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Nata

LumCAT: 2-1121-A4
Luminaire: 99.02.73.172+92.76.365.00

Report No: 200407-B015	Voltage(V): 33.2400
Test No: 200407-C015	Current(A): 0.3470
LampCAT: LUMINUS CXM-14-AC40	Power (W): 11.5340
Lamp flux(lm): 1553.5	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): 1389.93
Efficiency(%): 89.47%
Lumens(lm)/Power(W): 120.51
Central intensity(cd): 4532.766
Maximum intensity(cd): 4532.766
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=26.1
[C90/270]Total=26.1
Field angle(10%Imax): [C0/180]Total=65.1
[C90/270]Total=65.1
Maximum s/h(1/2): C0_180=0.45 C90_270=0.45
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.47%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.260%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4532.766	0.000	0	.000%	.000%
1.0	4520.883	4.332	4.332	.279%	.312%
2.0	4486.570	12.928	17.26	.832%	1.242%
3.0	4427.789	21.320	38.581	1.372%	2.776%
4.0	4346.789	29.371	67.952	1.891%	4.889%
5.0	4249.125	36.979	104.931	2.380%	7.549%
6.0	4108.570	43.922	148.853	2.827%	10.709%
7.0	3932.297	49.910	198.763	3.213%	14.300%
8.0	3744.984	54.945	253.707	3.537%	18.253%
9.0	3504.375	58.752	312.459	3.782%	22.480%
10.0	3215.250	60.810	373.27	3.914%	26.855%
11.0	2937.867	61.482	434.752	3.958%	31.279%
12.0	2646.422	61.044	495.796	3.929%	35.671%
13.0	2280.445	58.469	554.266	3.764%	39.877%
14.0	1987.875	54.634	608.9	3.517%	43.808%
15.0	1705.802	50.708	659.608	3.264%	47.456%
16.0	1451.348	46.261	705.869	2.978%	50.785%
17.0	1221.954	41.631	747.5	2.680%	53.780%
18.0	1039.859	37.292	784.792	2.401%	56.463%
19.0	919.048	34.081	818.873	2.194%	58.915%
20.0	824.899	31.919	850.792	2.055%	61.211%
21.0	751.669	30.273	881.066	1.949%	63.389%
22.0	695.468	29.081	910.146	1.872%	65.482%
23.0	658.772	28.416	938.562	1.829%	67.526%
24.0	627.370	28.120	966.682	1.810%	69.549%
25.0	601.819	27.949	994.631	1.799%	71.560%
26.0	583.784	27.986	1022.617	1.801%	73.574%
27.0	567.253	28.160	1050.777	1.813%	75.600%
28.0	549.077	28.263	1079.041	1.819%	77.633%
29.0	536.435	28.400	1107.441	1.828%	79.676%
30.0	521.733	28.570	1136.011	1.839%	81.732%
31.0	496.807	28.344	1164.355	1.825%	83.771%
32.0	469.814	27.693	1192.048	1.783%	85.763%
33.0	439.158	26.779	1218.827	1.724%	87.690%
34.0	391.437	25.136	1243.963	1.618%	89.499%
35.0	349.376	23.007	1266.97	1.481%	91.154%
36.0	294.476	20.500	1287.47	1.320%	92.629%
37.0	239.977	17.431	1304.901	1.122%	93.883%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	199.716	14.676	1319.577	.945%	94.939%
39.0	142.530	11.682	1331.259	.752%	95.779%
40.0	97.418	8.369	1339.628	.539%	96.381%
41.0	66.635	5.842	1345.469	.376%	96.802%
42.0	43.559	4.004	1349.473	.258%	97.090%
43.0	25.692	2.565	1352.038	.165%	97.274%
44.0	18.577	1.671	1353.709	.108%	97.394%
45.0	15.356	1.304	1355.013	.084%	97.488%
46.0	12.157	1.076	1356.089	.069%	97.566%
47.0	10.582	0.904	1356.994	.058%	97.631%
48.0	9.612	0.816	1357.81	.053%	97.689%
49.0	8.810	0.757	1358.566	.049%	97.744%
50.0	8.107	0.705	1359.272	.045%	97.795%
51.0	7.770	0.672	1359.943	.043%	97.843%
52.0	7.566	0.658	1360.601	.042%	97.890%
53.0	7.404	0.651	1361.253	.042%	97.937%
54.0	7.291	0.648	1361.9	.042%	97.984%
55.0	7.158	0.645	1362.545	.042%	98.030%
56.0	7.059	0.642	1363.188	.041%	98.076%
57.0	6.982	0.642	1363.83	.041%	98.123%
58.0	6.870	0.641	1364.47	.041%	98.169%
59.0	6.799	0.639	1365.109	.041%	98.215%
60.0	6.743	0.640	1365.749	.041%	98.261%
61.0	6.680	0.641	1366.39	.041%	98.307%
62.0	6.616	0.641	1367.03	.041%	98.353%
63.0	6.581	0.642	1367.672	.041%	98.399%
64.0	6.525	0.643	1368.315	.041%	98.445%
65.0	6.476	0.643	1368.959	.041%	98.492%
66.0	6.441	0.644	1369.603	.041%	98.538%
67.0	6.413	0.646	1370.249	.042%	98.584%
68.0	6.405	0.649	1370.899	.042%	98.631%
69.0	6.525	0.660	1371.558	.042%	98.679%
70.0	6.820	0.685	1372.244	.044%	98.728%
71.0	7.270	0.728	1372.972	.047%	98.780%
72.0	7.819	0.785	1373.757	.051%	98.837%
73.0	8.445	0.850	1374.607	.055%	98.898%
74.0	9.169	0.926	1375.533	.060%	98.965%
75.0	9.963	1.011	1376.544	.065%	99.037%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.744	1.099	1377.643	.071%	99.116%
77.0	11.412	1.181	1378.824	.076%	99.201%
78.0	11.566	1.230	1380.054	.079%	99.290%
79.0	10.709	1.197	1381.251	.077%	99.376%
80.0	9.098	1.068	1382.319	.069%	99.453%
81.0	8.121	0.931	1383.25	.060%	99.520%
82.0	7.362	0.840	1384.09	.054%	99.580%
83.0	7.404	0.803	1384.893	.052%	99.638%
84.0	7.509	0.812	1385.705	.052%	99.696%
85.0	7.467	0.817	1386.522	.053%	99.755%
86.0	7.334	0.809	1387.332	.052%	99.813%
87.0	6.152	0.738	1388.07	.048%	99.866%
88.0	5.555	0.641	1388.711	.041%	99.913%
89.0	5.534	0.608	1389.319	.039%	99.956%
90.0	5.534	0.607	1389.925	.039%	100.000%

