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

NATA

Client:
LumCAT: 2-1120-A3
Luminaire: 99.02.73.172+92.76.365.00

Report No: nata-0100	Voltage(V): 36.3000
Test No: GC2018111503	Current(A): 0.5600
LampCAT: OSRAM SOLERIQ S15	Power (W): 20.3280
Lamp flux(lm): 2616.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 71	Width(mm): 71
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2430.21, Efficiency(%): 92.90% , Luminous Efficacy(lm/W): 119.55
Central intensity(cd): 17067.660, Maximum intensity(cd): 17067.660
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=15.4
[C90/270]Total=15.4
Field angle(10%Imax): [C0/180]Total=31.4
[C90/270]Total=31.4
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.26 C90_270=0.26
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.05%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.607%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17067.656	4.083	4.083	.156%	.168%
1.0	16933.359	32.408	36.491	1.239%	1.502%
2.0	16487.578	63.100	99.591	2.412%	4.098%
3.0	15644.531	89.787	189.378	3.432%	7.793%
4.0	14194.336	108.580	297.959	4.151%	12.261%
5.0	13122.000	125.415	423.373	4.794%	17.421%
6.0	11493.984	131.752	555.125	5.036%	22.843%
7.0	9542.531	127.529	682.654	4.875%	28.090%
8.0	8019.070	122.386	805.04	4.678%	33.126%
9.0	6436.125	110.410	915.45	4.221%	37.670%
10.0	4994.367	95.105	1010.555	3.636%	41.583%
11.0	4008.867	83.883	1094.438	3.207%	45.035%
12.0	3323.180	75.768	1170.205	2.896%	48.153%
13.0	2597.133	64.067	1234.272	2.449%	50.789%
14.0	2204.086	58.473	1292.745	2.235%	53.195%
15.0	1883.602	53.461	1346.206	2.044%	55.395%
16.0	1624.781	49.112	1395.318	1.877%	57.416%
17.0	1457.508	46.730	1442.048	1.786%	59.339%
18.0	1318.620	44.684	1486.732	1.708%	61.177%
19.0	1223.937	43.697	1530.429	1.670%	62.975%
20.0	1151.051	43.172	1573.601	1.650%	64.752%
21.0	1089.710	42.824	1616.425	1.637%	66.514%
22.0	1050.609	43.159	1659.584	1.650%	68.290%
23.0	1014.300	43.461	1703.045	1.661%	70.078%
24.0	983.904	43.885	1746.93	1.678%	71.884%
25.0	952.615	44.149	1791.079	1.688%	73.701%
26.0	928.983	44.658	1835.737	1.707%	75.538%
27.0	905.977	45.104	1880.841	1.724%	77.394%
28.0	884.060	45.514	1926.355	1.740%	79.267%
29.0	865.786	46.029	1972.384	1.760%	81.161%
30.0	849.277	46.566	2018.95	1.780%	83.077%
31.0	828.042	46.767	2065.717	1.788%	85.002%
32.0	798.124	46.380	2112.098	1.773%	86.910%
33.0	758.074	45.276	2157.374	1.731%	88.773%
