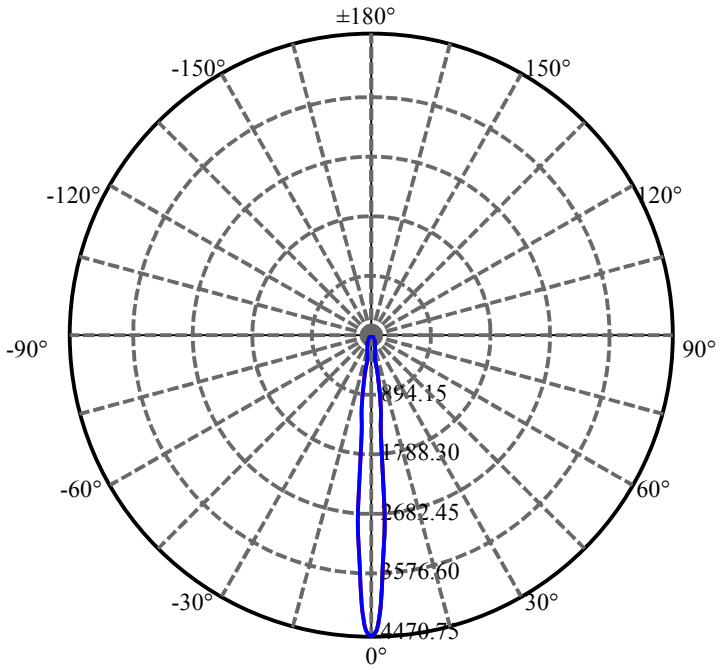
ZONAL LUMEN SUMMARY

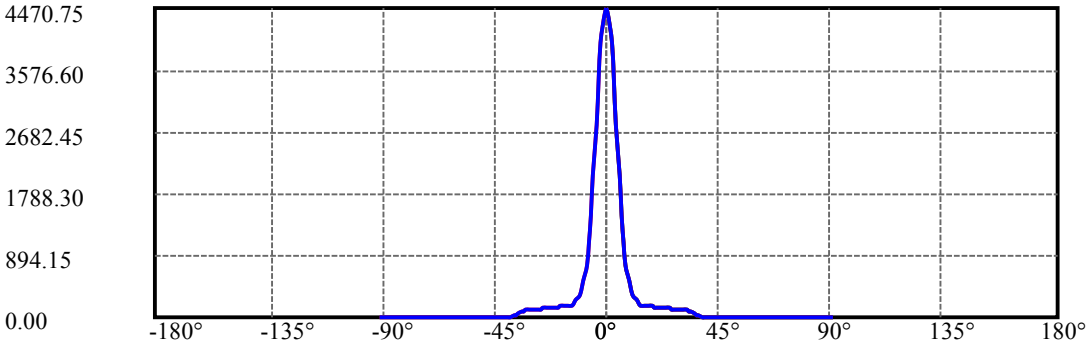
Zone	Lumens	%Lamp	%Fixt
0-30	252.47	77.16%	86.14%
0-40	284.66	87.00%	97.13%
0-60	288.47	88.16%	98.43%
0-90	292.94	89.53%	99.95%
0-120	292.94	89.53%	99.95%
0-180	293.08	89.57%	100.00%
60-90	4.63	1.42%	1.58%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.96	234.46	71.66%	80.00%

ZONAL LUMEN SUMMARY

0-10	141.37
10-20	53.20
20-30	57.90
30-40	32.19
40-50	2.10
50-60	1.72
60-70	1.71
70-80	1.48
80-90	1.28
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):

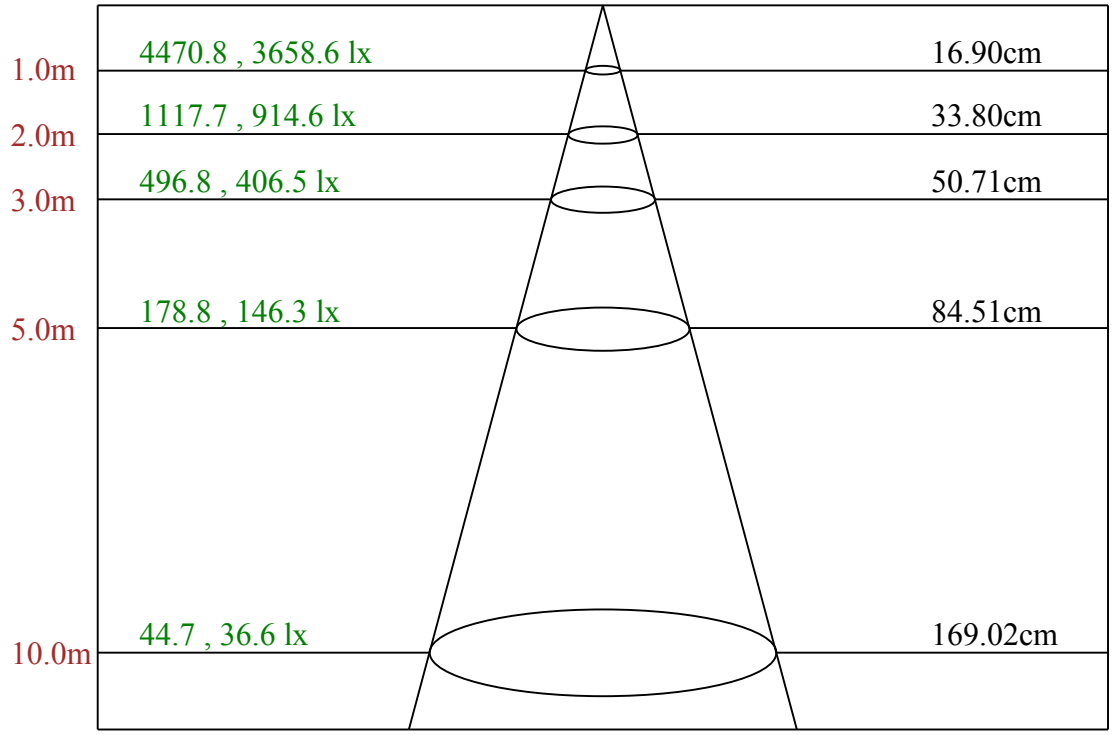
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:9.5 Right:9.5
:C90/270Left:9.5 Right:9.5