Zonal flux distribution table

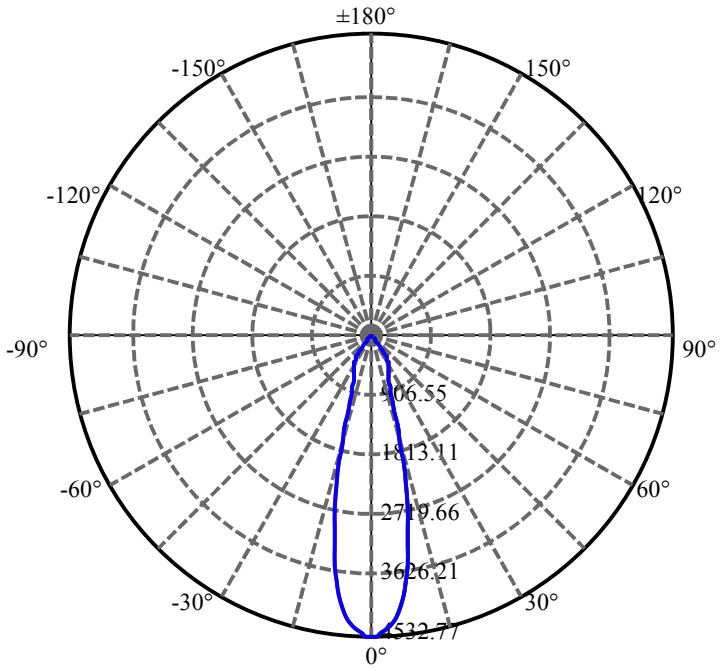
ZONAL LUMEN SUMMARY

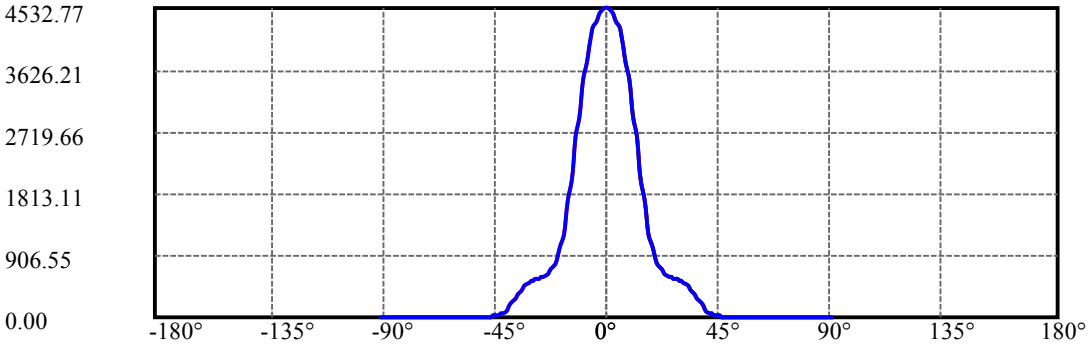
Zone	Lumens	%Lamp	%Fixt
0-30	1136.01	73.13%	81.73%
0-40	1339.63	86.23%	96.38%
0-60	1365.75	87.91%	98.26%
0-90	1389.32	89.43%	99.96%
0-120	1389.32	89.43%	99.96%
0-180	1389.93	89.47%	100.00%
60-90	24.21	1.56%	1.74%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.16	1111.94	71.58%	80.00%

ZONAL LUMEN SUMMARY

0-10	373.27
10-20	477.52
20-30	285.22
30-40	203.62
40-50	19.64
50-60	6.48
60-70	6.49
70-80	10.08
80-90	7.00
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:32.5 Right:32.5
:C90/270Left:32.5 Right:32.5

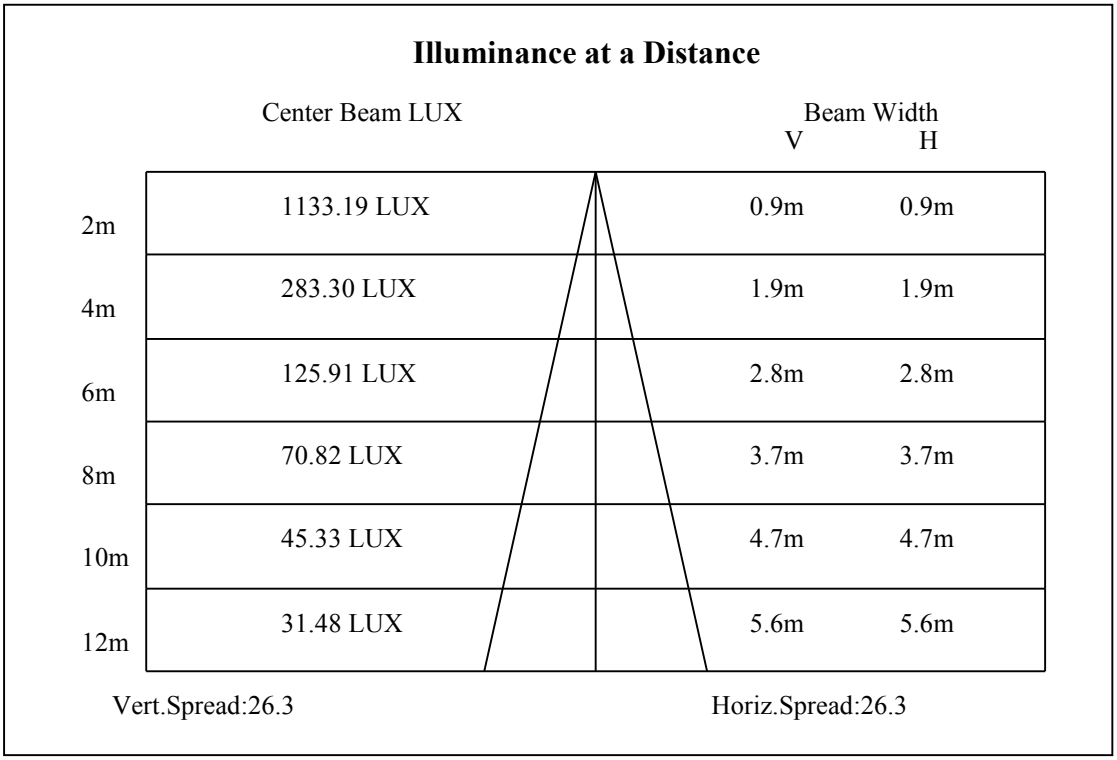
Beam Angle(50%Imax):C0/180Left:13.0 Right:13.0
:C90/270Left:13.0 Right:13.0

