NATA LIGHTNG CO.,LTD.
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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,Ching

Nata

LumCAT: 1-0941-N
Luminaire: 92.70.360.000
Report No: 220512-B004
Test No: 220512-C004
LampCAT: NICHIA NVNWS007Z-V1
Lamp flux(lm): 848.6
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 36.8700
Current(A): 0.2010
Power (W): 7.4100
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

Photometric Results

Lumens(lm): 663.55
Efficiency(%): 78.19%
Lumens(lm)/Power(W): 89.55
Central intensity(cd): 2902.049
Maximum intensity(cd): 2902.049
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.1
[C90/270]Total=23.1
Field angle(10%Imax): [C0/180]Total=49.5
[C90/270]Total=49.5
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.19%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.164%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2902.049	0.000	0	.000%	.000%
1.0	2887.708	2.770	2.77	.326%	.417%
2.0	2839.308	8.220	10.99	.969%	1.656%
3.0	2759.762	13.391	24.381	1.578%	3.674%
4.0	2661.170	18.146	42.527	2.138%	6.409%
5.0	2535.166	22.354	64.881	2.634%	9.778%
6.0	2389.070	25.878	90.76	3.049%	13.678%
7.0	2227.364	28.654	119.414	3.377%	17.996%
8.0	2064.463	30.716	150.129	3.620%	22.625%
9.0	1889.536	32.045	182.174	3.776%	27.455%
10.0	1709.530	32.570	214.745	3.838%	32.363%
11.0	1534.679	32.416	247.161	3.820%	37.248%
12.0	1378.798	31.848	279.009	3.753%	42.048%
13.0	1214.283	30.773	309.783	3.626%	46.686%
14.0	1078.450	29.347	339.13	3.458%	51.108%
15.0	964.852	28.051	367.181	3.306%	55.336%
16.0	848.379	26.569	393.75	3.131%	59.340%
17.0	748.719	24.871	418.621	2.931%	63.088%
18.0	665.640	23.320	441.941	2.748%	66.603%
19.0	588.305	21.816	463.757	2.571%	69.890%
20.0	524.272	20.363	484.12	2.400%	72.959%
21.0	466.827	19.031	503.151	2.243%	75.827%
22.0	412.265	17.666	520.817	2.082%	78.490%
23.0	367.921	16.370	537.187	1.929%	80.957%
24.0	329.724	15.253	552.44	1.797%	83.255%
25.0	278.389	13.827	566.267	1.629%	85.339%
26.0	246.010	12.378	578.646	1.459%	87.205%
27.0	210.965	11.180	589.826	1.317%	88.890%
28.0	167.741	9.588	599.414	1.130%	90.334%
29.0	136.685	7.965	607.379	.939%	91.535%
30.0	108.989	6.633	614.012	.782%	92.534%
31.0	82.123	5.318	619.33	.627%	93.336%
32.0	61.045	4.102	623.432	.483%	93.954%
33.0	46.316	3.163	626.595	.373%	94.431%
34.0	34.477	2.445	629.04	.288%	94.799%
35.0	26.687	1.900	630.939	.224%	95.085%
36.0	22.594	1.569	632.508	.185%	95.322%
37.0	20.062	1.391	633.9	.164%	95.532%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	18.441	1.285	635.185	.151%	95.725%
39.0	16.925	1.207	636.392	.142%	95.907%
40.0	15.551	1.133	637.525	.133%	96.078%
41.0	14.423	1.067	638.592	.126%	96.239%
42.0	13.392	1.011	639.602	.119%	96.391%
43.0	12.354	0.954	640.556	.112%	96.535%
44.0	11.525	0.901	641.457	.106%	96.671%
45.0	10.748	0.856	642.313	.101%	96.800%
46.0	9.964	0.810	643.123	.095%	96.922%
47.0	9.329	0.767	643.891	.090%	97.037%
48.0	8.739	0.730	644.621	.086%	97.147%
49.0	8.171	0.694	645.316	.082%	97.252%
50.0	7.656	0.660	645.975	.078%	97.352%
51.0	7.208	0.629	646.604	.074%	97.446%
52.0	6.819	0.602	647.206	.071%	97.537%
53.0	6.446	0.577	647.783	.068%	97.624%
54.0	6.132	0.554	648.338	.065%	97.707%
55.0	5.871	0.536	648.873	.063%	97.788%
56.0	5.647	0.520	649.394	.061%	97.867%
57.0	5.460	0.508	649.902	.060%	97.943%
58.0	5.288	0.497	650.399	.059%	98.018%
59.0	5.154	0.488	650.887	.058%	98.092%
60.0	5.019	0.481	651.367	.057%	98.164%
61.0	4.900	0.473	651.841	.056%	98.235%
62.0	4.788	0.467	652.308	.055%	98.306%
63.0	4.713	0.462	652.77	.054%	98.375%
64.0	4.601	0.457	653.227	.054%	98.444%
65.0	4.511	0.451	653.678	.053%	98.512%
66.0	4.422	0.446	654.123	.053%	98.579%
67.0	4.340	0.441	654.564	.052%	98.646%
68.0	4.250	0.435	654.999	.051%	98.711%
69.0	4.160	0.429	655.428	.051%	98.776%
70.0	4.078	0.423	655.851	.050%	98.840%
71.0	3.989	0.417	656.268	.049%	98.903%
72.0	3.914	0.411	656.679	.048%	98.965%
73.0	3.824	0.405	657.084	.048%	99.026%
74.0	3.749	0.398	657.482	.047%	99.086%
75.0	3.690	0.393	657.875	.046%	99.145%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.630	0.389	658.263	.046%	99.203%
77.0	3.585	0.385	658.648	.045%	99.261%
78.0	3.540	0.381	659.03	.045%	99.319%
79.0	3.473	0.377	659.406	.044%	99.376%
80.0	3.488	0.375	659.782	.044%	99.432%
81.0	3.645	0.386	660.167	.045%	99.490%
82.0	3.891	0.409	660.576	.048%	99.552%
83.0	4.130	0.436	661.012	.051%	99.618%
84.0	3.996	0.443	661.455	.052%	99.684%
85.0	3.720	0.421	661.876	.050%	99.748%
86.0	3.593	0.400	662.276	.047%	99.808%
87.0	2.853	0.353	662.628	.042%	99.861%
88.0	2.808	0.310	662.939	.037%	99.908%
89.0	2.786	0.307	663.245	.036%	99.954%
90.0	2.764	0.304	663.549	.036%	100.000%

