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NATA

LumCAT: LM01D0153050BY
Luminaire:

Report No: NATA0100	Voltage(V): 25.2000
Test No: GC2018121907	Current(A): 0.2100
LampCAT: LUMILEDS LUXEON5050	Power (W): 12.8520
Lamp flux(lm): 742.1	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 15	Width(mm): 15
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 658.02
Efficiency(%): 88.67%
Lumens(lm)/Power(W): 51.20
Central intensity(cd): 913.613
Maximum intensity(cd): 925.369
Angle of maximum intensity: C=90.0 γ=1.0
Beam Angle(50%Imax): [C0/180]Total=46.9
[C90/270]Total=31.6
Field angle(10%Imax): [C0/180]Total=89.2
[C90/270]Total=71.3
Maximum s/h(1/2): C0_180=0.76 C90_270=0.55
Maximum s/h(1/4): C0_180=0.80 C90_270=0.56
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 85.802%

Equipment: GMS1980	Date: 2018/12/19	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

NATA LM01D0153050BY

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	916.350	0.219	0.219	.030%	.033%
1.0	914.970	1.751	1.97	.236%	.299%
2.0	910.376	3.484	5.454	.470%	.829%
3.0	901.896	5.176	10.631	.698%	1.616%
4.0	890.168	6.809	17.44	.918%	2.650%
5.0	874.788	8.361	25.801	1.127%	3.921%
6.0	856.580	9.819	35.62	1.323%	5.413%
7.0	835.390	11.164	46.784	1.504%	7.110%
8.0	812.030	12.393	59.177	1.670%	8.993%
9.0	784.645	13.460	72.637	1.814%	11.039%
10.0	754.901	14.375	87.013	1.937%	13.223%
11.0	725.285	15.176	102.189	2.045%	15.530%
12.0	694.662	15.838	118.027	2.134%	17.937%
13.0	659.789	16.276	134.303	2.193%	20.410%
14.0	626.011	16.608	150.91	2.238%	22.934%
15.0	593.027	16.831	167.742	2.268%	25.492%
16.0	559.017	16.897	184.639	2.277%	28.060%
17.0	524.752	16.824	201.463	2.267%	30.617%
18.0	491.616	16.659	218.123	2.245%	33.148%
19.0	460.730	16.449	234.572	2.217%	35.648%
20.0	429.246	16.099	250.671	2.169%	38.095%
21.0	399.492	15.700	266.371	2.116%	40.481%
22.0	372.572	15.305	281.676	2.062%	42.807%
23.0	347.311	14.882	296.558	2.005%	45.068%
24.0	322.317	14.376	310.934	1.937%	47.253%
25.0	300.173	13.911	324.845	1.875%	49.367%
26.0	280.184	13.469	338.314	1.815%	51.414%
27.0	260.109	12.950	351.264	1.745%	53.382%
28.0	241.706	12.444	363.708	1.677%	55.273%
29.0	225.084	11.967	375.674	1.613%	57.092%
30.0	209.623	11.494	387.168	1.549%	58.838%
31.0	193.898	10.951	398.119	1.476%	60.503%
32.0	179.707	10.443	408.562	1.407%	62.090%
33.0	166.540	9.947	418.509	1.340%	63.601%
34.0	154.287	9.461	427.97	1.275%	65.039%
35.0	142.111	8.939	436.909	1.205%	66.397%
36.0	130.931	8.439	445.348	1.137%	67.680%
37.0	120.994	7.985	453.333	1.076%	68.893%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	111.398	7.521	460.854	1.013%	70.036%
39.0	102.127	7.048	467.902	.950%	71.108%
40.0	94.200	6.640	474.542	.895%	72.117%
41.0	86.843	6.248	480.79	.842%	73.066%
42.0	79.763	5.853	486.643	.789%	73.956%
43.0	73.622	5.506	492.149	.742%	74.792%
44.0	68.515	5.219	497.368	.703%	75.586%
45.0	64.045	4.966	502.334	.669%	76.340%
46.0	60.267	4.754	507.088	.641%	77.063%
47.0	57.197	4.587	511.675	.618%	77.760%
48.0	54.724	4.460	516.135	.601%	78.438%
49.0	52.448	4.341	520.476	.585%	79.097%
50.0	50.402	4.234	524.71	.571%	79.741%
51.0	48.825	4.161	528.871	.561%	80.373%
52.0	47.438	4.099	532.97	.552%	80.996%
53.0	46.226	4.048	537.019	.546%	81.611%
54.0	45.241	4.014	541.032	.541%	82.221%
55.0	44.428	3.991	545.023	.538%	82.828%
56.0	43.753	3.978	549.001	.536%	83.432%
57.0	43.139	3.967	552.968	.535%	84.035%
58.0	42.471	3.950	556.918	.532%	84.635%
59.0	41.838	3.933	560.851	.530%	85.233%
60.0	41.173	3.910	564.761	.527%	85.827%
61.0	40.561	3.890	568.651	.524%	86.419%
62.0	40.041	3.877	572.528	.522%	87.008%
63.0	39.539	3.863	576.392	.521%	87.595%
64.0	39.007	3.845	580.236	.518%	88.179%
65.0	38.517	3.828	584.064	.516%	88.761%
66.0	38.051	3.812	587.876	.514%	89.340%
67.0	37.617	3.797	591.673	.512%	89.917%
68.0	37.191	3.781	595.455	.510%	90.492%
69.0	36.752	3.763	599.217	.507%	91.064%
70.0	36.361	3.747	602.964	.505%	91.633%
71.0	35.946	3.727	606.691	.502%	92.200%
72.0	35.487	3.701	610.392	.499%	92.762%
73.0	35.009	3.671	614.064	.495%	93.320%
74.0	34.521	3.639	617.703	.490%	93.873%
75.0	33.926	3.594	621.296	.484%	94.419%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	33.263	3.539	624.836	.477%	94.957%
77.0	32.595	3.483	628.318	.469%	95.486%
78.0	31.887	3.420	631.739	.461%	96.006%
79.0	31.120	3.350	635.089	.451%	96.515%
80.0	30.288	3.271	638.36	.441%	97.012%
81.0	29.316	3.175	641.535	.428%	97.495%
82.0	28.137	3.055	644.59	.412%	97.959%
83.0	26.646	2.900	647.49	.391%	98.400%
84.0	24.818	2.707	650.197	.365%	98.811%
85.0	22.971	2.509	652.707	.338%	99.192%
86.0	19.659	2.151	654.857	.290%	99.519%
87.0	14.409	1.578	656.435	.213%	99.759%
88.0	8.198	0.899	657.334	.121%	99.896%
89.0	4.680	0.513	657.847	.069%	99.974%
90.0	3.162	0.173	658.02	.023%	100.000%

