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

NATA

LumCAT: 2-1672-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2019123011
LampCAT: LUMINUS CXM-14-AC40
Lamp flux(lm): 2608.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.3600
Current(A): 0.6000
Power (W): 20.6000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2325.80
Efficiency(%): 89.18%
Lumens(lm)/Power(W): 112.90
Central intensity(cd): 7242.891
Maximum intensity(cd): 7242.891
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=27.9
[C90/270]Total=27.9
Field angle(10%Imax): [C0/180]Total=65.5
[C90/270]Total=65.5
Maximum s/h(1/2): C0_180=0.48 C90_270=0.48
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.18%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.547%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7242.891	0.000	0	.000%	.000%
1.0	7234.383	6.927	6.927	.266%	.298%
2.0	7201.336	20.720	27.647	.794%	1.189%
3.0	7143.188	34.307	61.954	1.315%	2.664%
4.0	7061.203	47.547	109.501	1.823%	4.708%
5.0	6952.711	60.287	169.788	2.312%	7.300%
6.0	6809.484	72.324	242.112	2.773%	10.410%
7.0	6613.523	83.316	325.428	3.195%	13.992%
8.0	6381.563	93.003	418.432	3.566%	17.991%
9.0	6050.391	100.754	519.186	3.863%	22.323%
10.0	5639.063	105.785	624.971	4.056%	26.871%
11.0	5212.547	108.430	733.401	4.158%	31.533%
12.0	4713.609	108.507	841.908	4.161%	36.199%
13.0	4138.242	105.049	946.957	4.028%	40.715%
14.0	3600.773	99.059	1046.016	3.798%	44.975%
15.0	3074.203	91.637	1137.653	3.514%	48.915%
16.0	2572.172	82.735	1220.388	3.172%	52.472%
17.0	2163.305	73.744	1294.132	2.828%	55.643%
18.0	1802.391	65.386	1359.518	2.507%	58.454%
19.0	1535.625	58.075	1417.593	2.227%	60.951%
20.0	1334.798	52.537	1470.129	2.014%	63.210%
21.0	1194.905	48.575	1518.705	1.863%	65.298%
22.0	1083.157	45.779	1564.483	1.755%	67.267%
23.0	1021.591	44.163	1608.647	1.693%	69.165%
24.0	965.299	43.441	1652.087	1.666%	71.033%
25.0	922.205	42.918	1695.005	1.646%	72.878%
26.0	892.139	42.828	1737.833	1.642%	74.720%
27.0	866.271	43.020	1780.853	1.650%	76.570%
28.0	845.255	43.332	1824.185	1.662%	78.433%
29.0	828.872	43.800	1867.985	1.679%	80.316%
30.0	814.697	44.376	1912.361	1.702%	82.224%
31.0	789.680	44.647	1957.008	1.712%	84.144%
32.0	756.056	44.284	2001.292	1.698%	86.048%
33.0	712.378	43.261	2044.552	1.659%	87.908%
34.0	646.305	41.118	2085.67	1.577%	89.676%
35.0	575.712	37.951	2123.621	1.455%	91.307%
36.0	498.227	34.194	2157.816	1.311%	92.777%
37.0	417.016	29.850	2187.666	1.145%	94.061%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	346.113	25.472	2213.138	.977%	95.156%
39.0	253.188	20.456	2233.594	.784%	96.036%
40.0	189.021	15.423	2249.017	.591%	96.699%
41.0	119.257	10.978	2259.994	.421%	97.171%
42.0	73.835	7.015	2267.01	.269%	97.472%
43.0	41.527	4.273	2271.283	.164%	97.656%
44.0	24.427	2.489	2273.772	.095%	97.763%
45.0	19.188	1.676	2275.449	.064%	97.835%
46.0	16.727	1.405	2276.853	.054%	97.896%
47.0	14.745	1.252	2278.105	.048%	97.949%
48.0	13.802	1.154	2279.259	.044%	97.999%
49.0	13.036	1.102	2280.361	.042%	98.046%
50.0	12.530	1.066	2281.427	.041%	98.092%
51.0	12.340	1.052	2282.479	.040%	98.138%
52.0	12.199	1.053	2283.532	.040%	98.183%
53.0	12.023	1.054	2284.586	.040%	98.228%
54.0	11.897	1.054	2285.64	.040%	98.273%
55.0	11.756	1.056	2286.696	.040%	98.319%
56.0	11.637	1.057	2287.753	.041%	98.364%
57.0	11.545	1.060	2288.813	.041%	98.410%
58.0	11.447	1.063	2289.876	.041%	98.456%
59.0	11.363	1.066	2290.942	.041%	98.501%
60.0	11.292	1.070	2292.013	.041%	98.547%
61.0	11.208	1.074	2293.086	.041%	98.594%
62.0	11.159	1.078	2294.164	.041%	98.640%
63.0	11.102	1.083	2295.247	.042%	98.686%
64.0	11.025	1.086	2296.333	.042%	98.733%
65.0	10.997	1.090	2297.423	.042%	98.780%
66.0	10.948	1.095	2298.517	.042%	98.827%
67.0	10.913	1.099	2299.617	.042%	98.874%
68.0	10.898	1.105	2300.721	.042%	98.922%
69.0	10.849	1.109	2301.831	.043%	98.970%
70.0	10.800	1.112	2302.943	.043%	99.017%
71.0	10.779	1.115	2304.058	.043%	99.065%
72.0	10.758	1.120	2305.178	.043%	99.113%
73.0	10.744	1.124	2306.302	.043%	99.162%
74.0	10.716	1.128	2307.431	.043%	99.210%
75.0	10.688	1.131	2308.561	.043%	99.259%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.659	1.133	2309.695	.043%	99.308%
77.0	10.659	1.137	2310.831	.044%	99.357%
78.0	10.638	1.140	2311.971	.044%	99.406%
79.0	10.638	1.143	2313.114	.044%	99.455%
80.0	10.624	1.146	2314.261	.044%	99.504%
81.0	10.610	1.148	2315.409	.044%	99.553%
82.0	10.617	1.151	2316.56	.044%	99.603%
83.0	10.610	1.154	2317.714	.044%	99.652%
84.0	10.596	1.155	2318.869	.044%	99.702%
85.0	10.582	1.156	2320.025	.044%	99.752%
86.0	10.554	1.155	2321.181	.044%	99.802%
87.0	10.540	1.154	2322.335	.044%	99.851%
88.0	10.526	1.154	2323.489	.044%	99.901%
89.0	10.526	1.154	2324.643	.044%	99.950%
90.0	10.519	1.154	2325.797	.044%	100.000%