Beam Angle(50%Imax):C0/180Left:4.8 Right:4.8
:C90/270Left:4.8 Right:4.8

Lux distance Curve

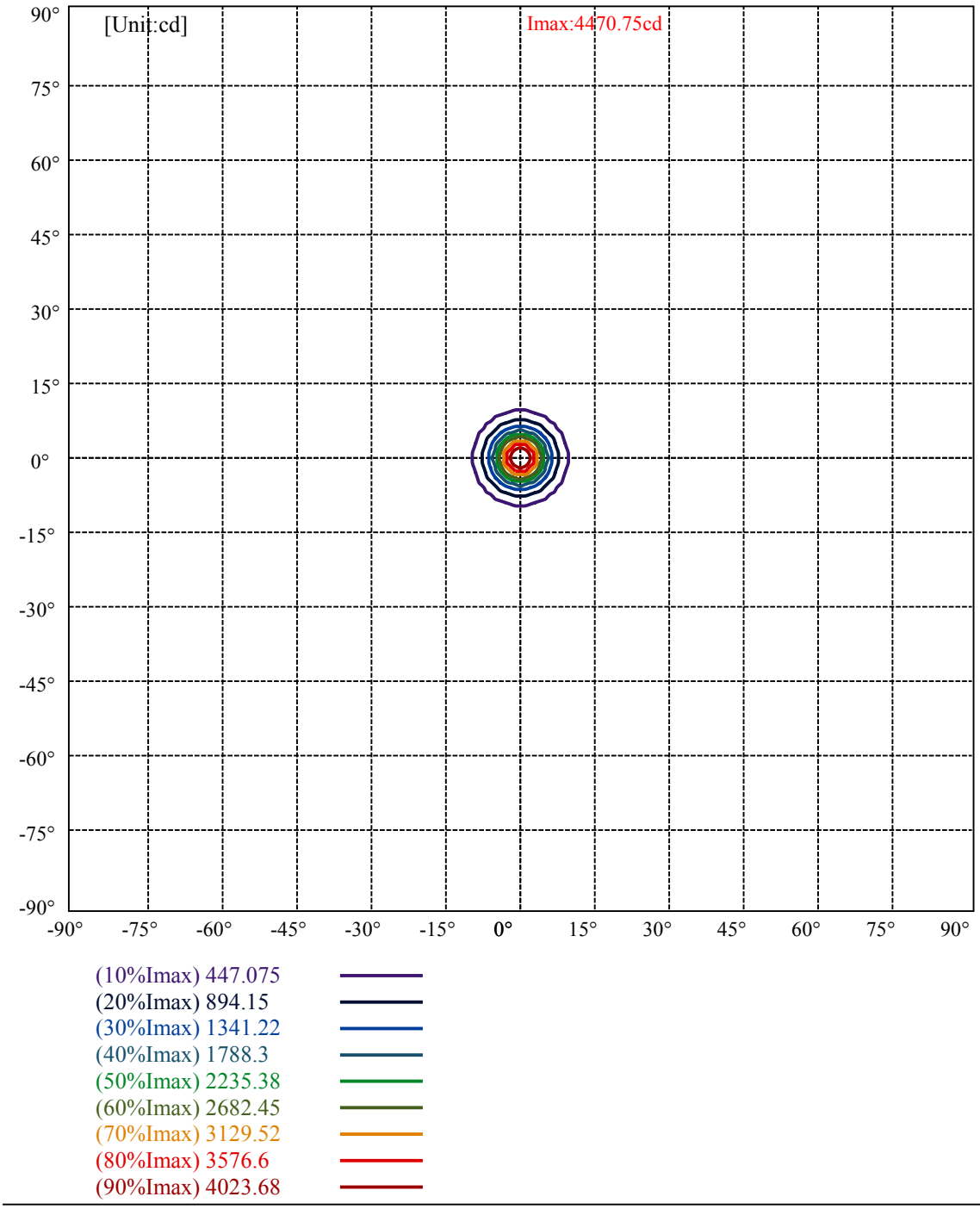


Max , Ave

Beam angle of C0 plane 9.66

Equipment: GMS1980	Date: 2019/9/26	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

ISO-Intensity(V-H)