Zonal flux distribution table

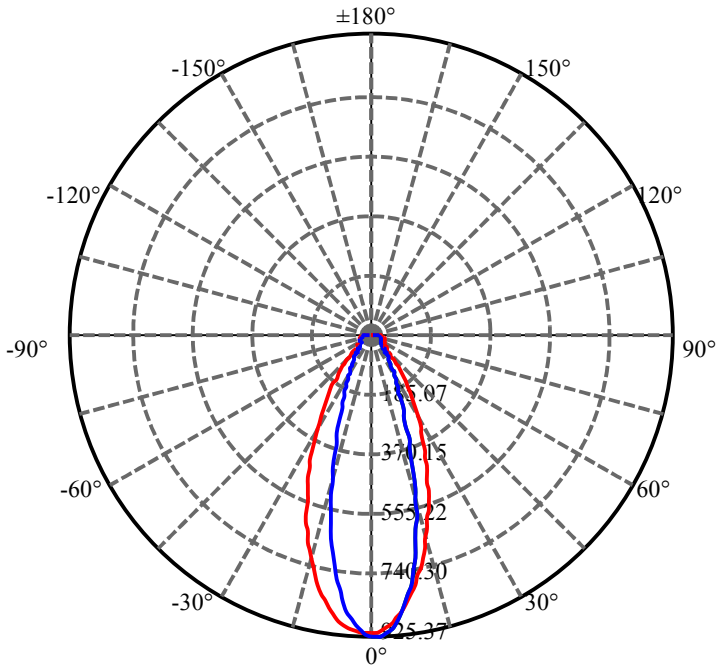
ZONAL LUMEN SUMMARY

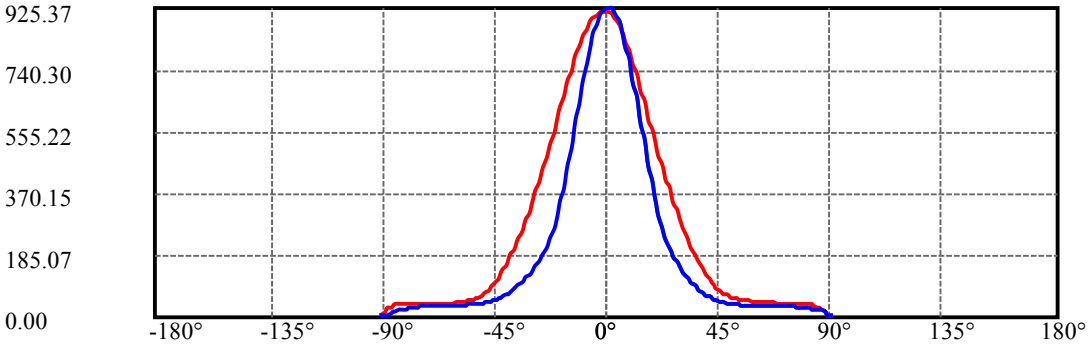
Zone	Lumens	%Lamp	%Fixt
0-30	387.17	52.17%	58.84%
0-40	474.54	63.95%	72.12%
0-60	564.76	76.11%	85.83%
0-90	657.85	88.65%	99.97%
0-120	657.85	88.65%	99.97%
0-180	658.02	88.67%	100.00%
60-90	97.00	13.07%	14.74%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-50.41	526.42	70.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	87.01
10-20	163.66
20-30	136.50
30-40	87.37
40-50	50.17
50-60	40.05
60-70	38.20
70-80	35.40
80-90	19.49
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]





C90(Max):

C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:45.8 Right:43.4

:C90/270Left:36.6 Right:34.7

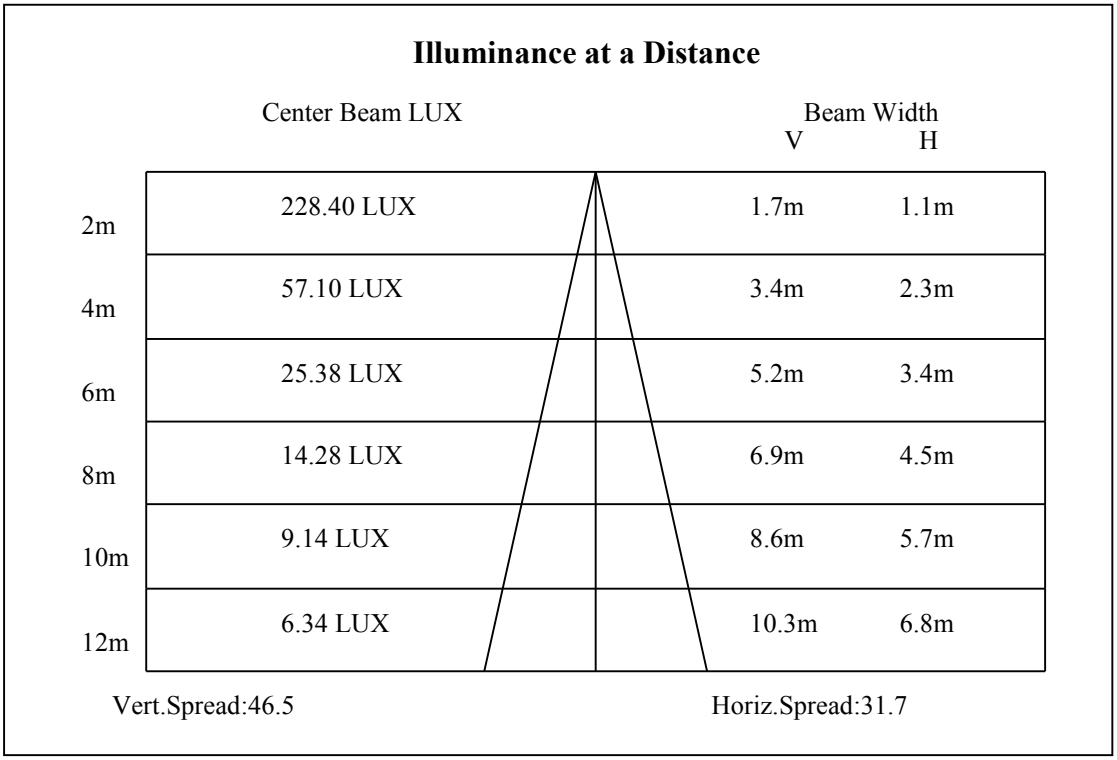
Beam Angle(50%Imax):C0/180Left:24.7 Right:22.2

:C90/270Left:16.0 Right:15.6

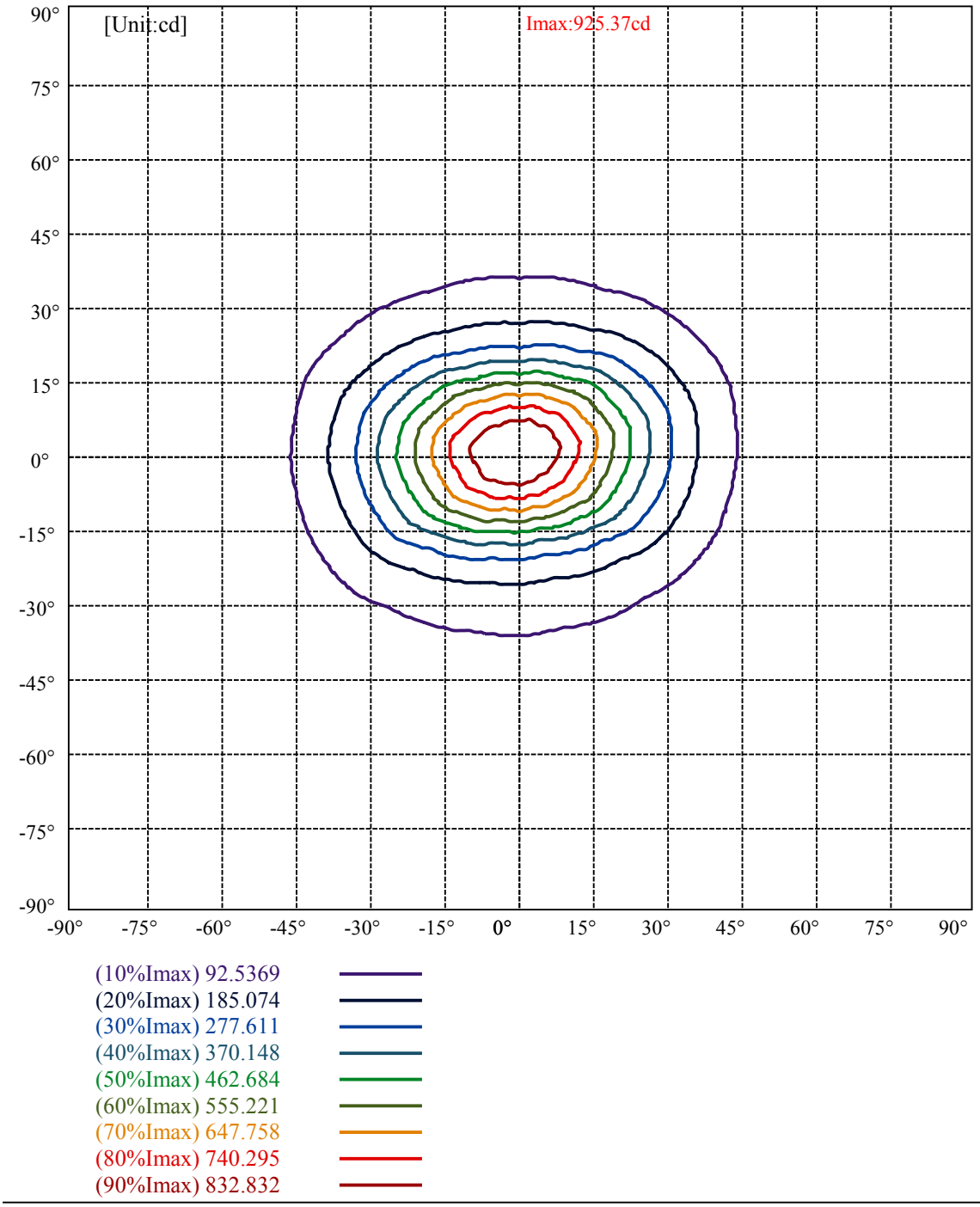
Equipment: GMS1980 Date: 2018/12/19 Operator: NT07

Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Lux distance Curve



ISO-Intensity(V-H)



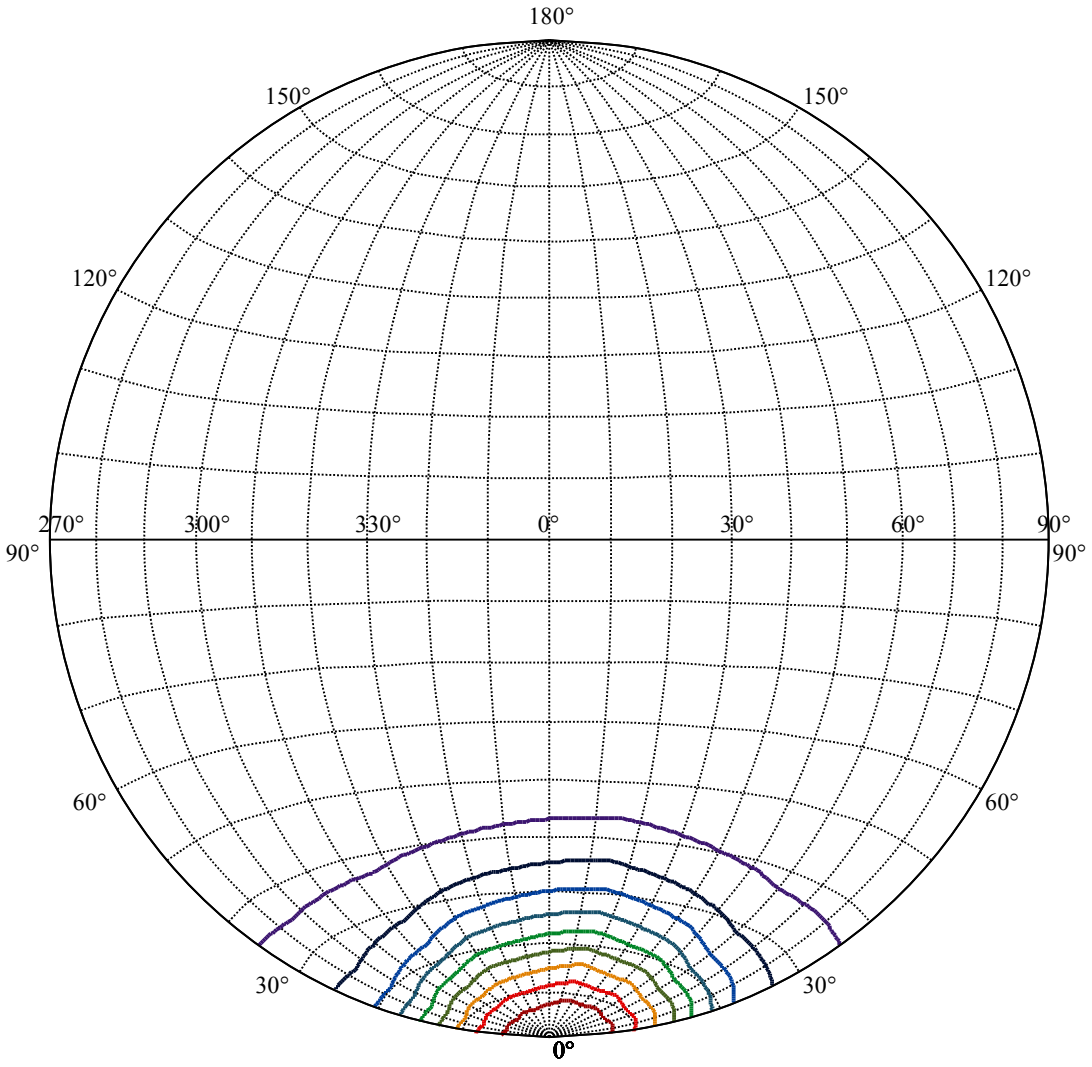
(10%Imax) 92.5369
(20%Imax) 185.074
(30%Imax) 277.611
(40%Imax) 370.148
(50%Imax) 462.684
(60%Imax) 555.221
(70%Imax) 647.758
(80%Imax) 740.295
(90%Imax) 832.832

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:925.37

(10%Imax) 92.5369
(20%Imax) 185.074
(30%Imax) 277.611
(40%Imax) 370.148
(50%Imax) 462.684
(60%Imax) 555.221
(70%Imax) 647.758
(80%Imax) 740.295
(90%Imax) 832.832

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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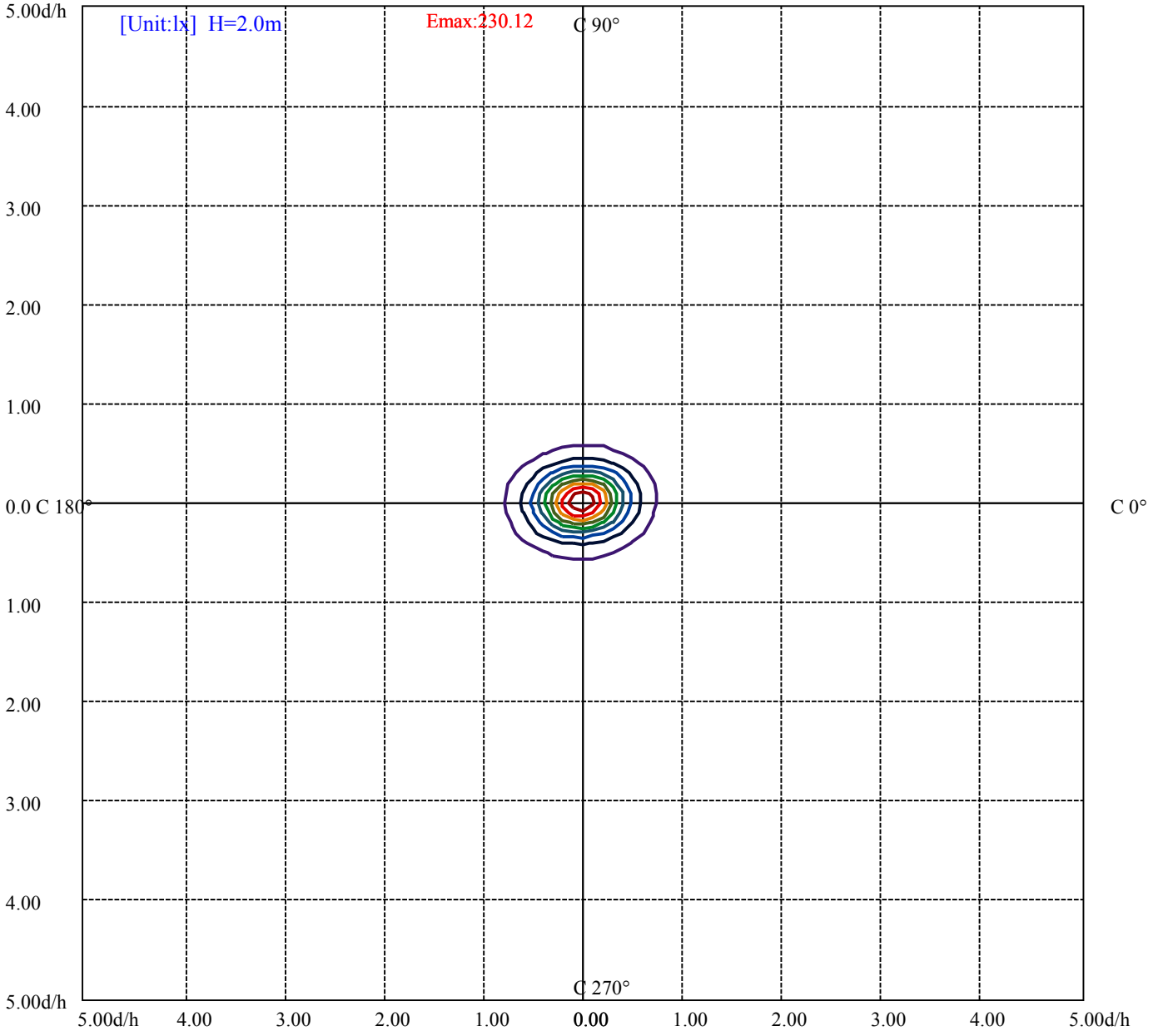
ISO illuminance diagram