Equipment: GMS1980
Temperature(°C): 25.0

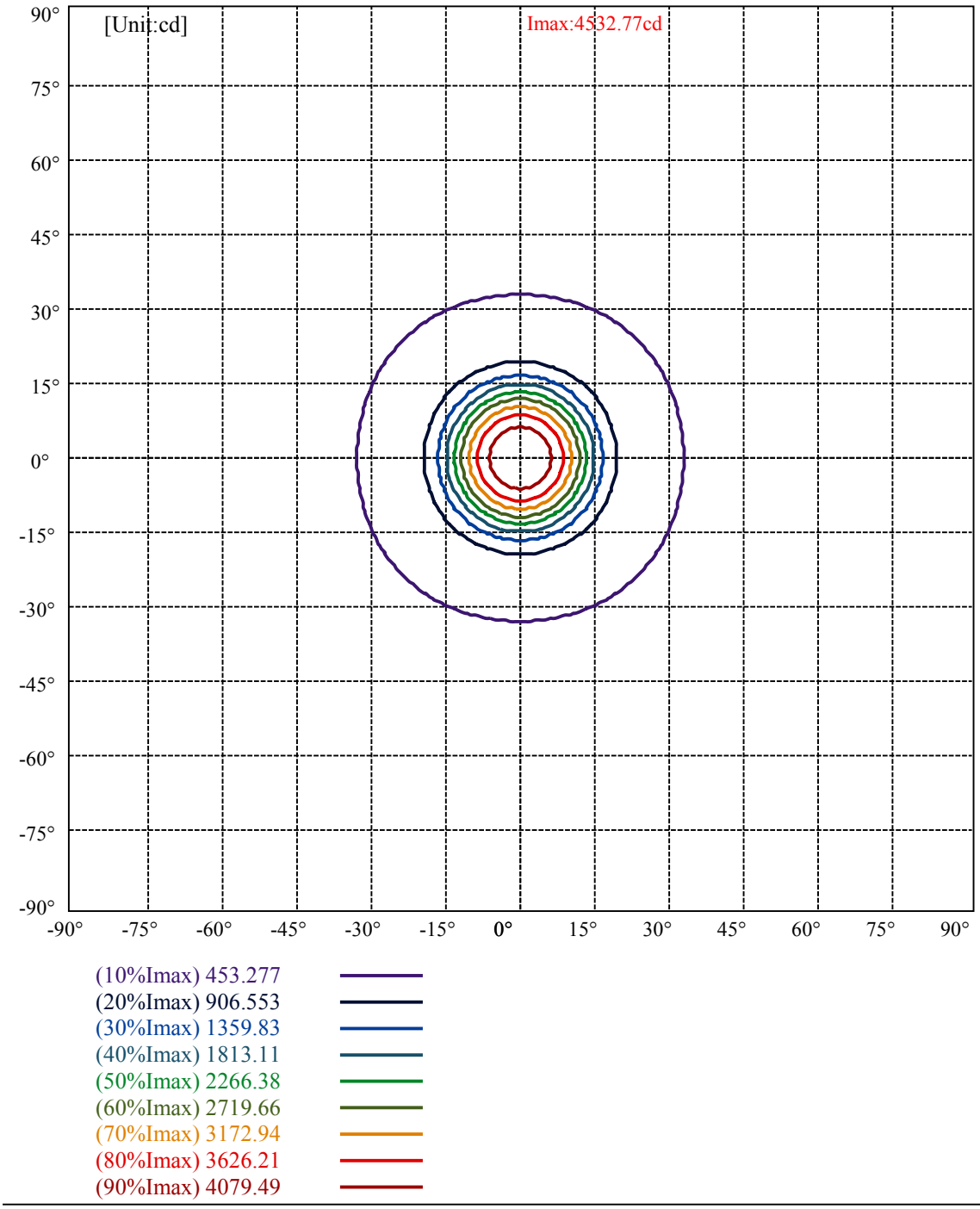
Date: 2020/4/7
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Lux distance Curve



ISO-Intensity(V-H)

