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

Nata

LumCAT: 2-1678-M
Luminaire: 92.70.127.00
Report No: NT2017081408
Test No: GC2017081408
LampCAT: CREE CXA1512
Lamp flux(lm): 1330.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 37.4000
Current(A): 0.3000
Power (W): 11.2200
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 1208.12
Efficiency(%): 90.84%
Lumens(lm)/Power(W): 107.68
Central intensity(cd): 15148.370
Maximum intensity(cd): 15148.370
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=10.7
[C90/270]Total=10.7
Field angle(10%Imax): [C0/180]Total=21.0
[C90/270]Total=21.0
Maximum s/h(1/2): C0_180=0.19 C90_270=0.19
Maximum s/h(1/4): C0_180=0.19 C90_270=0.19
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.84%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.721%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15148.366	0.000	0	.000%	.000%
1.0	14595.189	14.232	14.232	1.070%	1.178%
2.0	13848.901	40.826	55.057	3.070%	4.557%
3.0	12141.510	62.161	117.218	4.674%	9.703%
4.0	10311.407	75.157	192.375	5.651%	15.924%
5.0	8305.723	80.090	272.465	6.022%	22.553%
6.0	6274.440	76.623	349.088	5.761%	28.895%
7.0	4595.779	67.471	416.559	5.073%	34.480%
8.0	3389.182	57.147	473.706	4.297%	39.210%
9.0	2345.534	46.477	520.182	3.494%	43.057%
10.0	1697.089	36.584	556.767	2.751%	46.086%
11.0	1315.499	30.102	586.869	2.263%	48.577%
12.0	1038.487	25.732	612.601	1.935%	50.707%
13.0	855.936	22.482	635.083	1.690%	52.568%
14.0	754.789	20.617	655.7	1.550%	54.275%
15.0	685.245	19.769	675.47	1.486%	55.911%
16.0	634.143	19.333	694.802	1.454%	57.511%
17.0	598.707	19.199	714.001	1.444%	59.100%
18.0	571.264	19.290	733.291	1.450%	60.697%
19.0	552.078	19.544	752.835	1.469%	62.315%
20.0	534.158	19.881	772.716	1.495%	63.960%
21.0	519.271	20.228	792.944	1.521%	65.635%
22.0	506.638	20.616	813.56	1.550%	67.341%
23.0	494.270	21.002	834.562	1.579%	69.080%
24.0	483.717	21.382	855.945	1.608%	70.850%
25.0	473.741	21.770	877.715	1.637%	72.652%
26.0	464.559	22.149	899.864	1.665%	74.485%
27.0	455.752	22.516	922.379	1.693%	76.349%
28.0	447.188	22.861	945.24	1.719%	78.241%
29.0	437.832	23.155	968.394	1.741%	80.157%
30.0	429.415	23.415	991.81	1.761%	82.096%
31.0	420.684	23.657	1015.467	1.779%	84.054%
32.0	410.987	23.826	1039.293	1.791%	86.026%
33.0	395.446	23.758	1063.051	1.786%	87.992%
34.0	372.713	23.247	1086.298	1.748%	89.917%
35.0	339.753	22.127	1108.425	1.664%	91.748%
36.0	290.244	20.059	1128.484	1.508%	93.409%
37.0	240.130	17.298	1145.782	1.301%	94.840%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	168.562	13.642	1159.423	1.026%	95.970%
39.0	120.653	9.872	1169.295	.742%	96.787%
40.0	70.893	6.680	1175.975	.502%	97.340%
41.0	39.422	3.928	1179.904	.295%	97.665%
42.0	23.082	2.271	1182.174	.171%	97.853%
43.0	12.626	1.323	1183.497	.099%	97.962%
44.0	9.447	0.833	1184.33	.063%	98.031%
45.0	8.139	0.676	1185.006	.051%	98.087%
46.0	7.033	0.593	1185.599	.045%	98.136%
47.0	6.483	0.538	1186.137	.040%	98.181%
48.0	6.254	0.515	1186.652	.039%	98.223%
49.0	6.101	0.507	1187.159	.038%	98.265%
50.0	5.962	0.503	1187.662	.038%	98.307%
51.0	5.871	0.501	1188.163	.038%	98.348%
52.0	5.802	0.501	1188.664	.038%	98.390%
53.0	5.711	0.501	1189.164	.038%	98.431%
54.0	5.649	0.501	1189.665	.038%	98.473%
55.0	5.565	0.501	1190.166	.038%	98.514%
56.0	5.503	0.500	1190.666	.038%	98.556%
57.0	5.426	0.500	1191.166	.038%	98.597%
58.0	5.370	0.499	1191.665	.038%	98.638%
59.0	5.322	0.500	1192.165	.038%	98.680%
60.0	5.259	0.500	1192.665	.038%	98.721%
61.0	5.196	0.499	1193.164	.038%	98.762%
62.0	5.176	0.500	1193.663	.038%	98.804%
63.0	5.120	0.501	1194.164	.038%	98.845%
64.0	5.106	0.502	1194.666	.038%	98.887%
65.0	5.071	0.504	1195.169	.038%	98.928%
66.0	5.064	0.506	1195.675	.038%	98.970%
67.0	5.043	0.508	1196.183	.038%	99.012%
68.0	4.981	0.508	1196.691	.038%	99.054%
69.0	4.974	0.508	1197.199	.038%	99.096%
70.0	4.939	0.509	1197.708	.038%	99.139%
71.0	4.925	0.510	1198.218	.038%	99.181%
72.0	4.925	0.512	1198.73	.039%	99.223%
73.0	4.939	0.516	1199.246	.039%	99.266%
74.0	4.911	0.518	1199.764	.039%	99.309%
75.0	4.883	0.518	1200.281	.039%	99.352%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.856	0.517	1200.798	.039%	99.394%
77.0	4.863	0.518	1201.316	.039%	99.437%
78.0	4.835	0.519	1201.836	.039%	99.480%
79.0	4.856	0.521	1202.356	.039%	99.523%
80.0	4.849	0.523	1202.879	.039%	99.567%
81.0	4.835	0.524	1203.403	.039%	99.610%
82.0	4.807	0.523	1203.926	.039%	99.653%
83.0	4.835	0.524	1204.45	.039%	99.697%
84.0	4.807	0.525	1204.975	.039%	99.740%
85.0	4.786	0.524	1205.499	.039%	99.783%
86.0	4.786	0.523	1206.022	.039%	99.827%
87.0	4.800	0.525	1206.547	.039%	99.870%
88.0	4.779	0.525	1207.071	.039%	99.914%
89.0	4.758	0.523	1207.594	.039%	99.957%
90.0	4.758	0.522	1208.116	.039%	100.000%