Zonal flux distribution table

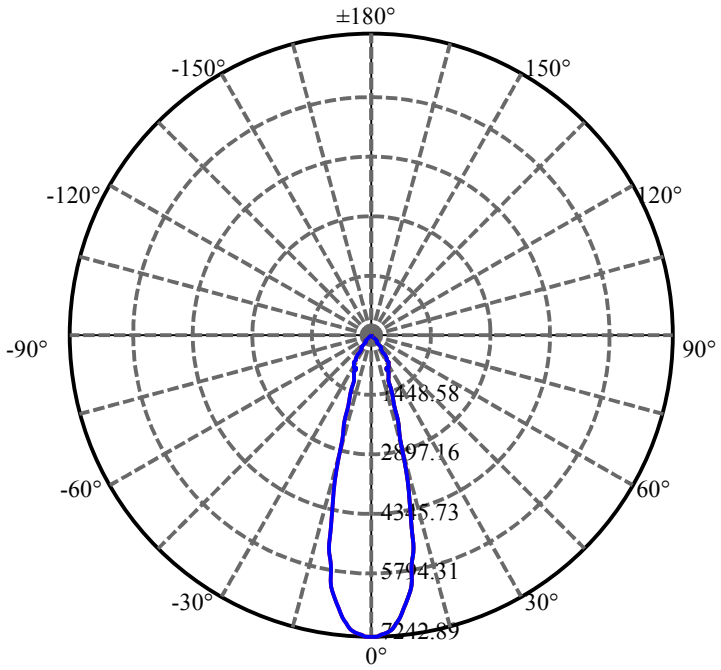
ZONAL LUMEN SUMMARY

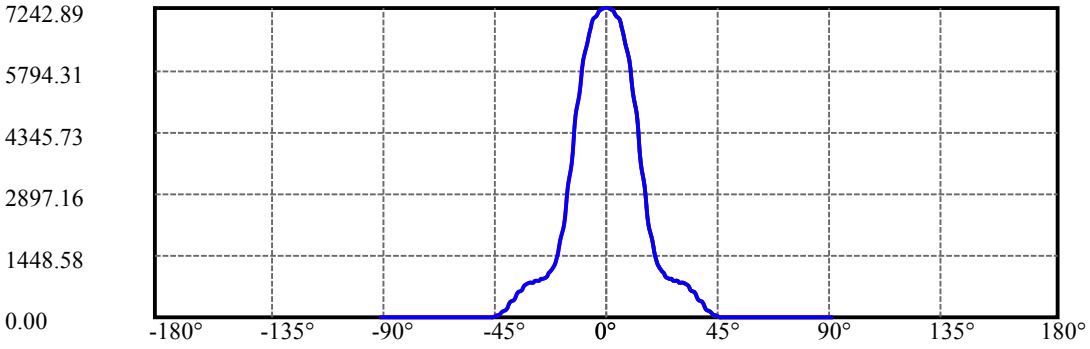
Zone	Lumens	%Lamp	%Fixt
0-30	1912.36	73.33%	82.22%
0-40	2249.02	86.24%	96.70%
0-60	2292.01	87.88%	98.55%
0-90	2324.64	89.14%	99.95%
0-120	2324.64	89.14%	99.95%
0-180	2325.80	89.18%	100.00%
60-90	33.70	1.29%	1.45%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.83	1860.64	71.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	624.97
10-20	845.16
20-30	442.23
30-40	336.66
40-50	32.41
50-60	10.59
60-70	10.93
70-80	11.32
80-90	10.38
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):

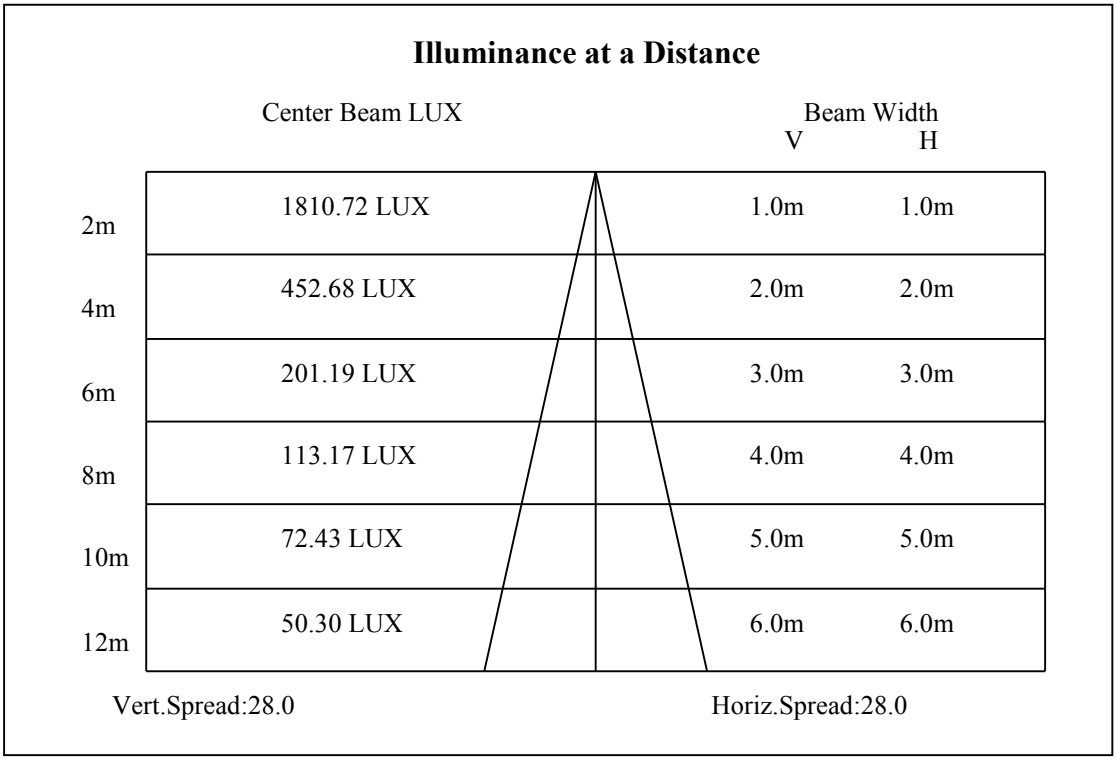
C0/C180:

C90/C270:

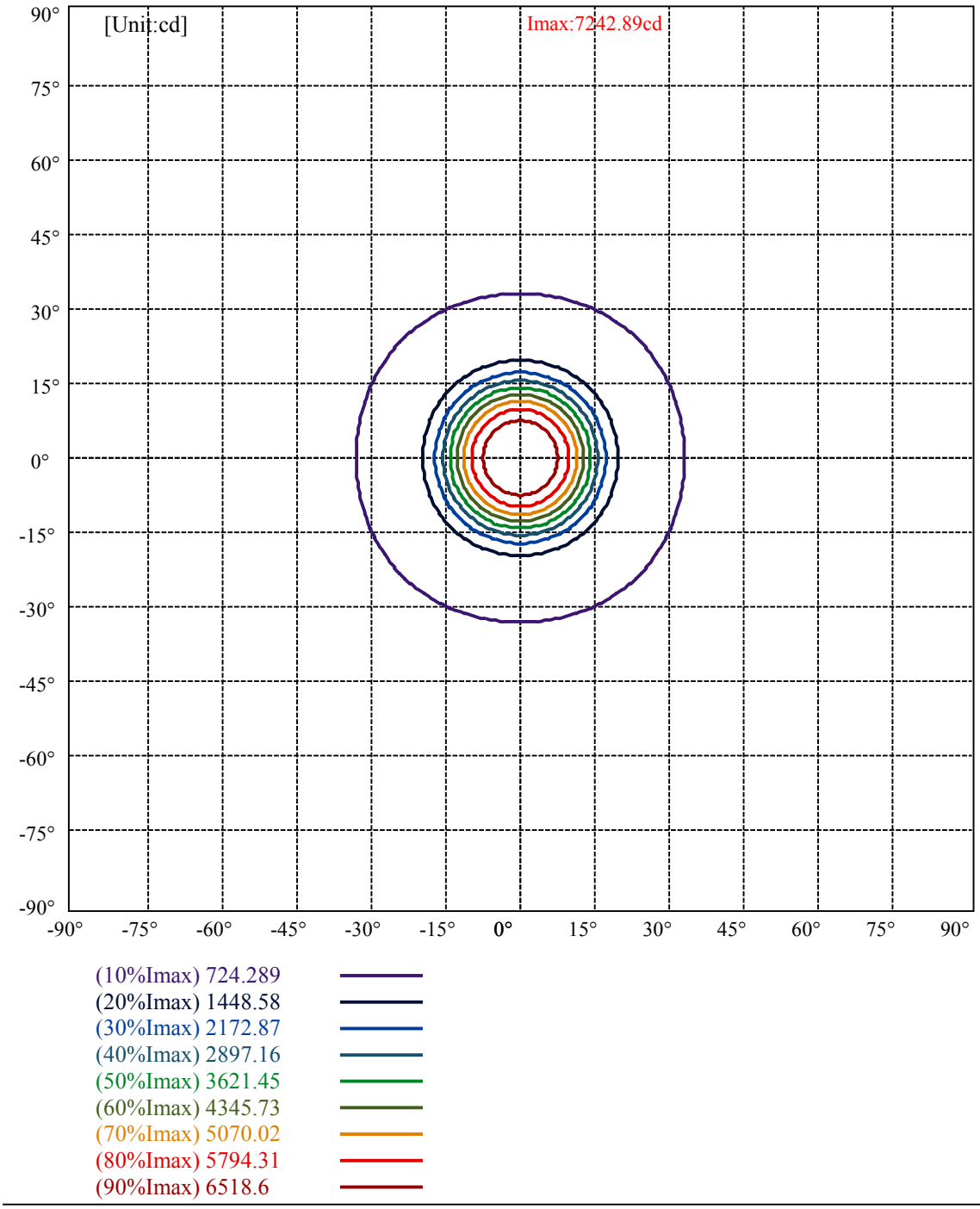
Field angle(10%Imax):C0/180Left:32.7 Right:32.7
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:14.0 Right:14.0
:C90/270Left:14.0 Right:14.0

Lux distance Curve



ISO-Intensity(V-H)

