NATA LIGHTING CO.,LTD.
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Nata

LumCAT: LN01D04536DA-N
Luminaire: 97.70.234.00
Report No: 200708-B008
Test No: 200708-C008
LampCAT: BRIDGELUX V6HD
Lamp flux(lm): 718.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.8800
Current(A): 0.1510
Power (W): 5.1200
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 642.58
Efficiency(%): 89.50%
Lumens(lm)/Power(W): 125.50
Central intensity(cd): 1435.500
Maximum intensity(cd): 1435.500
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=38.1
[C90/270]Total=38.1
Field angle(10%Imax): [C0/180]Total=59.4
[C90/270]Total=59.4
Maximum s/h(1/2): C0_180=0.63 C90_270=0.63
Maximum s/h(1/4): C0_180=0.59 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.50%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.556%

Nata LM01D04536DA

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1435.500	0.000	0	.000%	.000%
1.0	1435.359	1.374	1.374	.191%	.214%
2.0	1433.320	4.117	5.491	.573%	.855%
3.0	1429.172	6.846	12.337	.954%	1.920%
4.0	1423.969	9.550	21.888	1.330%	3.406%
5.0	1414.547	12.211	34.099	1.701%	5.307%
6.0	1401.398	14.799	48.897	2.061%	7.610%
7.0	1384.242	17.290	66.188	2.408%	10.300%
8.0	1361.461	19.650	85.838	2.737%	13.358%
9.0	1332.703	21.835	107.673	3.041%	16.756%
10.0	1299.305	23.819	131.492	3.317%	20.463%
11.0	1257.750	25.550	157.042	3.559%	24.439%
12.0	1211.484	26.992	184.034	3.759%	28.640%
13.0	1142.663	27.938	211.972	3.891%	32.988%
14.0	1095.005	28.642	240.614	3.989%	37.445%
15.0	1030.641	29.182	269.796	4.064%	41.986%
16.0	958.535	29.147	298.943	4.059%	46.522%
17.0	878.822	28.613	327.555	3.985%	50.975%
18.0	794.545	27.590	355.145	3.843%	55.269%
19.0	720.675	26.362	381.507	3.672%	59.371%
20.0	638.325	24.873	406.381	3.464%	63.242%
21.0	559.863	23.008	429.388	3.204%	66.823%
22.0	495.795	21.214	450.602	2.955%	70.124%
23.0	429.813	19.422	470.024	2.705%	73.147%
24.0	370.111	17.489	487.513	2.436%	75.868%
25.0	317.658	15.638	503.151	2.178%	78.302%
26.0	276.933	14.035	517.187	1.955%	80.486%
27.0	235.772	12.543	529.73	1.747%	82.438%
28.0	193.964	10.880	540.61	1.515%	84.132%
29.0	162.274	9.320	549.93	1.298%	85.582%
30.0	136.266	8.061	557.991	1.123%	86.836%
31.0	114.244	6.971	564.962	.971%	87.921%
32.0	95.161	5.999	570.962	.836%	88.855%
33.0	80.016	5.161	576.122	.719%	89.658%
34.0	67.845	4.475	580.597	.623%	90.354%
35.0	57.361	3.888	584.485	.542%	90.960%
36.0	49.198	3.393	587.878	.473%	91.488%
37.0	43.291	3.016	590.895	.420%	91.957%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	37.730	2.704	593.599	.377%	92.378%
39.0	33.180	2.420	596.019	.337%	92.755%
40.0	29.820	2.197	598.217	.306%	93.096%
41.0	26.740	2.014	600.231	.281%	93.410%
42.0	24.026	1.844	602.075	.257%	93.697%
43.0	21.825	1.698	603.774	.237%	93.961%
44.0	19.849	1.573	605.346	.219%	94.206%
45.0	18.098	1.458	606.805	.203%	94.433%
46.0	16.608	1.357	608.162	.189%	94.644%
47.0	15.159	1.263	609.426	.176%	94.841%
48.0	13.922	1.176	610.601	.164%	95.024%
49.0	12.839	1.099	611.7	.153%	95.195%
50.0	11.813	1.028	612.728	.143%	95.355%
51.0	10.941	0.963	613.691	.134%	95.505%
52.0	10.223	0.908	614.599	.126%	95.646%
53.0	9.492	0.858	615.456	.119%	95.779%
54.0	8.888	0.810	616.267	.113%	95.905%
55.0	8.395	0.771	617.038	.107%	96.025%
56.0	7.903	0.736	617.774	.103%	96.140%
57.0	7.502	0.704	618.479	.098%	96.250%
58.0	7.165	0.678	619.157	.094%	96.355%
59.0	6.855	0.655	619.813	.091%	96.457%
60.0	6.567	0.634	620.447	.088%	96.556%
61.0	6.342	0.616	621.063	.086%	96.652%
62.0	6.131	0.601	621.664	.084%	96.745%
63.0	5.941	0.587	622.251	.082%	96.837%
64.0	5.794	0.576	622.827	.080%	96.926%
65.0	5.625	0.565	623.392	.079%	97.014%
66.0	5.498	0.555	623.947	.077%	97.101%
67.0	5.407	0.548	624.495	.076%	97.186%
68.0	5.309	0.543	625.038	.076%	97.270%
69.0	5.730	0.563	625.601	.078%	97.358%
70.0	6.553	0.631	626.232	.088%	97.456%
71.0	7.580	0.730	626.963	.102%	97.570%
72.0	8.768	0.850	627.813	.118%	97.702%
73.0	9.654	0.963	628.776	.134%	97.852%
74.0	10.385	1.054	629.829	.147%	98.016%
75.0	11.166	1.139	630.968	.159%	98.193%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.756	1.217	632.185	.169%	98.383%
77.0	11.932	1.263	633.448	.176%	98.579%
78.0	11.454	1.252	634.7	.174%	98.774%
79.0	10.723	1.192	635.891	.166%	98.959%
80.0	9.921	1.113	637.004	.155%	99.133%
81.0	9.042	1.026	638.03	.143%	99.292%
82.0	8.283	0.940	638.969	.131%	99.438%
83.0	6.757	0.818	639.787	.114%	99.566%
84.0	4.697	0.624	640.411	.087%	99.663%
85.0	3.586	0.452	640.863	.063%	99.733%
86.0	3.326	0.378	641.241	.053%	99.792%
87.0	3.164	0.355	641.596	.049%	99.847%
88.0	2.988	0.337	641.933	.047%	99.900%
89.0	2.925	0.324	642.257	.045%	99.950%
90.0	2.918	0.320	642.577	.045%	100.000%