Zonal flux distribution table

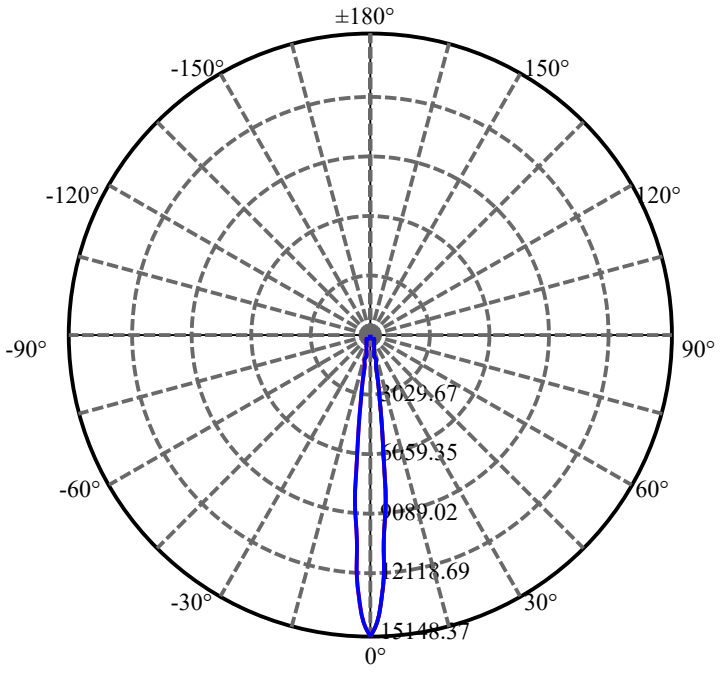
ZONAL LUMEN SUMMARY

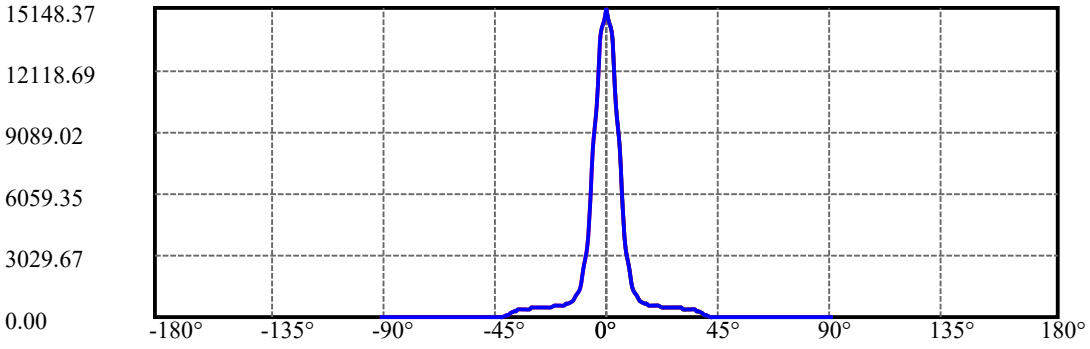
Zone	Lumens	%Lamp	%Fixt
0-30	991.81	74.57%	82.10%
0-40	1175.98	88.42%	97.34%
0-60	1192.66	89.67%	98.72%
0-90	1207.59	90.80%	99.96%
0-120	1207.59	90.80%	99.96%
0-180	1208.12	90.84%	100.00%
60-90	15.43	1.16%	1.28%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.92	966.49	72.67%	80.00%

ZONAL LUMEN SUMMARY

0-10	556.77
10-20	215.95
20-30	219.09
30-40	184.17
40-50	11.69
50-60	5.00
60-70	5.04
70-80	5.17
80-90	4.71
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):

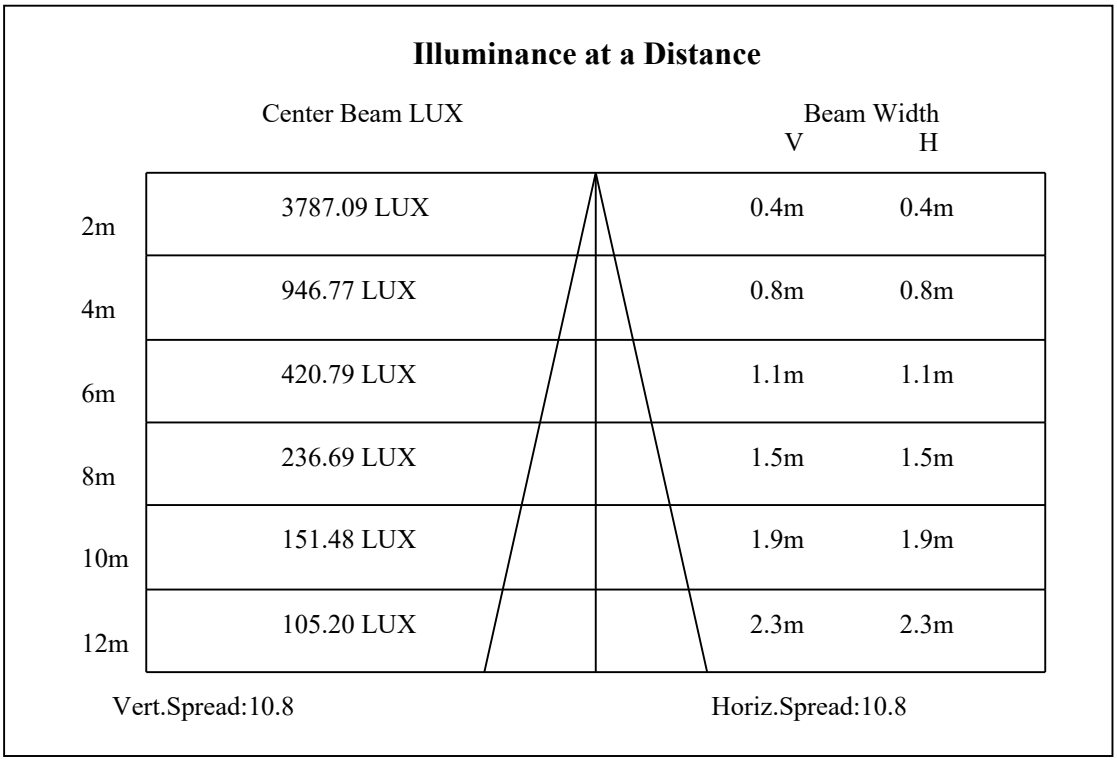
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:10.5 Right:10.5
:C90/270Left:10.5 Right:10.5

