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

Nata

LumCAT: 3-1915-E
Luminaire: 92.76.323.00
Report No: NATA0100
Test No: GC2019111514
LampCAT: LUMENS EDC-57-20W
Lamp flux(lm): 1515.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 218.0000
Current(A): 0.0810
Power (W): 17.6000
PF: 0.9940
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1321.71
Efficiency(%): 87.24%
Lumens(lm)/Power(W): 75.10
Central intensity(cd): 11329.170
Maximum intensity(cd): 11329.170
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=12.9
[C90/270]Total=12.9
Field angle(10%Imax): [C0/180]Total=28.8
[C90/270]Total=28.8
Maximum s/h(1/2): C0_180=0.22 C90_270=0.22
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.24%
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	11329.172	0.000	0	.000%	.000%
1.0	11174.063	10.767	10.767	.711%	.815%
2.0	10540.055	31.166	41.934	2.057%	3.173%
3.0	9575.367	48.109	90.043	3.176%	6.813%
4.0	8473.922	60.417	150.46	3.988%	11.384%
5.0	7375.922	68.185	218.645	4.501%	16.543%
6.0	6153.188	71.099	289.744	4.693%	21.922%
7.0	5048.156	69.527	359.271	4.589%	27.182%
8.0	4123.477	65.640	424.91	4.333%	32.149%
9.0	3229.172	59.589	484.499	3.933%	36.657%
10.0	2610.984	52.851	537.351	3.489%	40.656%
11.0	2054.672	46.619	583.97	3.077%	44.183%
12.0	1676.813	40.790	624.761	2.692%	47.269%
13.0	1382.555	36.307	661.068	2.397%	50.016%
14.0	1178.944	32.787	693.855	2.164%	52.497%
15.0	1060.179	30.740	724.594	2.029%	54.823%
16.0	936.330	29.254	753.849	1.931%	57.036%
17.0	836.213	27.603	781.452	1.822%	59.124%
18.0	762.553	26.360	807.812	1.740%	61.119%
19.0	705.966	25.549	833.361	1.686%	63.052%
20.0	665.445	25.101	858.462	1.657%	64.951%
21.0	635.295	24.977	883.439	1.649%	66.841%
22.0	612.091	25.067	908.506	1.655%	68.737%
23.0	593.810	25.303	933.809	1.670%	70.652%
24.0	576.070	25.578	959.386	1.688%	72.587%
25.0	560.932	25.853	985.239	1.706%	74.543%
26.0	547.608	26.167	1011.407	1.727%	76.523%
27.0	534.734	26.480	1037.886	1.748%	78.526%
28.0	517.465	26.639	1064.526	1.758%	80.542%
29.0	504.190	26.729	1091.255	1.764%	82.564%
30.0	492.525	26.911	1118.166	1.776%	84.600%
31.0	479.243	27.043	1145.209	1.785%	86.646%
32.0	452.257	26.686	1171.895	1.761%	88.665%
33.0	409.964	25.401	1197.297	1.677%	90.587%
34.0	348.891	22.965	1220.262	1.516%	92.325%
35.0	280.441	19.545	1239.807	1.290%	93.803%
36.0	233.972	16.379	1256.186	1.081%	95.043%
37.0	145.884	12.389	1268.575	.818%	95.980%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	90.120	7.877	1276.452	.520%	96.576%
39.0	47.152	4.685	1281.137	.309%	96.931%
40.0	27.141	2.591	1283.729	.171%	97.127%
41.0	24.230	1.829	1285.558	.121%	97.265%
42.0	21.523	1.662	1287.22	.110%	97.391%
43.0	18.000	1.464	1288.684	.097%	97.501%
44.0	14.752	1.236	1289.92	.082%	97.595%
45.0	12.066	1.031	1290.951	.068%	97.673%
46.0	9.513	0.844	1291.795	.056%	97.737%
47.0	8.557	0.719	1292.513	.047%	97.791%
48.0	8.128	0.675	1293.188	.045%	97.842%
49.0	7.903	0.658	1293.846	.043%	97.892%
50.0	7.741	0.652	1294.499	.043%	97.941%
51.0	7.573	0.648	1295.146	.043%	97.990%
52.0	7.425	0.644	1295.79	.042%	98.039%
53.0	7.305	0.641	1296.431	.042%	98.088%
54.0	7.207	0.640	1297.07	.042%	98.136%
55.0	7.116	0.639	1297.71	.042%	98.184%
56.0	7.059	0.641	1298.35	.042%	98.233%
57.0	6.989	0.642	1298.993	.042%	98.281%
58.0	6.947	0.644	1299.637	.043%	98.330%
59.0	6.891	0.647	1300.284	.043%	98.379%
60.0	6.870	0.650	1300.934	.043%	98.428%
61.0	6.827	0.654	1301.588	.043%	98.478%
62.0	6.792	0.656	1302.244	.043%	98.527%
63.0	6.771	0.660	1302.904	.044%	98.577%
64.0	6.736	0.663	1303.566	.044%	98.627%
65.0	6.701	0.665	1304.231	.044%	98.678%
66.0	6.694	0.668	1304.9	.044%	98.728%
67.0	6.659	0.671	1305.571	.044%	98.779%
68.0	6.652	0.674	1306.245	.045%	98.830%
69.0	6.616	0.677	1306.922	.045%	98.881%
70.0	6.680	0.683	1307.605	.045%	98.933%
71.0	6.891	0.701	1308.306	.046%	98.986%
72.0	7.249	0.735	1309.042	.049%	99.042%
73.0	7.727	0.783	1309.825	.052%	99.101%
74.0	8.149	0.835	1310.66	.055%	99.164%
75.0	8.184	0.863	1311.523	.057%	99.229%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.488	0.832	1312.355	.055%	99.292%
77.0	6.785	0.761	1313.116	.050%	99.350%
78.0	6.469	0.709	1313.825	.047%	99.404%
79.0	6.349	0.689	1314.514	.045%	99.456%
80.0	6.159	0.674	1315.188	.045%	99.507%
81.0	6.110	0.664	1315.852	.044%	99.557%
82.0	6.068	0.660	1316.512	.044%	99.607%
83.0	6.040	0.658	1317.17	.043%	99.657%
84.0	6.005	0.656	1317.826	.043%	99.706%
85.0	5.970	0.654	1318.48	.043%	99.756%
86.0	5.941	0.651	1319.131	.043%	99.805%
87.0	5.920	0.649	1319.78	.043%	99.854%
88.0	5.871	0.646	1320.426	.043%	99.903%
89.0	5.843	0.642	1321.068	.042%	99.952%
90.0	5.815	0.639	1321.707	.042%	100.000%