Zonal flux distribution table

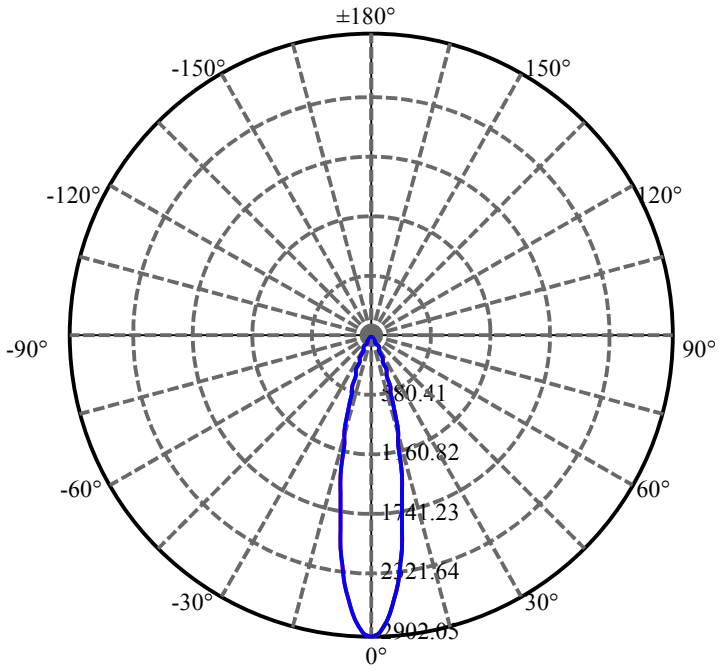
ZONAL LUMEN SUMMARY

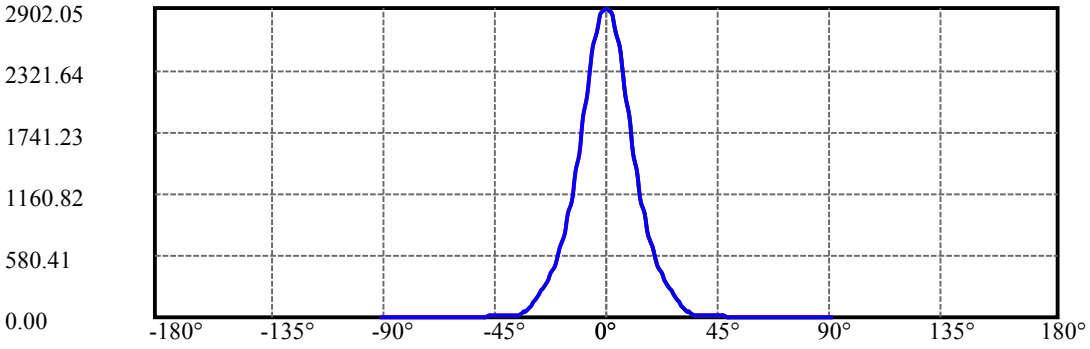
Zone	Lumens	%Lamp	%Fixt
0-30	614.01	72.36%	92.53%
0-40	637.52	75.13%	96.08%
0-60	651.37	76.76%	98.16%
0-90	663.25	78.16%	99.95%
0-120	663.25	78.16%	99.95%
0-180	663.55	78.19%	100.00%
60-90	12.36	1.46%	1.86%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-22.61	530.84	62.55%	80.00%

ZONAL LUMEN SUMMARY

0-10	214.74
10-20	269.38
20-30	129.89
30-40	23.51
40-50	8.45
50-60	5.39
60-70	4.48
70-80	3.93
80-90	3.46
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):

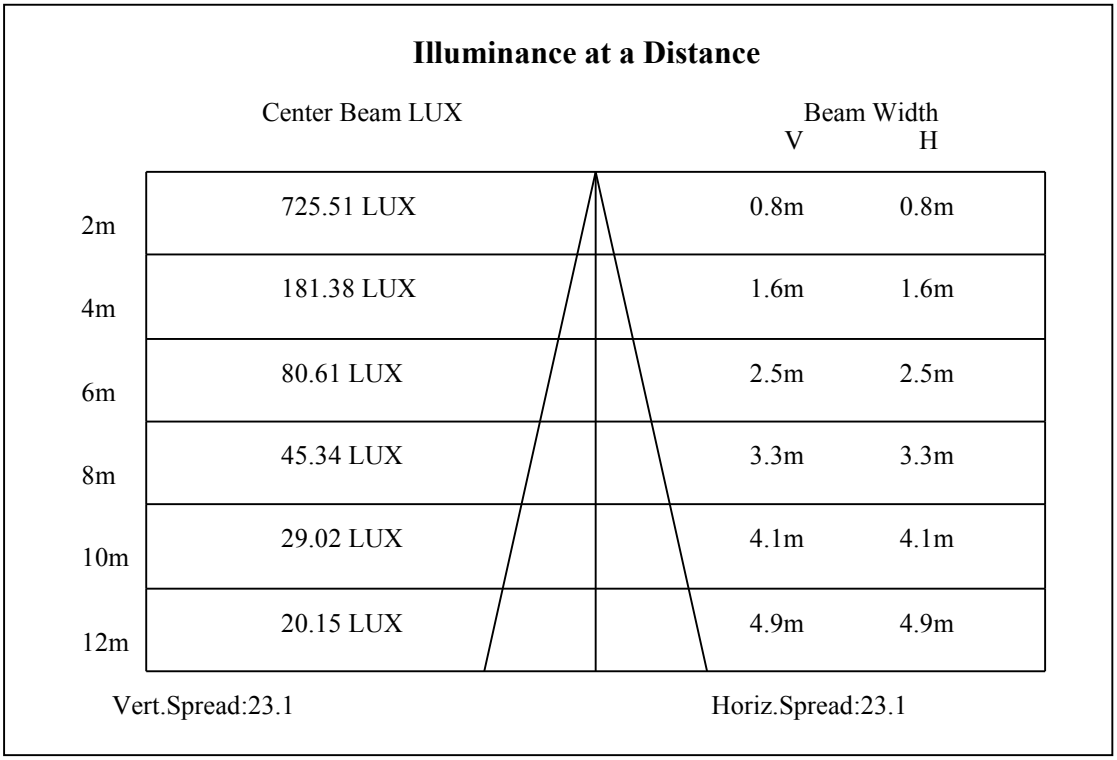
C0/C180:

C90/C270:

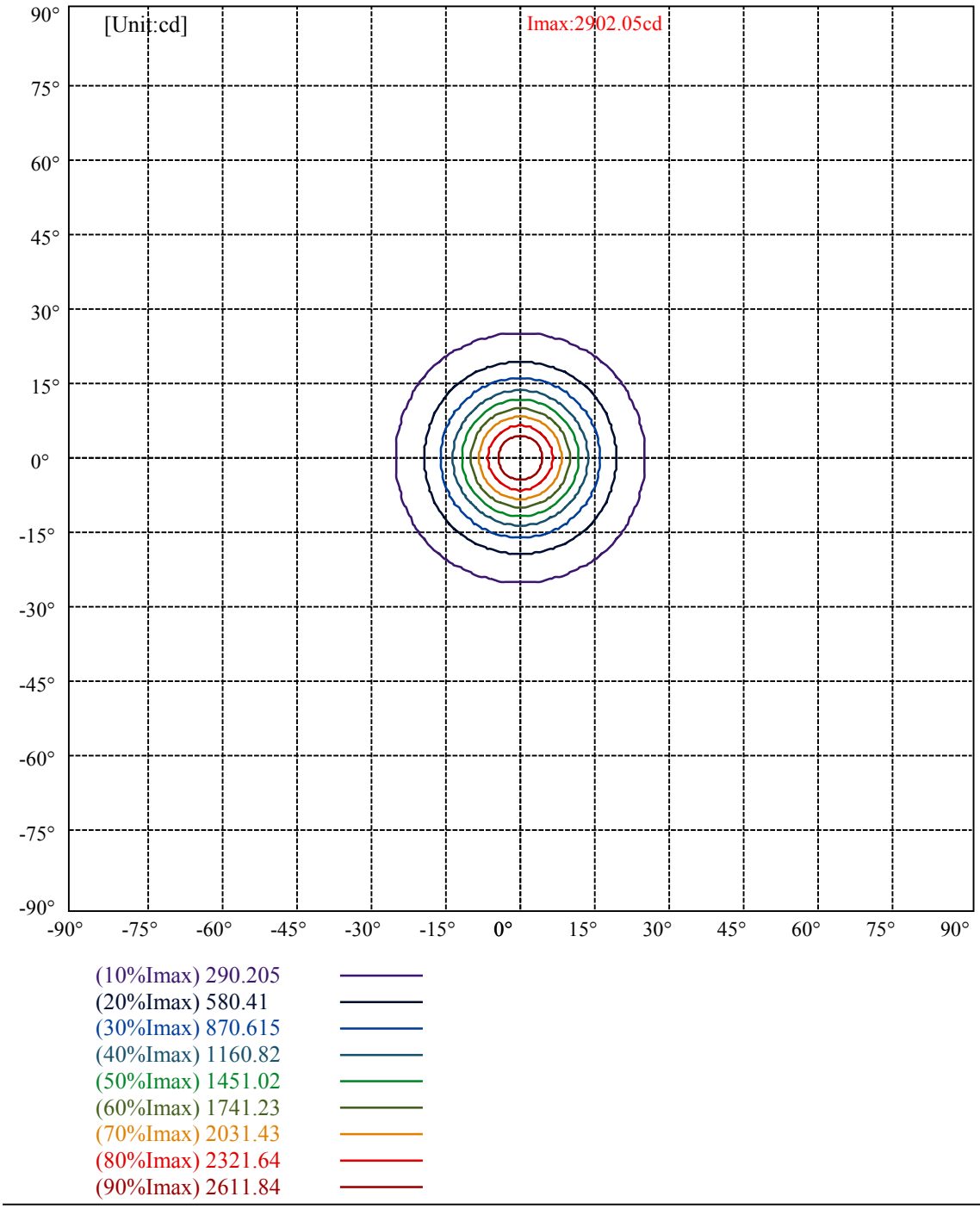
Field angle(10%Imax):C0/180Left:24.8 Right:24.8
:C90/270Left:24.8 Right:24.8

Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5

Lux distance Curve



ISO-Intensity(V-H)