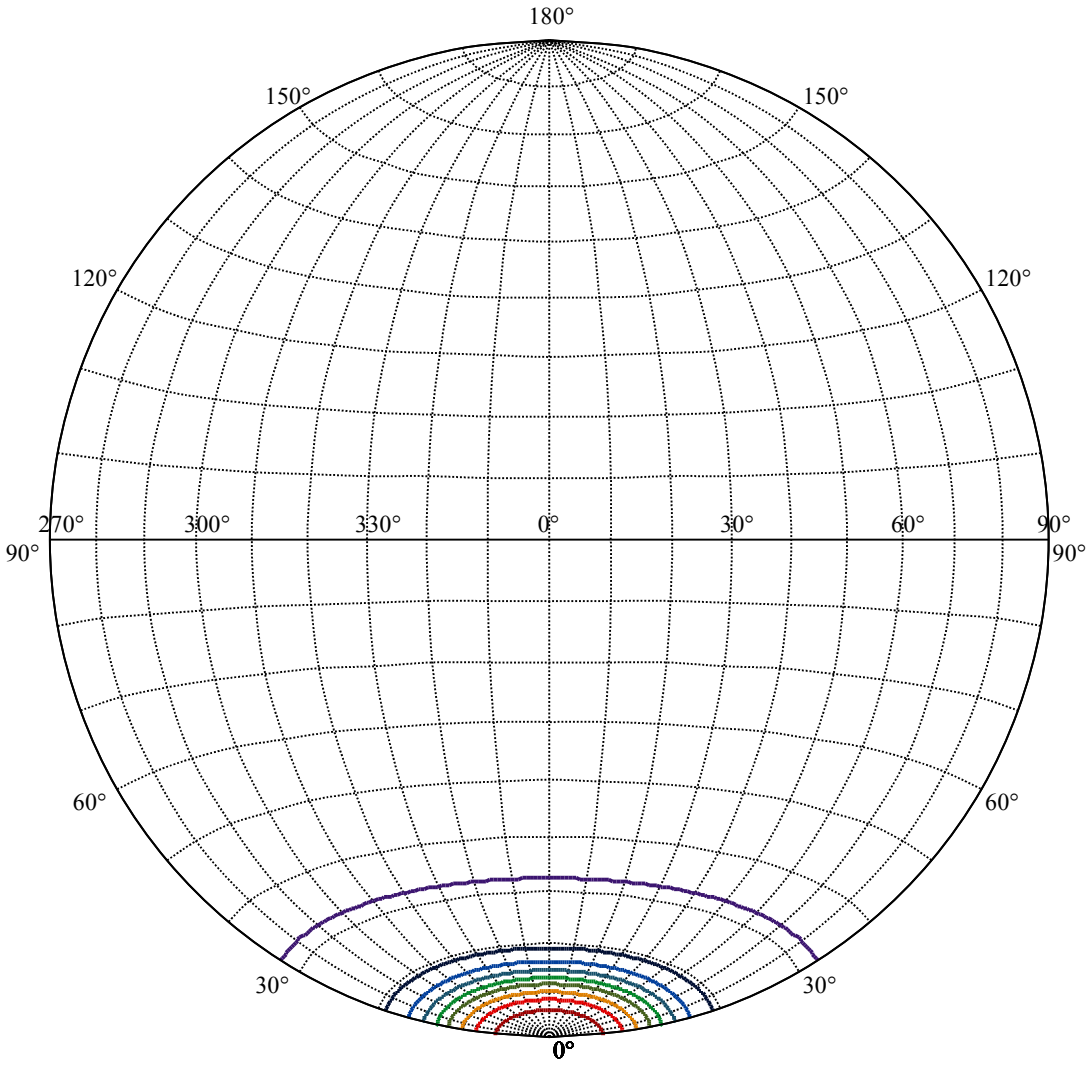


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4532.77

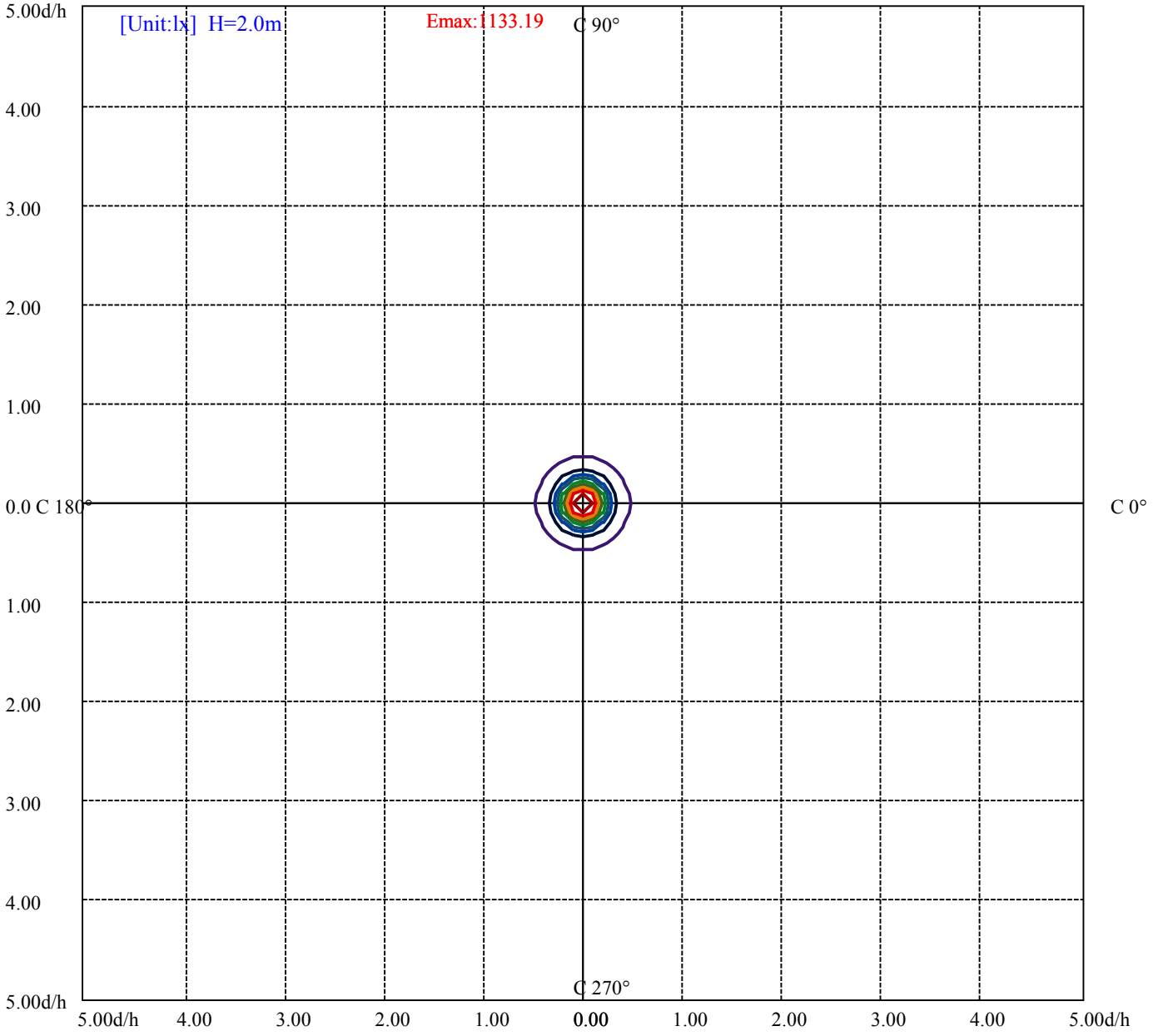
(10%Imax) 453.277
(20%Imax) 906.553
(30%Imax) 1359.83
(40%Imax) 1813.11
(50%Imax) 2266.38
(60%Imax) 2719.66
(70%Imax) 3172.94
(80%Imax) 3626.21
(90%Imax) 4079.49