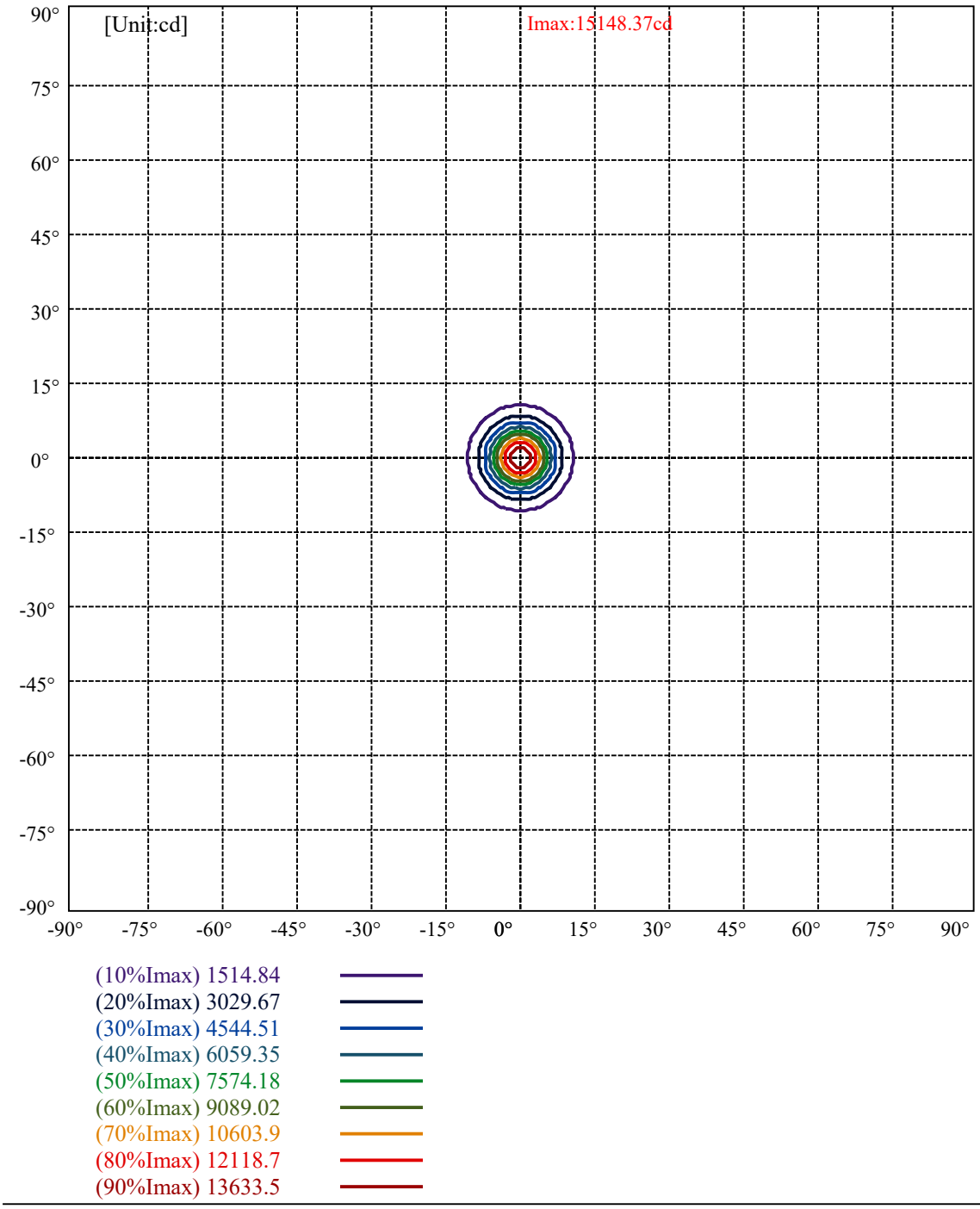
Beam Angle(50%Imax):C0/180Left:5.4 Right:5.4
:C90/270Left:5.4 Right:5.4

Lux distance Curve



Equipment: GMS1980 Date: 2017/8/14 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.46

ISO-Intensity(V-H)