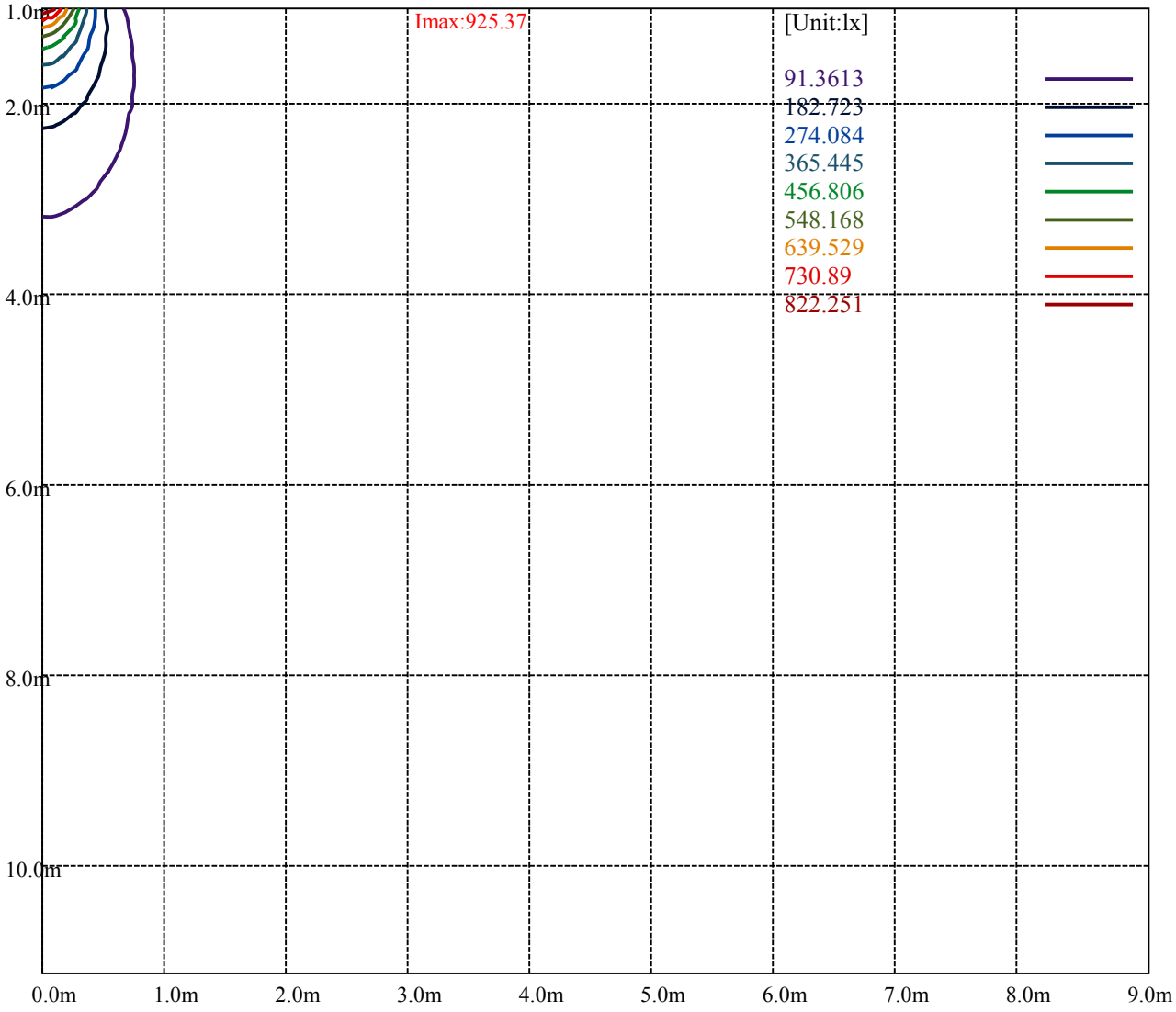


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

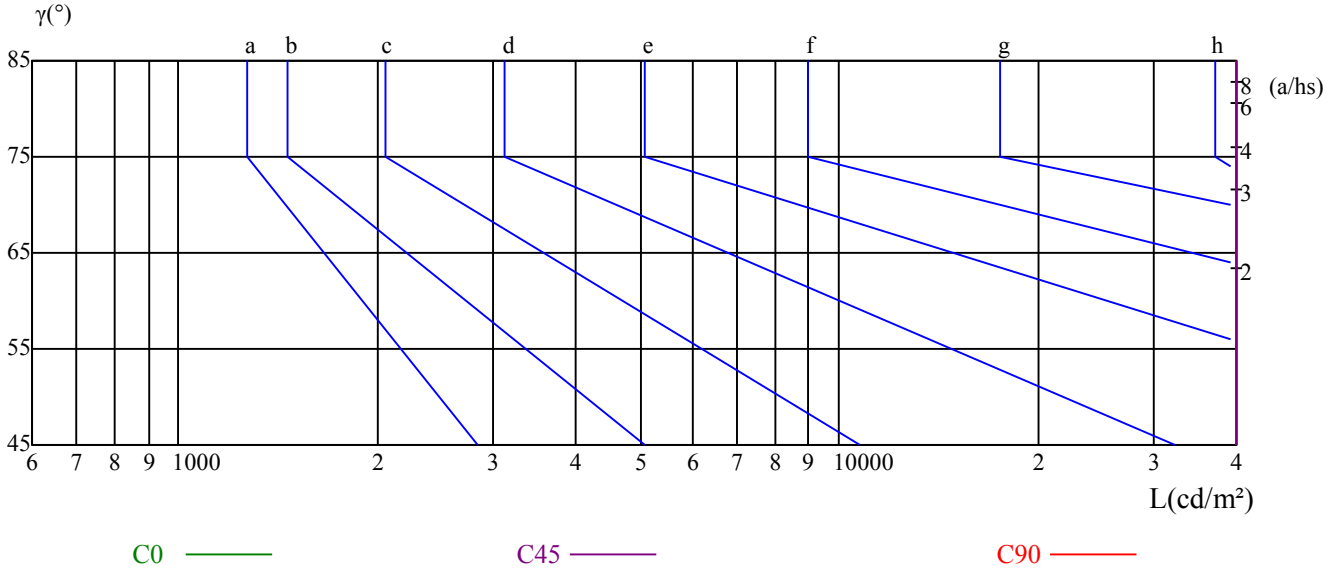
γ	45	50	55	60	65	70	75	80	85
C0	506642	414212	401429	404500	467325	555523	703194	1004905	1471504
C45	382191	354316	363073	380500	405804	465616	574726	760158	1213345
C90	298753	273807	282003	313500	371494	446611	547680	712648	1127292

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
451649	374156	394860	685807	543816	556856	1606320	1021160	1064904