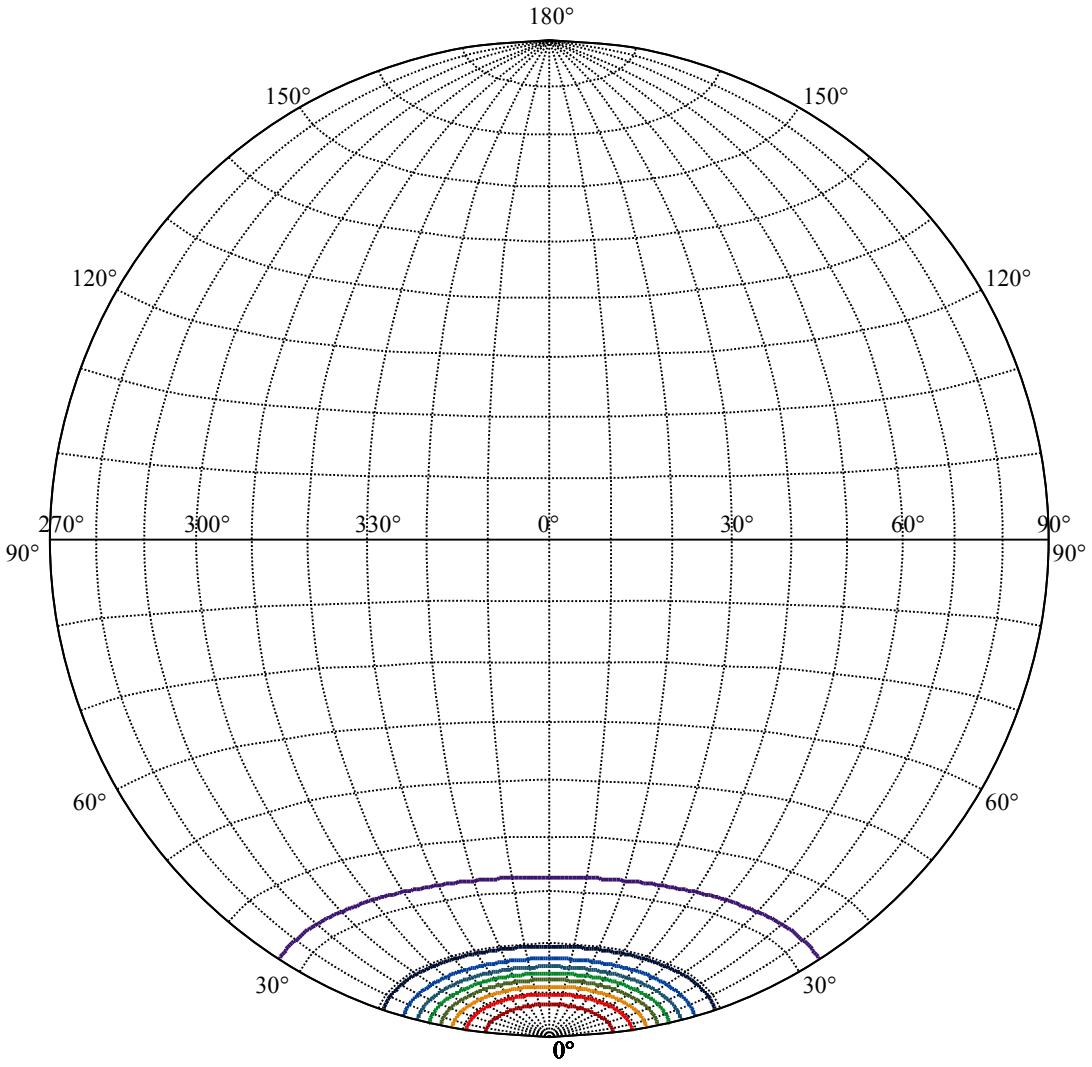


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



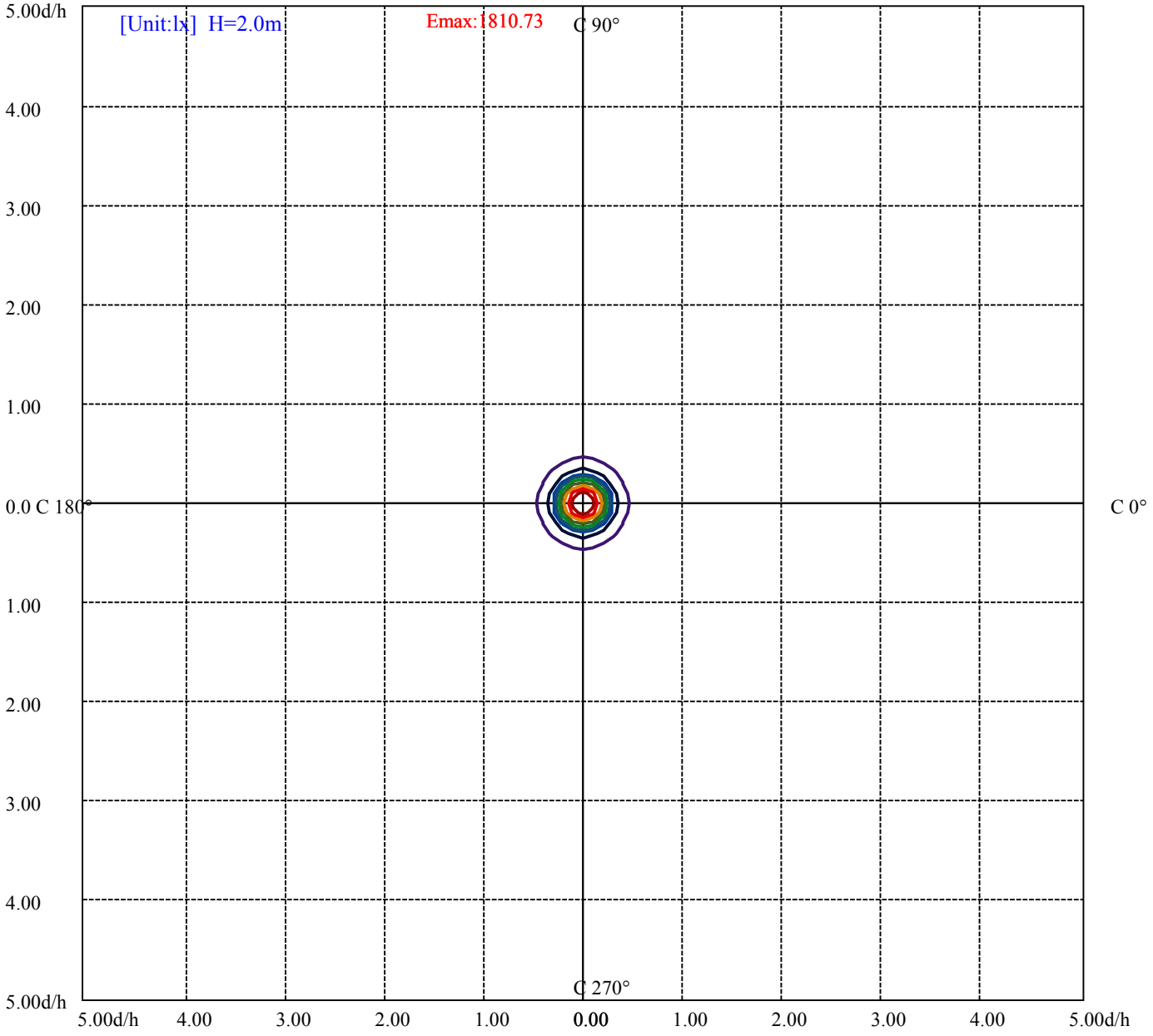
House [Unit:cd] Road

Imax:7242.89

(10%Imax) 724.289
(20%Imax) 1448.58
(30%Imax) 2172.87
(40%Imax) 2897.16
(50%Imax) 3621.45
(60%Imax) 4345.73
(70%Imax) 5070.02
(80%Imax) 5794.31
(90%Imax) 6518.6