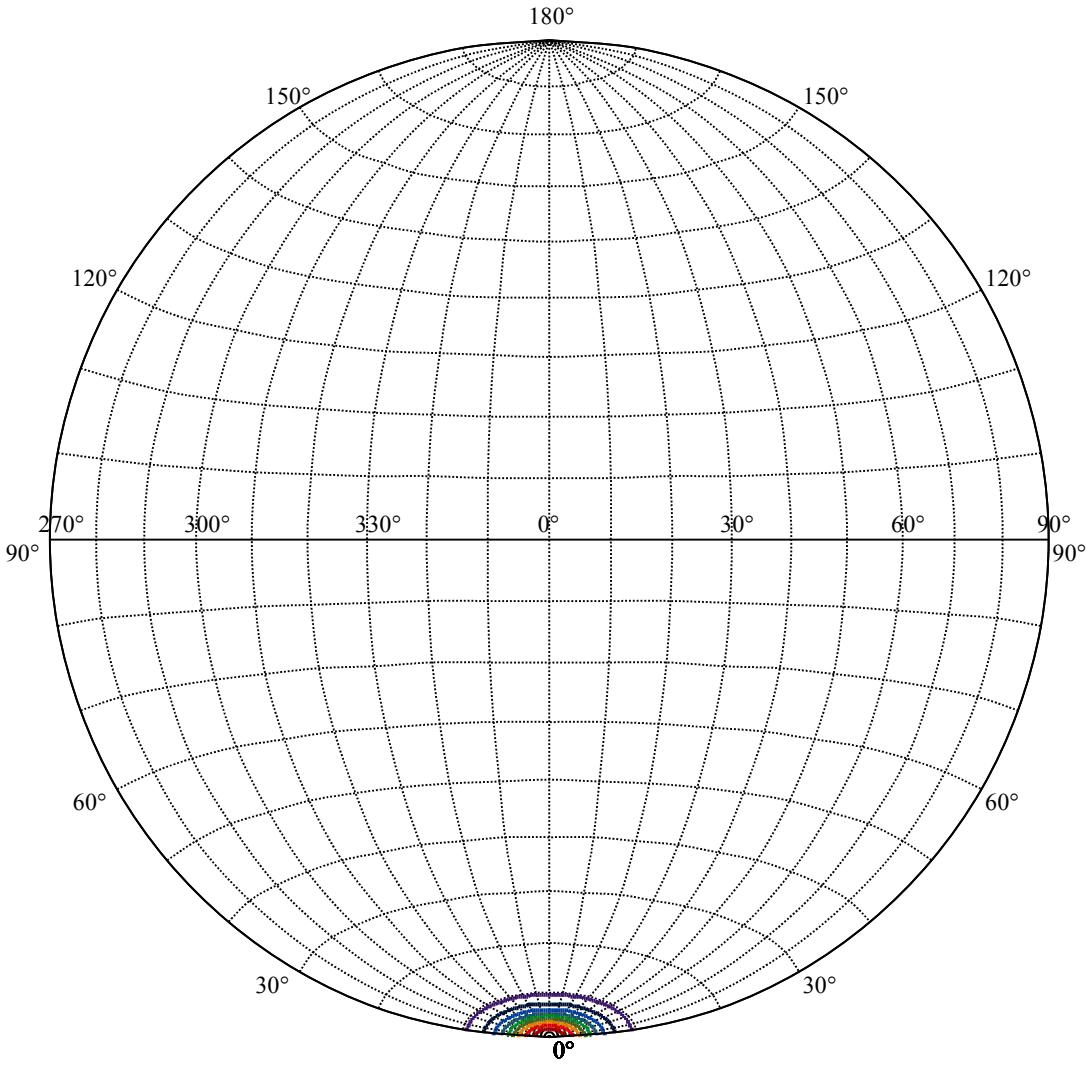


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4470.75

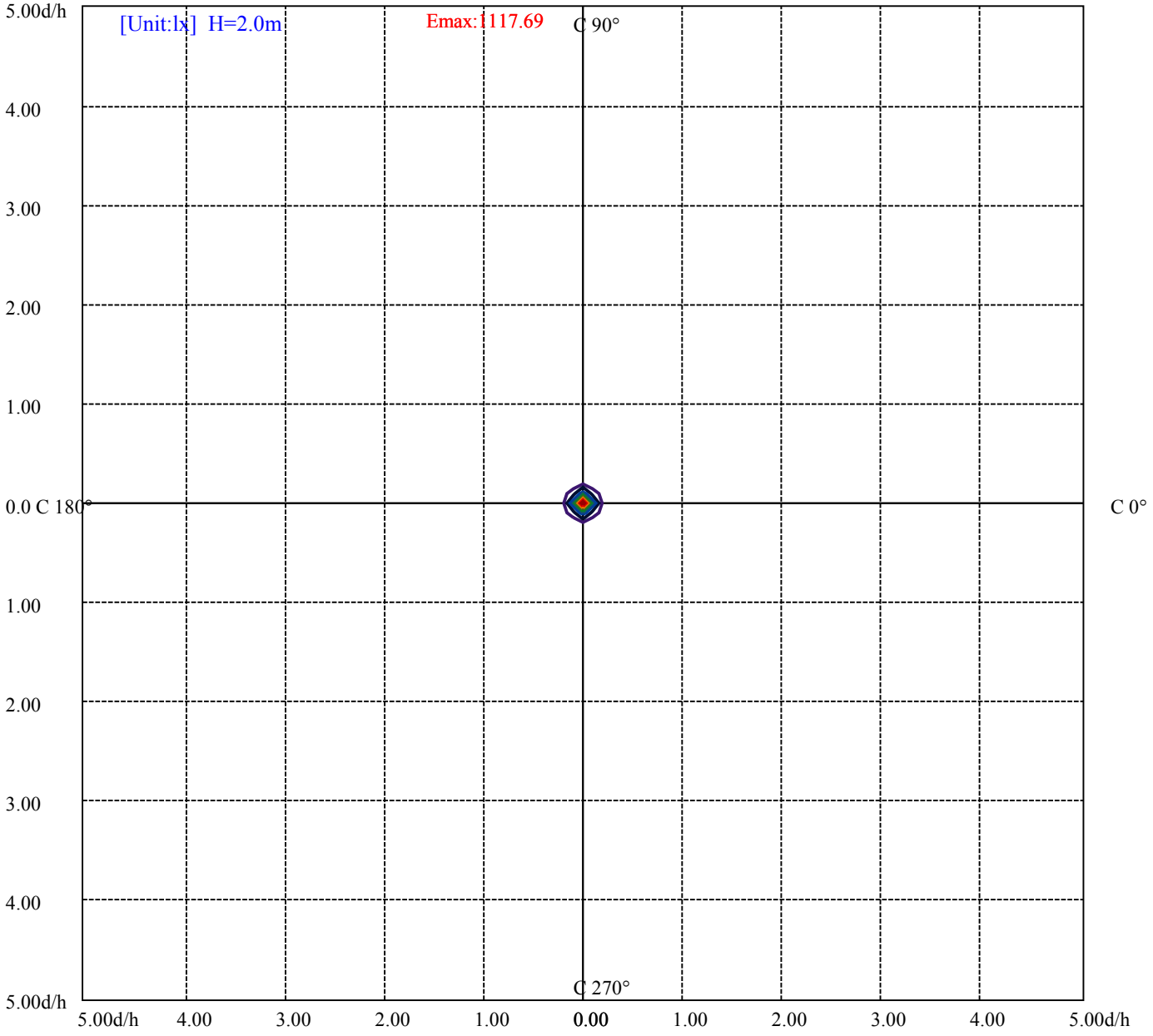
(10%Imax) 447.075
(20%Imax) 894.15
(30%Imax) 1341.22
(40%Imax) 1788.3
(50%Imax) 2235.38
(60%Imax) 2682.45
(70%Imax) 3129.52
(80%Imax) 3576.6
(90%Imax) 4023.68