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

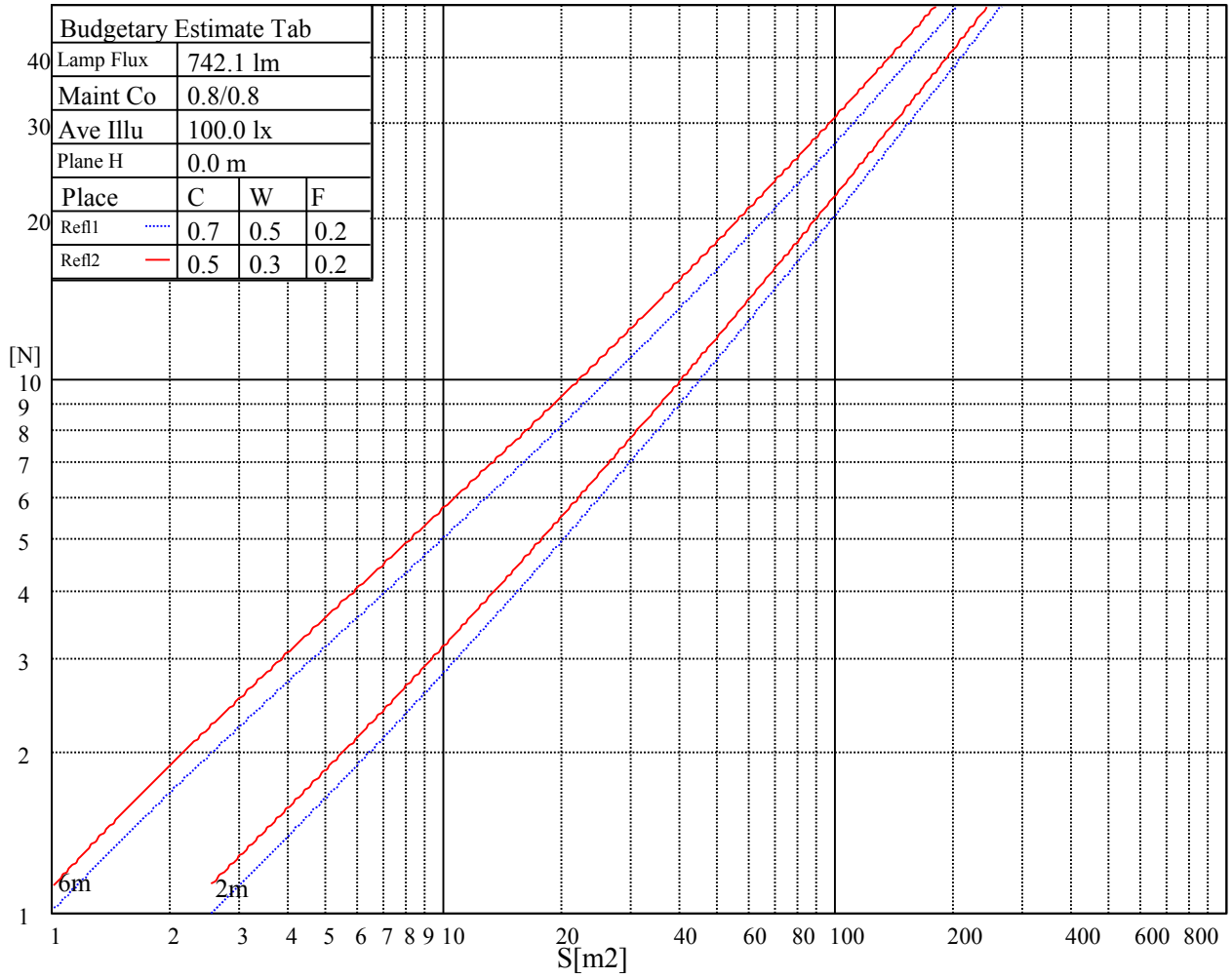


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

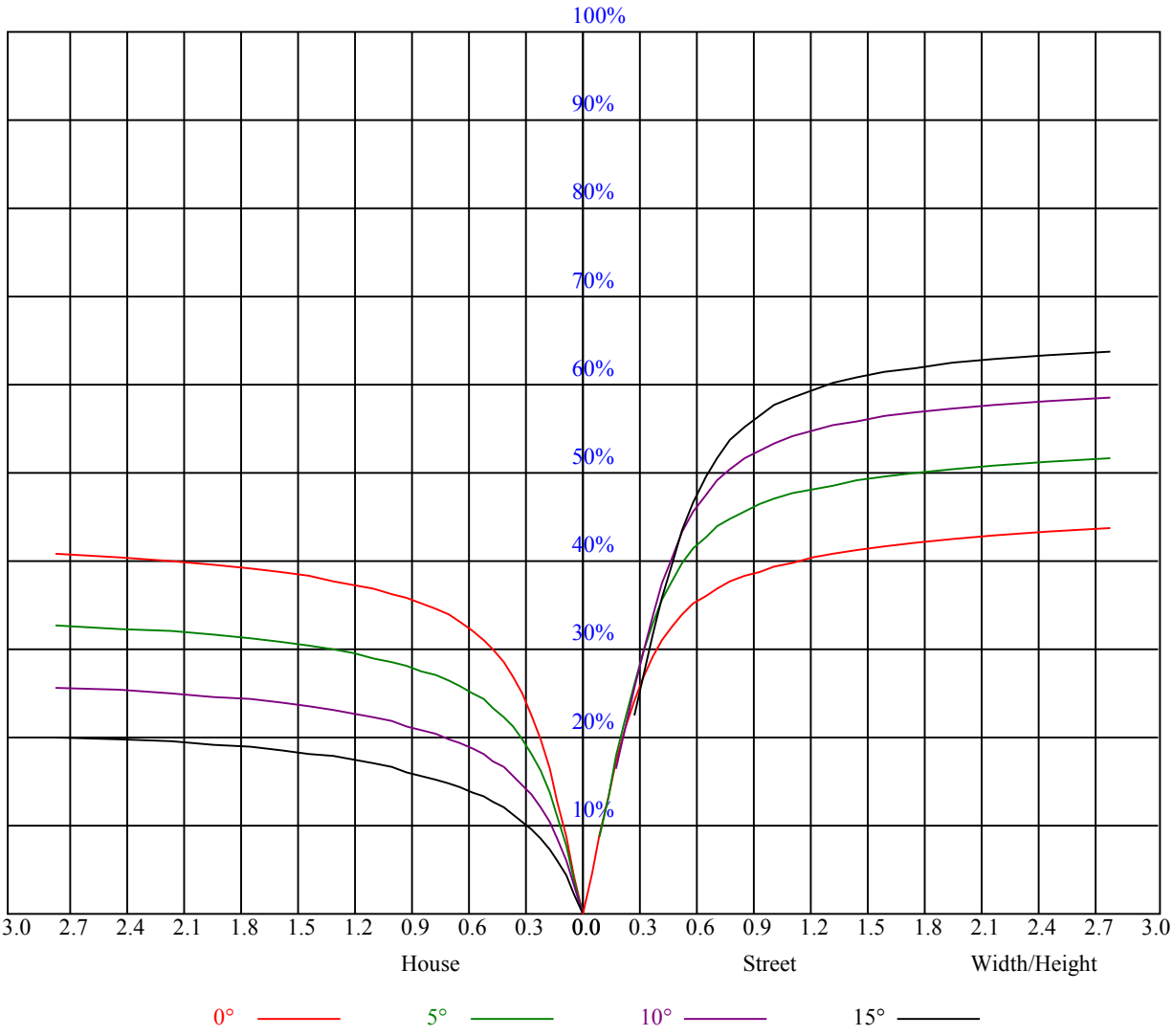


Equipment: GMS1980 Date: 2018/12/19 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.91	0.91	0.91	0.89
1	0.95	0.91	0.89	0.93	0.90	0.87	0.89	0.87	0.84	0.85	0.84	0.82	0.82	0.81	0.79	0.78
2	0.86	0.81	0.77	0.84	0.80	0.76	0.81	0.77	0.74	0.78	0.75	0.73	0.76	0.73	0.71	0.69
3	0.79	0.73	0.68	0.77	0.72	0.68	0.75	0.70	0.67	0.73	0.69	0.66	0.70	0.67	0.65	0.63
4	0.73	0.67	0.62	0.72	0.66	0.62	0.70	0.65	0.61	0.68	0.63	0.60	0.66	0.62	0.59	0.58
5	0.68	0.61	0.57	0.67	0.61	0.57	0.65	0.60	0.56	0.63	0.59	0.55	0.62	0.58	0.55	0.53
6	0.63	0.57	0.53	0.62	0.57	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.58	0.54	0.51	0.50
7	0.59	0.53	0.49	0.59	0.53	0.49	0.58	0.52	0.49	0.56	0.52	0.48	0.55	0.51	0.48	0.47
8	0.56	0.50	0.46	0.55	0.50	0.46	0.54	0.49	0.46	0.53	0.49	0.45	0.53	0.48	0.45	0.44
9	0.53	0.47	0.43	0.53	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.41
10	0.50	0.45	0.41	0.50	0.45	0.41	0.49	0.44	0.41	0.48	0.44	0.41	0.48	0.44	0.41	0.39