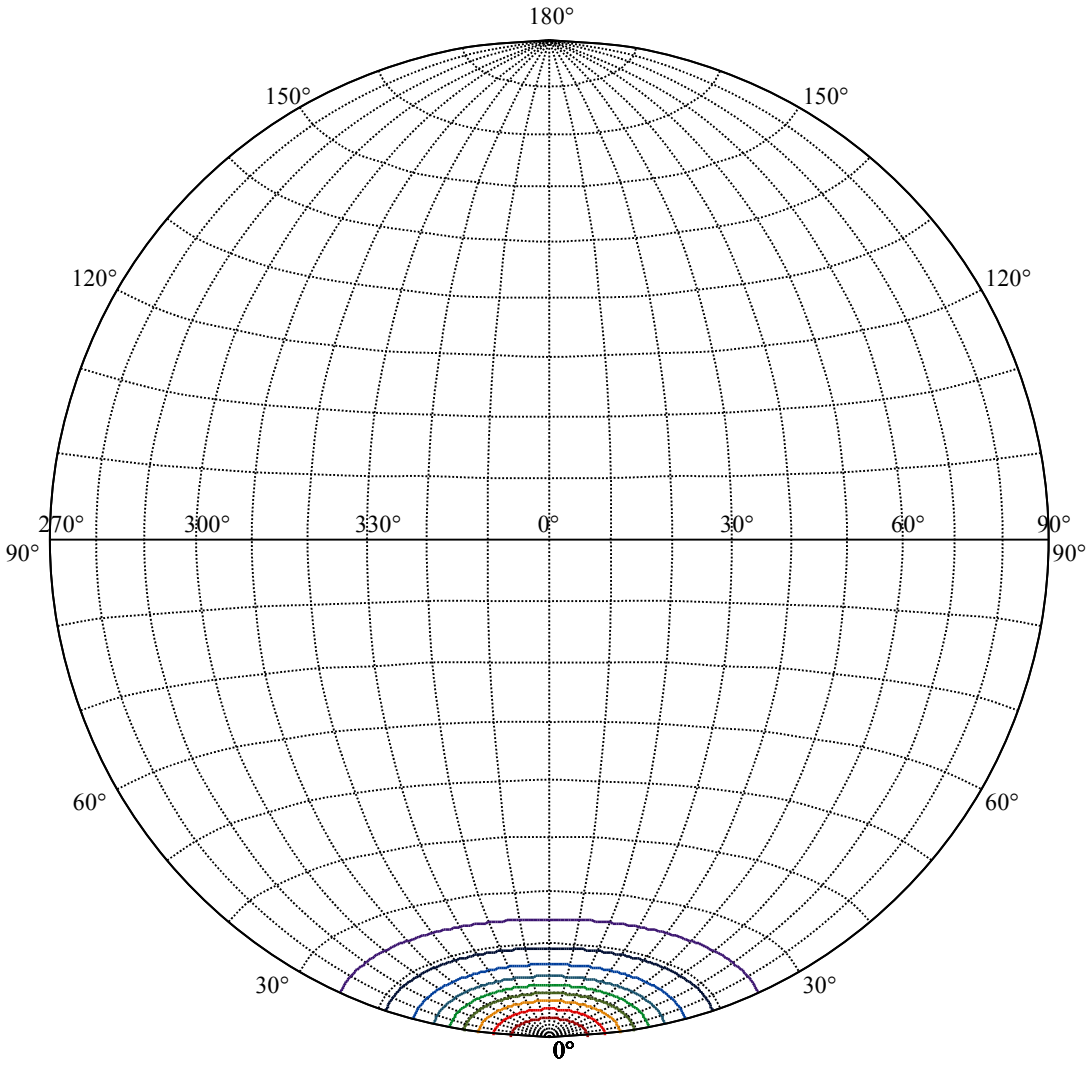
(10%Imax) 290.205
(20%Imax) 580.41
(30%Imax) 870.615
(40%Imax) 1160.82
(50%Imax) 1451.02
(60%Imax) 1741.23
(70%Imax) 2031.43
(80%Imax) 2321.64
(90%Imax) 2611.84

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/5/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:2902.05

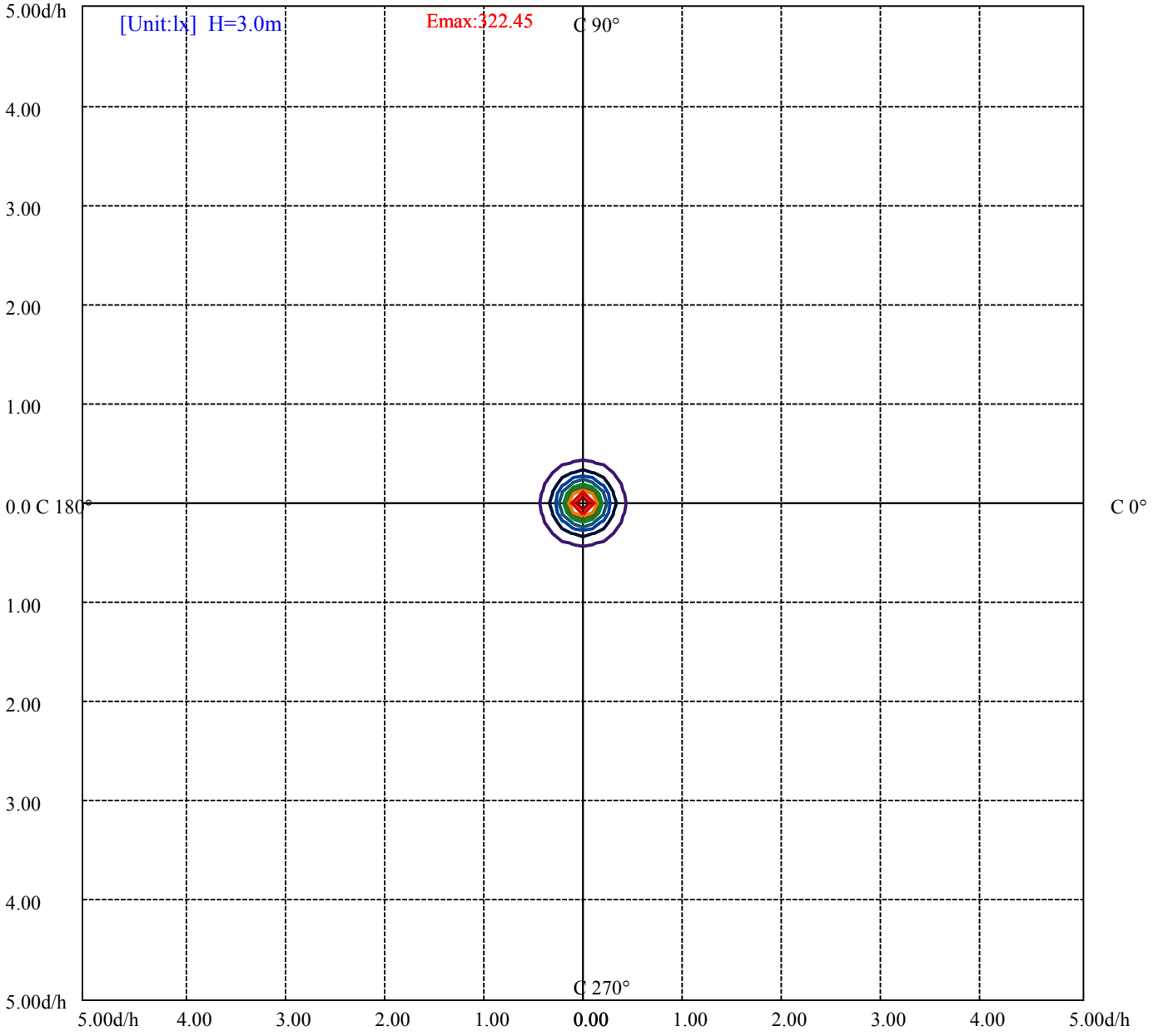
(10%Imax) 290.205
(20%Imax) 580.41
(30%Imax) 870.615
(40%Imax) 1160.82
(50%Imax) 1451.02
(60%Imax) 1741.23
(70%Imax) 2031.43
(80%Imax) 2321.64
(90%Imax) 2611.84