34.0	697.957	42.800	2200.174	1.636%	90.534%
35.0	634.155	39.888	2240.061	1.525%	92.176%
36.0	550.934	35.512	2275.573	1.357%	93.637%
37.0	458.648	30.269	2305.842	1.157%	94.883%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	372.164	25.126	2330.968	.960%	95.916%
39.0	274.071	18.914	2349.882	.723%	96.695%
40.0	191.974	13.532	2363.414	.517%	97.252%
41.0	139.584	10.042	2373.456	.384%	97.665%
42.0	79.080	5.803	2379.259	.222%	97.904%
43.0	43.559	3.258	2382.517	.125%	98.038%
44.0	25.966	1.978	2384.495	.076%	98.119%
45.0	19.561	1.517	2386.012	.058%	98.181%
46.0	16.369	1.291	2387.303	.049%	98.235%
47.0	13.050	1.047	2388.35	.040%	98.278%
48.0	11.813	0.963	2389.312	.037%	98.317%
49.0	11.306	0.936	2390.248	.036%	98.356%
50.0	10.709	0.900	2391.148	.034%	98.393%
51.0	10.526	0.897	2392.045	.034%	98.430%
52.0	10.413	0.900	2392.944	.034%	98.467%
53.0	10.315	0.903	2393.848	.035%	98.504%
54.0	10.202	0.905	2394.753	.035%	98.541%
55.0	10.139	0.911	2395.664	.035%	98.579%
56.0	10.069	0.915	2396.579	.035%	98.616%
57.0	10.027	0.922	2397.501	.035%	98.654%
58.0	9.956	0.926	2398.427	.035%	98.692%
59.0	9.907	0.931	2399.358	.036%	98.731%
60.0	9.879	0.938	2400.297	.036%	98.769%
61.0	9.851	0.945	2401.241	.036%	98.808%
62.0	9.837	0.952	2402.194	.036%	98.847%
63.0	9.823	0.960	2403.154	.037%	98.887%
64.0	9.788	0.965	2404.118	.037%	98.927%
65.0	9.773	0.971	2405.09	.037%	98.966%
66.0	9.759	0.978	2406.067	.037%	99.007%
67.0	9.745	0.984	2407.051	.038%	99.047%
68.0	9.724	0.989	2408.04	.038%	99.088%
69.0	9.717	0.995	2409.035	.038%	99.129%
70.0	9.717	1.001	2410.036	.038%	99.170%
71.0	9.689	1.005	2411.04	.038%	99.211%
72.0	9.696	1.011	2412.052	.039%	99.253%
73.0	9.668	1.014	2413.066	.039%	99.295%
74.0	9.654	1.018	2414.083	.039%	99.337%
75.0	9.661	1.023	2415.107	.039%	99.379%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.647	1.026	2416.133	.039%	99.421%
77.0	9.633	1.029	2417.162	.039%	99.463%
78.0	9.640	1.034	2418.196	.040%	99.506%
79.0	9.619	1.035	2419.232	.040%	99.548%
80.0	9.612	1.038	2420.27	.040%	99.591%
81.0	9.612	1.041	2421.311	.040%	99.634%
82.0	9.591	1.041	2422.352	.040%	99.677%
83.0	9.598	1.045	2423.397	.040%	99.720%
84.0	9.605	1.047	2424.444	.040%	99.763%
85.0	9.612	1.050	2425.494	.040%	99.806%
86.0	9.598	1.050	2426.544	.040%	99.849%
87.0	9.591	1.050	2427.595	.040%	99.893%
88.0	9.534	1.045	2428.64	.040%	99.936%
89.0	9.527	1.045	2429.684	.040%	99.979%
90.0	9.513	0.522	2430.206	.020%	100.000%