Equipment: GMS1980 Date: 2019/12/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO illuminance diagram

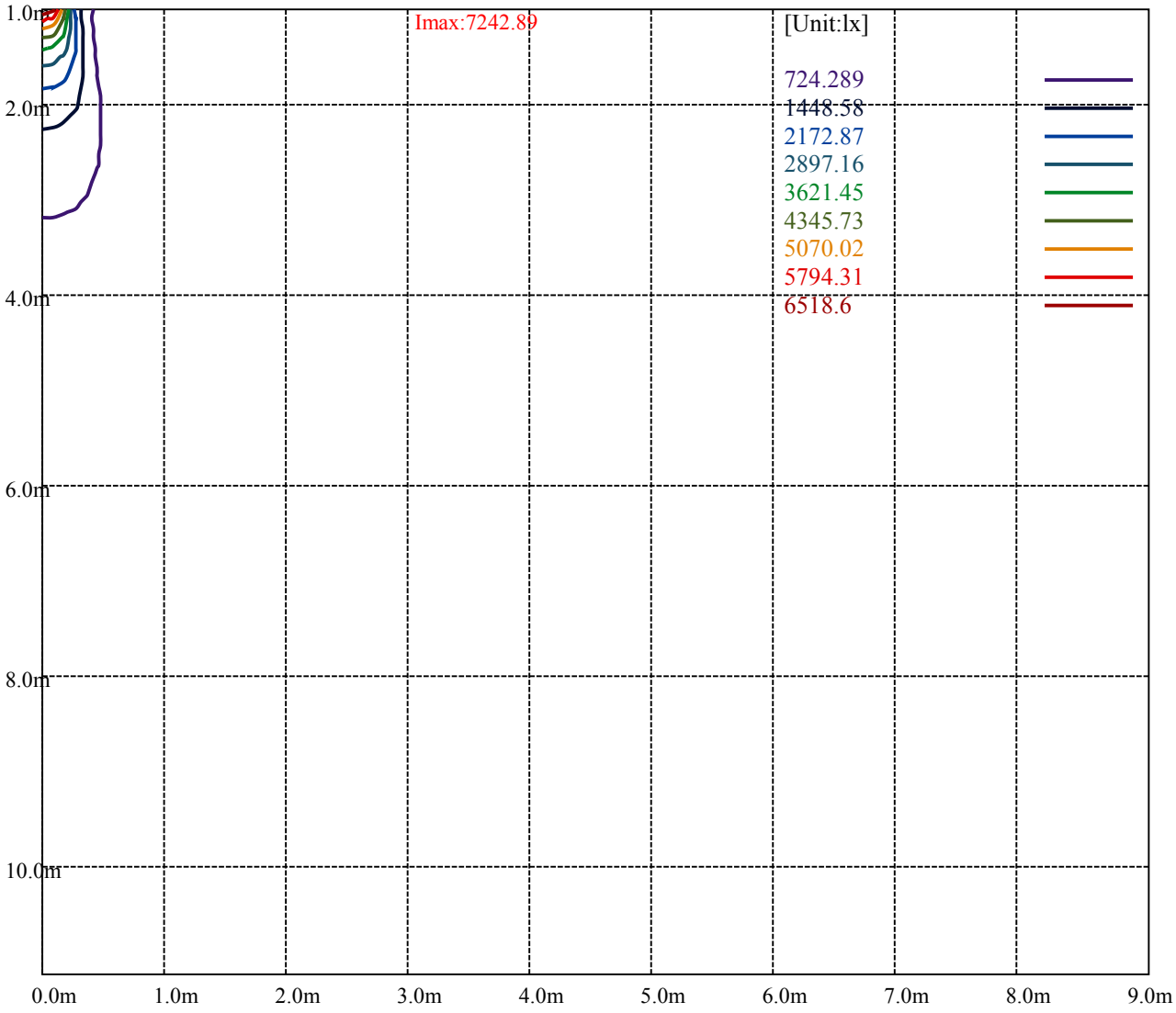


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

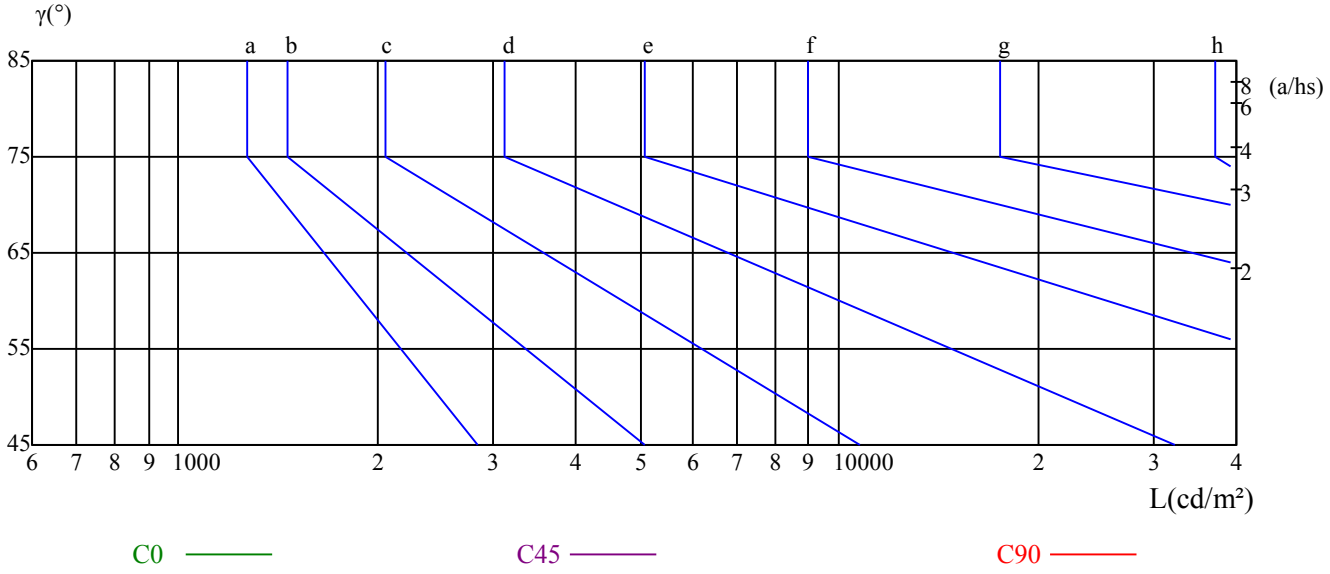
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