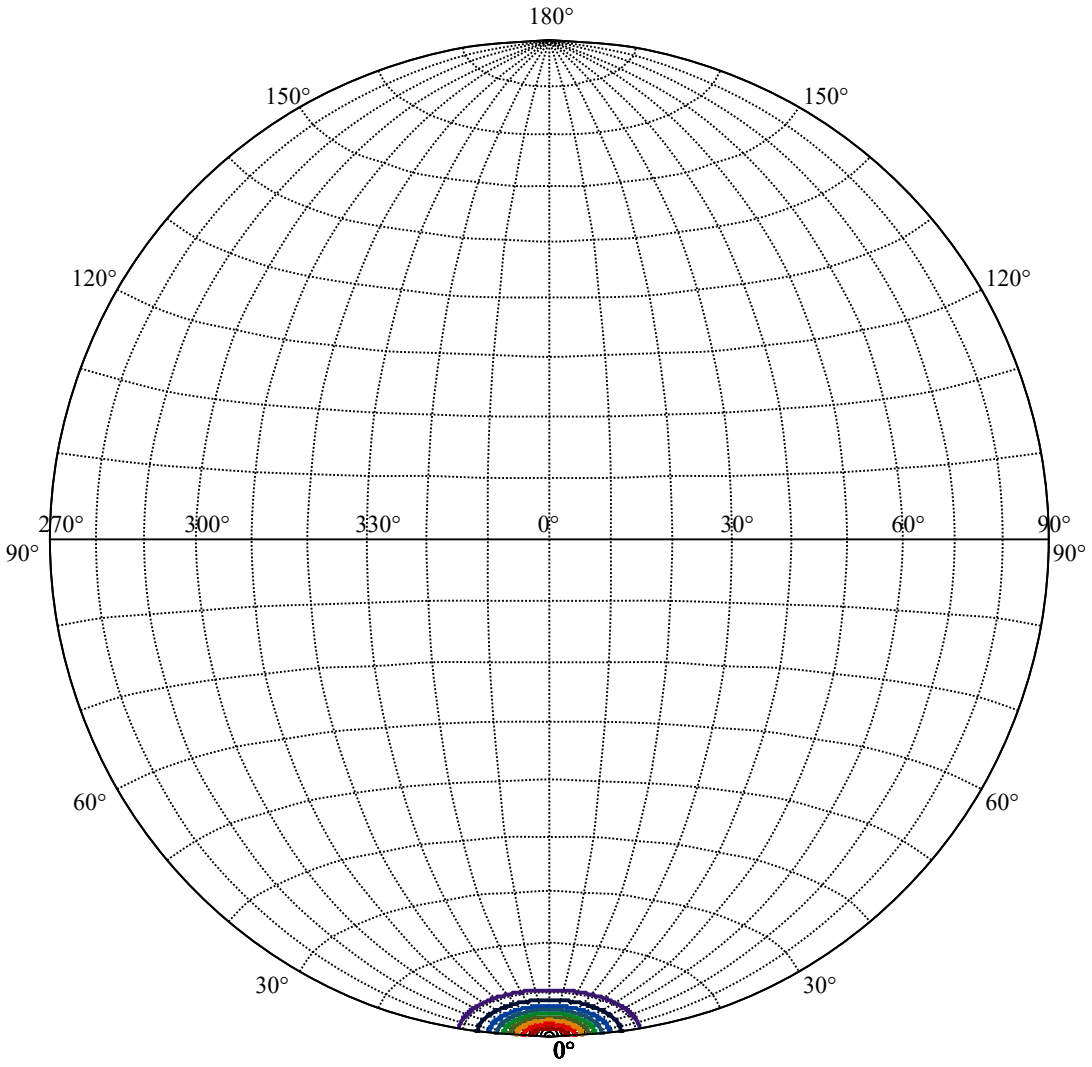
(10%Imax) 1514.84
(20%Imax) 3029.67
(30%Imax) 4544.51
(40%Imax) 6059.35
(50%Imax) 7574.18
(60%Imax) 9089.02
(70%Imax) 10603.9
(80%Imax) 12118.7
(90%Imax) 13633.5

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/8/14
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

ISO candela diagram on circular web



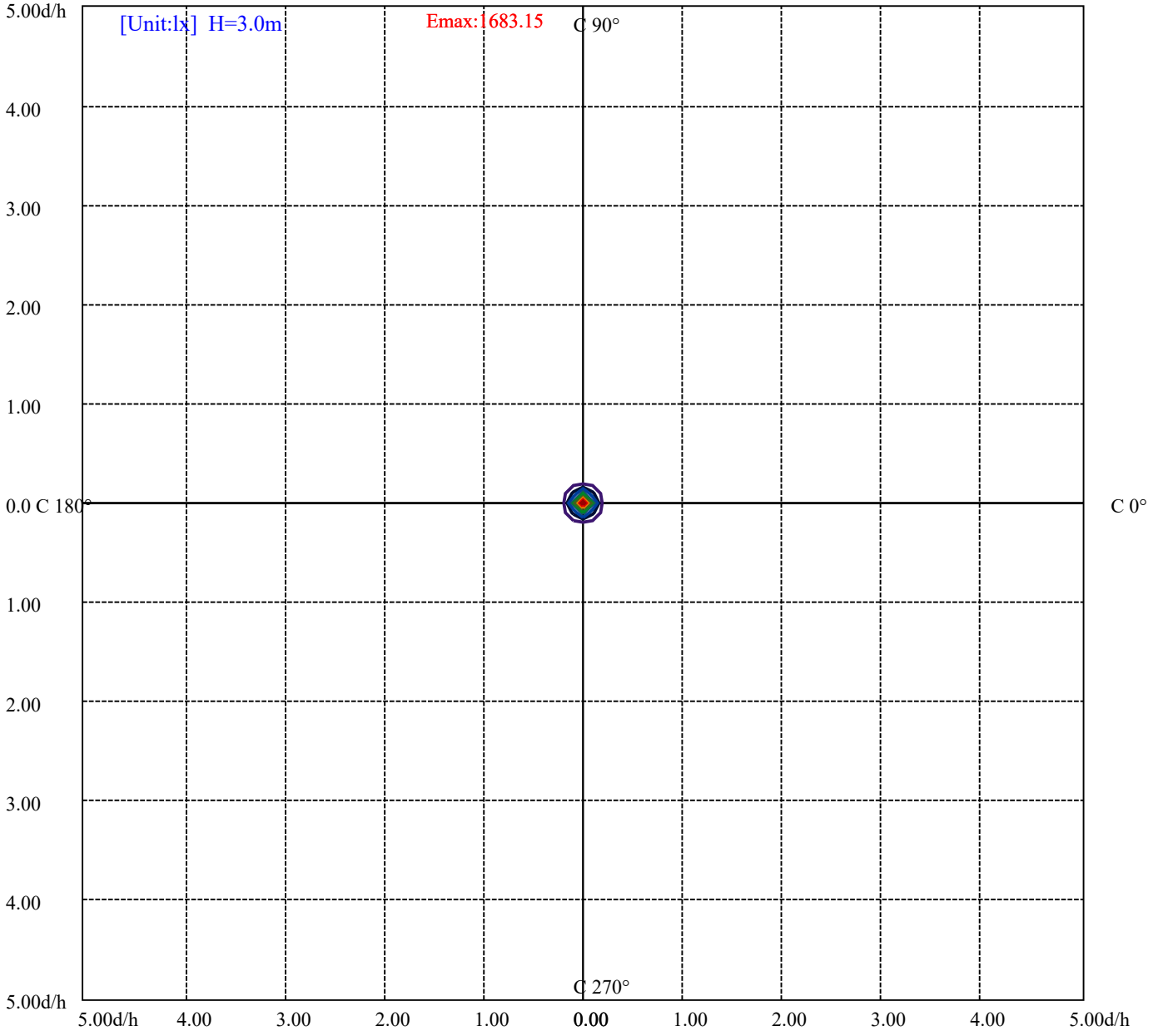
House [Unit:cd] Road

Imax:15148.37

(10%Imax) 1514.84
(20%Imax) 3029.67
(30%Imax) 4544.51
(40%Imax) 6059.35
(50%Imax) 7574.18
(60%Imax) 9089.02
(70%Imax) 10603.9
(80%Imax) 12118.7
(90%Imax) 13633.5