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

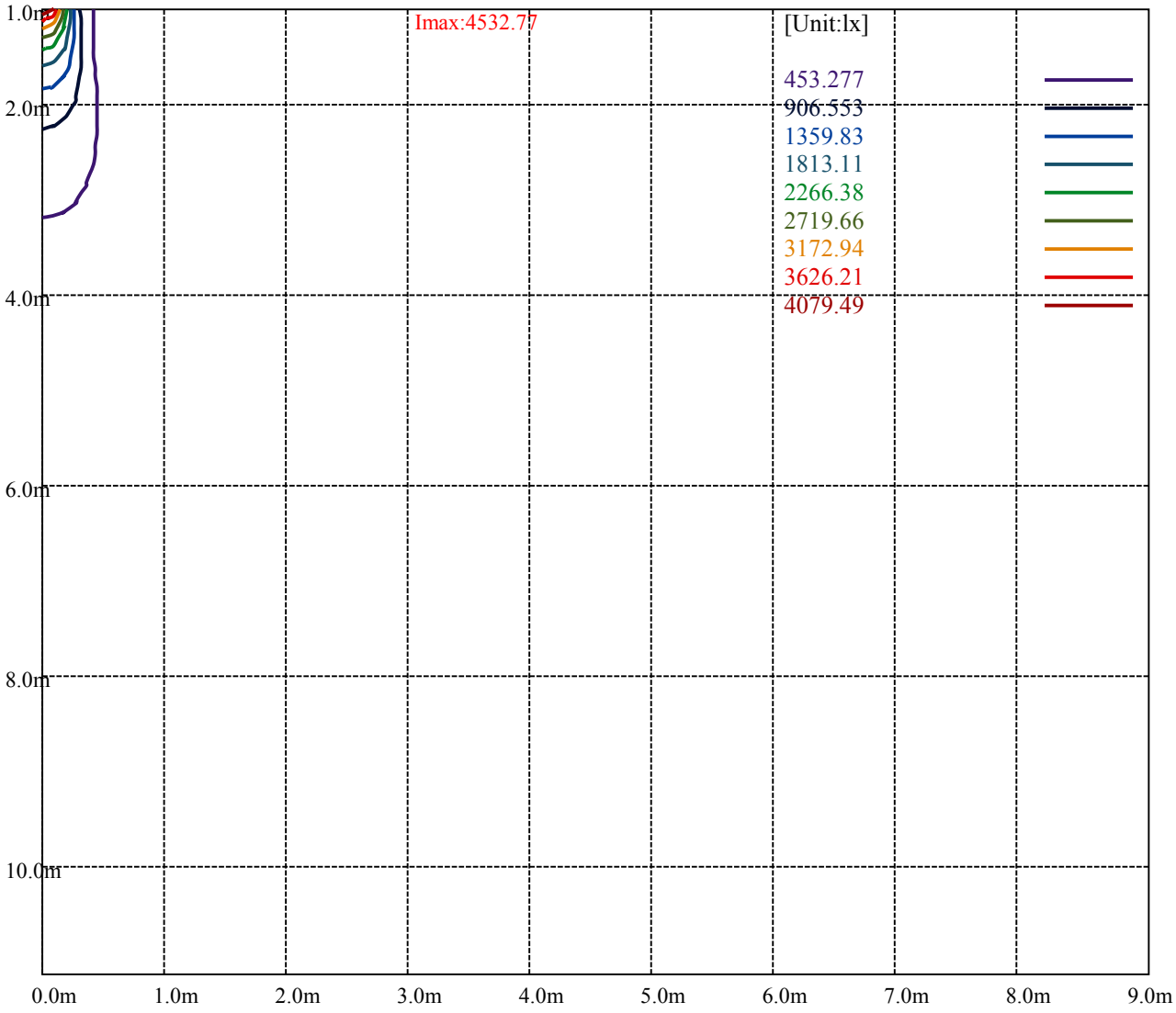


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

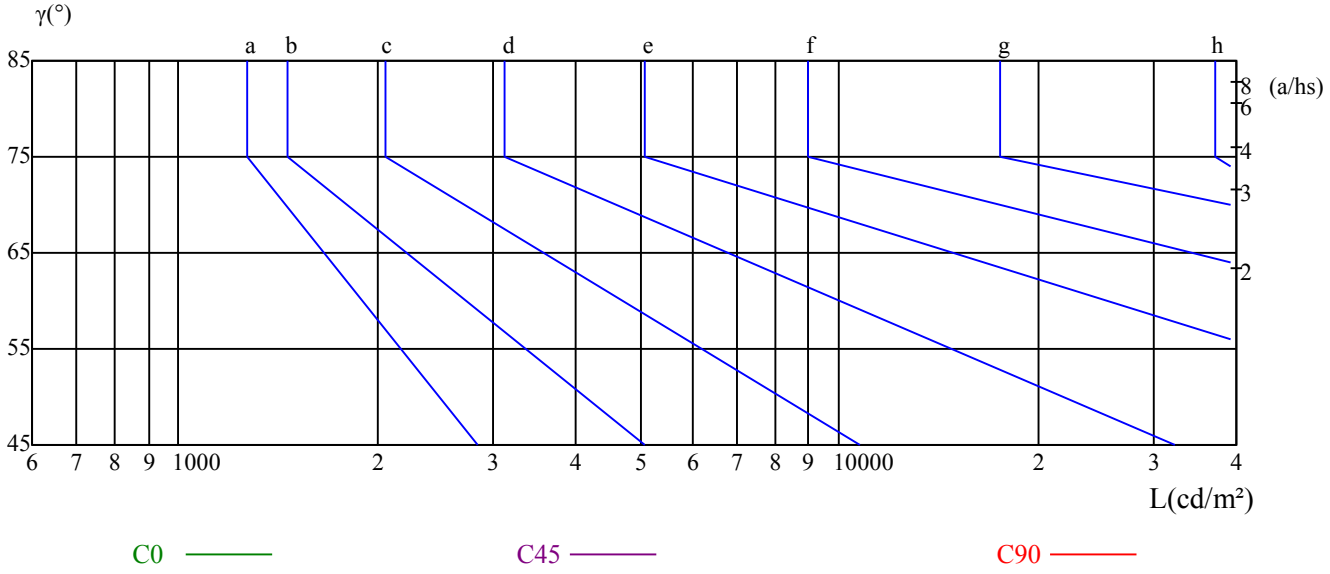
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