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/12/19	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	913.61	912.49	908.10	899.33	888.24	872.55	858.49	844.54	820.74
15.0	915.13	916.03	915.08	911.64	903.09	891.90	878.01	862.14	845.61
30.0	917.78	918.51	916.20	911.53	902.36	887.79	873.34	855.34	834.69
45.0	920.48	922.39	921.49	917.21	909.96	898.88	878.74	860.46	840.49
60.0	922.39	923.34	921.43	914.74	904.05	889.93	869.57	843.64	818.33
75.0	920.76	923.85	922.44	917.38	908.66	893.98	874.86	852.92	827.16
90.0	923.40	925.37	923.06	915.81	902.81	886.16	863.61	835.37	806.18
105.0	917.61	921.83	921.43	916.26	906.24	890.38	872.33	847.58	821.59
120.0	914.96	916.37	913.84	906.75	897.02	882.45	865.52	841.78	813.09
135.0	909.62	912.26	912.04	908.89	903.04	892.69	878.18	862.09	844.31
150.0	908.44	909.90	909.51	905.01	898.20	889.37	878.12	864.84	850.05
165.0	912.04	912.88	912.99	910.69	906.36	899.38	892.46	881.94	870.24
180.0	913.61	913.39	912.71	908.61	903.43	897.02	888.69	877.11	863.94
195.0	915.13	913.11	909.73	901.69	894.04	885.15	872.33	858.71	842.12
210.0	917.78	915.30	909.96	902.76	893.25	880.03	868.33	854.38	837.45
225.0	920.48	915.02	907.26	895.67	880.99	865.46	846.39	825.02	804.09
240.0	922.39	917.27	908.44	896.85	881.89	859.50	838.18	814.78	786.21
255.0	920.76	914.18	902.87	886.16	866.98	841.61	812.25	783.34	748.46
270.0	923.40	918.06	907.14	891.00	872.55	850.22	817.71	788.63	756.96
285.0	917.61	910.41	899.33	880.20	860.79	837.17	806.85	772.37	739.41
300.0	914.96	910.18	898.88	886.78	870.98	845.33	820.69	793.24	760.44
315.0	909.62	903.49	894.49	880.43	861.30	840.26	818.21	791.83	762.69
330.0	908.44	905.01	898.20	889.93	872.89	857.19	839.64	815.29	794.36
345.0	912.04	908.66	902.42	890.21	874.91	860.51	845.44	822.04	800.10
360.0	913.61	912.49	908.10	899.33	888.24	872.55	858.49	844.54	820.74

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	796.95	778.44	750.77	727.20	703.18	673.59	648.28	621.56	588.49
15.0	824.29	799.93	778.11	755.10	724.61	699.81	675.96	651.83	618.75
30.0	813.09	785.42	757.74	732.99	707.12	673.37	646.59	620.44	590.12
45.0	813.32	789.36	762.08	732.88	695.19	665.55	636.02	602.94	569.03
60.0	787.28	754.43	724.44	690.08	656.55	618.41	580.16	545.74	511.71
75.0	791.94	760.33	722.87	687.71	646.48	609.30	566.89	528.86	485.61
90.0	774.79	732.66	696.77	659.93	612.23	573.41	533.81	488.98	445.95
105.0	789.64	754.20	720.39	684.68	639.06	601.03	562.11	513.96	475.03
120.0	786.09	753.08	718.43	686.36	652.67	609.24	573.36	537.75	501.58
135.0	818.66	794.87	768.66	736.82	702.51	672.24	637.14	602.10	570.32
150.0	831.04	804.32	780.41	756.51	724.84	697.22	668.98	637.82	606.54
165.0	855.00	833.01	813.94	794.25	766.07	741.88	717.24	687.49	661.11
180.0	845.89	826.71	808.59	785.76	762.58	738.00	713.08	688.78	662.96
195.0	821.70	800.94	780.30	754.09	727.65	704.53	677.25	650.53	622.58
210.0	812.53	790.76	768.66	742.50	713.48	686.36	656.55	625.33	597.38
225.0	779.91	746.27	717.58	688.16	650.76	621.28	589.84	553.95	519.13
240.0	754.93	725.85	690.81	657.84	618.02	577.29	540.56	499.61	459.96
255.0	714.66	674.21	632.19	594.17	550.46	506.64	468.23	430.71	388.63
270.0	713.48	676.74	638.16	593.44	548.16	507.09	460.97	422.89	383.34
285.0	699.64	657.62	618.53	574.14	533.81	488.31	443.93	407.08	372.99
300.0	725.40	691.48	652.89	617.79	576.84	535.05	497.70	455.29	415.24
315.0	735.75	699.41	667.46	635.06	602.33	561.49	528.53	495.51	459.11
330.0	767.42	738.06	711.84	684.79	649.41	620.49	592.03	560.81	529.59
345.0	778.11	749.53	725.23	699.64	670.95	642.66	617.46	586.46	558.90
360.0	796.95	778.44	750.77	727.20	703.18	673.59	648.28	621.56	588.49

Intensity data(cd)

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	564.02	540.51	509.40	484.99	461.48	436.33	410.63	388.41	364.22
15.0	591.75	566.27	536.29	511.37	485.33	457.82	431.78	409.28	384.19
30.0	557.16	527.96	497.87	469.24	443.70	415.24	391.95	367.09	343.18
45.0	539.27	505.80	473.46	444.09	410.40	381.83	352.46	324.96	300.77
60.0	468.23	433.24	400.50	361.80	333.06	306.39	279.51	254.87	234.73
75.0	442.86	406.74	366.13	334.80	305.33	281.42	249.86	230.01	214.54
90.0	409.50	369.84	336.77	302.18	272.42	249.53	227.98	208.97	194.01
105.0	437.85	397.29	359.94	328.56	295.26	268.65	244.01	223.09	206.16
120.0	456.98	422.27	390.15	351.51	322.48	295.31	267.98	243.84	224.83
135.0	534.04	501.86	467.21	433.35	402.47	369.06	338.85	314.04	290.59
150.0	577.35	543.49	515.59	485.49	455.85	429.69	400.44	373.50	350.21
165.0	633.15	604.18	575.49	549.68	518.74	492.47	465.02	439.76	414.73
180.0	632.42	607.84	582.58	549.73	524.93	501.92	476.89	449.66	426.99
195.0	595.58	570.77	544.28	512.38	488.03	465.64	435.60	413.38	391.89
210.0	565.48	538.93	507.09	480.60	453.43	424.74	397.58	374.79	354.21
225.0	488.64	453.77	422.49	388.97	359.21	333.90	305.78	279.73	258.75
240.0	426.38	398.08	355.89	327.15	304.20	272.25	251.27	234.23	212.18
255.0	356.46	327.38	297.06	269.49	248.51	228.04	209.93	195.08	180.23
270.0	350.83	317.93	287.55	263.87	241.54	223.99	206.33	190.29	177.47
285.0	333.51	305.61	280.52	253.01	233.10	215.55	196.54	183.21	171.39
300.0	382.73	352.35	316.74	291.09	268.26	245.48	224.72	208.24	191.76
315.0	424.29	395.21	363.60	333.00	307.07	280.35	258.92	237.32	217.97
330.0	500.23	468.28	438.47	413.16	385.37	360.73	334.18	309.66	288.45
345.0	530.10	501.92	476.83	448.31	421.59	399.15	377.44	350.78	330.98
360.0	564.02	540.51	509.40	484.99	461.48	436.33	410.63	388.41	364.22