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/5/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO illuminance diagram

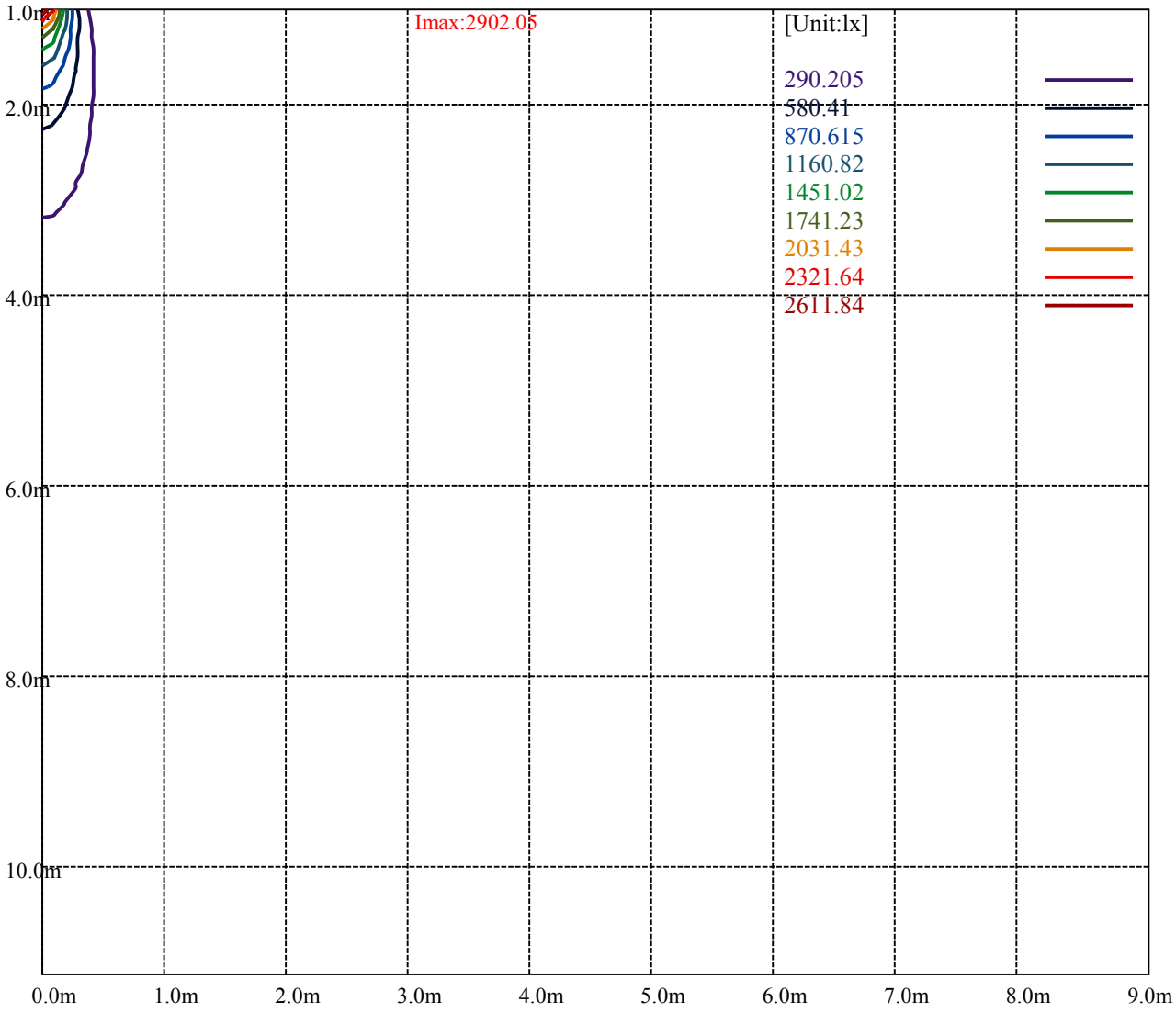


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/5/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/5/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Luminance Limitting Curve(no luminous side)

Luminance Table

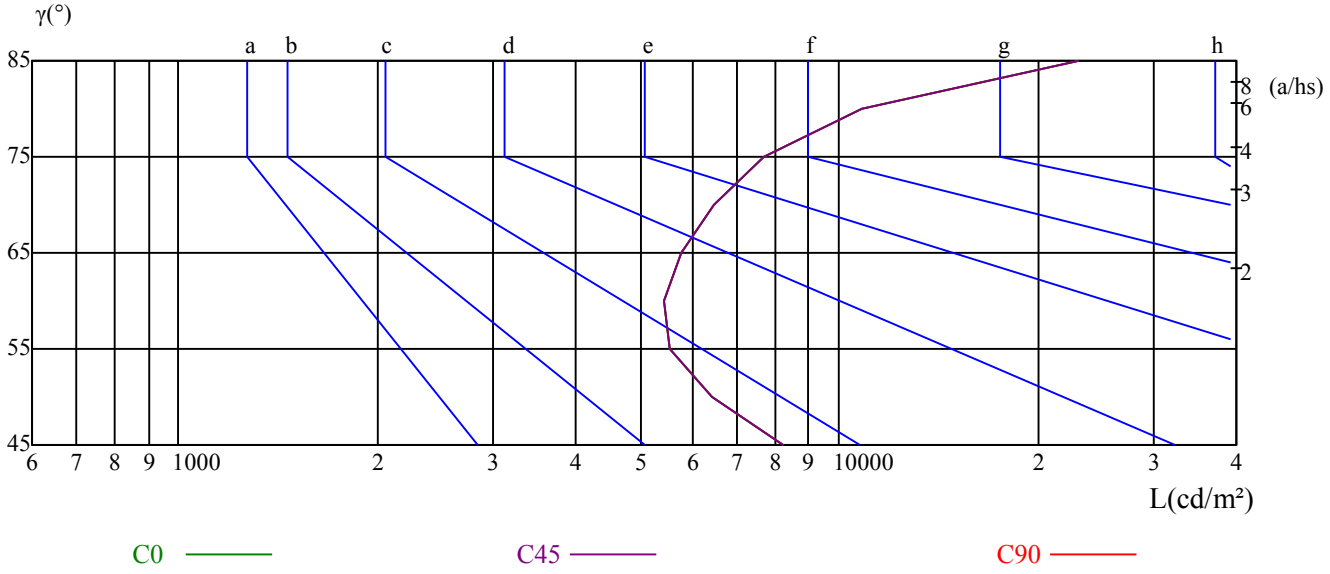
γ	45	50	55	60	65	70	75	80	85
C0	8221	6442	5536	5429	5773	6449	7710	10864	23082
C45	8221	6442	5536	5429	5773	6449	7710	10864	23082
C90	8221	6442	5536	5429	5773	6449	7710	10864	23082