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

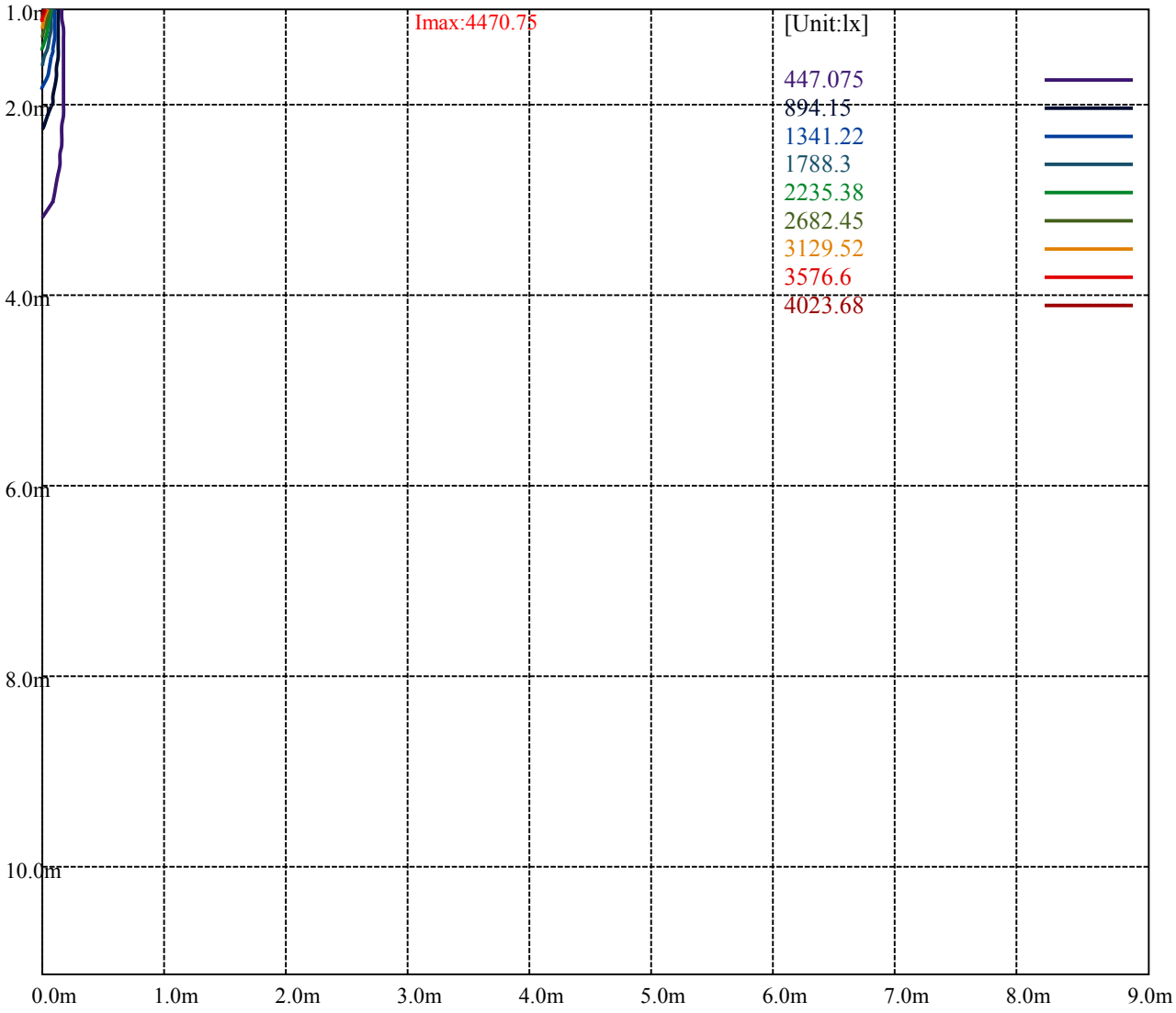


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

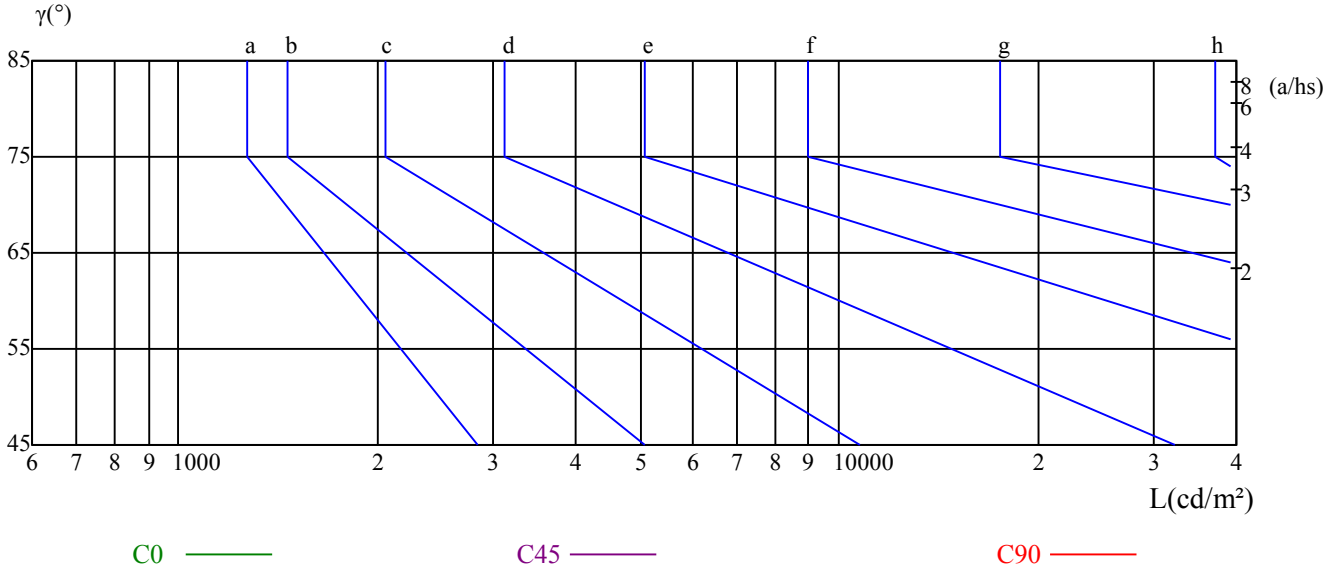
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