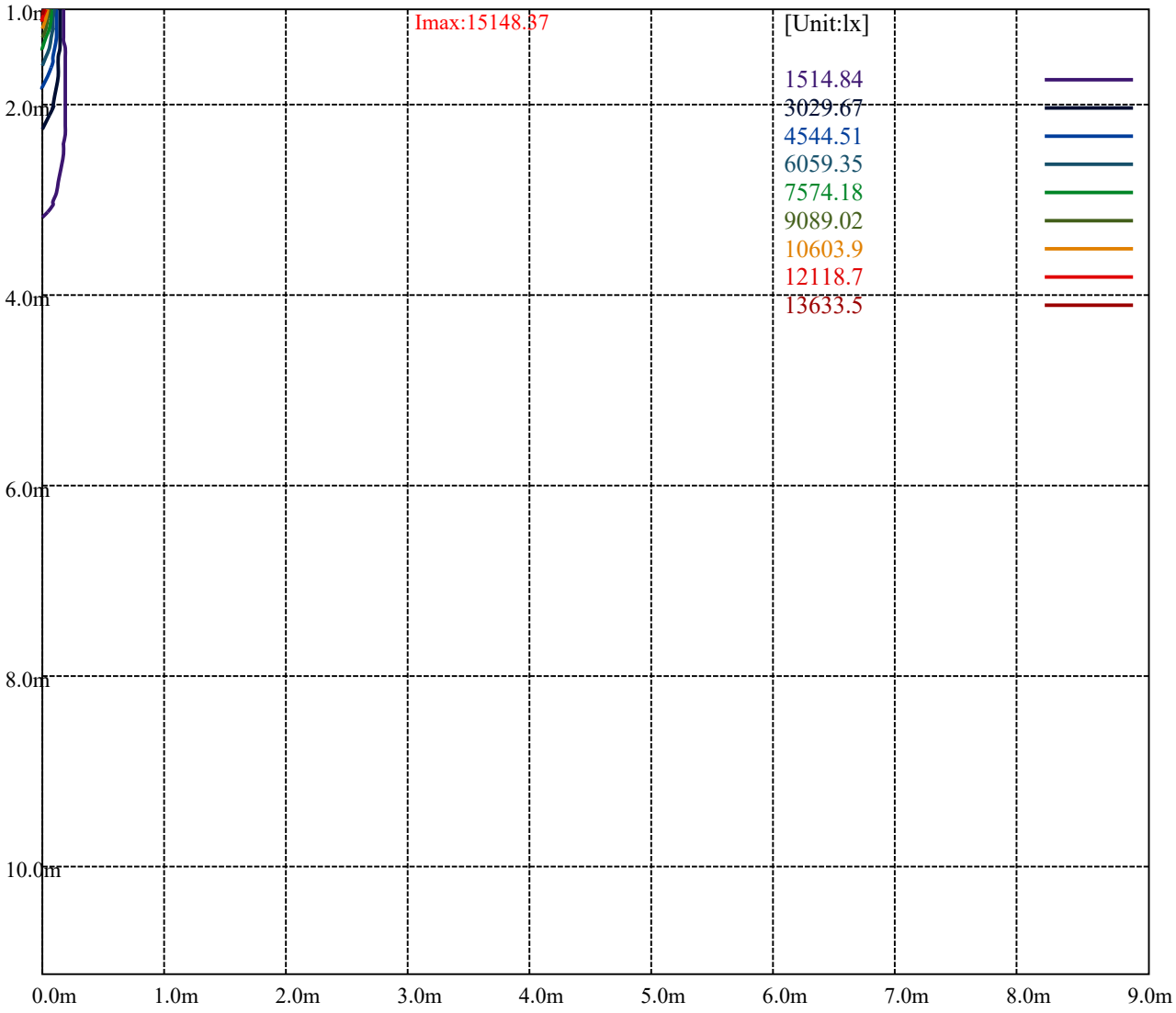
Equipment: GMS1980	Date: 2017/8/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.46

ISO illuminance diagram



Equipment: GMS1980	Date: 2017/8/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.46

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/8/14
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

Nata 2-1678-M

Luminance Limitting Curve(no luminous side)

Luminance Table

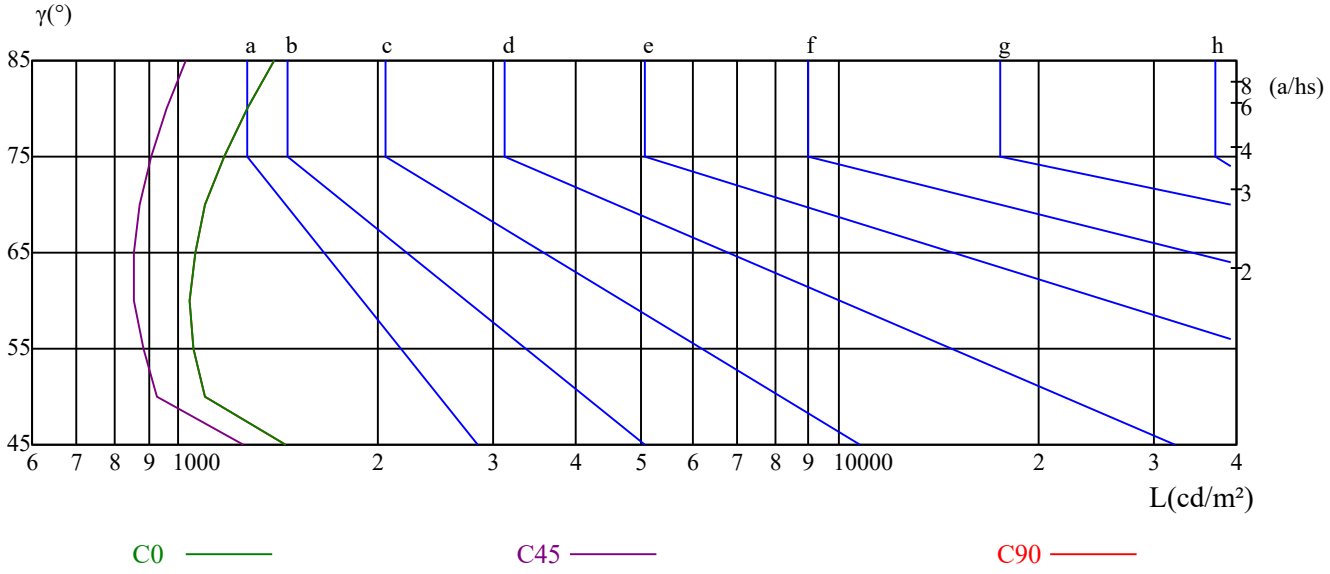
γ	45	50	55	60	65	70	75	80	85
C0	1455	1093	1055	1040	1057	1097	1170	1271	1397
C45	1257	930	884	857	855	870	908	961	1025
C90	1455	1093	1055	1040	1057	1097	1170	1271	1397