Zonal flux distribution table

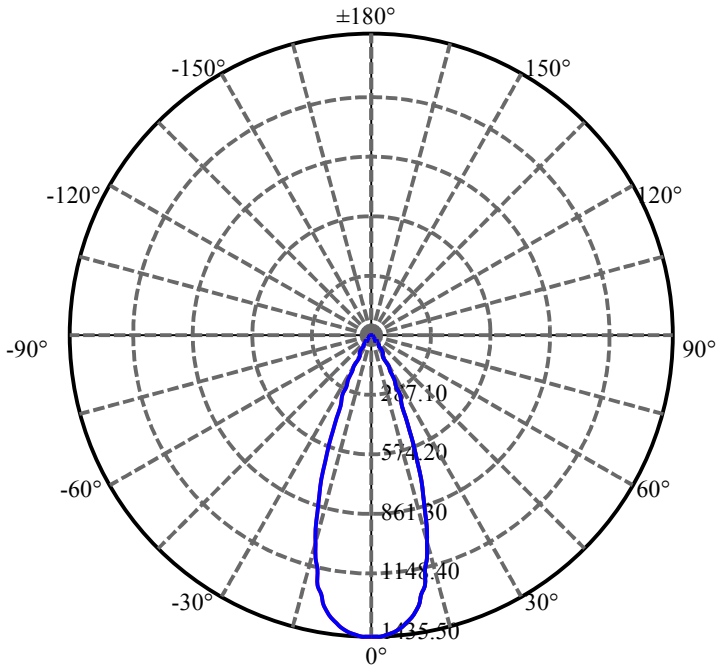
ZONAL LUMEN SUMMARY

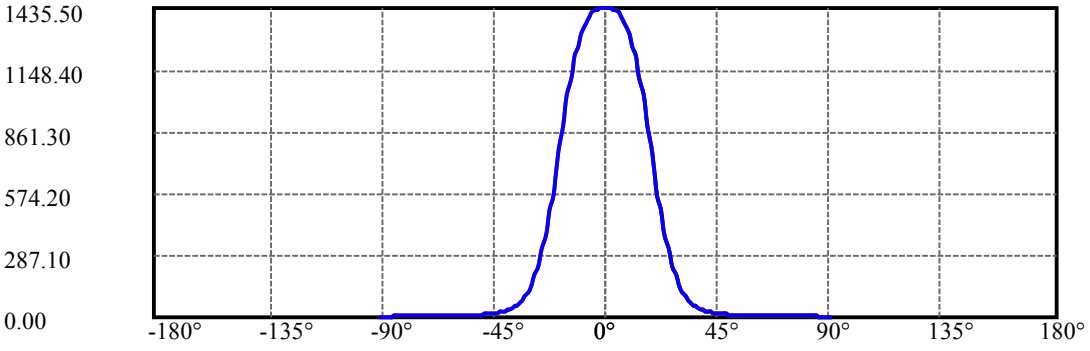
Zone	Lumens	%Lamp	%Fixt
0-30	557.99	77.71%	86.84%
0-40	598.22	83.32%	93.10%
0-60	620.45	86.41%	96.56%
0-90	642.26	89.45%	99.95%
0-120	642.26	89.45%	99.95%
0-180	642.58	89.50%	100.00%
60-90	22.44	3.13%	3.49%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.78	514.06	71.60%	80.00%

ZONAL LUMEN SUMMARY

0-10	131.49
10-20	274.89
20-30	151.61
30-40	40.23
40-50	14.51
50-60	7.72
60-70	5.79
70-80	10.77
80-90	5.25
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:

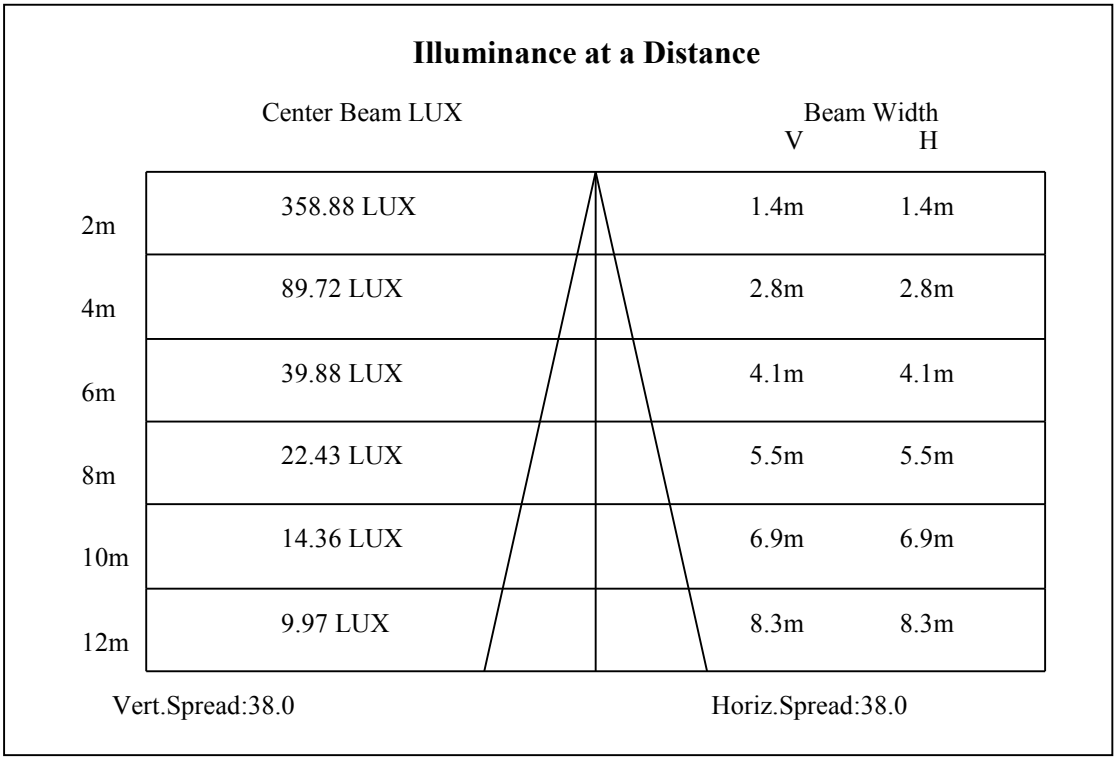
C90/C270:

Field angle(10%Imax):C0/180Left:29.7 Right:29.7
:C90/270Left:29.7 Right:29.7

Beam Angle(50%Imax):C0/180Left:19.0 Right:19.0
:C90/270Left:19.0 Right:19.0

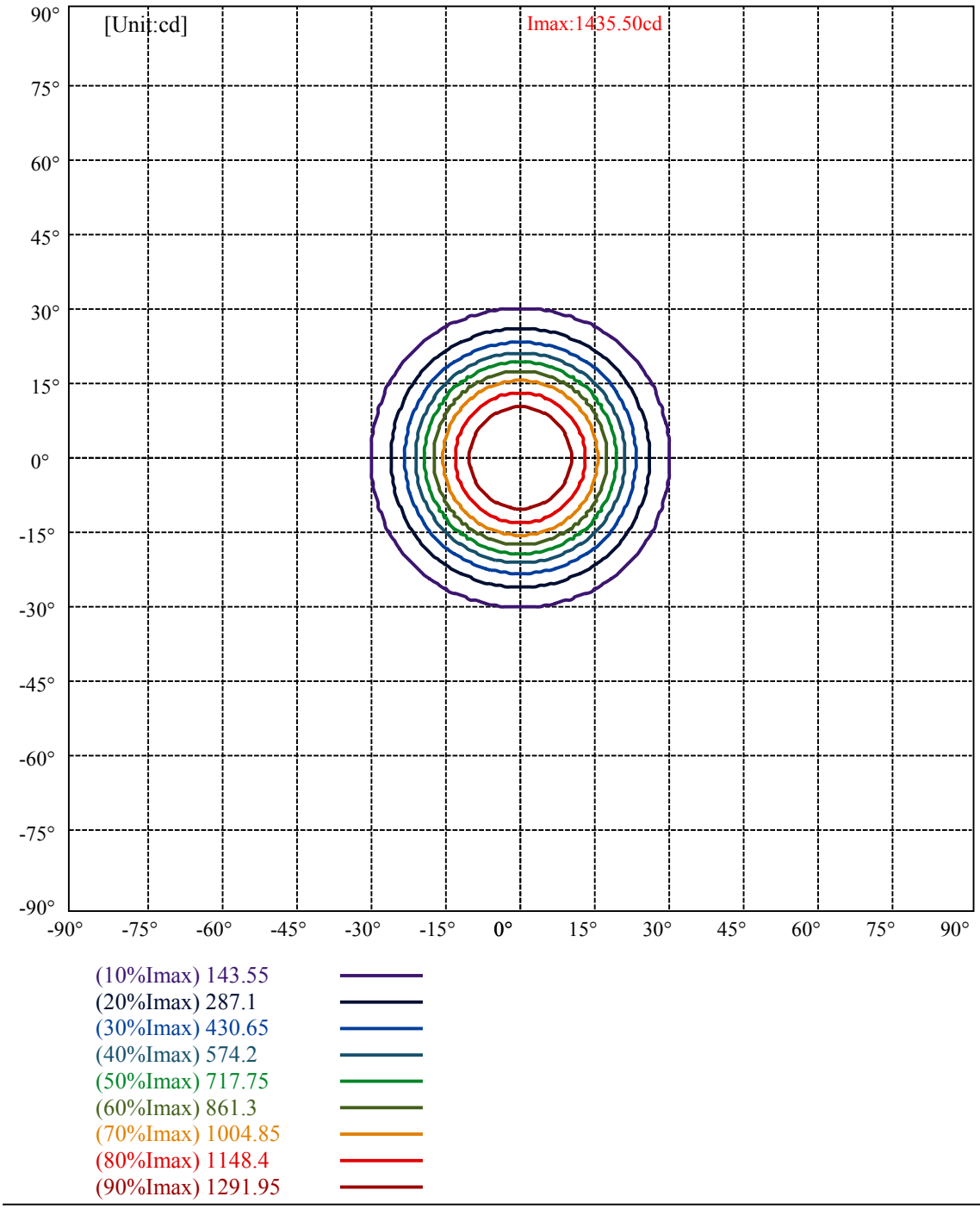
Equipment: GMS1980 Date: 2020/7/8 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Lux distance Curve



Equipment: GMS1980 Date: 2020/7/8 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)