Zonal flux distribution table

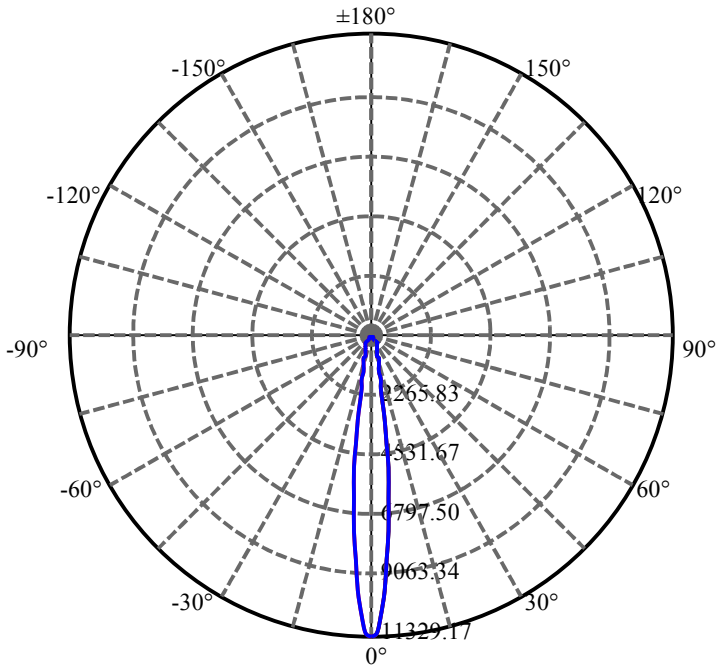
ZONAL LUMEN SUMMARY

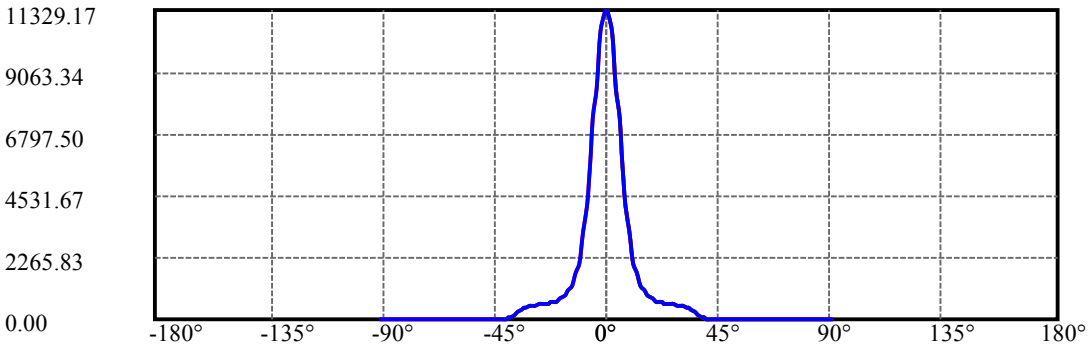
Zone	Lumens	%Lamp	%Fixt
0-30	1118.17	73.81%	84.60%
0-40	1283.73	84.73%	97.13%
0-60	1300.93	85.87%	98.43%
0-90	1321.07	87.20%	99.95%
0-120	1321.07	87.20%	99.95%
0-180	1321.71	87.24%	100.00%
60-90	20.78	1.37%	1.57%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.73	1057.37	69.79%	80.00%

ZONAL LUMEN SUMMARY

0-10	537.35
10-20	321.11
20-30	259.70
30-40	165.56
40-50	10.77
50-60	6.44
60-70	6.67
70-80	7.58
80-90	5.88
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):

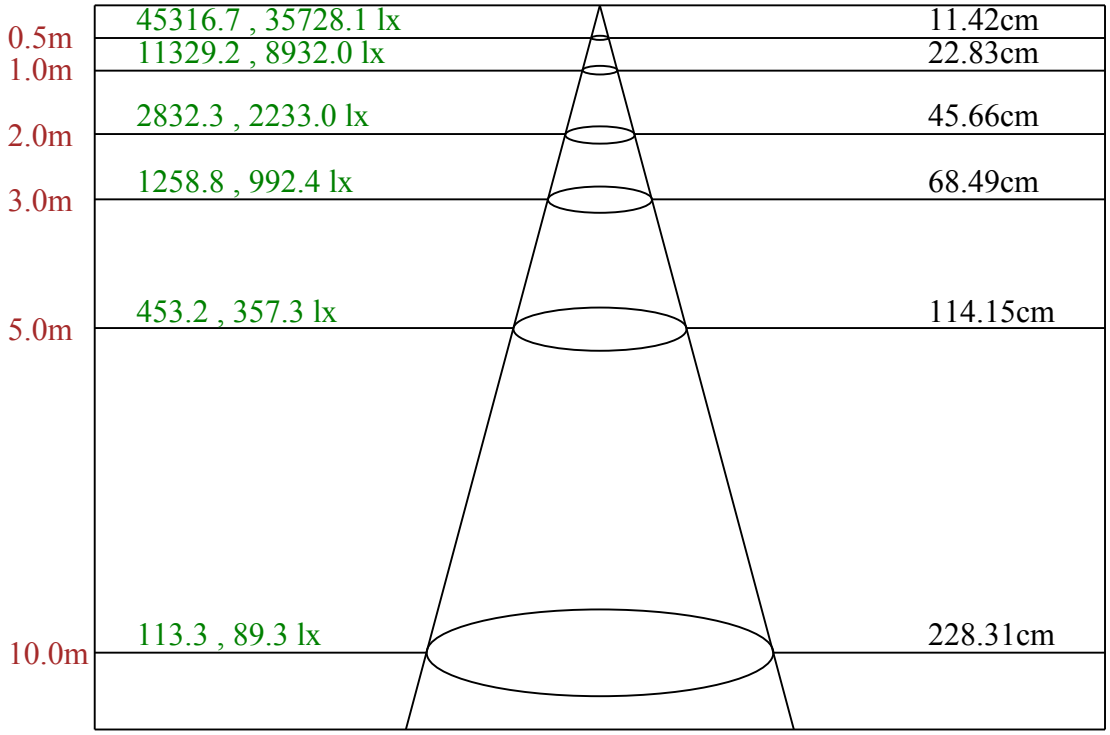
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.4 Right:14.4
:C90/270Left:14.4 Right:14.4