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	339.92	320.18	299.76	282.26	262.35	243.11	226.35	208.74	191.93
15.0	362.59	339.81	316.01	297.68	276.24	255.77	237.99	223.59	201.94
30.0	321.98	301.73	277.31	258.02	239.40	218.19	201.94	186.36	168.53
45.0	280.35	252.51	233.27	217.74	194.74	178.88	166.28	150.30	136.91
60.0	213.86	197.16	180.17	164.64	151.82	138.60	126.96	117.45	109.01
75.0	193.89	178.88	168.02	154.07	141.02	132.98	120.94	113.01	104.23
90.0	180.62	165.71	154.46	143.78	132.58	122.12	113.63	104.79	96.75
105.0	189.84	176.40	164.36	154.18	140.51	130.50	121.28	111.94	102.94
120.0	205.71	190.63	174.94	160.76	149.46	137.42	126.34	117.51	109.01
135.0	262.29	241.26	221.91	203.12	184.44	171.11	154.58	142.71	130.73
150.0	329.01	301.28	280.29	260.16	238.50	218.98	202.89	185.91	169.54
165.0	388.46	365.12	343.80	325.07	297.68	278.66	260.10	239.63	223.93
180.0	402.53	377.66	356.85	334.13	312.98	291.66	271.63	254.25	237.60
195.0	364.16	343.58	323.83	299.53	282.77	262.97	241.71	227.31	209.70
210.0	322.99	302.63	285.30	261.84	242.72	228.43	208.52	191.81	179.49
225.0	239.85	219.04	203.85	189.39	175.11	161.61	149.57	137.25	125.94
240.0	194.63	183.32	168.92	157.84	147.09	134.83	126.11	117.84	108.23
255.0	168.13	156.04	145.52	136.91	128.98	119.70	112.39	105.36	96.98
270.0	165.66	152.38	143.21	134.55	124.99	117.96	111.38	104.01	96.58
285.0	157.89	149.29	139.05	128.87	122.18	114.36	105.92	99.90	92.76
300.0	176.91	165.26	153.23	143.55	133.48	124.43	117.17	109.07	100.58
315.0	201.71	187.03	170.38	158.12	147.32	135.56	126.73	118.18	108.79
330.0	268.43	244.74	227.76	211.61	192.54	178.65	165.83	152.21	138.94
345.0	311.23	289.35	269.83	253.13	234.68	216.51	200.76	183.77	169.65
360.0	339.92	320.18	299.76	282.26	262.35	243.11	226.35	208.74	191.93

Intensity data(cd)

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	177.75	165.49	149.29	137.03	125.83	113.96	103.28	94.84	87.08
15.0	187.48	174.94	159.36	146.19	133.71	121.11	109.29	100.91	91.01
30.0	155.42	143.16	128.76	118.24	108.79	98.38	91.24	83.08	75.88
45.0	127.18	114.64	105.86	97.31	87.75	81.00	74.70	68.12	64.07
60.0	99.45	92.48	86.06	78.64	73.35	68.29	62.66	58.73	55.91
75.0	95.51	89.27	83.03	75.54	70.14	65.31	59.91	56.25	53.04
90.0	90.34	83.31	77.46	71.49	66.04	61.48	57.54	53.27	50.06
105.0	95.63	88.09	81.62	76.16	70.26	65.31	60.19	55.97	52.54
120.0	99.23	92.25	85.61	77.91	72.45	67.33	62.21	57.88	54.51
135.0	120.26	111.99	102.99	94.28	87.41	80.78	73.24	68.06	63.56
150.0	156.66	143.16	131.91	119.98	109.18	100.24	91.07	82.97	76.56
165.0	208.29	191.36	176.12	162.11	147.83	135.62	122.85	111.49	102.04
180.0	217.63	202.50	188.44	170.66	157.05	144.00	130.28	117.73	107.61
195.0	191.14	178.93	165.49	148.11	137.53	126.00	114.02	102.99	94.22
210.0	162.56	149.74	137.87	124.59	115.03	106.03	95.46	87.98	81.06
225.0	116.89	107.33	99.56	91.91	85.11	79.48	74.25	68.29	63.96
240.0	101.19	94.44	87.08	81.73	76.56	71.21	66.09	62.04	57.94
255.0	90.56	84.54	77.79	72.73	68.06	62.66	59.34	55.69	52.26
270.0	90.28	83.48	76.95	71.83	66.83	62.66	58.56	54.68	51.69
285.0	83.98	78.53	73.24	68.12	63.73	60.02	56.42	53.49	51.36
300.0	93.32	86.06	78.19	73.07	68.46	63.90	59.91	56.98	54.68
315.0	99.56	91.69	83.93	77.34	72.39	67.39	63.56	60.41	57.60
330.0	127.46	115.59	106.14	97.03	88.82	82.46	76.67	71.78	67.95
345.0	154.58	140.91	130.84	119.03	108.51	99.62	91.58	83.31	77.79
360.0	177.75	165.49	149.29	137.03	125.83	113.96	103.28	94.84	87.08

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	80.61	75.94	71.55	68.18	63.68	59.91	57.21	55.46	53.78
15.0	84.32	78.81	73.24	69.47	66.49	62.61	59.12	56.48	53.72
30.0	71.66	67.67	63.06	60.64	58.33	56.08	54.90	53.83	52.20
45.0	60.81	57.94	56.25	54.45	52.76	51.24	50.23	49.16	48.26
60.0	53.10	51.36	49.22	47.31	46.18	45.28	44.33	43.88	43.43
75.0	50.34	48.15	46.41	44.61	43.26	41.91	40.84	39.94	39.21
90.0	47.53	45.00	43.59	42.19	40.61	39.60	38.81	37.91	37.41
105.0	49.44	46.52	44.78	43.20	41.51	40.33	39.43	38.48	37.63
120.0	51.02	48.77	46.69	44.94	43.48	42.24	40.95	40.33	39.88
135.0	58.44	55.07	52.54	50.23	48.43	47.14	46.07	45.23	44.27
150.0	70.88	64.97	61.43	58.44	55.52	53.10	51.41	49.61	48.26
165.0	92.48	83.98	77.91	72.96	67.44	63.56	60.36	56.64	53.21
180.0	97.31	89.55	81.68	74.76	69.81	64.01	59.63	56.31	53.66
195.0	85.73	78.53	73.01	67.84	63.73	59.40	56.31	53.21	51.19
210.0	73.69	69.08	65.36	61.82	58.95	56.70	54.56	52.93	50.96
225.0	60.41	56.87	54.90	53.38	51.58	50.34	49.28	47.93	46.97
240.0	54.62	52.09	49.61	47.87	46.41	45.39	44.61	43.93	43.37
255.0	50.23	47.98	45.84	44.49	43.14	41.57	40.78	40.05	39.54
270.0	49.73	47.25	45.62	44.33	42.64	41.46	40.56	39.60	38.76
285.0	49.16	47.42	45.73	44.27	43.09	42.02	41.01	40.28	39.66
300.0	52.76	50.85	49.22	47.93	46.69	45.68	45.00	44.38	43.88
315.0	55.46	53.44	51.75	50.96	50.29	49.44	48.83	48.21	47.59
330.0	64.41	60.64	58.28	56.48	54.45	53.33	52.43	51.69	50.96
345.0	72.96	68.57	65.08	62.66	60.30	57.32	55.18	53.04	51.64
360.0	80.61	75.94	71.55	68.18	63.68	59.91	57.21	55.46	53.78

Intensity data(cd)

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	52.71	51.81	50.79	49.67	47.93	46.29	45.51	45.51	45.62
15.0	52.31	51.24	50.46	49.73	49.05	47.70	45.84	44.49	43.59
30.0	50.29	48.83	47.64	46.91	46.18	45.39	44.78	44.04	43.03
45.0	47.59	46.86	46.07	45.39	44.78	43.88	42.81	41.79	41.01
60.0	43.09	42.86	42.64	42.24	41.79	41.29	40.73	39.99	39.32
75.0	38.76	38.53	38.53	38.53	38.42	38.42	38.36	38.14	37.97
90.0	36.84	36.39	36.06	35.72	35.44	35.33	35.27	35.21	35.27
105.0	37.01	36.51	36.17	35.94	35.78	35.78	35.78	35.83	35.83
120.0	39.43	39.21	38.98	38.76	38.42	38.25	38.08	37.80	37.52
135.0	43.43	42.75	41.96	41.23	40.73	40.33	39.71	39.26	38.76
150.0	47.08	45.68	44.33	43.09	42.02	41.29	40.44	39.54	38.87
165.0	50.79	48.71	47.19	46.07	45.06	44.33	43.43	42.41	41.57
180.0	51.13	49.61	48.49	47.25	46.24	44.78	43.14	42.36	41.91
195.0	49.16	47.98	47.03	46.07	44.94	43.59	42.36	41.23	40.67
210.0	49.22	47.64	46.24	45.06	43.93	43.20	42.36	41.74	41.06
225.0	46.29	45.51	44.89	44.04	42.86	42.02	40.95	39.66	38.98
240.0	43.03	42.69	42.47	42.19	41.91	41.51	40.89	40.22	39.43
255.0	39.26	39.04	38.87	38.87	38.81	38.70	38.70	38.53	38.42
270.0	38.31	37.63	37.18	36.84	36.45	36.28	36.23	36.11	36.06
285.0	39.15	38.81	38.59	38.48	38.36	38.36	38.36	38.31	38.14
300.0	43.54	43.26	42.98	42.75	42.53	42.30	42.02	41.63	41.01
315.0	46.97	46.41	45.90	45.45	44.89	44.21	43.65	42.81	41.68
330.0	50.06	48.99	48.04	47.14	46.18	45.34	44.38	43.37	42.41
345.0	50.34	49.33	48.60	47.93	46.63	45.56	44.38	43.48	42.86
360.0	52.71	51.81	50.79	49.67	47.93	46.29	45.51	45.51	45.62