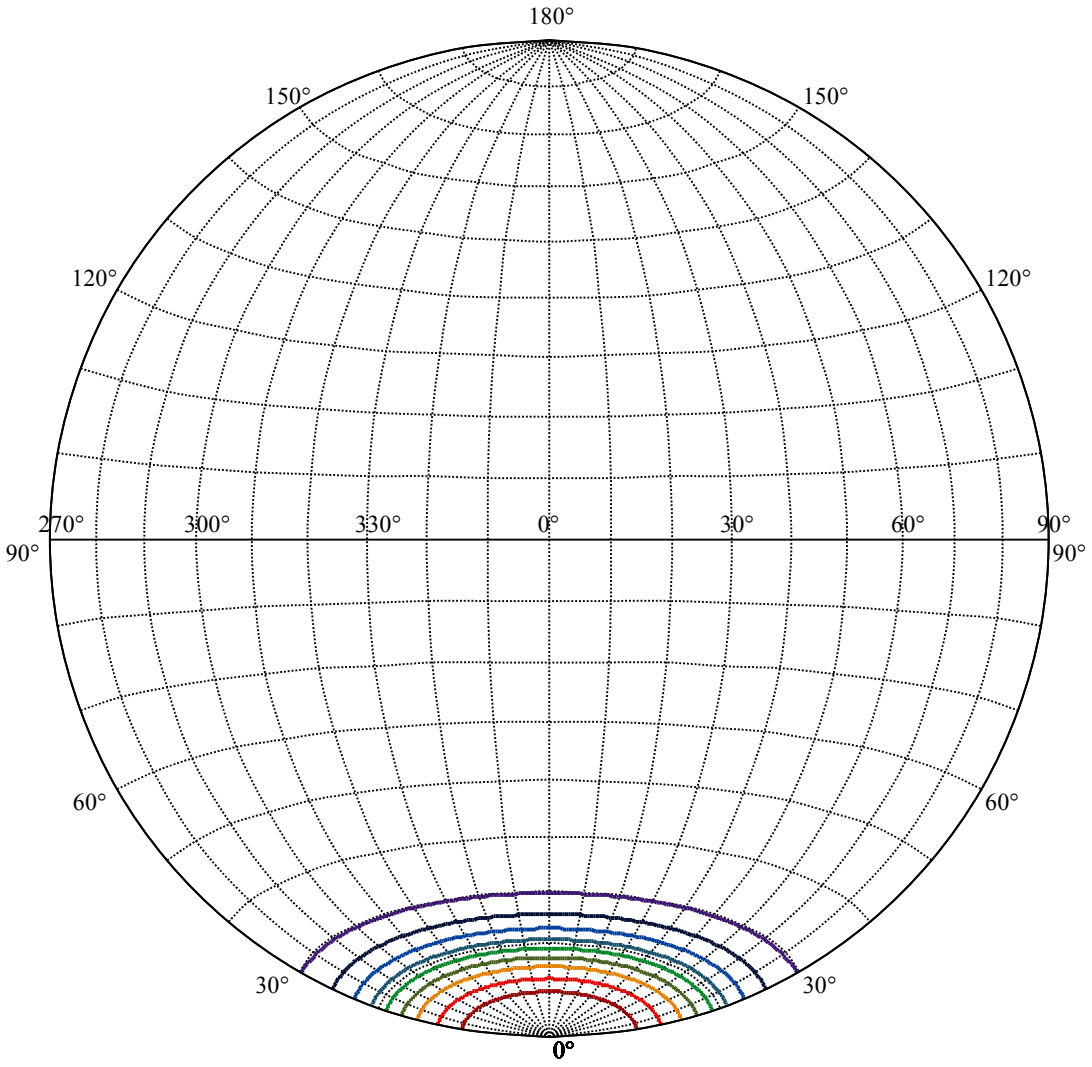


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/8
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



[Unit:cd]

Imax:1435.50

(10%Imax) 143.55
(20%Imax) 287.1
(30%Imax) 430.65
(40%Imax) 574.2
(50%Imax) 717.75
(60%Imax) 861.3
(70%Imax) 1004.85
(80%Imax) 1148.4
(90%Imax) 1291.95

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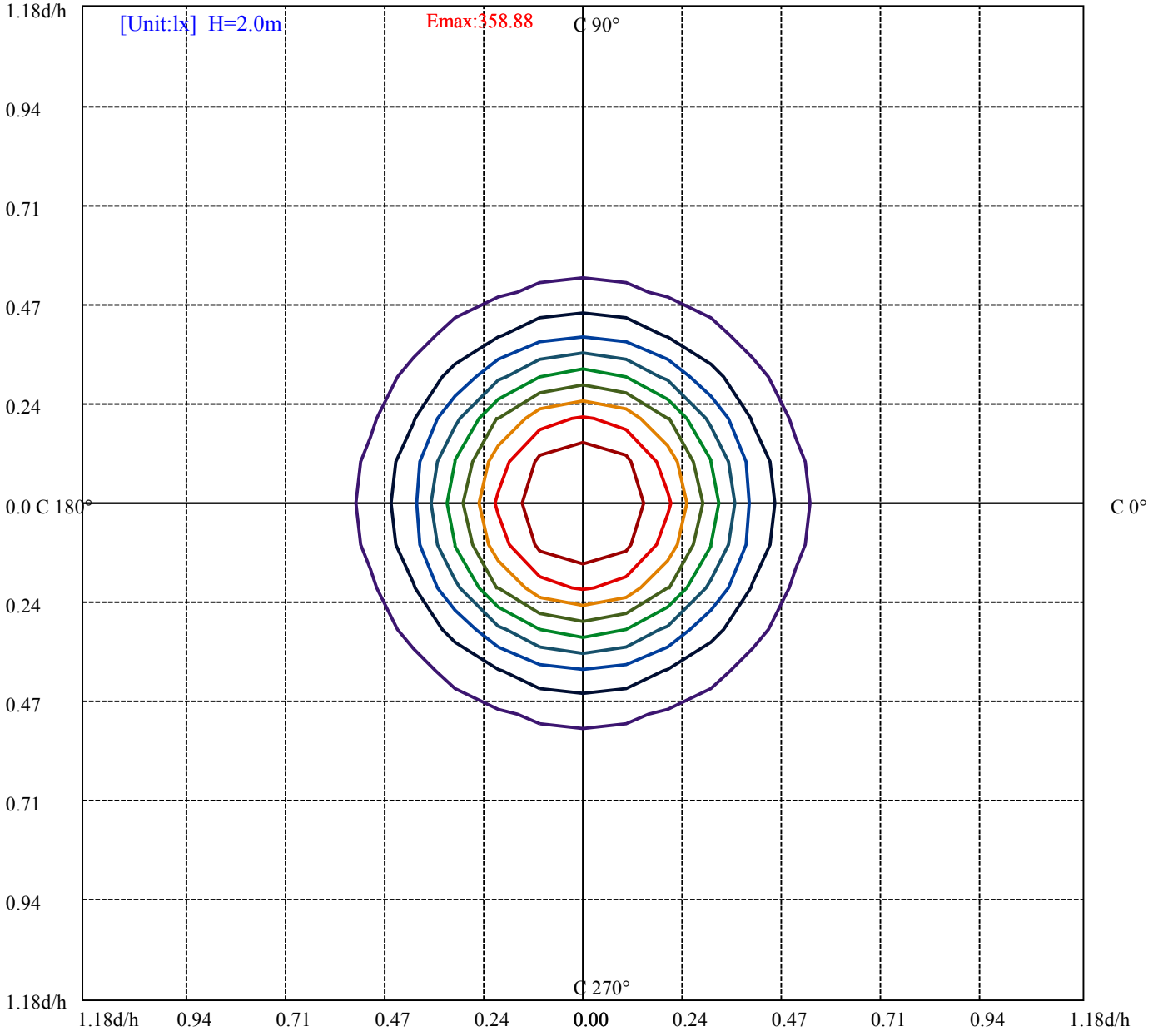
ISO illuminance diagram