Beam Angle(50%Imax):C0/180Left:6.4 Right:6.4
:C90/270Left:6.4 Right:6.4

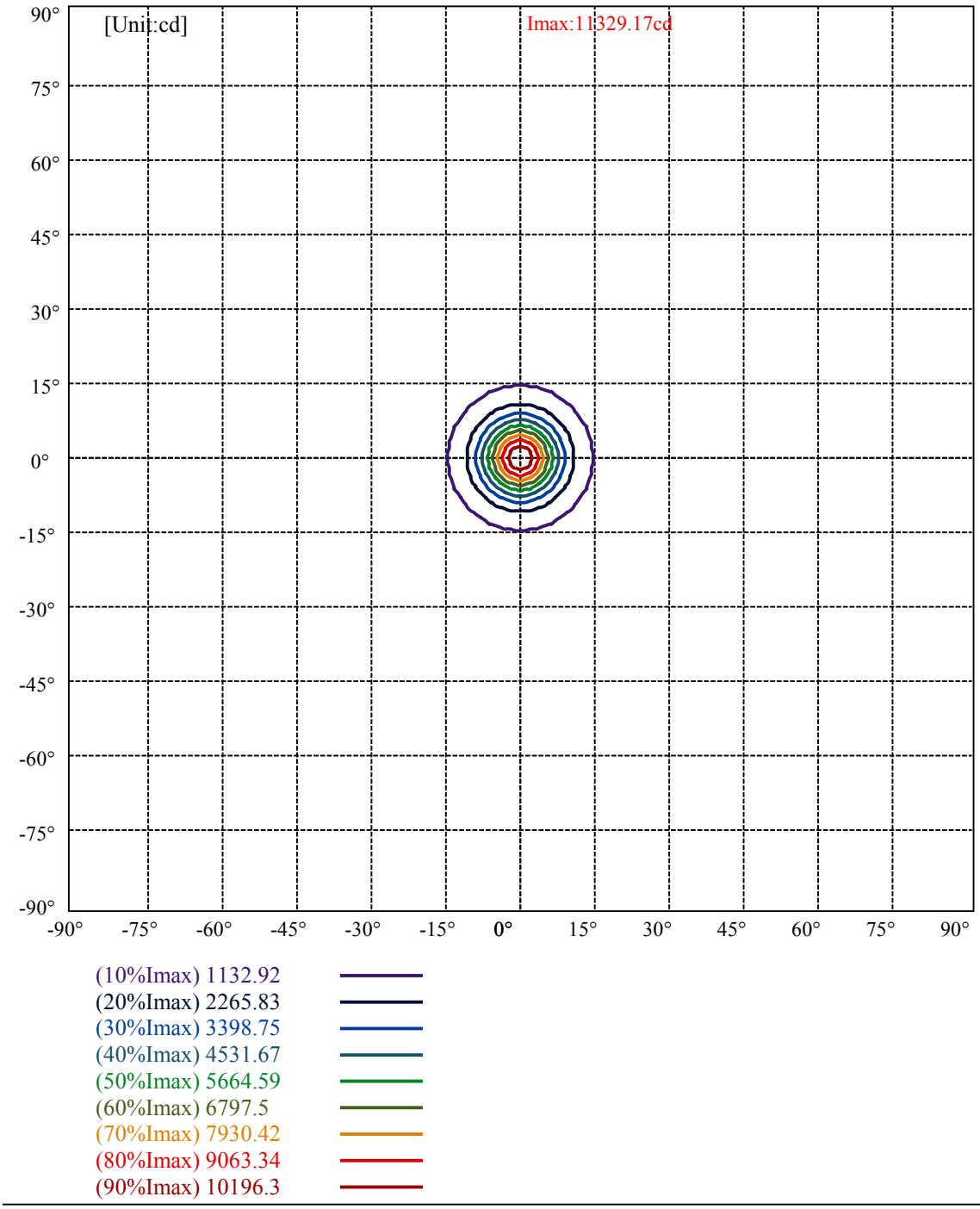
Lux distance Curve



Max , Ave

Beam angle of C0 plane 13.02

ISO-Intensity(V-H)