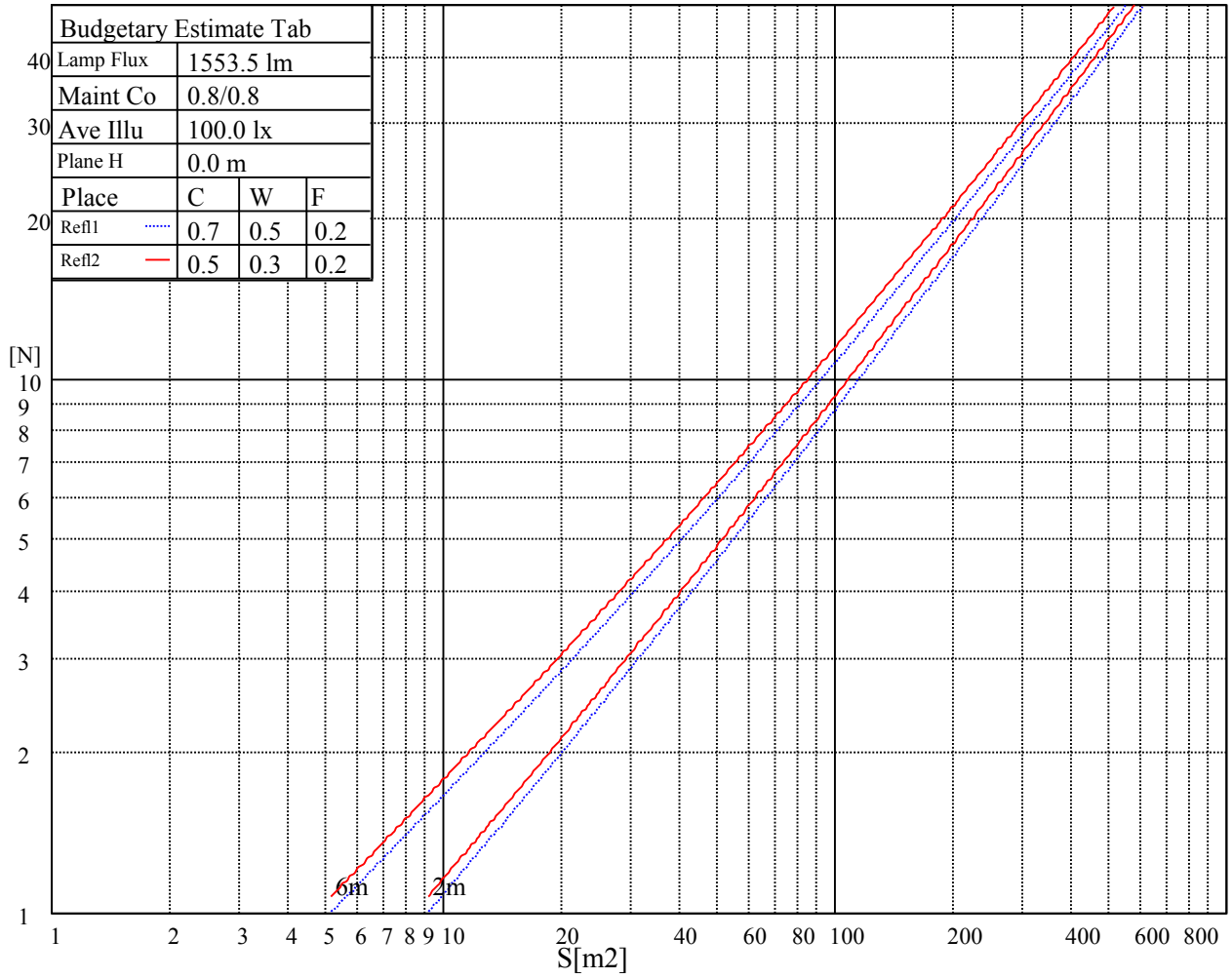
Glare Table

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

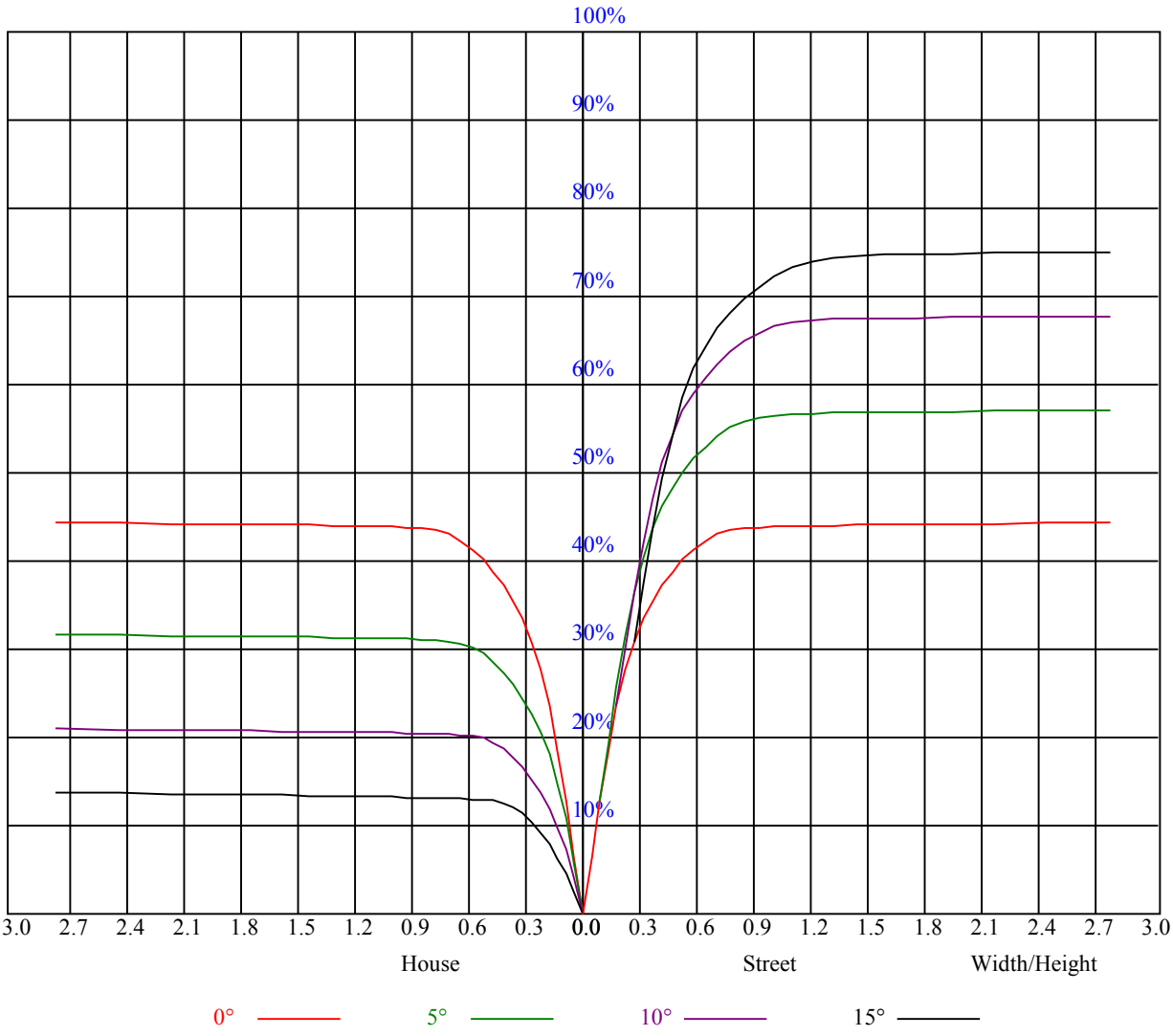


Equipment: GMS1980 Date: 2020/4/7 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.76
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
6	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.61
9	0.68	0.64	0.61	0.68	0.63	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.57

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/4/7	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	4534.88	4492.13	4419.56	4332.94	4208.63	4074.19	3874.50	3684.38	3466.69
45.0	4542.75	4480.88	4411.69	4323.38	4181.63	4039.88	3866.63	3595.50	3341.25
90.0	4523.63	4479.19	4417.31	4310.44	4206.94	4076.44	3892.50	3655.69	3399.75
135.0	4532.06	4536.00	4515.19	4473.00	4422.38	4348.69	4236.75	4091.06	3935.25
180.0	4534.88	4563.00	4561.88	4542.75	4503.38	4448.81	4359.38	4241.81	4111.88
225.0	4542.75	4569.19	4577.06	4559.63	4525.88	4471.88	4374.56	4266.56	4132.13
270.0	4519.13	4545.00	4539.94	4510.13	4457.81	4381.88	4274.44	4131.00	3979.69
315.0	4532.06	4501.69	4449.94	4370.06	4267.69	4151.25	3989.81	3792.38	3593.25
360.0	4534.88	4492.13	4419.56	4332.94	4208.63	4074.19	3874.50	3684.38	3466.69

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3156.75	2880.00	2591.44	2300.06	1942.88	1671.75	1428.75	1202.06	1027.69