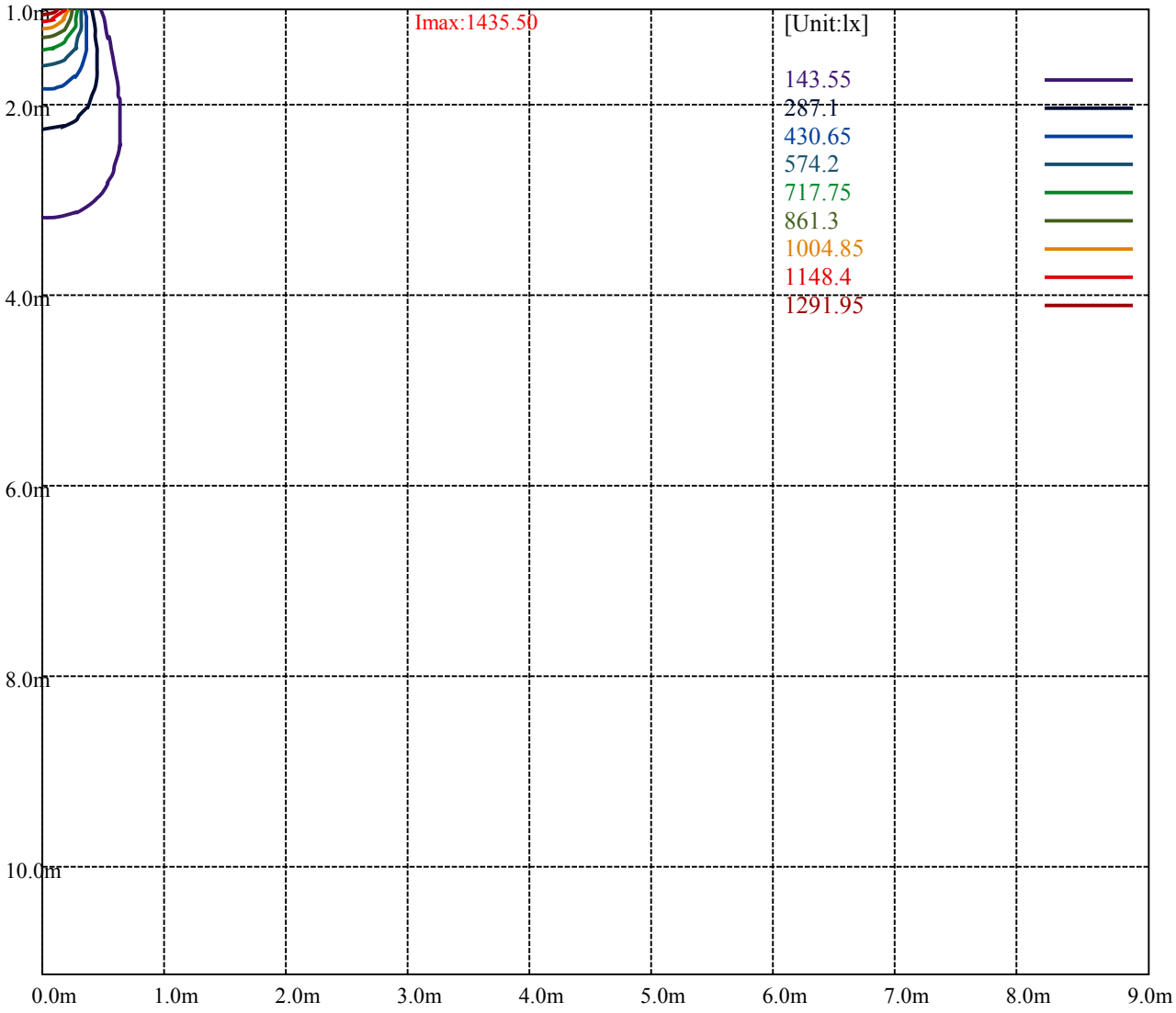


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/8
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/8
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

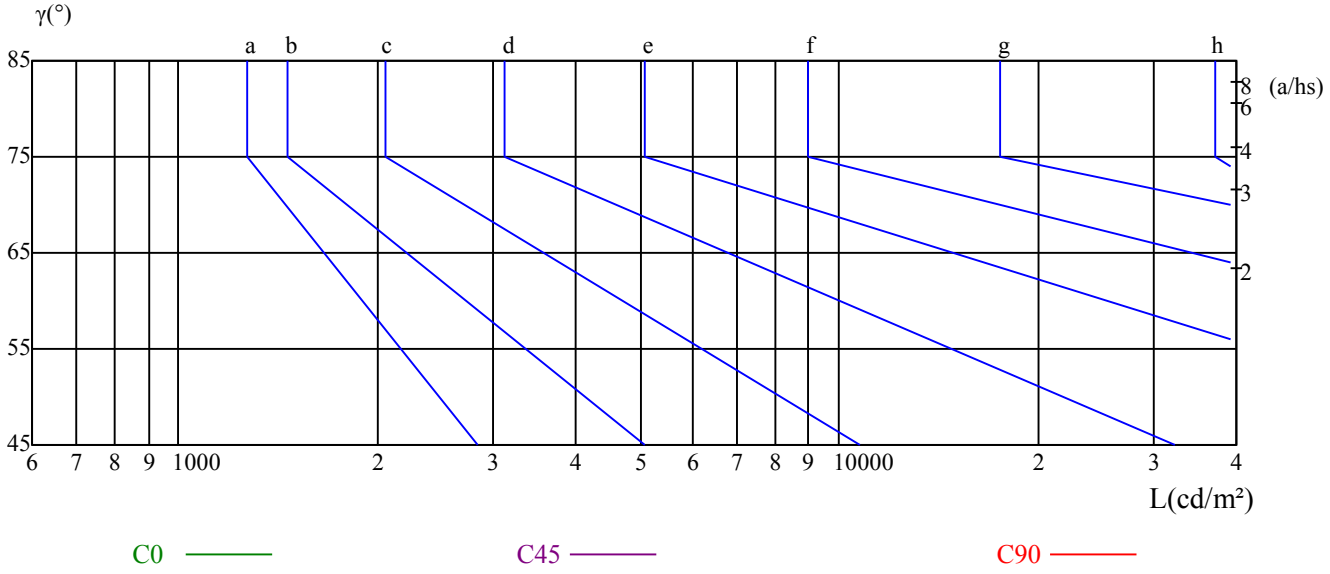
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