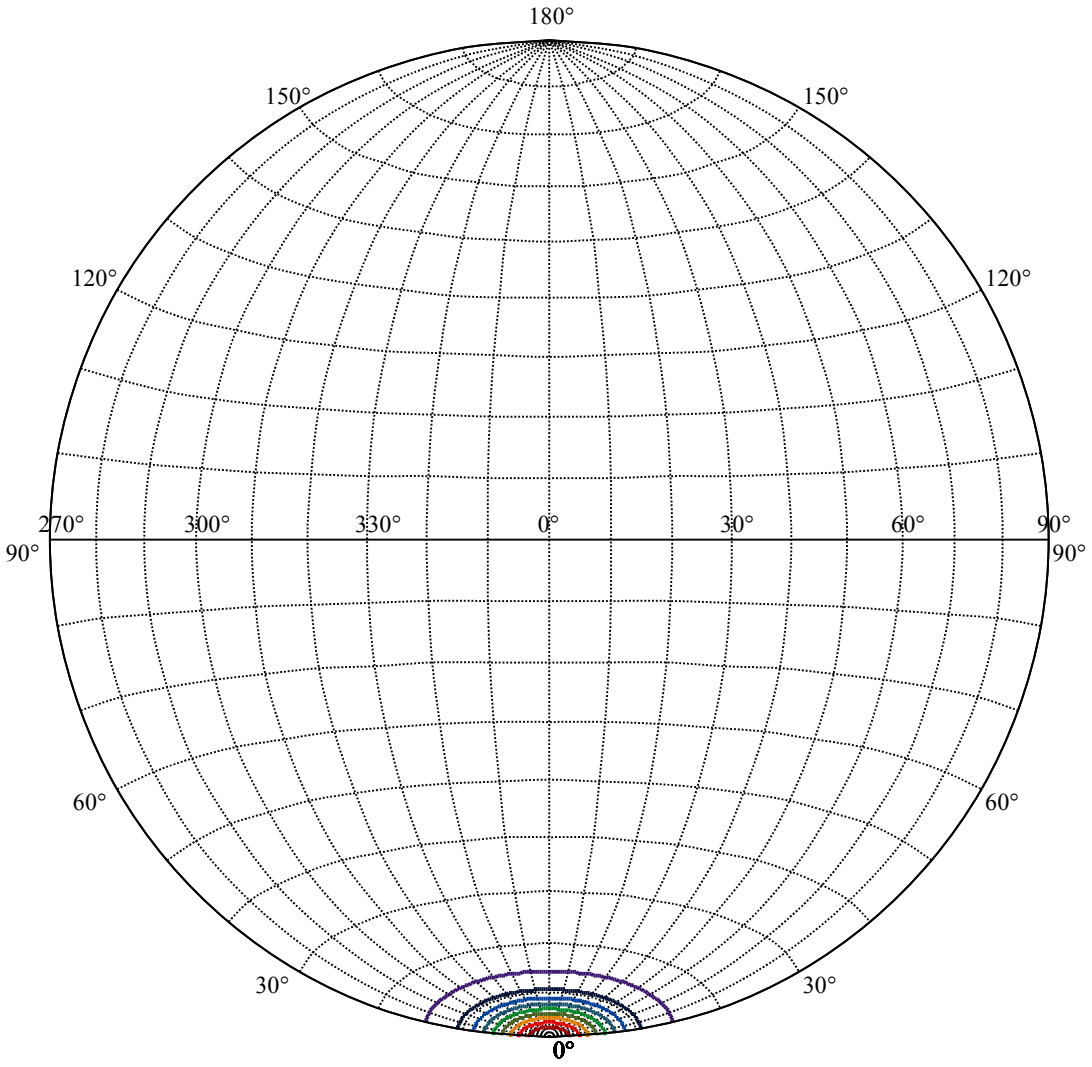


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:11329.17

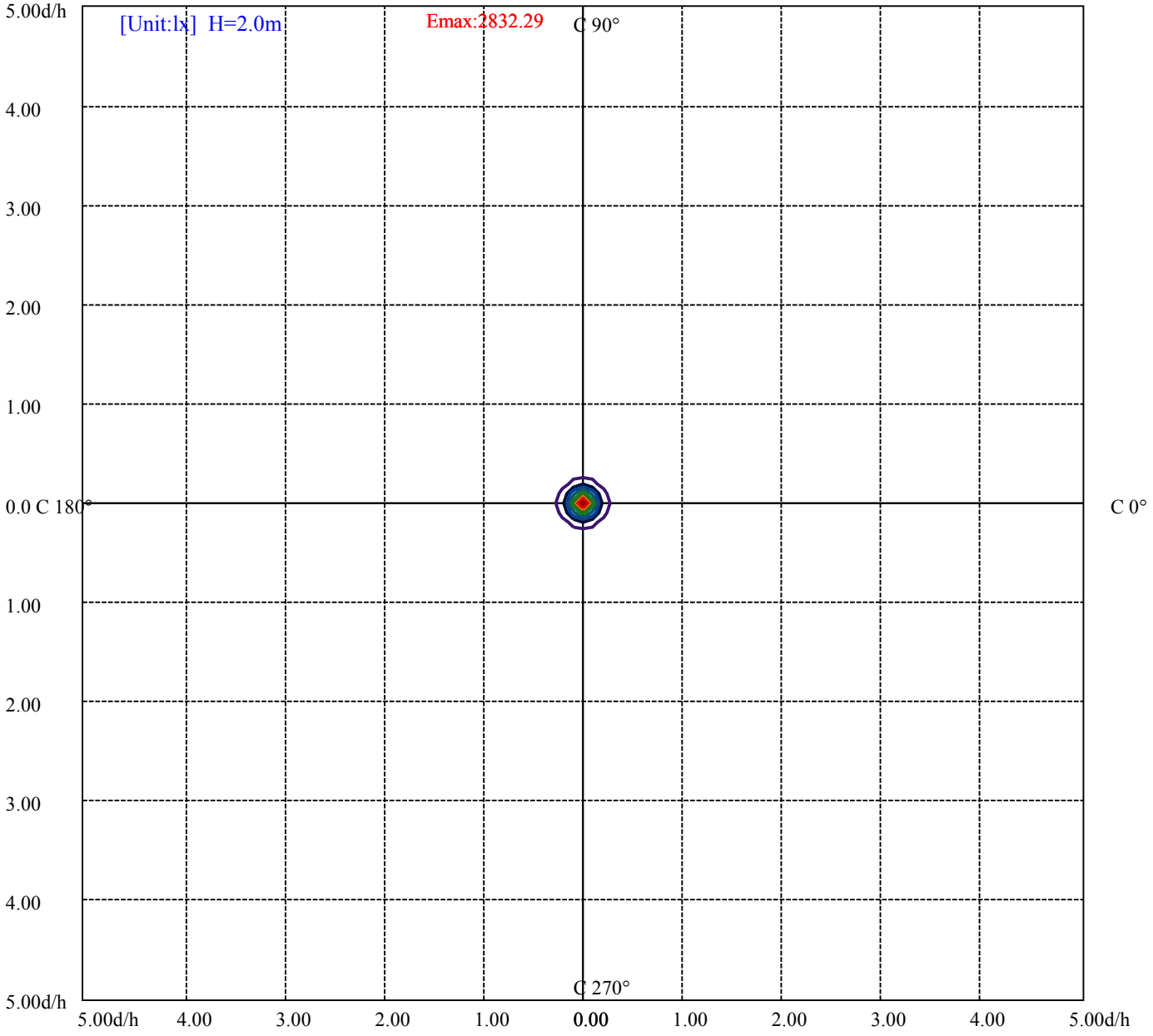
(10%Imax) 1132.92
(20%Imax) 2265.83
(30%Imax) 3398.75
(40%Imax) 4531.67
(50%Imax) 5664.59
(60%Imax) 6797.5
(70%Imax) 7930.42
(80%Imax) 9063.34
(90%Imax) 10196.3