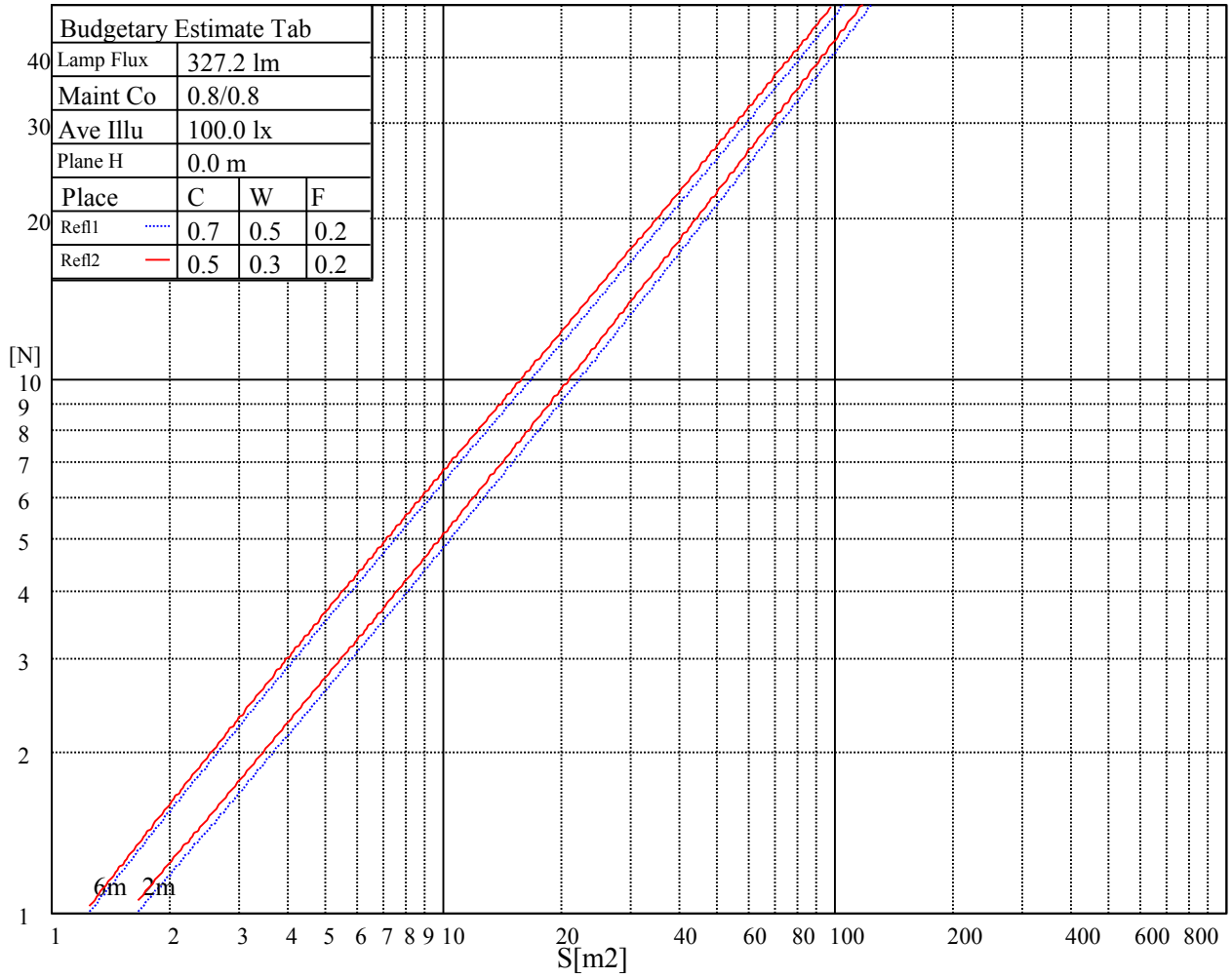
Glare Table

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

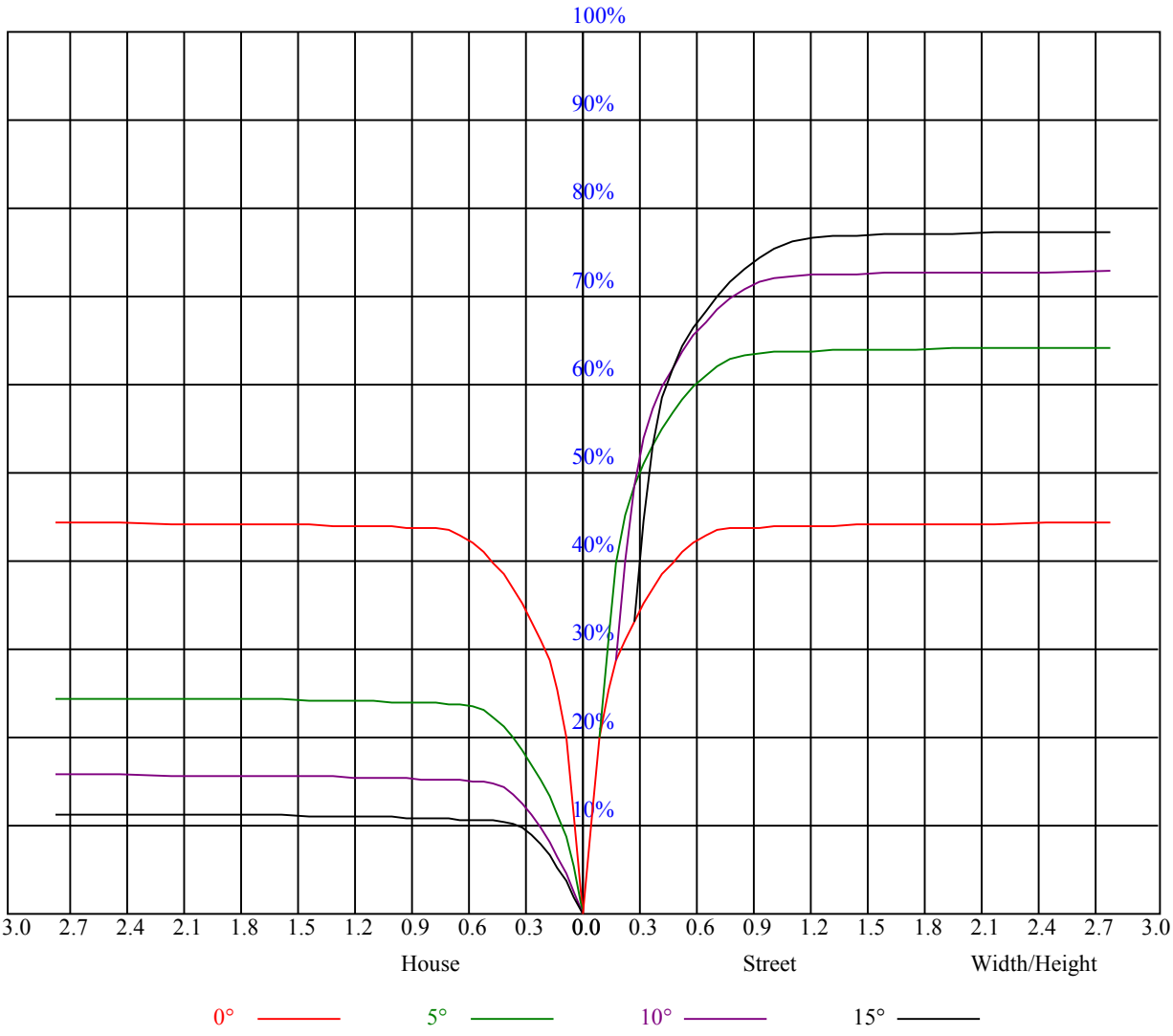


Equipment: GMS1980 Date: 2019/9/26 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	1.01	0.99	0.97	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.91	0.89	0.88	0.89	0.87	0.86	0.86	0.85	0.84	0.83
3	0.91	0.88	0.85	0.90	0.87	0.85	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.84	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.81	0.78	0.75	0.81	0.77	0.75	0.80	0.76	0.74	0.79	0.76	0.74	0.77	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.76	0.73	0.71	0.70
8	0.76	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.74	0.71	0.69	0.68
9	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.67
10	0.72	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/9/26
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	4471.88	4546.69	4263.19	3763.13	3065.63	2172.38	1578.94	1117.13	748.69
45.0	4390.88	4482.00	4291.88	3880.13	3241.13	2511.00	1899.00	1308.38	922.50
90.0	4478.63	4307.63	3916.69	3365.44	2800.13	2144.81	1606.50	1121.34	784.07
135.0	4541.63	4391.44	3971.25	3520.13	2993.63	2301.19	1762.88	1302.19	916.88
180.0	4471.88	4214.81	3692.25	3170.25	2606.06	1909.69	1308.94	1037.98	754.65
225.0	4390.88	4095.00	3611.81	2854.69	2232.00	1688.63	1105.99	830.14	592.71
270.0	4478.63	4432.50	4019.06	3426.75	2721.94	1920.38	1416.38	1020.38	714.38
315.0	4541.63	4454.44	4037.06	3312.00	2581.31	1839.94	1075.73	899.83	586.24
360.0	4471.88	4546.69	4263.19	3763.13	3065.63	2172.38	1578.94	1117.13	748.69

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	496.69	352.13	290.25	200.59	170.78	152.83	143.94	140.85	141.47
45.0	635.06	449.44	343.13	288.00	218.93	192.09	175.39	164.08	159.69