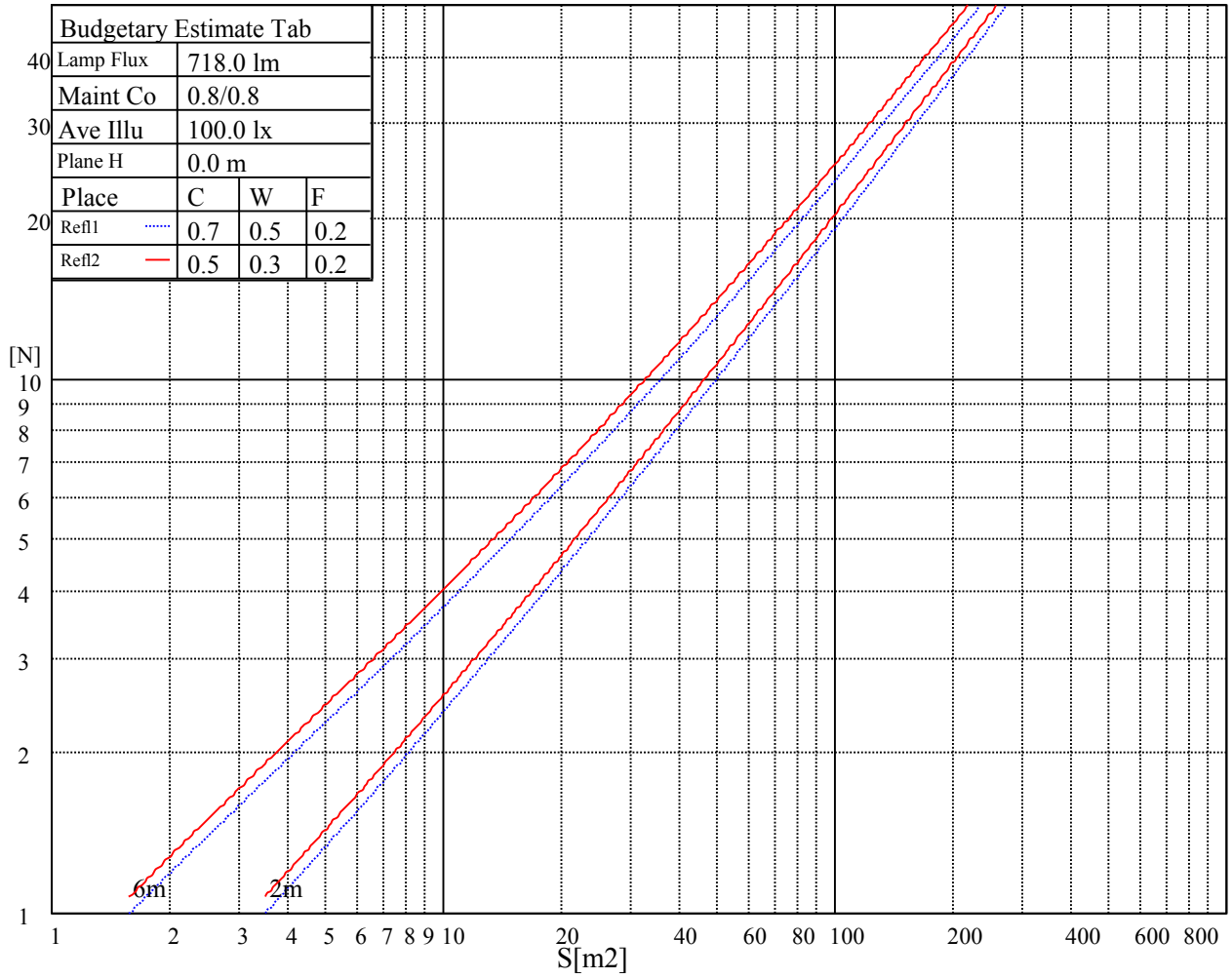
Glare Table

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



Budgetary Estimate Table

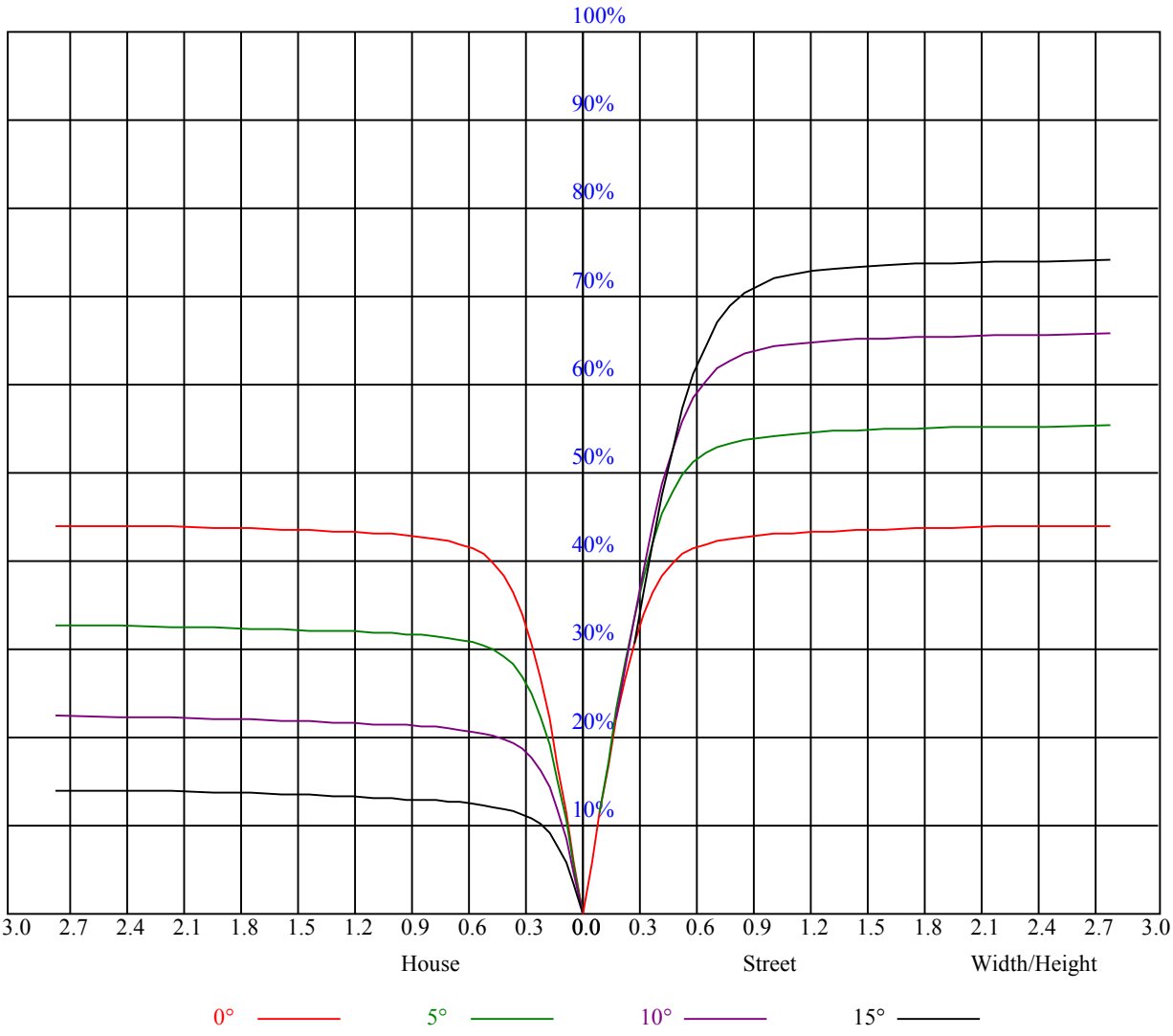


Equipment: GMS1980	Date: 2020/7/8	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.97	0.95	0.97	0.95	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.84
2	0.93	0.90	0.87	0.92	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.81	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.78	0.81	0.78	0.77	0.75
4	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.68
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.65
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.67	0.64	0.61	0.60
9	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/7/8	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	1433.81	1438.31	1438.31	1434.38	1426.50	1414.13	1400.06	1382.63	1357.88
45.0	1444.50	1440.00	1435.50	1427.06	1419.19	1410.75	1393.31	1374.19	1353.94
90.0	1429.88	1423.69	1417.50	1410.19	1404.00	1395.00	1381.50	1366.88	1343.81
135.0	1433.81	1426.50	1417.50	1409.06	1404.56	1391.06	1375.31	1359.56	1338.75
180.0	1433.81	1432.69	1427.06	1420.88	1411.31	1400.63	1383.19	1365.19	1340.44
225.0	1444.50	1447.88	1449.56	1448.44	1446.75	1439.44	1428.75	1409.63	1387.69
270.0	1429.88	1436.63	1442.25	1446.75	1446.75	1443.38	1438.88	1425.94	1404.56
315.0	1433.81	1437.19	1438.88	1436.63	1432.69	1422.00	1410.19	1389.94	1364.63