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2449	2449	2449	3851	3851	3851	11207	11207	11207

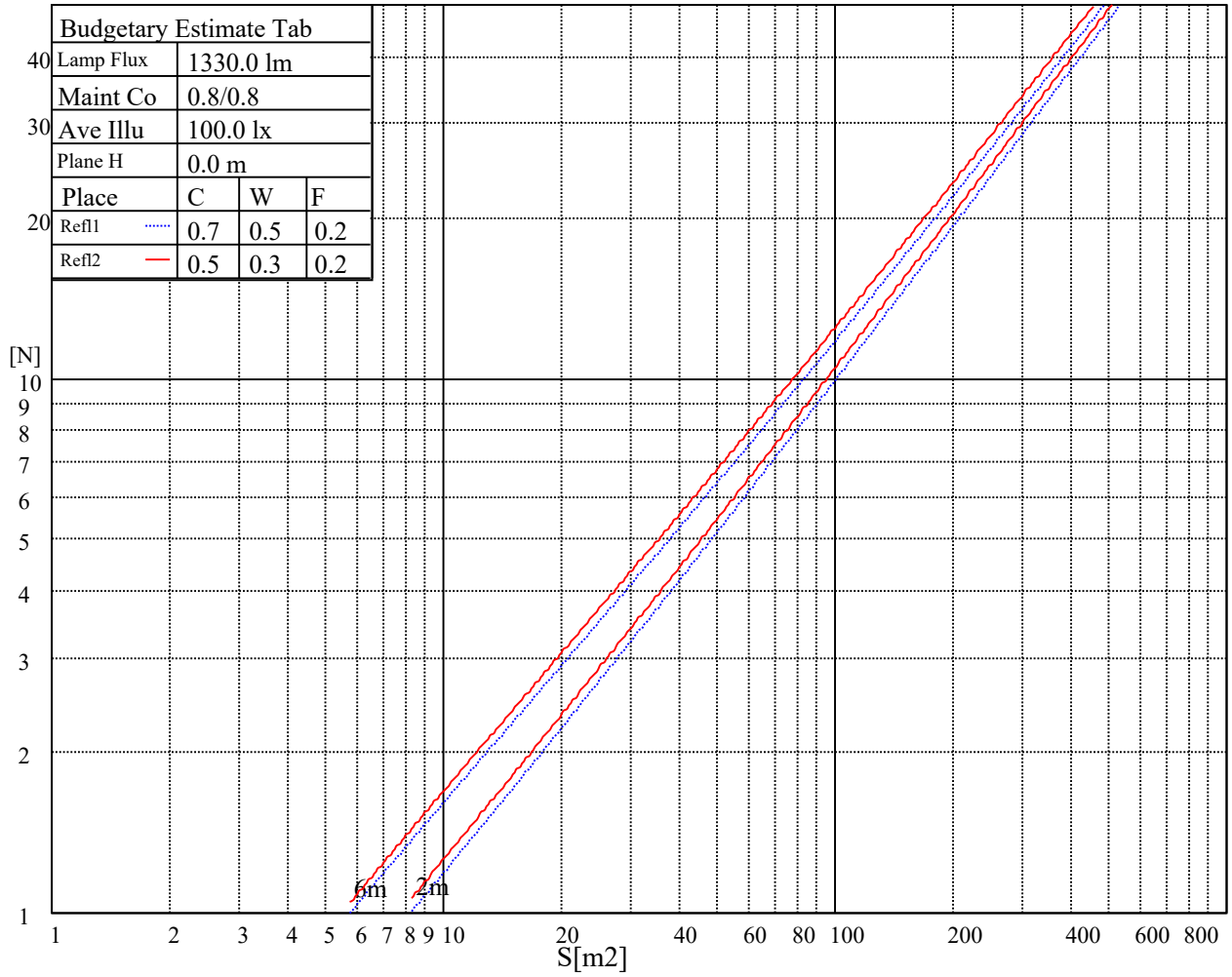
Glare Table

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

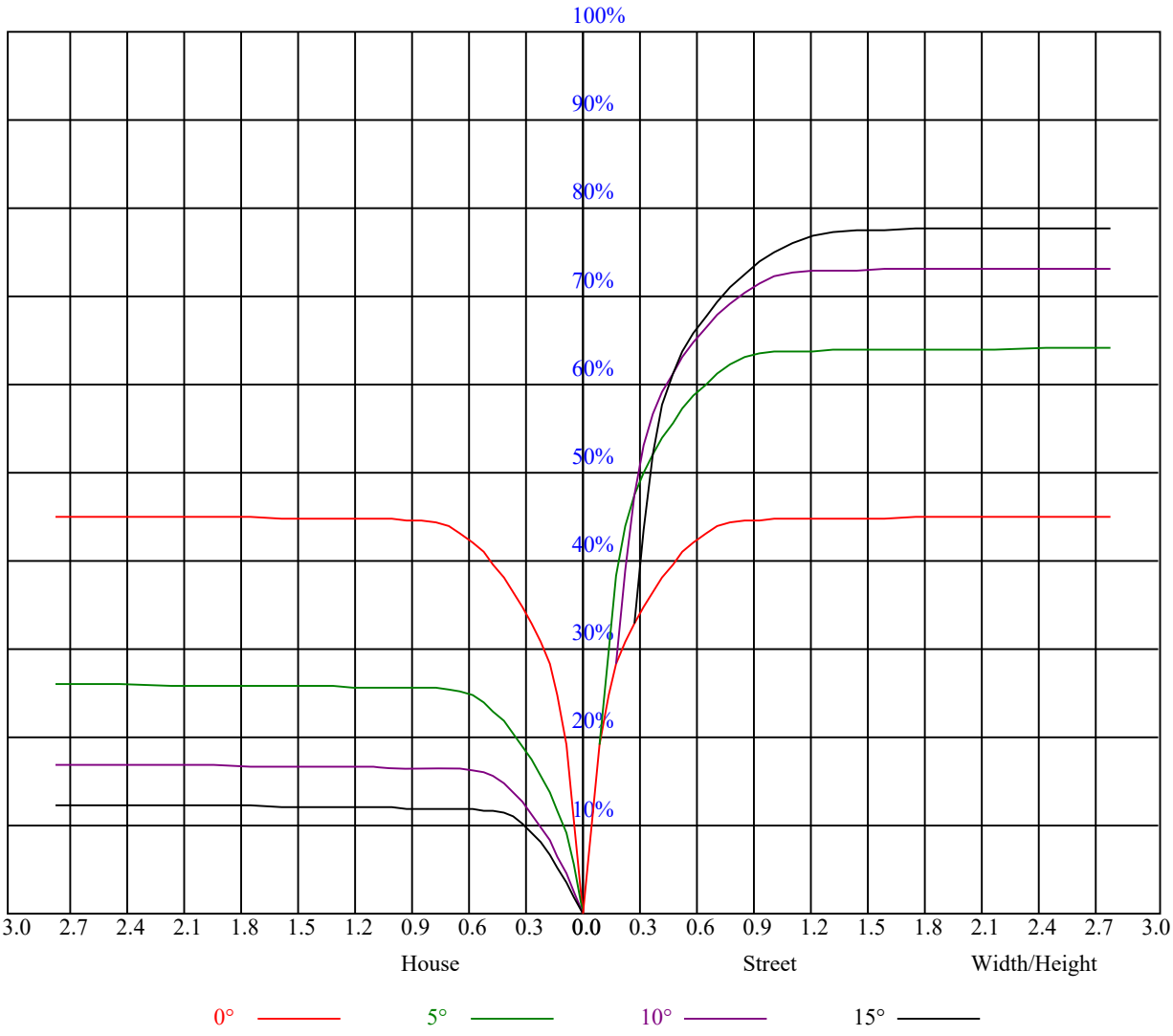


Equipment: GMS1980 Date: 2017/8/14 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.46

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	1.00	0.98	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.97	0.94	0.91	0.95	0.93	0.90	0.92	0.90	0.88	0.90	0.88	0.87	0.87	0.86	0.85	0.83
3	0.92	0.89	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.87	0.84	0.83	0.85	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.84	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.76	0.74
6	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.70
8	0.76	0.72	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
9	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.66
10	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2017/8/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.46

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	16072.18	15576.88	14358.11	12354.66	10223.20	7668.79	5398.21	3856.66	2866.06
45.0	14647.50	12966.82	10612.76	8102.87	6082.72	4229.52	2854.93	2350.72	1509.27
90.0	14402.63	10850.95	10590.50	8167.43	6165.08	4316.34	3045.26	2069.13	1469.76
135.0	15471.14	14920.19	13495.51	11464.23	9366.16	6967.58	4891.78	3478.23	2832.67
180.0	16072.18	15799.49	14925.76	13217.26	10607.75	8643.81	6450.58	4037.52	3001.85
225.0	14647.50	15888.53	16378.27	16038.79	14897.93	13306.30	11002.32	8762.34	6424.98