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5773	5773	5773	7710	7710	7710	23082	23082	23082

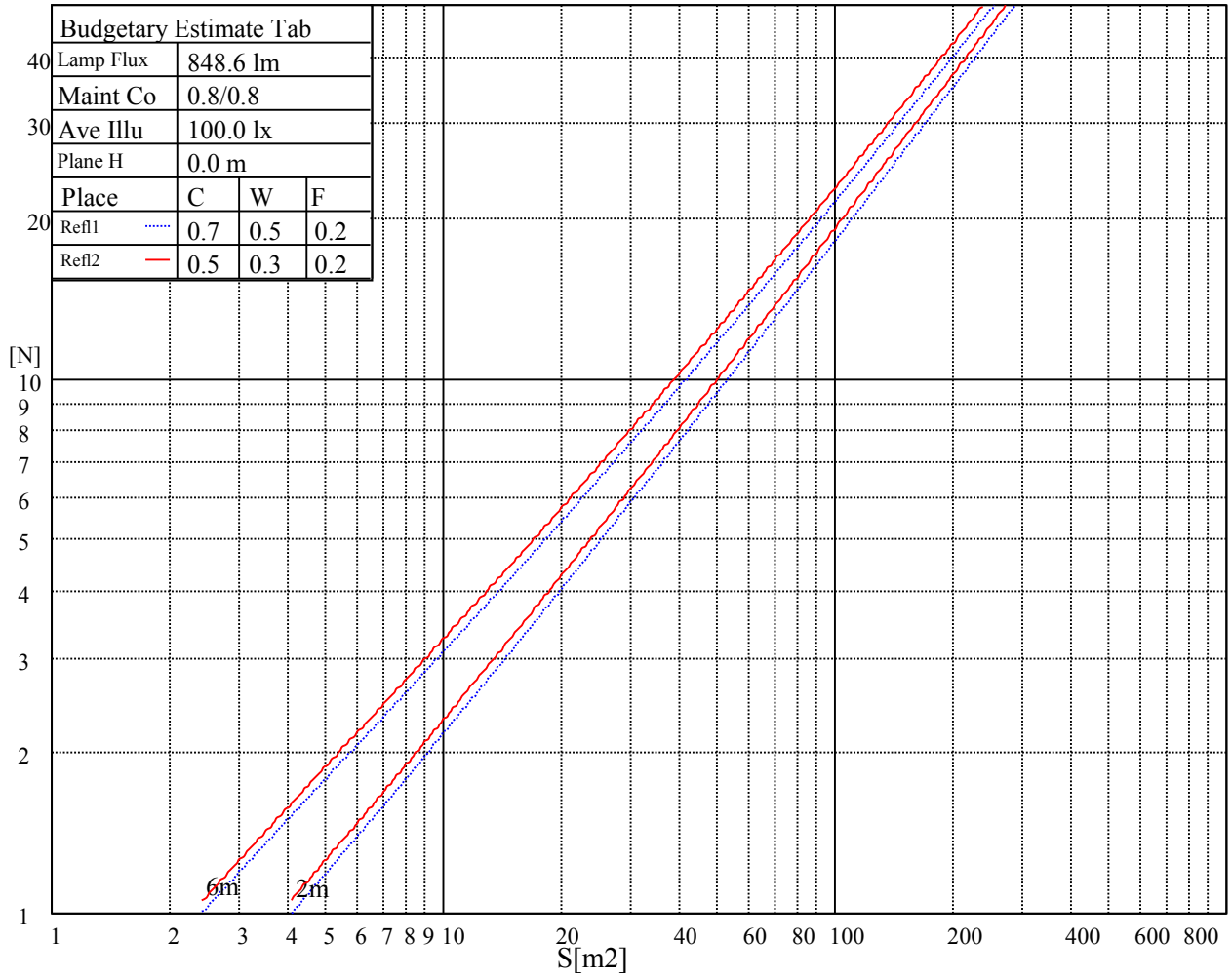
Glare Table

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

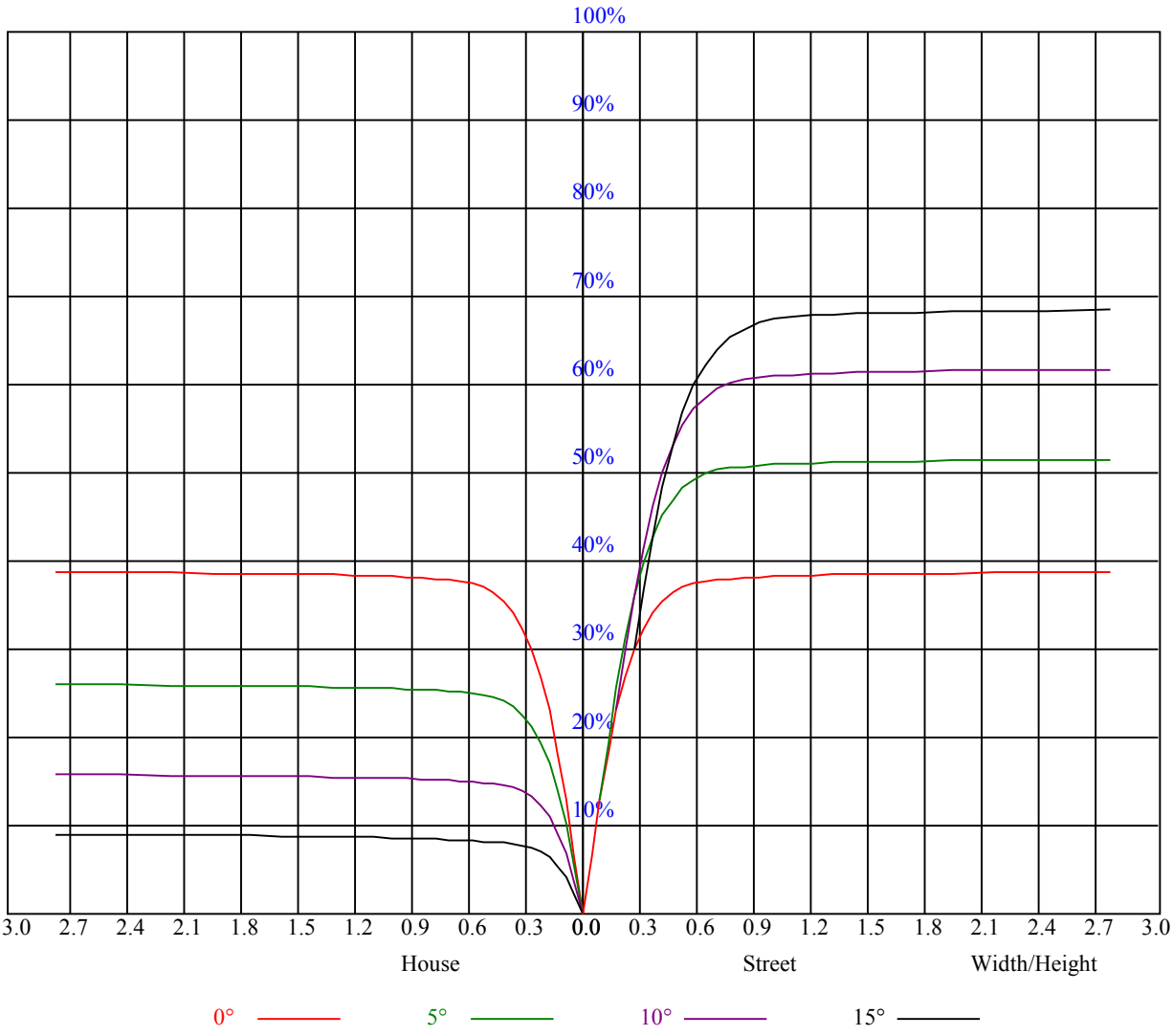


Equipment: GMS1980 Date: 2022/5/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.88	0.86	0.84	0.86	0.84	0.83	0.83	0.82	0.81	0.80	0.79	0.78	0.77	0.77	0.76	0.75
2	0.83	0.81	0.78	0.82	0.80	0.78	0.79	0.77	0.76	0.77	0.76	0.74	0.75	0.74	0.73	0.72
3	0.79	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.73	0.71	0.73	0.71	0.70	0.69
4	0.76	0.73	0.70	0.75	0.72	0.70	0.73	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.67	0.66
5	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.67	0.65	0.64
6	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.62
7	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.62	0.61	0.60
8	0.65	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58
9	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56
10	0.61	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.57	0.56	0.60	0.57	0.55	0.55

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/5/12	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	2917.14	2928.49	2900.41	2845.43	2778.51	2635.70	2508.43	2369.20	2201.30
45.0	2906.38	2842.45	2748.63	2641.68	2504.24	2369.20	2198.91	2019.05	1856.52
90.0	2870.53	2798.23	2704.42	2556.83	2422.38	2279.57	2124.22	1920.46	1756.14
135.0	2914.15	2868.14	2788.67	2677.53	2560.41	2431.35	2244.92	2085.38	1922.85
180.0	2917.14	2875.91	2786.28	2687.09	2567.58	2397.29	2264.63	2084.18	1875.64
225.0	2906.38	2936.86	2936.86	2889.65	2822.13	2730.11	2580.73	2446.88	2299.29