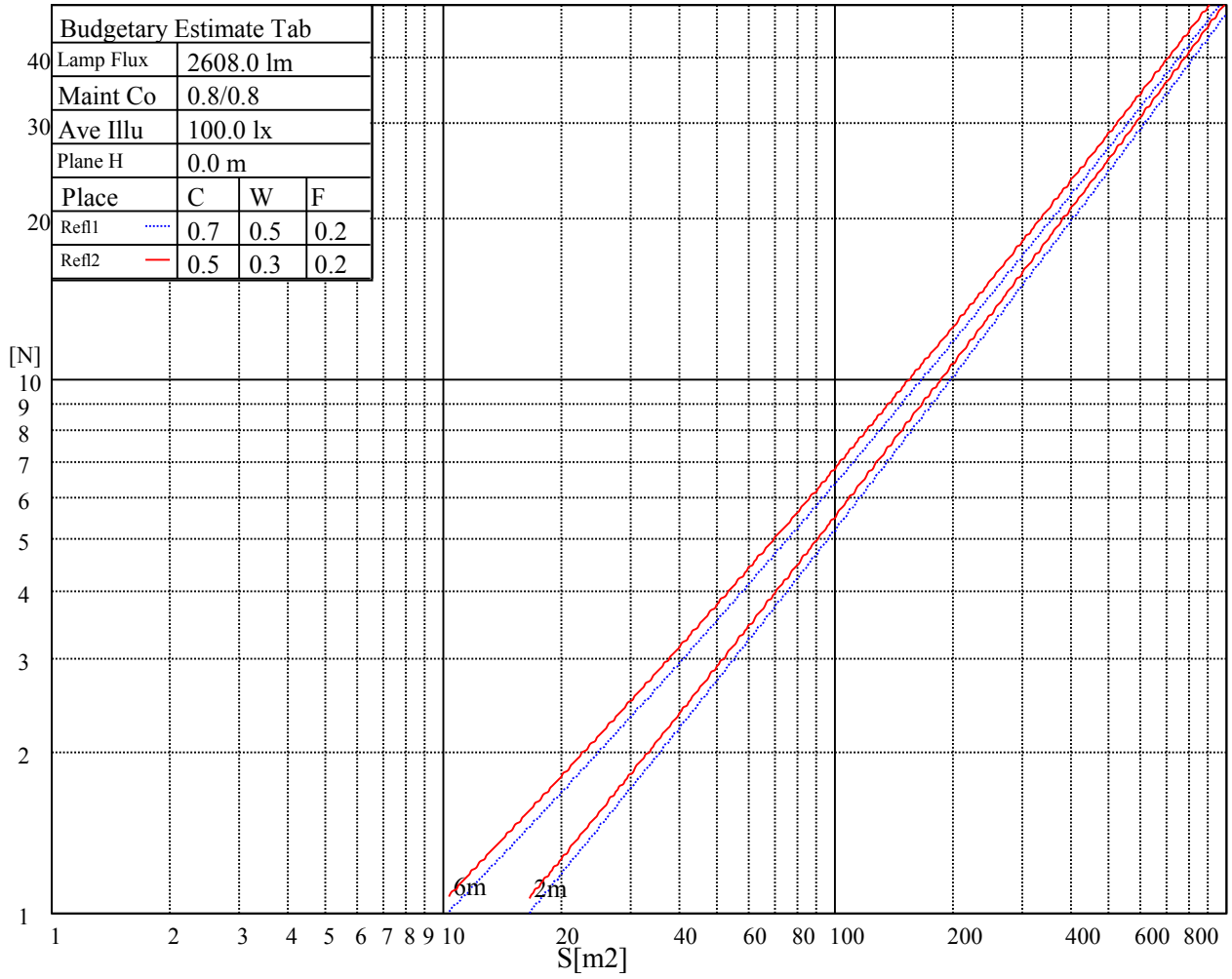
Glare Table

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

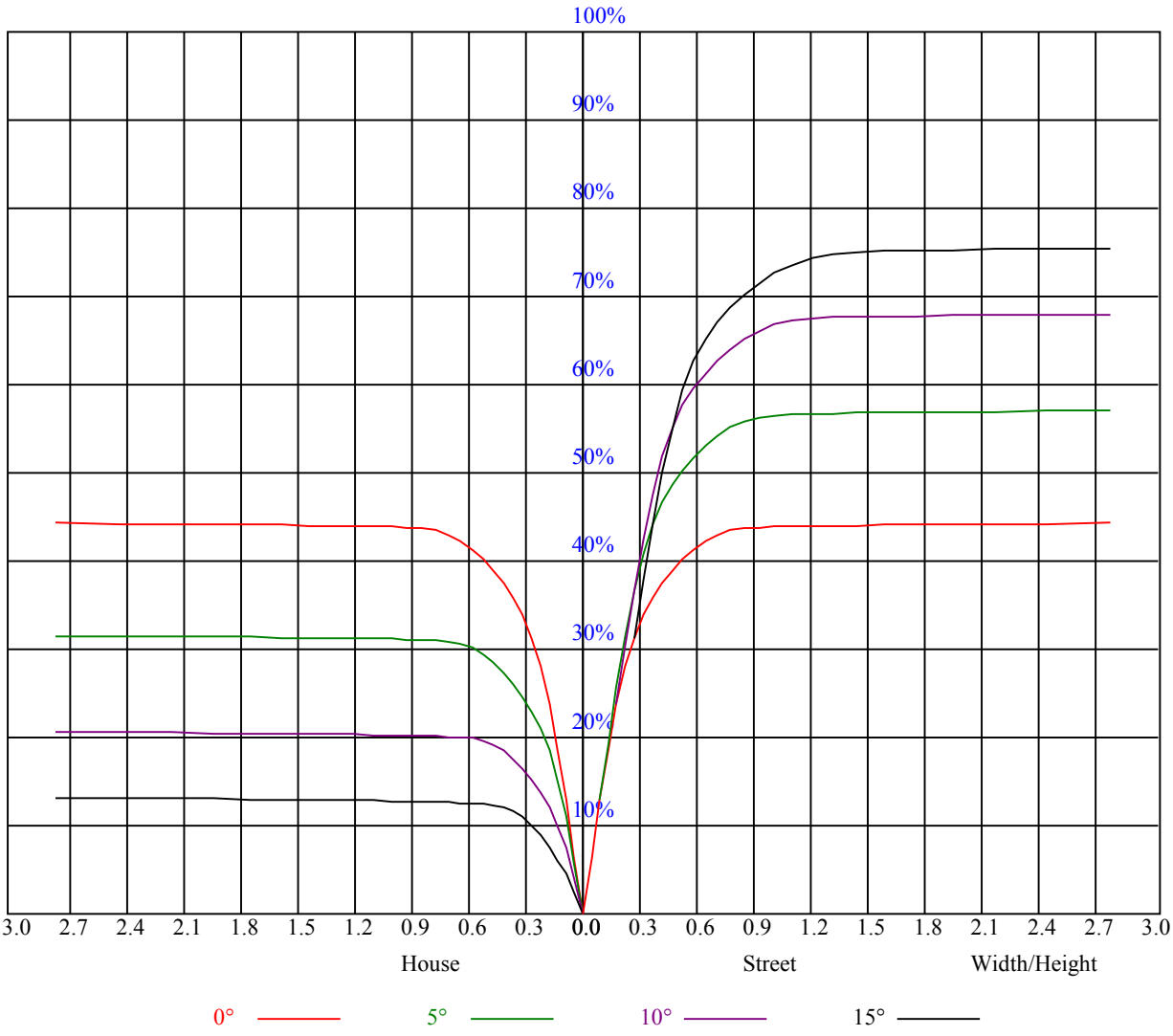


Equipment: GMS1980 Date: 2019/12/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.04	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	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.92	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	0.82	0.86	0.83	0.80	0.83	0.81	0.79	0.81	0.80	0.78	0.77
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.79	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	0.72	0.76	0.73	0.71	0.70
6	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	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	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
8	0.71	0.67	0.64	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.59
10	0.66	0.62	0.59	0.65	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/12/30	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	7230.38	7194.38	7144.88	7075.13	6972.75	6806.81	6578.44	6312.38	5985.56
45.0	7270.88	7220.81	7159.50	7086.38	6972.75	6817.50	6629.63	6341.06	6018.75
90.0	7239.94	7196.63	7135.88	7045.31	6952.50	6840.00	6673.50	6438.94	6167.25
135.0	7230.38	7231.50	7197.19	7140.94	7070.63	6987.94	6888.38	6777.00	6631.31
180.0	7230.38	7255.69	7244.44	7194.38	7120.13	7037.44	6954.75	6833.81	6697.13
225.0	7270.88	7297.31	7292.81	7248.38	7192.69	7126.31	7043.06	6927.75	6782.63
270.0	7239.94	7264.69	7259.63	7233.19	7182.00	7108.31	7013.25	6863.06	6673.50
315.0	7230.38	7214.06	7176.38	7121.81	7026.19	6897.38	6694.88	6414.19	6096.38