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

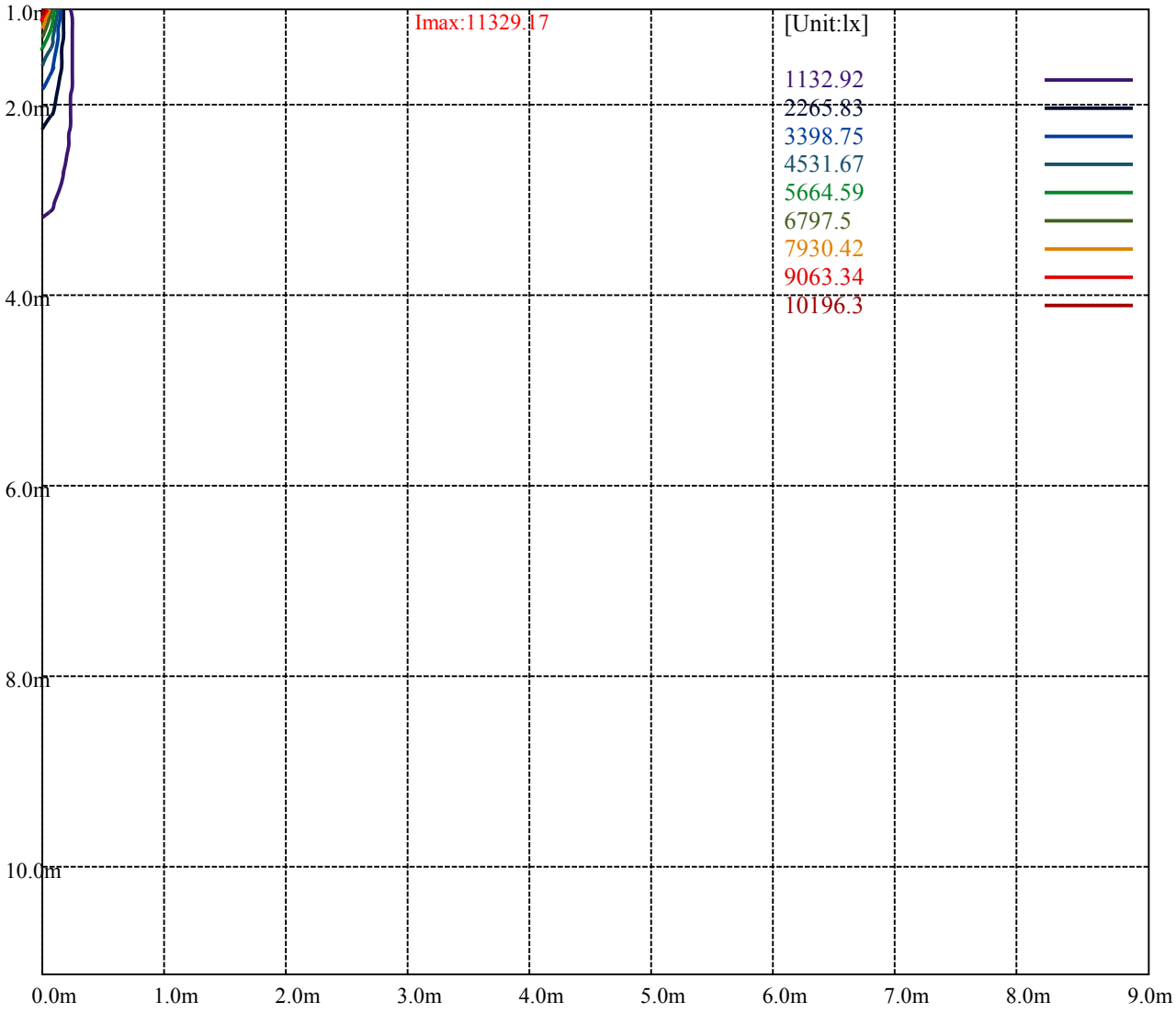


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

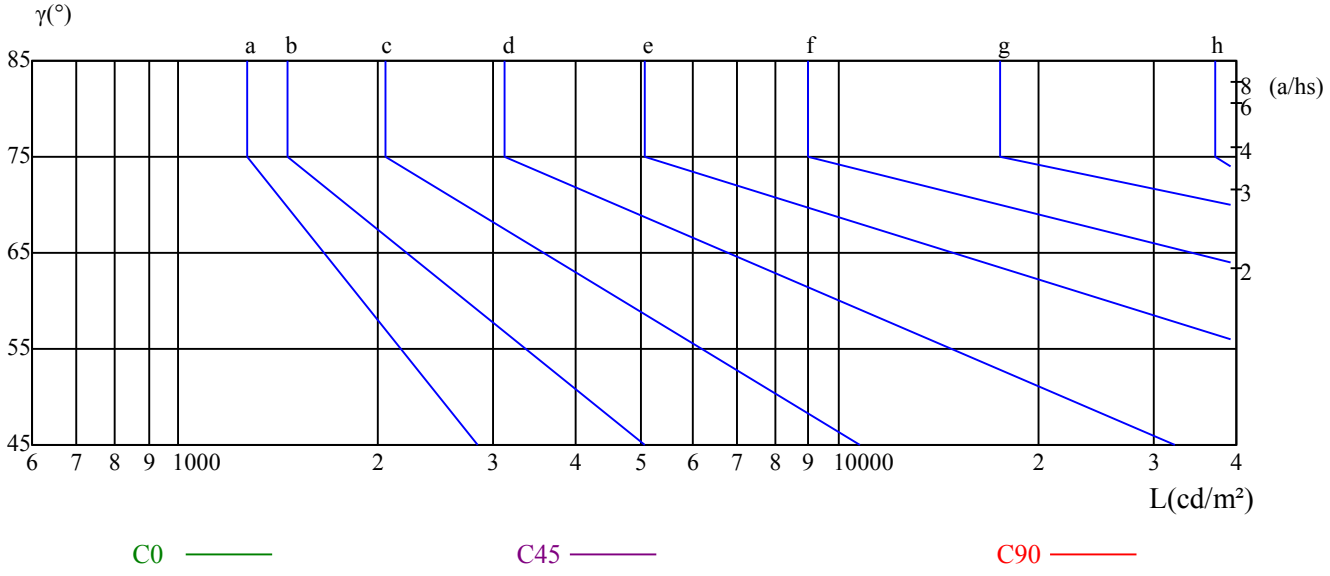
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