270.0	2870.53	2921.92	2941.04	2924.31	2865.15	2771.34	2663.19	2519.78	2380.56
315.0	2914.15	2929.68	2908.17	2855.59	2768.95	2666.77	2527.55	2373.98	2223.41
360.0	2917.14	2928.49	2900.41	2845.43	2778.51	2635.70	2508.43	2369.20	2201.30

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2026.22	1866.68	1685.63	1527.28	1337.87	1196.25	1065.39	934.54	818.61
45.0	1674.87	1495.02	1344.44	1205.81	1046.27	933.34	833.55	734.96	646.53
90.0	1594.21	1402.40	1186.69	1122.04	988.31	869.58	777.56	686.02	614.92
135.0	1718.49	1552.98	1395.83	1233.30	1086.31	969.79	853.87	763.04	673.42
180.0	1730.44	1545.81	1352.81	1189.20	1090.73	957.18	840.42	750.68	670.97
225.0	2097.92	1928.23	1758.53	1548.80	1386.86	1179.40	1082.07	962.74	842.28
270.0	2209.66	2029.21	1863.10	1676.07	1492.63	1335.48	1208.20	1027.75	911.83
315.0	2064.46	1855.93	1690.41	1527.88	1285.28	1186.57	1057.75	927.31	811.21
360.0	2026.22	1866.68	1685.63	1527.28	1337.87	1196.25	1065.39	934.54	818.61

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	730.18	644.14	571.84	514.47	455.32	407.51	358.52	319.08	303.54
45.0	577.21	514.47	449.34	402.14	351.94	311.31	302.35	225.69	192.34
90.0	543.27	478.62	427.17	375.73	330.61	289.14	248.99	204.71	172.81
135.0	593.35	537.18	472.05	415.28	371.07	331.63	306.53	245.52	209.55
180.0	585.34	526.12	472.53	411.88	368.20	328.94	286.04	243.37	208.78
225.0	750.97	663.38	596.87	530.49	471.21	422.57	372.26	328.10	290.76
270.0	822.20	712.85	630.99	575.42	504.31	448.15	408.11	354.93	317.29
315.0	722.59	629.68	573.39	509.21	445.46	404.11	354.99	305.70	273.01
360.0	730.18	644.14	571.84	514.47	455.32	407.51	358.52	319.08	303.54