45.0	3062.25	2686.50	2368.69	2051.44	1712.81	1414.13	1199.81	1018.69	887.06
90.0	3114.56	2728.13	2406.94	2088.00	1710.00	1443.38	1108.86	1032.98	897.98
135.0	3691.13	3446.44	3163.50	2858.06	2457.00	2130.19	1817.44	1507.50	1252.69
180.0	3949.31	3691.69	3443.63	3163.50	2784.94	2469.38	2149.88	1803.38	1495.69
225.0	3920.63	3720.38	3486.94	3187.69	2855.81	2552.63	2217.94	1923.19	1605.94
270.0	3775.50	3528.00	3279.38	3044.81	2655.56	2369.25	2124.56	1782.00	1498.50
315.0	3364.88	3040.88	2762.44	2477.81	2124.56	1852.31	1599.19	1341.00	1110.09
360.0	3156.75	2880.00	2591.44	2300.06	1942.88	1671.75	1428.75	1202.06	1027.69

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	909.56	810.56	736.88	687.94	648.00	622.13	598.50	577.13	560.81
45.0	797.06	734.63	691.88	657.56	630.56	609.75	592.31	573.75	559.69
90.0	811.97	742.11	697.78	663.02	637.65	619.48	601.09	584.27	570.32
135.0	1063.13	920.81	815.06	750.94	697.50	664.88	637.31	615.38	600.19
180.0	1104.02	1064.93	934.03	825.47	749.25	700.88	661.11	629.21	611.44
225.0	1335.38	1121.29	994.67	857.48	777.32	719.04	666.45	635.57	611.72
270.0	1309.50	1092.38	945.00	853.88	756.56	702.56	662.63	624.94	599.63
315.0	988.26	865.69	783.90	717.08	666.90	631.46	599.57	574.31	556.48
360.0	909.56	810.56	736.88	687.94	648.00	622.13	598.50	577.13	560.81