360.0	7230.38	7194.38	7144.88	7075.13	6972.75	6806.81	6578.44	6312.38	5985.56

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5484.94	5011.31	4498.31	3894.19	3281.63	2761.31	2248.88	1838.25	1568.25
45.0	5584.50	5068.13	4556.25	4023.00	3361.50	2849.63	2382.75	1909.69	1622.81
90.0	5780.25	5316.75	4848.19	4289.06	3781.69	3211.31	2667.94	2238.19	1881.00
135.0	6381.56	6103.69	5754.38	5292.56	4767.19	4264.31	3688.31	3189.38	2651.06
180.0	6518.25	6208.31	5887.69	5510.25	5020.31	4469.06	3960.00	3386.25	2882.25
225.0	6553.13	6248.81	5910.19	5451.19	4975.88	4401.56	3813.19	3281.06	2763.56
270.0	6388.88	6022.13	5627.81	5176.13	4536.00	3989.25	3443.63	2785.50	2319.19
315.0	5711.63	5133.38	4617.56	4072.50	3381.75	2859.75	2388.94	1949.06	1618.31
360.0	5484.94	5011.31	4498.31	3894.19	3281.63	2761.31	2248.88	1838.25	1568.25

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1352.81	1221.75	1117.69	1038.94	984.94	939.94	902.25	877.50	857.81
45.0	1402.31	1253.25	1126.69	1052.44	992.81	940.50	901.13	874.13	851.06
90.0	1542.94	1351.69	1186.88	1093.67	1025.55	974.14	930.15	892.91	869.01
135.0	2213.44	1830.38	1546.31	1361.25	1206.00	1108.69	1033.88	975.38	935.44
180.0	2357.44	1922.63	1629.56	1393.88	1232.44	1114.59	1047.77	975.54	932.68
225.0	2203.31	1843.88	1568.81	1329.19	1113.69	1103.68	1018.91	968.46	929.87
270.0	1938.38	1618.31	1388.81	1242.00	1126.69	1050.19	985.50	937.69	904.50
315.0	1408.50	1243.13	1113.64	1047.88	983.14	941.01	902.81	876.04	856.74
360.0	1352.81	1221.75	1117.69	1038.94	984.94	939.94	902.25	877.50	857.81