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	232.74	197.60	158.11	129.72	103.13	73.97	54.32	39.50	28.68
45.0	160.44	123.15	95.60	72.00	50.07	36.93	29.10	24.62	22.11
90.0	143.59	108.57	82.46	58.92	39.91	29.58	25.28	22.95	21.15
135.0	180.51	137.73	107.97	85.45	57.48	43.26	33.88	25.99	22.95
180.0	173.82	144.78	113.59	84.31	61.90	42.72	31.49	25.99	23.24
225.0	255.86	212.06	179.38	147.23	115.02	86.10	64.47	45.47	31.91
270.0	302.95	228.32	194.73	163.66	128.95	102.00	77.26	53.12	36.21
315.0	237.82	189.72	161.63	130.62	100.50	73.79	54.73	38.18	27.25
360.0	232.74	197.60	158.11	129.72	103.13	73.97	54.32	39.50	28.68

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	23.90	21.45	19.42	17.63	16.31	15.00	13.80	12.85	11.95
45.0	20.20	18.28	16.85	15.42	14.16	13.09	12.07	11.17	10.40
90.0	19.24	17.63	16.37	15.24	13.92	12.91	12.01	11.05	10.34
135.0	21.27	19.18	17.75	16.43	14.88	13.86	12.91	11.83	10.99
180.0	20.85	19.24	17.75	16.07	14.94	13.80	12.79	11.83	11.05
225.0	25.34	22.11	20.38	18.64	17.09	15.77	14.76	13.50	12.61
270.0	27.84	22.77	20.61	19.06	17.51	16.37	15.12	13.98	13.03
315.0	22.11	19.84	18.40	16.91	15.60	14.58	13.68	12.61	11.83
360.0	23.90	21.45	19.42	17.63	16.31	15.00	13.80	12.85	11.95

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	11.17	10.40	9.68	9.08	8.54	7.89	7.41	6.99	6.57
45.0	9.74	9.02	8.48	7.95	7.53	7.05	6.69	6.39	5.98
90.0	9.62	8.96	8.37	7.89	7.41	6.99	6.57	6.27	5.98
135.0	10.28	9.50	8.90	8.31	7.71	7.23	6.81	6.39	6.09
180.0	10.28	9.56	8.90	8.31	7.77	7.29	6.87	6.51	6.21
225.0	11.71	10.76	10.10	9.44	8.84	8.25	7.77	7.35	6.93
270.0	12.13	11.29	10.64	9.92	9.14	8.66	8.13	7.65	7.17
315.0	11.05	10.22	9.56	9.02	8.43	7.89	7.41	6.99	6.63
360.0	11.17	10.40	9.68	9.08	8.54	7.89	7.41	6.99	6.57

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.21	5.98	5.68	5.50	5.32	5.14	5.02	4.90	4.72
45.0	5.74	5.56	5.32	5.14	5.02	4.90	4.78	4.66	4.60
90.0	5.74	5.56	5.38	5.26	5.14	5.08	4.96	4.84	4.78
135.0	5.86	5.56	5.44	5.26	5.14	5.02	4.90	4.84	4.72
180.0	5.86	5.62	5.44	5.32	5.14	5.02	4.90	4.84	4.72
225.0	6.57	6.27	5.98	5.74	5.50	5.32	5.14	5.02	4.90
270.0	6.81	6.45	6.21	5.98	5.74	5.56	5.38	5.20	5.08
315.0	6.27	5.98	5.74	5.50	5.32	5.20	5.08	4.90	4.78
360.0	6.21	5.98	5.68	5.50	5.32	5.14	5.02	4.90	4.72

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.66	4.54	4.42	4.36	4.30	4.18	4.18	4.06	3.94
45.0	4.48	4.36	4.30	4.18	4.06	3.94	3.88	3.82	3.70
90.0	4.66	4.54	4.48	4.42	4.30	4.24	4.12	4.00	4.00
135.0	4.66	4.54	4.48	4.36	4.24	4.18	4.06	4.00	3.88
180.0	4.66	4.54	4.42	4.36	4.30	4.18	4.06	3.94	3.88
225.0	4.84	4.72	4.60	4.48	4.42	4.36	4.24	4.18	4.06
270.0	5.02	4.96	4.90	4.78	4.72	4.66	4.54	4.48	4.36
315.0	4.72	4.60	4.48	4.42	4.36	4.24	4.18	4.12	4.06
360.0	4.66	4.54	4.42	4.36	4.30	4.18	4.18	4.06	3.94

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.88	3.76	3.70	3.64	3.59	3.47	3.47	3.35	3.35
45.0	3.64	3.59	3.53	3.47	3.41	3.35	3.29	3.23	3.17
90.0	3.94	3.82	3.76	3.76	3.70	3.70	3.76	3.76	4.24
135.0	3.82	3.70	3.64	3.59	3.53	3.53	3.41	3.35	3.29
180.0	3.76	3.70	3.64	3.53	3.47	3.41	3.35	3.29	3.23
225.0	4.00	3.88	3.76	3.70	3.64	3.59	3.53	3.41	3.35
270.0	4.30	4.24	4.18	4.12	4.06	4.06	4.00	3.94	3.88
315.0	3.94	3.88	3.76	3.70	3.64	3.59	3.53	3.47	3.41
360.0	3.88	3.76	3.70	3.64	3.59	3.47	3.47	3.35	3.35

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.29	3.23	3.11	3.11	3.05	2.99	2.93	2.87	2.81
45.0	3.11	3.11	3.05	3.05	2.93	2.81	2.81	2.75	2.75
90.0	5.68	7.89	9.32	6.57	2.87	2.81	2.75	2.75	2.75
135.0	3.29	3.23	3.17	3.17	2.93	2.81	2.75	2.75	2.75
180.0	3.17	3.11	3.05	2.99	2.87	2.81	2.81	2.75	2.75
225.0	3.35	3.29	3.23	3.17	3.11	2.99	2.87	2.81	2.81
270.0	3.94	4.00	4.90	6.75	8.90	8.48	2.99	2.93	2.87
315.0	3.35	3.29	3.23	3.17	3.11	3.05	2.93	2.87	2.81
360.0	3.29	3.23	3.11	3.11	3.05	2.99	2.93	2.87	2.81

Intensity data(cd)

C/γ(°)	90.0
0.0	2.75
45.0	2.75
90.0	2.75
135.0	2.75
180.0	2.75
225.0	2.75
270.0	2.81
315.0	2.81
360.0	2.75