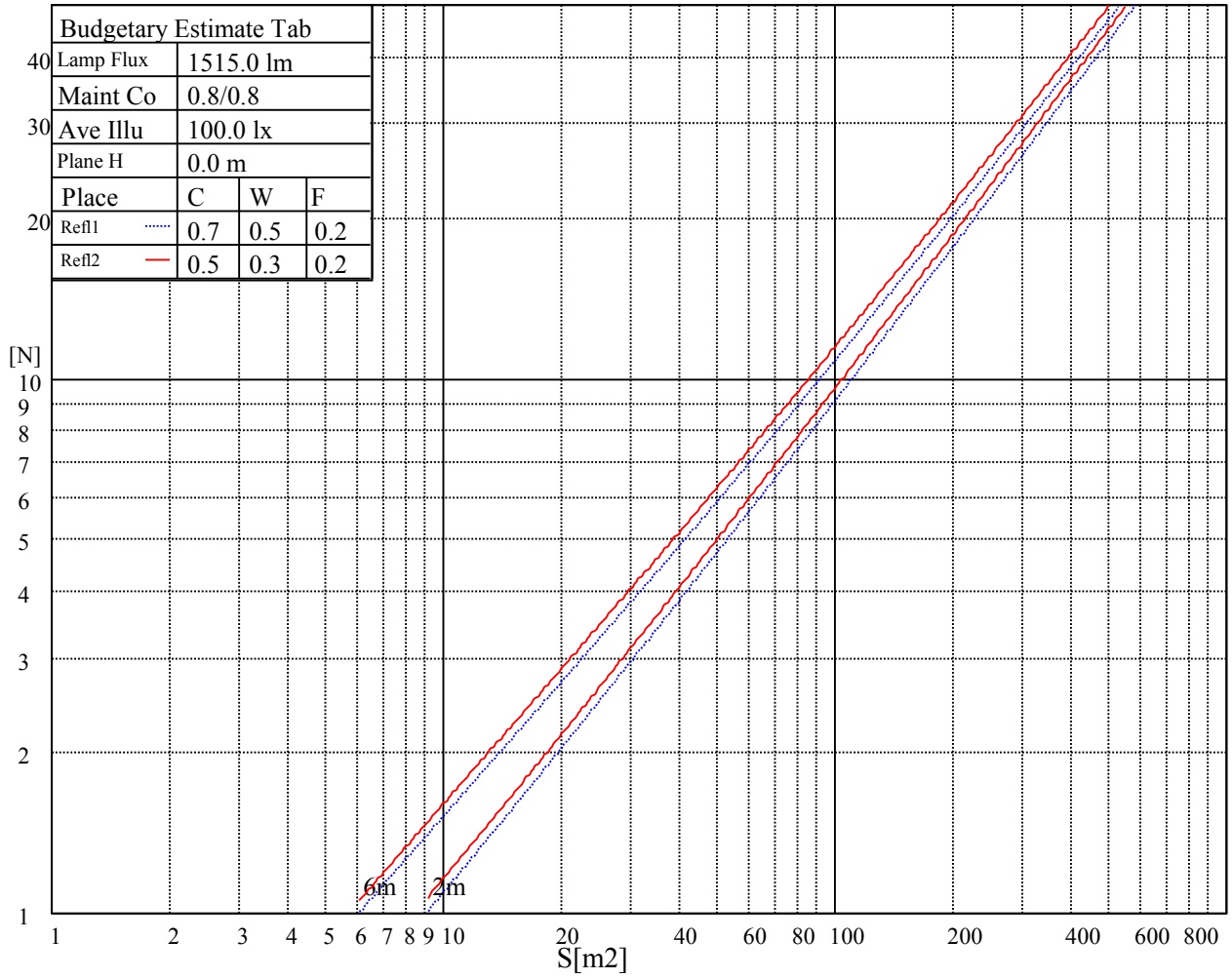
Glare Table

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

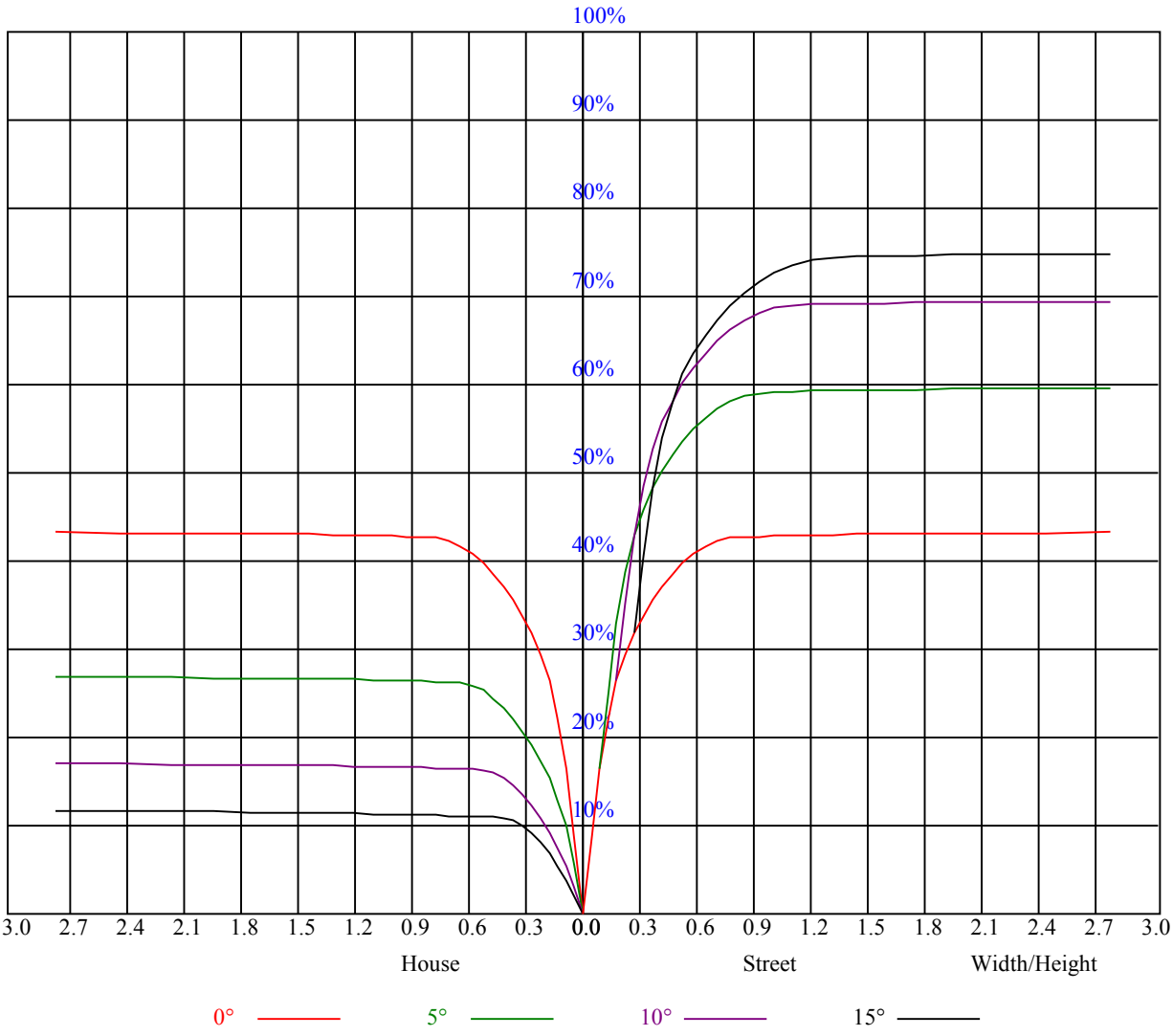


Equipment: GMS1980 Date: 2019/11/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.94	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.83
2	0.93	0.90	0.87	0.91	0.89	0.86	0.88	0.86	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.80
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.77
4	0.84	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.79	0.76	0.75	0.74
5	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.70	0.69
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
10	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.61

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/11/15	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	11469.38	11238.75	10575.00	9708.75	8555.63	7470.00	6255.00	5118.75	4185.00
45.0	11207.81	11266.88	10670.63	9736.88	8746.88	7678.13	6333.75	5293.13	4331.25
90.0	11424.38	11196.00	10590.75	9619.31	8462.25	7374.94	6155.44	4996.69	4057.88
135.0	11215.13	11407.50	10974.38	10113.75	9163.13	7970.63	6744.38	5692.50	4725.00
180.0	11469.38	11182.50	10557.00	9568.69	8403.75	7318.13	6108.19	4972.50	4051.69
225.0	11207.81	11032.88	10346.63	9313.88	8138.81	7047.56	5860.69	4754.81	3867.75
270.0	11424.38	11199.38	10513.13	9523.13	8482.50	7391.25	6058.13	5062.50	4140.00
315.0	11215.13	10868.63	10092.94	9018.56	7838.44	6756.75	5709.94	4494.38	3629.25