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	837.56	824.06	810.56	797.06	755.44	700.31	633.38	540.00	463.50
45.0	834.19	820.69	804.94	792.00	751.50	696.94	631.69	553.50	462.94
90.0	848.14	831.88	817.03	802.80	784.52	736.65	679.61	604.18	531.11
135.0	905.63	871.31	852.19	838.13	818.44	803.81	778.50	734.63	663.75
180.0	897.81	868.16	846.90	831.99	816.98	801.00	786.77	744.75	690.08
225.0	889.71	866.98	849.49	831.99	820.58	804.77	781.71	744.13	687.04
270.0	876.94	856.69	841.50	828.00	810.00	797.63	764.44	698.06	633.38
315.0	840.21	822.26	808.37	795.60	759.99	707.34	642.94	551.19	473.91
360.0	837.56	824.06	810.56	797.06	755.44	700.31	633.38	540.00	463.50

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	383.63	296.44	238.39	139.11	75.60	37.80	24.08	20.98	17.94
45.0	386.44	321.75	285.75	150.86	88.59	43.14	25.14	21.99	18.34
90.0	446.68	361.29	285.58	203.57	130.89	75.83	36.79	23.68	20.70
135.0	606.94	516.94	435.94	349.88	286.88	188.94	117.34	57.66	27.79
180.0	616.05	544.22	459.90	373.22	285.92	211.44	142.43	76.50	33.30
225.0	590.63	524.98	446.79	349.88	274.28	200.70	133.82	65.98	32.68
270.0	560.25	471.38	383.06	303.75	285.75	150.47	85.73	44.04	25.82
315.0	395.21	299.14	233.49	155.25	84.26	45.73	25.37	21.38	18.84
360.0	383.63	296.44	238.39	139.11	75.60	37.80	24.08	20.98	17.94

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	15.13	13.73	12.77	12.49	12.26	12.04	11.93	11.76	11.64
45.0	15.75	14.01	12.88	12.66	12.49	12.32	12.15	12.04	11.87
90.0	17.61	15.41	13.78	13.05	12.83	12.60	12.43	12.26	12.09
135.0	21.54	18.68	16.26	15.13	13.22	12.77	12.54	12.38	12.21
180.0	21.83	19.63	16.82	15.30	14.01	12.66	12.43	12.32	12.09
225.0	23.29	20.31	17.04	15.13	13.89	12.83	12.54	12.43	12.26
270.0	22.22	18.56	15.53	14.01	13.16	12.83	12.66	12.49	12.26
315.0	16.14	13.50	12.88	12.66	12.43	12.21	12.04	11.93	11.76
360.0	15.13	13.73	12.77	12.49	12.26	12.04	11.93	11.76	11.64

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.53	11.42	11.31	11.25	11.19	11.14	11.08	11.03	10.97
45.0	11.76	11.64	11.53	11.48	11.42	11.31	11.25	11.19	11.14
90.0	11.98	11.87	11.76	11.64	11.53	11.48	11.36	11.31	11.25
135.0	12.09	11.93	11.81	11.64	11.59	11.48	11.42	11.31	11.25
180.0	11.98	11.81	11.64	11.59	11.42	11.36	11.31	11.14	11.14
225.0	12.09	11.87	11.76	11.70	11.53	11.42	11.36	11.25	11.19
270.0	12.09	11.98	11.87	11.70	11.64	11.53	11.42	11.36	11.25
315.0	11.64	11.53	11.42	11.36	11.25	11.19	11.14	11.08	11.08
360.0	11.53	11.42	11.31	11.25	11.19	11.14	11.08	11.03	10.97

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.91	10.86	10.80	10.74	10.69	10.74	10.69	10.63	10.63
45.0	11.08	11.03	10.97	10.91	10.91	10.91	10.86	10.80	10.74
90.0	11.19	11.14	11.08	11.03	10.97	10.97	10.91	10.86	10.86
135.0	11.19	11.08	11.08	11.03	11.03	10.97	10.91	10.86	10.86
180.0	11.08	10.97	10.97	10.91	10.86	10.86	10.80	10.74	10.74
225.0	11.14	11.08	11.08	11.03	10.97	10.97	10.91	10.86	10.80
270.0	11.19	11.14	11.08	11.08	11.03	10.97	10.97	10.91	10.86
315.0	11.03	10.91	10.91	10.86	10.86	10.80	10.74	10.74	10.74
360.0	10.91	10.86	10.80	10.74	10.69	10.74	10.69	10.63	10.63

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.63	10.63	10.58	10.58	10.52	10.52	10.52	10.52	10.52
45.0	10.74	10.74	10.74	10.69	10.69	10.69	10.63	10.69	10.63
90.0	10.86	10.80	10.80	10.74	10.74	10.74	10.74	10.69	10.69
135.0	10.80	10.80	10.74	10.74	10.69	10.69	10.69	10.69	10.69
180.0	10.69	10.69	10.63	10.63	10.58	10.58	10.52	10.52	10.52
225.0	10.80	10.80	10.74	10.74	10.69	10.69	10.69	10.63	10.63
270.0	10.80	10.80	10.80	10.74	10.74	10.74	10.69	10.74	10.69
315.0	10.74	10.69	10.69	10.63	10.63	10.63	10.63	10.63	10.63
360.0	10.63	10.63	10.58	10.58	10.52	10.52	10.52	10.52	10.52

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.46	10.52	10.52	10.52	10.52	10.46	10.46	10.46	10.46
45.0	10.63	10.63	10.63	10.63	10.58	10.63	10.58	10.52	10.58
90.0	10.69	10.69	10.69	10.63	10.58	10.58	10.58	10.58	10.52
135.0	10.63	10.63	10.63	10.63	10.63	10.58	10.52	10.52	10.52
180.0	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.46
225.0	10.63	10.63	10.63	10.58	10.63	10.58	10.63	10.58	10.58
270.0	10.69	10.69	10.63	10.69	10.69	10.63	10.58	10.58	10.58
315.0	10.63	10.63	10.63	10.63	10.58	10.52	10.52	10.52	10.52
360.0	10.46	10.52	10.52	10.52	10.52	10.46	10.46	10.46	10.46

Intensity data(cd)

C/γ(°)	90.0
0.0	10.46
45.0	10.58
90.0	10.52
135.0	10.52
180.0	10.41
225.0	10.58
270.0	10.58
315.0	10.52
360.0	10.46