360.0	1433.81	1438.31	1438.31	1434.38	1426.50	1414.13	1400.06	1382.63	1357.88

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1327.50	1294.88	1250.44	1203.75	1149.19	1087.31	1027.13	947.25	863.44
45.0	1320.19	1287.56	1256.06	1206.00	1154.25	1110.94	1041.19	979.31	914.63
90.0	1321.31	1292.63	1253.81	1212.75	1120.84	1100.31	1045.01	983.36	906.64
135.0	1313.44	1290.38	1256.63	1221.19	1174.50	1122.75	1069.88	1003.50	929.25
180.0	1309.50	1272.94	1235.25	1181.81	1119.38	1072.97	1006.59	937.35	866.03
225.0	1358.44	1320.75	1271.81	1225.69	1116.00	1091.31	1022.01	947.19	848.98
270.0	1377.56	1343.25	1296.00	1249.31	1188.00	1118.81	1049.06	961.31	871.31
315.0	1333.69	1292.06	1242.00	1191.38	1119.15	1055.64	984.26	909.00	830.31
360.0	1327.50	1294.88	1250.44	1203.75	1149.19	1087.31	1027.13	947.25	863.44

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	789.75	724.50	628.88	562.50	507.38	425.81	372.94	317.25	288.56
45.0	821.81	748.69	679.50	590.63	521.44	460.69	394.88	341.44	295.31
90.0	824.63	749.87	666.84	585.45	519.92	450.84	395.83	339.58	289.13
135.0	856.69	783.00	693.00	617.06	546.75	472.50	415.69	362.81	308.25
180.0	771.98	697.61	627.30	544.28	483.47	425.53	365.23	309.94	267.36
225.0	770.23	693.39	609.53	533.36	469.18	402.41	341.27	293.01	246.26
270.0	790.31	712.69	617.63	545.63	479.81	419.06	350.44	302.06	284.06
315.0	730.97	655.65	583.93	500.01	438.41	381.66	324.62	275.18	236.53
360.0	789.75	724.50	628.88	562.50	507.38	425.81	372.94	317.25	288.56