360.0	11469.38	11238.75	10575.00	9708.75	8555.63	7470.00	6255.00	5118.75	4185.00

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3279.38	2851.88	2073.94	1720.69	1413.00	1231.88	1090.13	957.94	849.94
45.0	3296.25	2851.88	2113.31	1704.94	1421.44	1231.88	1071.00	957.38	853.88
90.0	3233.25	2422.13	1969.31	1650.38	1365.75	1122.24	1058.57	948.66	836.66
135.0	3628.13	2891.25	2550.94	1877.63	1508.63	1299.38	1140.19	987.19	891.56
180.0	3240.00	2432.25	1972.13	1644.75	1351.69	1104.53	1040.91	922.50	824.74
225.0	3098.25	2340.00	1902.38	1590.19	1315.69	1118.64	1025.55	919.52	812.25
270.0	3155.63	2891.25	2047.50	1703.25	1397.81	1215.56	1071.00	938.81	832.50
315.0	2902.50	2207.25	1807.88	1522.69	1286.44	1107.45	984.09	858.66	788.18
360.0	3279.38	2851.88	2073.94	1720.69	1413.00	1231.88	1090.13	957.94	849.94

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	772.31	710.44	667.13	639.56	615.38	597.94	579.94	564.75	551.25
45.0	767.81	714.94	672.19	638.44	617.06	599.06	579.38	566.44	554.06
90.0	765.62	711.84	669.71	637.93	617.18	598.78	579.83	565.48	551.42
135.0	811.13	741.38	691.88	657.56	630.00	608.63	590.63	573.19	559.69
180.0	758.87	706.11	670.67	638.78	615.21	596.81	577.18	560.48	545.91
225.0	745.48	694.13	650.93	622.74	601.76	580.44	564.24	550.29	534.71
270.0	760.50	703.13	662.06	634.50	610.31	592.88	575.44	561.38	548.44
315.0	718.71	665.78	639.00	612.84	589.84	575.94	561.94	545.46	535.39
360.0	772.31	710.44	667.13	639.56	615.38	597.94	579.94	564.75	551.25