90.0	581.23	428.96	331.03	273.21	231.81	199.97	183.99	175.56	168.92
135.0	660.94	509.06	388.13	315.00	287.44	222.92	198.34	178.88	165.94
180.0	536.29	396.90	316.41	257.63	222.02	196.48	180.17	171.68	165.83
225.0	402.98	309.71	252.23	207.17	188.72	174.66	165.66	161.78	158.68
270.0	454.50	322.88	288.00	187.99	164.08	154.41	150.47	149.46	149.91
315.0	396.62	264.54	195.86	167.68	155.53	148.22	146.98	146.76	142.26
360.0	496.69	352.13	290.25	200.59	170.78	152.83	143.94	140.85	141.47

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	142.03	142.54	140.18	138.43	134.78	128.48	123.98	118.91	115.14
45.0	156.54	152.38	149.85	147.66	143.61	138.77	135.62	131.74	128.36
90.0	164.87	161.16	156.60	151.43	146.36	141.08	138.26	133.31	128.64
135.0	160.26	154.41	147.21	142.99	136.80	133.20	128.53	124.54	119.36
180.0	158.96	154.29	148.67	141.47	136.24	131.57	125.66	121.39	117.73
225.0	154.58	151.54	147.99	144.28	140.46	136.29	131.01	126.00	122.23
270.0	149.23	148.95	148.05	145.07	141.13	136.86	133.93	130.44	129.71
315.0	136.52	137.25	127.41	123.30	122.01	124.59	123.53	119.42	115.71
360.0	142.03	142.54	140.18	138.43	134.78	128.48	123.98	118.91	115.14

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	114.64	112.16	103.33	96.98	95.68	89.78	78.92	63.00	47.14
45.0	124.03	120.32	116.94	113.29	109.69	106.88	101.70	86.18	68.74
90.0	124.93	121.33	117.11	113.46	110.59	106.54	99.79	86.34	67.67
135.0	116.49	114.58	113.34	110.25	107.27	105.36	101.48	89.83	73.86
180.0	113.68	110.03	104.91	101.36	97.59	93.49	84.32	69.58	53.89
225.0	117.51	115.71	111.04	107.21	103.61	94.16	77.29	58.39	38.93
270.0	126.45	122.46	117.90	112.95	108.11	100.74	82.58	61.43	42.36
315.0	111.04	106.31	104.23	102.04	99.84	88.26	72.45	55.01	37.18
360.0	114.64	112.16	103.33	96.98	95.68	89.78	78.92	63.00	47.14