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	226.18	193.56	162.11	138.38	115.48	96.69	82.74	69.75	59.06
45.0	285.19	210.71	179.72	150.75	125.55	106.88	89.10	75.99	63.62
90.0	249.64	214.20	175.84	149.40	127.13	103.61	88.37	75.32	61.76
135.0	287.44	224.61	187.93	158.91	131.46	108.39	91.69	76.33	63.90
180.0	223.99	191.59	159.13	131.85	111.71	92.42	77.40	66.26	57.43
225.0	209.87	174.38	145.41	123.02	103.95	84.83	72.34	61.99	51.86
270.0	206.89	175.50	148.84	123.08	101.81	87.98	71.49	59.74	51.47
315.0	196.99	167.18	139.22	114.75	96.86	80.49	66.99	57.38	49.78
360.0	226.18	193.56	162.11	138.38	115.48	96.69	82.74	69.75	59.06

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	51.30	45.23	38.59	34.31	30.77	27.51	24.69	22.50	20.48
45.0	53.61	46.69	41.01	35.27	31.44	28.18	24.81	22.67	20.59
90.0	52.99	45.96	38.93	34.43	30.77	26.89	24.69	22.33	19.91
135.0	54.96	47.81	40.61	36.28	32.40	28.74	25.71	23.57	21.21
180.0	48.54	42.98	38.08	33.24	29.98	27.17	24.30	21.94	20.25
225.0	45.51	40.56	35.83	31.78	28.74	25.88	23.63	21.26	19.35
270.0	44.33	39.26	34.93	30.49	27.56	25.03	22.28	20.31	18.62
315.0	42.36	37.86	33.86	29.64	26.89	24.53	22.11	20.03	18.39
360.0	51.30	45.23	38.59	34.31	30.77	27.51	24.69	22.50	20.48

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	18.56	17.04	15.41	14.12	12.83	11.81	10.97	10.18	9.39
45.0	18.79	17.04	15.75	14.40	13.39	12.38	11.36	10.63	9.90
90.0	18.51	17.04	15.24	14.23	13.11	11.87	11.19	10.46	9.68
135.0	19.18	17.78	16.37	15.02	13.78	12.77	11.81	11.03	10.13
180.0	18.39	16.93	15.41	14.01	12.99	11.93	11.08	10.29	9.62
225.0	17.83	16.26	14.85	13.73	12.66	11.48	10.69	10.01	9.34
270.0	16.76	15.47	14.18	12.99	11.93	11.08	10.18	9.56	8.89
315.0	16.76	15.30	14.06	12.88	12.04	11.19	10.24	9.62	9.00
360.0	18.56	17.04	15.41	14.12	12.83	11.81	10.97	10.18	9.39

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.89	8.38	7.76	7.48	7.14	6.81	6.53	6.36	6.08
45.0	9.23	8.72	8.21	7.71	7.37	7.09	6.75	6.53	6.24
90.0	9.00	8.49	8.04	7.65	7.26	6.92	6.64	6.41	6.19
135.0	9.51	8.94	8.44	7.93	7.54	7.20	6.86	6.58	6.36
180.0	8.94	8.49	7.99	7.54	7.20	6.86	6.58	6.36	6.19
225.0	8.72	8.27	7.76	7.37	7.09	6.75	6.53	6.24	6.08
270.0	8.38	7.93	7.48	7.14	6.86	6.64	6.36	6.13	6.02
315.0	8.44	7.93	7.54	7.20	6.86	6.58	6.30	6.13	5.91
360.0	8.89	8.38	7.76	7.48	7.14	6.81	6.53	6.36	6.08

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.91	5.74	5.57	5.40	5.34	5.18	5.06	4.95	4.78
45.0	6.08	5.85	5.68	5.63	5.51	5.29	5.18	5.06	4.89
90.0	6.08	5.96	5.74	5.68	5.63	5.57	7.31	10.69	14.57
135.0	6.13	5.91	5.74	5.57	5.46	5.34	5.18	5.06	4.89
180.0	5.91	5.79	5.57	5.46	5.34	5.18	5.06	4.95	4.89
225.0	5.85	5.74	5.57	5.40	5.29	5.12	5.01	4.89	4.78
270.0	5.85	5.74	5.68	5.51	5.51	5.74	8.10	11.98	17.04
315.0	5.74	5.63	5.46	5.34	5.18	5.06	4.95	4.84	4.78
360.0	5.91	5.74	5.57	5.40	5.34	5.18	5.06	4.95	4.78

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.73	4.67	4.67	4.61	4.56	4.44	4.39	4.28	4.16
45.0	4.84	4.78	4.67	4.56	4.50	4.39	4.33	4.22	4.11
90.0	19.52	23.29	26.21	29.31	31.95	33.30	32.79	30.38	27.51
135.0	4.73	4.61	4.56	4.50	4.39	4.33	4.22	4.16	4.05
180.0	4.84	4.78	4.78	4.67	4.61	4.50	4.39	4.28	4.16
225.0	4.73	4.67	4.67	4.56	4.56	4.39	4.33	4.16	3.99
270.0	22.11	25.82	28.97	32.63	35.10	35.83	33.02	30.32	27.45
315.0	4.67	4.61	4.56	4.50	4.39	4.28	4.16	3.99	3.94
360.0	4.73	4.67	4.67	4.61	4.56	4.44	4.39	4.28	4.16

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.05	3.94	3.83	3.71	3.49	3.32	3.21	3.09	3.04
45.0	3.99	3.88	3.77	3.60	3.49	3.32	3.09	2.98	2.93
90.0	24.69	22.28	16.43	9.90	4.39	3.54	3.15	2.98	2.87
135.0	3.88	3.77	3.71	3.60	3.43	3.32	3.15	2.93	2.93
180.0	4.05	3.88	3.83	3.66	3.49	3.32	3.21	3.09	2.98
225.0	3.88	3.77	3.60	3.49	3.32	3.15	3.09	2.98	2.93
270.0	24.02	21.09	15.36	6.24	3.83	3.54	3.49	2.98	2.93
315.0	3.77	3.66	3.54	3.38	3.26	3.09	2.93	2.87	2.81
360.0	4.05	3.94	3.83	3.71	3.49	3.32	3.21	3.09	3.04

Intensity data(cd)

C/γ(°)	90.0
0.0	3.04
45.0	2.93
90.0	2.81
135.0	2.87
180.0	2.98
225.0	2.93
270.0	2.93
315.0	2.87
360.0	3.04