270.0	14402.63	15398.80	15805.05	15393.23	14335.85	12710.83	10106.33	7902.53	5915.77
315.0	15471.14	15359.84	14625.24	12393.61	10812.55	8602.62	6446.12	4309.10	3093.12
360.0	16072.18	15576.88	14358.11	12354.66	10223.20	7668.79	5398.21	3856.66	2866.06

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1850.42	1410.77	1119.15	911.02	787.47	712.34	661.14	615.51	586.57
45.0	1111.92	921.03	805.28	716.79	656.69	618.29	588.79	565.98	550.95
90.0	1108.80	917.08	790.31	718.63	670.60	619.46	590.02	567.54	548.95
135.0	1725.76	1325.62	1057.94	872.06	755.19	687.85	634.98	596.03	569.87
180.0	2150.93	1440.26	1107.91	967.84	838.61	725.98	673.27	628.08	591.52
225.0	4639.12	3164.35	2165.96	1597.20	1107.91	965.78	834.16	739.72	669.88
270.0	3934.57	2843.80	2374.65	1523.18	1168.13	962.77	814.18	722.36	672.27
315.0	2242.76	1553.79	1102.79	1001.17	862.88	745.84	685.41	637.93	599.65
360.0	1850.42	1410.77	1119.15	911.02	787.47	712.34	661.14	615.51	586.57

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	564.86	547.06	531.47	519.79	506.99	496.41	485.84	477.49	468.03
45.0	534.26	520.90	505.87	494.19	484.17	474.71	465.25	459.68	452.45
90.0	534.42	524.24	511.33	498.42	488.40	477.38	470.26	460.35	451.28
135.0	550.95	534.81	519.79	505.87	492.52	481.94	469.70	461.91	454.67
180.0	563.64	545.55	529.97	515.28	501.09	489.23	479.61	469.76	459.79
225.0	621.35	590.96	565.09	544.22	528.69	512.05	499.47	484.89	474.43
270.0	624.41	593.25	565.42	545.39	532.59	517.00	504.20	491.96	481.39
315.0	576.22	559.86	544.33	531.03	518.67	505.43	495.41	483.89	474.43
360.0	564.86	547.06	531.47	519.79	506.99	496.41	485.84	477.49	468.03