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	31.89	17.83	7.99	5.46	4.56	3.88	3.54	3.26	3.04
45.0	49.61	31.16	13.95	5.91	3.94	3.09	2.87	2.76	2.59
90.0	46.46	28.91	12.71	4.33	2.98	2.81	2.64	2.36	2.14
135.0	54.17	34.37	17.89	5.46	3.60	3.38	2.93	2.81	2.64
180.0	33.75	19.24	9.23	3.99	3.54	3.32	2.98	2.81	2.70
225.0	19.97	9.45	4.28	3.26	2.98	2.87	2.81	2.70	2.59
270.0	23.96	12.21	5.23	3.94	3.38	3.04	2.87	2.81	2.64
315.0	18.23	9.62	5.12	4.28	3.71	3.38	3.21	3.09	3.04
360.0	31.89	17.83	7.99	5.46	4.56	3.88	3.54	3.26	3.04

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	2.87	2.87	2.87	2.81	2.76	2.70	2.59	2.48	2.31
45.0	2.36	2.19	2.14	2.03	1.97	1.91	1.86	1.80	1.69
90.0	2.03	1.97	1.91	1.86	1.80	1.69	1.69	1.63	1.63
135.0	2.59	2.64	2.70	2.70	2.81	2.81	2.53	2.36	2.19
180.0	2.70	2.76	2.76	2.70	2.76	2.70	2.53	2.31	2.14
225.0	2.48	2.31	2.19	2.08	2.03	1.91	1.80	1.74	1.69
270.0	2.48	2.36	2.31	2.19	2.08	1.97	1.91	1.86	1.80
315.0	3.09	3.21	3.32	3.32	3.32	3.26	3.09	2.87	2.59
360.0	2.87	2.87	2.87	2.81	2.76	2.70	2.59	2.48	2.31

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.25	2.14	2.08	2.03	2.03	2.08	2.08	2.03	2.03
45.0	1.74	1.69	1.63	1.63	1.63	1.58	1.58	1.58	1.58
90.0	1.58	1.58	1.52	1.52	1.52	1.52	1.52	1.52	1.52
135.0	2.08	2.03	1.86	1.80	1.80	1.80	1.86	1.91	2.08
180.0	2.08	2.03	1.97	1.91	1.97	1.97	1.97	2.03	2.08
225.0	1.63	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.63
270.0	1.69	1.63	1.63	1.58	1.58	1.52	1.58	1.52	1.52
315.0	2.31	2.14	1.97	1.86	1.80	1.80	1.74	1.74	1.80
360.0	2.25	2.14	2.08	2.03	2.03	2.08	2.08	2.03	2.03

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.14	2.25	2.42	2.36	1.91	1.58	1.46	1.46	1.46
45.0	1.58	1.58	1.58	1.52	1.46	1.46	1.46	1.46	1.41
90.0	1.52	1.52	1.46	1.46	1.46	1.46	1.46	1.46	1.46
135.0	2.36	2.76	2.87	2.53	1.80	1.52	1.46	1.46	1.46
180.0	2.14	2.14	2.03	1.80	1.58	1.52	1.46	1.46	1.46
225.0	1.69	1.63	1.58	1.52	1.46	1.46	1.46	1.46	1.46
270.0	1.58	1.58	1.58	1.52	1.52	1.46	1.46	1.46	1.41
315.0	1.86	1.97	1.97	1.80	1.58	1.52	1.46	1.46	1.46
360.0	2.14	2.25	2.42	2.36	1.91	1.58	1.46	1.46	1.46

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.41	1.41	1.41	1.41	1.41	1.41	1.35	1.41	1.41
45.0	1.41	1.41	1.41	1.41	1.41	1.41	1.35	1.35	1.35
90.0	1.41	1.41	1.41	1.35	1.41	1.35	1.35	1.35	1.35
135.0	1.46	1.46	1.46	1.41	1.41	1.41	1.41	1.41	1.35
180.0	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.35	1.35
225.0	1.46	1.41	1.41	1.35	1.41	1.35	1.35	1.35	1.35
270.0	1.41	1.35	1.35	1.35	1.35	1.41	1.35	1.35	1.35
315.0	1.41	1.41	1.41	1.35	1.35	1.41	1.41	1.35	1.35
360.0	1.41	1.41	1.41	1.41	1.41	1.41	1.35	1.41	1.41

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.35	1.35	1.29	1.29	1.29	1.29	1.29	1.24	1.24
45.0	1.35	1.35	1.35	1.29	1.29	1.29	1.29	1.29	1.29
90.0	1.35	1.35	1.29	1.29	1.29	1.29	1.29	1.29	1.29
135.0	1.35	1.35	1.35	1.35	1.29	1.29	1.29	1.24	1.24
180.0	1.35	1.35	1.35	1.29	1.29	1.29	1.29	1.24	1.24
225.0	1.35	1.35	1.35	1.29	1.35	1.29	1.29	1.29	1.29
270.0	1.29	1.35	1.29	1.29	1.29	1.29	1.29	1.29	1.29
315.0	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.24	1.24
360.0	1.35	1.35	1.29	1.29	1.29	1.29	1.29	1.24	1.24

Intensity data(cd)

C/γ(°)	90.0
0.0	1.24
45.0	1.29
90.0	1.24
135.0	1.24
180.0	1.24
225.0	1.24
270.0	1.29
315.0	1.24
360.0	1.24