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	546.19	528.19	516.94	497.81	452.81	412.88	375.19	315.56	285.19
45.0	545.63	529.31	516.94	493.88	453.94	407.81	362.25	307.69	287.44
90.0	555.81	539.38	526.84	514.58	486.39	445.16	401.01	346.95	298.24
135.0	587.25	569.25	555.19	543.94	528.19	512.44	489.94	441.00	389.25
180.0	594.00	573.69	560.70	546.30	530.94	516.60	494.27	455.96	410.01
225.0	589.16	569.81	554.96	539.61	527.68	515.64	504.06	472.89	429.36
270.0	577.69	556.31	542.81	531.00	518.63	509.06	489.38	452.25	405.00
315.0	542.31	526.67	517.11	506.76	475.88	438.92	397.18	339.19	290.53
360.0	546.19	528.19	516.94	497.81	452.81	412.88	375.19	315.56	285.19

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	208.91	156.15	112.73	70.31	38.19	23.63	19.97	15.58	12.32
45.0	201.66	152.04	108.56	65.98	33.98	21.32	17.94	12.94	10.29
90.0	244.01	190.35	143.72	94.73	53.83	30.04	21.26	15.92	12.04
135.0	348.19	286.88	255.04	179.33	127.07	84.83	45.79	26.04	20.81
180.0	366.19	312.47	264.09	209.42	154.97	110.48	71.61	36.17	25.03
225.0	385.20	333.23	284.12	228.15	175.16	129.99	88.48	47.14	28.41
270.0	359.44	305.44	286.31	196.48	144.34	100.91	59.68	33.08	24.24
315.0	242.21	183.26	143.16	95.85	51.81	31.89	23.74	18.68	15.47
360.0	208.91	156.15	112.73	70.31	38.19	23.63	19.97	15.58	12.32

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	10.91	9.68	8.66	8.27	7.99	7.76	7.59	7.43	7.26
45.0	9.56	8.78	8.33	8.04	7.82	7.65	7.59	7.43	7.37
90.0	9.96	9.06	8.33	8.04	7.76	7.54	7.43	7.31	7.20
135.0	15.86	11.48	10.35	9.34	8.44	8.16	7.88	7.71	7.48
180.0	19.97	14.18	11.81	10.52	9.28	8.21	7.99	7.71	7.54
225.0	22.95	17.16	13.67	12.04	10.63	9.11	8.04	7.76	7.59
270.0	20.64	15.75	13.33	11.98	10.46	8.55	7.99	7.71	7.48
315.0	12.99	11.19	10.18	8.66	8.10	7.88	7.65	7.48	7.31
360.0	10.91	9.68	8.66	8.27	7.99	7.76	7.59	7.43	7.26

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.20	7.14	7.03	7.03	6.92	6.86	6.81	6.81	6.69
45.0	7.26	7.14	7.09	7.03	6.98	6.92	6.86	6.75	6.69
90.0	7.14	7.03	6.98	6.92	6.81	6.75	6.75	6.69	6.69
135.0	7.37	7.26	7.14	7.09	6.98	6.92	6.86	6.75	6.69
180.0	7.37	7.26	7.09	6.98	6.86	6.81	6.75	6.69	6.64
225.0	7.43	7.20	7.09	6.98	6.81	6.69	6.64	6.58	6.47
270.0	7.37	7.20	7.09	6.98	6.86	6.75	6.64	6.58	6.53
315.0	7.20	7.03	6.98	6.86	6.75	6.69	6.64	6.58	6.53
360.0	7.20	7.14	7.03	7.03	6.92	6.86	6.81	6.81	6.69

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.69	6.64	6.58	6.53	6.53	6.53	6.53	6.53	7.09
45.0	6.69	6.64	6.58	6.58	6.58	6.75	7.82	9.28	11.08
90.0	6.64	6.58	6.53	6.53	6.53	6.53	6.58	7.71	9.11
135.0	6.64	6.64	6.58	6.58	6.53	6.47	6.47	6.41	6.41
180.0	6.58	6.53	6.47	6.41	6.36	6.36	6.30	6.24	6.19
225.0	6.41	6.36	6.30	6.24	6.24	6.19	6.13	6.13	6.08
270.0	6.47	6.36	6.36	6.30	6.24	6.19	6.13	6.08	6.08
315.0	6.53	6.47	6.41	6.36	6.30	6.24	6.24	6.19	6.13
360.0	6.69	6.64	6.58	6.53	6.53	6.53	6.53	6.53	7.09

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.21	9.90	11.31	12.43	13.89	14.68	14.57	12.88	8.72
45.0	12.94	14.68	16.71	18.51	20.03	21.04	20.31	16.43	10.97
90.0	10.58	11.98	12.99	13.95	14.68	15.08	14.85	13.22	10.80
135.0	6.47	6.81	7.65	9.39	10.86	12.60	13.84	14.85	14.79
180.0	6.19	6.13	6.13	6.13	6.53	7.54	8.49	9.34	9.51
225.0	6.02	5.96	5.96	5.91	5.91	5.85	5.85	5.79	5.79
270.0	6.02	5.96	5.96	5.91	5.85	5.85	5.85	5.85	5.79
315.0	6.13	6.13	6.64	7.48	8.21	8.66	8.78	7.31	6.41
360.0	8.21	9.90	11.31	12.43	13.89	14.68	14.57	12.88	8.72

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.48	7.99	8.21	8.10	7.65	6.92	5.63	5.51	5.57
45.0	8.49	8.66	9.34	9.51	9.39	9.06	5.63	5.51	5.51
90.0	8.94	7.99	8.38	8.66	8.78	8.78	5.63	5.51	5.51
135.0	13.11	9.06	8.27	8.89	9.17	9.23	9.06	5.68	5.57
180.0	8.94	7.14	7.03	7.14	6.98	6.75	6.36	5.57	5.51
225.0	5.74	5.79	5.79	5.79	5.85	5.74	5.68	5.57	5.51
270.0	5.85	5.85	5.96	5.96	5.91	5.74	5.63	5.57	5.51
315.0	6.41	6.41	6.24	6.02	6.02	6.47	5.63	5.51	5.57
360.0	7.48	7.99	8.21	8.10	7.65	6.92	5.63	5.51	5.57

Intensity data(cd)

C/γ(°)	90.0
0.0	5.57
45.0	5.51
90.0	5.51
135.0	5.51
180.0	5.51
225.0	5.51
270.0	5.57
315.0	5.57
360.0	5.57