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	538.88	520.88	509.06	497.81	483.75	456.75	414.56	354.38	284.06
45.0	541.13	525.38	512.44	499.50	486.56	465.19	416.25	358.31	289.13
90.0	538.54	519.19	505.01	492.53	481.05	449.61	409.22	357.92	280.07
135.0	544.50	527.06	510.75	496.13	480.38	464.06	429.75	365.63	307.13
180.0	532.13	511.93	498.38	486.17	472.11	444.83	405.62	340.71	279.17
225.0	522.96	508.16	494.78	484.71	475.14	444.09	397.13	338.91	261.90
270.0	537.19	519.19	507.94	498.38	485.44	463.50	430.88	368.44	297.56
315.0	522.56	507.94	495.17	484.99	469.52	430.03	376.31	306.84	244.52
360.0	538.88	520.88	509.06	497.81	483.75	456.75	414.56	354.38	284.06

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	238.05	144.73	90.90	47.48	26.89	24.47	21.71	18.28	14.91
45.0	257.06	158.12	100.69	54.56	27.62	24.75	21.54	17.94	14.40
90.0	210.54	145.52	86.63	45.34	26.83	24.08	21.71	18.45	14.91
135.0	285.19	179.16	114.81	65.08	31.39	25.93	23.23	20.59	17.55
180.0	215.38	139.33	94.22	49.50	26.78	24.58	22.11	17.83	15.02
225.0	200.42	140.63	78.47	36.06	25.54	22.95	20.42	16.99	13.33
270.0	289.13	148.11	93.49	49.50	27.45	24.81	21.88	18.45	15.08
315.0	176.01	111.49	61.76	29.70	24.64	22.28	19.58	15.47	12.83
360.0	238.05	144.73	90.90	47.48	26.89	24.47	21.71	18.28	14.91

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	12.26	9.39	8.61	8.21	7.99	7.82	7.65	7.48	7.37
45.0	11.98	10.63	8.72	8.21	7.99	7.88	7.71	7.54	7.48
90.0	12.49	9.06	8.49	8.16	7.93	7.76	7.59	7.43	7.31
135.0	14.96	9.79	8.72	8.16	7.88	7.76	7.59	7.48	7.37
180.0	12.21	9.23	8.27	7.99	7.76	7.59	7.48	7.31	7.20
225.0	10.01	8.89	8.38	8.04	7.88	7.65	7.48	7.31	7.20
270.0	12.32	10.41	9.00	8.21	7.99	7.82	7.59	7.48	7.37
315.0	10.29	8.72	8.27	8.04	7.82	7.65	7.48	7.37	7.14
360.0	12.26	9.39	8.61	8.21	7.99	7.82	7.65	7.48	7.37

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.26	7.20	7.14	7.03	7.03	6.98	6.92	6.92	6.86
45.0	7.43	7.31	7.20	7.20	7.09	7.03	7.03	6.98	6.92
90.0	7.14	7.03	6.98	6.86	6.81	6.75	6.69	6.64	6.69
135.0	7.31	7.20	7.20	7.09	7.03	7.03	7.03	6.92	6.92
180.0	7.09	6.98	6.92	6.86	6.86	6.75	6.75	6.69	6.64
225.0	7.09	6.98	6.92	6.86	6.81	6.75	6.75	6.75	6.69
270.0	7.26	7.26	7.20	7.14	7.14	7.09	7.03	6.98	6.92
315.0	7.09	6.98	6.92	6.86	6.81	6.75	6.75	6.75	6.69
360.0	7.26	7.20	7.14	7.03	7.03	6.98	6.92	6.92	6.86

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.81	6.75	6.75	6.75	6.69	6.64	6.64	6.98	7.48
45.0	6.92	6.86	6.81	6.75	6.81	6.69	6.69	6.92	7.71
90.0	6.64	6.64	6.58	6.64	6.58	6.64	6.58	6.58	6.53
135.0	6.86	6.81	6.75	6.75	6.69	6.69	6.58	6.58	6.47
180.0	6.64	6.64	6.58	6.58	6.58	6.58	6.53	6.53	6.53
225.0	6.69	6.64	6.64	6.58	6.53	6.53	6.53	6.47	6.41
270.0	6.92	6.86	6.81	6.81	6.69	6.69	6.64	6.58	7.20
315.0	6.69	6.69	6.69	6.69	6.69	6.75	6.75	6.81	6.81
360.0	6.81	6.75	6.75	6.75	6.69	6.64	6.64	6.98	7.48

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.10	8.66	9.23	9.68	9.62	8.61	7.99	7.54	6.41
45.0	8.55	9.34	9.90	10.46	9.90	7.76	6.41	6.24	6.19
90.0	6.53	6.53	6.47	6.36	6.30	6.30	6.24	6.19	6.08
135.0	6.86	7.88	8.72	9.68	7.99	6.24	6.19	6.13	6.13
180.0	6.53	6.69	6.86	6.92	6.81	6.64	6.36	6.24	6.13
225.0	6.41	6.47	6.64	6.58	6.24	6.24	6.13	6.13	6.08
270.0	8.21	9.45	10.63	9.17	6.64	6.24	6.24	6.13	6.08
315.0	6.81	6.81	6.75	6.64	6.41	6.24	6.19	6.19	6.19
360.0	8.10	8.66	9.23	9.68	9.62	8.61	7.99	7.54	6.41

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.19	6.13	6.08	6.02	5.96	5.96	5.91	5.91	5.91
45.0	6.19	6.19	6.08	6.02	6.02	6.02	5.96	5.96	5.91
90.0	6.08	6.02	6.02	5.96	5.96	5.91	5.91	5.85	5.79
135.0	6.13	6.08	6.08	6.08	6.02	6.02	6.02	5.85	5.85
180.0	6.08	6.02	5.96	5.96	5.91	5.91	5.85	5.79	5.79
225.0	6.08	6.02	6.02	6.02	5.96	5.91	5.91	5.79	5.85
270.0	6.08	6.08	6.08	6.02	5.96	5.91	5.91	5.91	5.79
315.0	6.08	6.02	6.02	5.96	5.96	5.91	5.91	5.91	5.85
360.0	6.19	6.13	6.08	6.02	5.96	5.96	5.91	5.91	5.91

Intensity data(cd)

C/γ(°)	90.0
0.0	5.79
45.0	5.85
90.0	5.79
135.0	5.79
180.0	5.79
225.0	5.85
270.0	5.79
315.0	5.85
360.0	5.79