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	45.56	45.06	44.44	43.76	43.26	42.86	42.75	42.75	42.53
15.0	43.14	42.75	42.47	42.24	42.02	41.74	41.63	41.63	41.51
30.0	42.24	41.63	40.78	40.28	39.77	39.32	39.04	38.87	38.64
45.0	40.16	39.21	38.59	37.97	37.35	36.84	36.34	35.83	35.33
60.0	38.59	37.97	37.24	36.62	36.06	35.49	34.71	34.20	33.69
75.0	37.63	37.29	36.84	36.39	36.00	35.55	35.10	34.54	34.09
90.0	35.27	35.33	35.33	35.27	35.16	34.93	34.65	34.37	33.98
105.0	35.83	35.83	35.72	35.49	35.27	34.99	34.71	34.26	33.75
120.0	37.13	36.73	36.23	35.66	35.10	34.54	33.81	33.30	32.79
135.0	37.97	37.07	36.23	35.44	34.82	34.37	34.03	33.69	33.36
150.0	38.25	37.58	37.18	36.79	36.34	36.17	35.89	35.61	35.38
165.0	40.89	40.22	39.94	39.83	39.88	39.88	39.66	39.32	39.04
180.0	41.57	41.57	41.46	41.23	40.89	40.61	40.22	39.99	39.88
195.0	40.22	39.77	39.43	39.21	39.09	38.93	38.76	38.76	38.70
210.0	40.28	39.49	39.04	38.48	38.14	37.74	37.29	36.96	36.84
225.0	38.19	37.24	36.68	36.11	35.44	34.88	34.54	34.09	33.75
240.0	38.81	38.03	37.29	36.68	35.94	35.27	34.65	34.14	33.53
255.0	38.14	37.80	37.46	36.96	36.56	35.89	35.38	34.82	34.26
270.0	36.00	35.94	35.83	35.72	35.55	35.38	35.04	34.65	34.14
285.0	37.91	37.74	37.35	36.84	36.45	35.94	35.27	34.65	33.98
300.0	40.39	39.60	38.76	37.97	37.18	36.28	35.38	34.59	33.53
315.0	40.78	39.83	38.70	37.80	37.01	36.23	35.49	34.93	34.31
330.0	41.51	40.50	39.77	39.15	38.64	38.14	37.69	37.13	36.45
345.0	42.47	42.02	41.68	41.34	40.89	40.61	40.05	39.60	39.26
360.0	45.56	45.06	44.44	43.76	43.26	42.86	42.75	42.75	42.53

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	42.13	41.68	41.29	40.95	40.67	40.22	39.99	39.77	39.26
15.0	41.29	40.84	40.11	39.32	38.70	38.08	37.63	37.07	36.56
30.0	38.48	38.08	37.41	36.56	35.49	34.59	33.58	32.74	31.61
45.0	34.88	34.37	33.98	33.47	32.91	32.18	31.44	30.49	29.70
60.0	33.19	32.68	32.29	31.67	31.05	30.43	29.64	28.86	27.96
75.0	33.41	32.85	32.40	31.78	31.22	30.60	29.81	28.97	28.18
90.0	33.53	33.08	32.57	31.89	31.22	30.49	29.76	28.69	27.84
105.0	33.30	32.79	32.34	31.73	31.11	30.32	29.76	29.03	28.18
120.0	32.18	31.73	31.33	30.88	30.32	29.81	29.19	28.58	27.96
135.0	33.02	32.74	32.40	32.06	31.67	31.22	30.66	30.09	29.53
150.0	35.10	34.88	34.59	34.14	33.53	32.96	32.34	31.61	31.05
165.0	38.70	38.36	37.97	37.46	37.01	36.62	36.11	35.61	35.33
180.0	39.60	39.32	39.04	38.93	38.76	38.59	38.36	38.31	38.31
195.0	38.36	38.14	37.97	37.63	37.18	36.96	36.79	36.84	37.01
210.0	36.62	36.51	36.34	35.89	35.16	34.31	33.24	32.34	31.61
225.0	33.41	33.08	32.74	32.40	31.89	31.22	30.54	29.64	28.91
240.0	33.08	32.57	32.12	31.56	31.05	30.43	29.76	29.14	28.29
255.0	33.64	33.08	32.34	31.73	30.99	30.21	29.42	28.58	27.84
270.0	33.64	32.96	32.34	31.44	30.49	29.53	28.52	27.06	25.76
285.0	32.96	31.95	31.28	30.21	28.91	27.90	26.83	25.93	24.69
300.0	32.79	32.01	31.22	30.32	29.53	28.69	27.68	26.83	25.71
315.0	33.75	33.24	32.51	31.78	30.88	29.87	29.03	28.13	26.89
330.0	35.94	35.33	34.54	33.64	32.79	32.01	31.05	29.36	26.55
345.0	38.70	37.97	37.41	36.79	35.78	35.04	34.14	33.24	32.18
360.0	42.13	41.68	41.29	40.95	40.67	40.22	39.99	39.77	39.26

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	38.53	37.41	34.82	30.71	28.86	20.70	16.48	3.83	2.93
15.0	36.00	35.33	34.03	32.40	28.97	27.34	18.00	13.73	3.21
30.0	30.71	29.70	28.46	27.34	25.54	23.91	13.05	9.11	2.93
45.0	28.74	27.62	26.55	25.26	23.79	22.39	17.16	8.49	4.22
60.0	27.00	26.04	24.92	23.74	22.16	20.81	12.26	6.41	3.54
75.0	27.28	26.33	25.31	24.13	22.84	21.15	19.52	7.93	4.84
90.0	26.89	25.71	24.53	23.34	22.11	20.76	18.28	6.92	4.28
105.0	27.28	26.49	25.65	24.53	22.95	21.21	19.74	11.59	5.63
120.0	27.23	26.49	25.59	24.47	23.12	20.81	19.18	8.33	5.29
135.0	28.74	28.07	27.28	26.38	25.31	22.73	21.38	14.63	7.43
150.0	30.38	29.53	28.63	27.73	26.55	24.64	22.95	12.21	8.38
165.0	35.16	35.33	34.82	33.75	31.67	28.91	26.61	19.69	12.83
180.0	38.53	38.64	38.36	37.52	34.14	30.38	28.46	18.28	13.11
195.0	37.01	36.51	35.55	32.46	28.97	27.51	16.54	12.83	2.98
210.0	30.66	29.87	29.14	28.01	26.04	24.47	13.95	10.01	3.83
225.0	28.13	27.17	26.33	24.13	22.89	19.74	8.72	5.06	2.93
240.0	27.45	26.55	25.43	23.63	22.16	19.29	7.88	5.06	3.04
255.0	26.94	25.99	24.30	22.39	20.98	10.80	5.79	3.54	3.04
270.0	24.41	22.95	21.60	19.58	17.94	11.31	5.79	3.60	3.04
285.0	23.51	21.94	19.86	16.88	14.68	8.33	5.06	3.04	3.04
300.0	23.46	20.08	16.26	13.44	11.76	9.17	5.91	3.32	2.98
315.0	25.54	22.84	17.89	14.29	11.53	8.78	5.51	3.04	2.98
330.0	23.06	19.80	17.55	15.69	14.46	11.87	8.83	3.21	2.98
345.0	30.94	28.91	26.66	23.85	21.88	14.85	8.78	2.93	2.93
360.0	38.53	37.41	34.82	30.71	28.86	20.70	16.48	3.83	2.93

Intensity data(cd)

C/γ(°)	90.0
0.0	2.98
15.0	2.93
30.0	2.93
45.0	2.93
60.0	2.87
75.0	2.98
90.0	2.98
105.0	3.54
120.0	3.21
135.0	3.83
150.0	3.83
165.0	4.84
180.0	3.15
195.0	2.93
210.0	2.93
225.0	2.98
240.0	3.04
255.0	3.04
270.0	3.04
285.0	3.04
300.0	3.04
315.0	2.98
330.0	2.98
345.0	2.93
360.0	2.98