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	460.24	453.00	444.10	436.31	426.29	419.61	413.49	397.35	357.28
45.0	441.87	432.97	424.62	417.39	408.48	397.35	352.27	288.28	248.82
90.0	444.04	432.75	421.45	414.21	405.87	391.95	356.84	304.97	234.91
135.0	445.21	438.53	428.52	419.06	411.27	402.92	394.01	371.20	327.23
180.0	452.34	444.82	434.25	426.01	418.89	410.10	404.20	396.35	365.80
225.0	465.53	457.07	448.11	440.87	433.19	422.73	416.33	410.99	402.14
270.0	470.26	460.80	453.56	444.66	434.08	424.62	415.72	409.60	402.36
315.0	466.53	457.57	448.05	436.81	427.40	418.61	410.71	402.97	379.49
360.0	460.24	453.00	444.10	436.31	426.29	419.61	413.49	397.35	357.28

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	299.41	283.82	149.31	88.37	37.68	17.47	13.25	9.24	7.29
45.0	152.21	90.04	39.18	17.03	13.13	9.74	7.07	6.51	6.34
90.0	163.89	103.73	49.14	19.31	14.25	10.18	7.79	7.29	6.40
135.0	282.15	192.00	123.77	71.46	30.66	15.92	12.19	8.18	6.90
180.0	310.37	250.65	178.42	108.85	55.21	21.98	15.14	11.58	8.74
225.0	394.68	374.92	312.65	251.04	186.38	108.91	63.39	25.71	15.75
270.0	394.57	362.85	306.64	282.71	166.18	105.74	49.81	20.42	15.58
315.0	324.67	263.01	189.38	126.44	63.67	25.43	16.03	12.08	8.57
360.0	299.41	283.82	149.31	88.37	37.68	17.47	13.25	9.24	7.29

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	6.68	6.46	6.29	6.23	6.01	5.90	5.79	5.79	5.68
45.0	6.23	6.18	6.07	6.01	5.84	5.73	5.68	5.62	5.57
90.0	6.29	6.12	6.07	5.95	5.90	5.79	5.73	5.62	5.57
135.0	6.46	6.29	6.18	6.12	5.95	5.84	5.73	5.73	5.62
180.0	7.85	6.34	6.23	6.12	6.07	5.84	5.79	5.68	5.62
225.0	12.80	9.68	7.62	6.57	6.40	6.23	6.18	6.07	5.90
270.0	11.07	7.85	7.01	6.73	6.51	6.34	6.18	6.07	6.01
315.0	7.74	7.35	6.40	6.29	6.12	6.01	5.90	5.84	5.73
360.0	6.68	6.46	6.29	6.23	6.01	5.90	5.79	5.79	5.68

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.62	5.51	5.45	5.34	5.34	5.29	5.23	5.18	5.12
45.0	5.51	5.40	5.34	5.34	5.29	5.29	5.18	5.12	5.12
90.0	5.45	5.45	5.40	5.34	5.29	5.23	5.18	5.12	5.18
135.0	5.62	5.45	5.45	5.34	5.40	5.34	5.29	5.12	5.12
180.0	5.57	5.51	5.45	5.40	5.29	5.18	5.18	5.12	5.12
225.0	5.79	5.73	5.68	5.57	5.45	5.40	5.34	5.29	5.23
270.0	5.95	5.84	5.68	5.62	5.57	5.51	5.45	5.40	5.34
315.0	5.68	5.62	5.57	5.45	5.34	5.34	5.23	5.23	5.18
360.0	5.62	5.51	5.45	5.34	5.34	5.29	5.23	5.18	5.12

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.06	5.12	5.06	5.06	5.01	4.95	4.95	4.90	4.95
45.0	5.06	5.06	5.01	5.01	5.01	4.95	4.95	4.95	4.84
90.0	5.06	5.06	5.01	5.06	5.06	4.95	4.95	4.95	4.95
135.0	5.06	5.12	5.12	5.06	5.01	4.95	4.95	4.90	4.95
180.0	5.12	5.06	5.01	5.01	4.95	4.90	4.95	4.90	4.90
225.0	5.18	5.12	5.12	5.12	5.06	5.06	4.95	4.95	4.90
270.0	5.29	5.18	5.18	5.12	5.18	5.12	5.12	5.01	5.01
315.0	5.12	5.12	5.06	5.06	5.06	4.95	4.95	4.95	4.90
360.0	5.06	5.12	5.06	5.06	5.01	4.95	4.95	4.90	4.95

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.90	4.95	4.90	4.84	4.84	4.84	4.84	4.84	4.84
45.0	4.84	4.84	4.90	4.90	4.84	4.84	4.79	4.84	4.84
90.0	4.95	4.95	4.95	4.90	4.90	4.84	4.84	4.84	4.90
135.0	4.90	4.95	4.95	4.90	4.84	4.84	4.84	4.84	4.84
180.0	4.90	4.90	4.84	4.79	4.79	4.84	4.79	4.84	4.79
225.0	4.95	4.95	4.90	4.84	4.84	4.90	4.84	4.90	4.84
270.0	5.01	5.01	5.01	5.01	4.95	4.90	4.90	4.90	4.90
315.0	4.95	4.95	4.84	4.90	4.84	4.90	4.84	4.84	4.84
360.0	4.90	4.95	4.90	4.84	4.84	4.84	4.84	4.84	4.84

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.79	4.84	4.79	4.84	4.79	4.79	4.79	4.73	4.79
45.0	4.84	4.79	4.84	4.79	4.73	4.79	4.79	4.79	4.73
90.0	4.90	4.90	4.90	4.79	4.84	4.79	4.79	4.79	4.79
135.0	4.84	4.79	4.84	4.79	4.79	4.79	4.79	4.79	4.79
180.0	4.79	4.73	4.79	4.73	4.73	4.79	4.79	4.79	4.73
225.0	4.79	4.79	4.79	4.79	4.79	4.73	4.79	4.73	4.73
270.0	4.90	4.84	4.90	4.90	4.84	4.84	4.90	4.84	4.79
315.0	4.84	4.79	4.84	4.84	4.79	4.79	4.79	4.79	4.73
360.0	4.79	4.84	4.79	4.84	4.79	4.79	4.79	4.73	4.79

Intensity data(cd)

C/γ(°)	90.0
0.0	4.79
45.0	4.73
90.0	4.73
135.0	4.79
180.0	4.73
225.0	4.73
270.0	4.79
315.0	4.79
360.0	4.79