Zonal flux distribution table

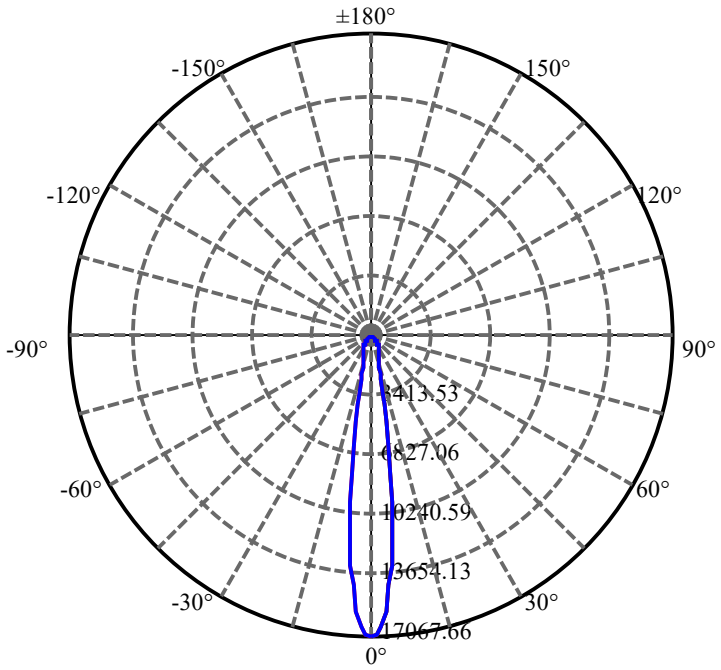
ZONAL LUMEN SUMMARY

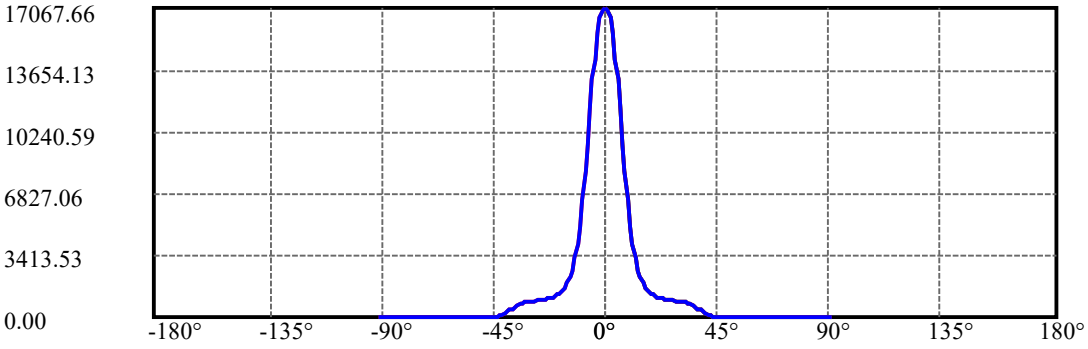
Zone	Lumens	%Lamp	%Fixt
0-30	2018.95	77.18%	83.08%
0-40	2363.41	90.34%	97.25%
0-60	2400.30	91.75%	98.77%
0-90	2429.68	92.88%	99.98%
0-120	2429.68	92.88%	99.98%
0-180	2430.21	92.90%	100.00%
60-90	30.33	1.16%	1.25%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.39	1944.17	74.32%	80.00%

ZONAL LUMEN SUMMARY

0-10	1010.55
10-20	563.05
20-30	445.35
30-40	344.46
40-50	27.73
50-60	9.15
60-70	9.74
70-80	10.23
80-90	9.41
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):

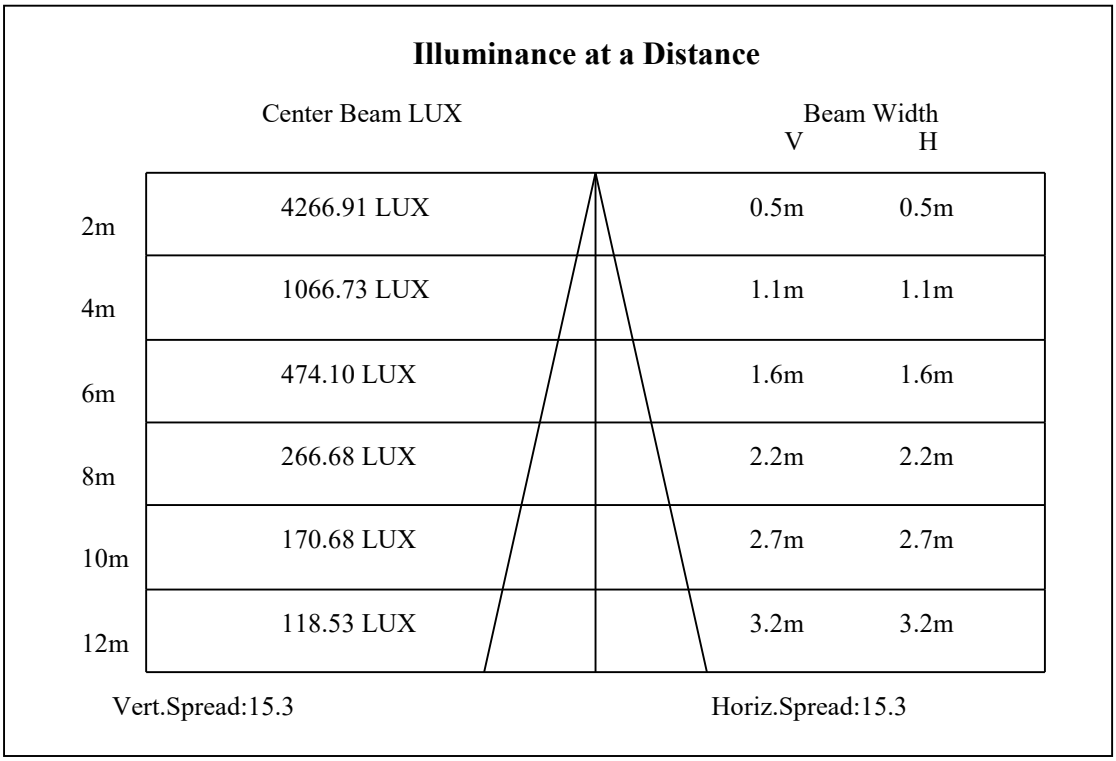
C0/C180:

C90/C270:

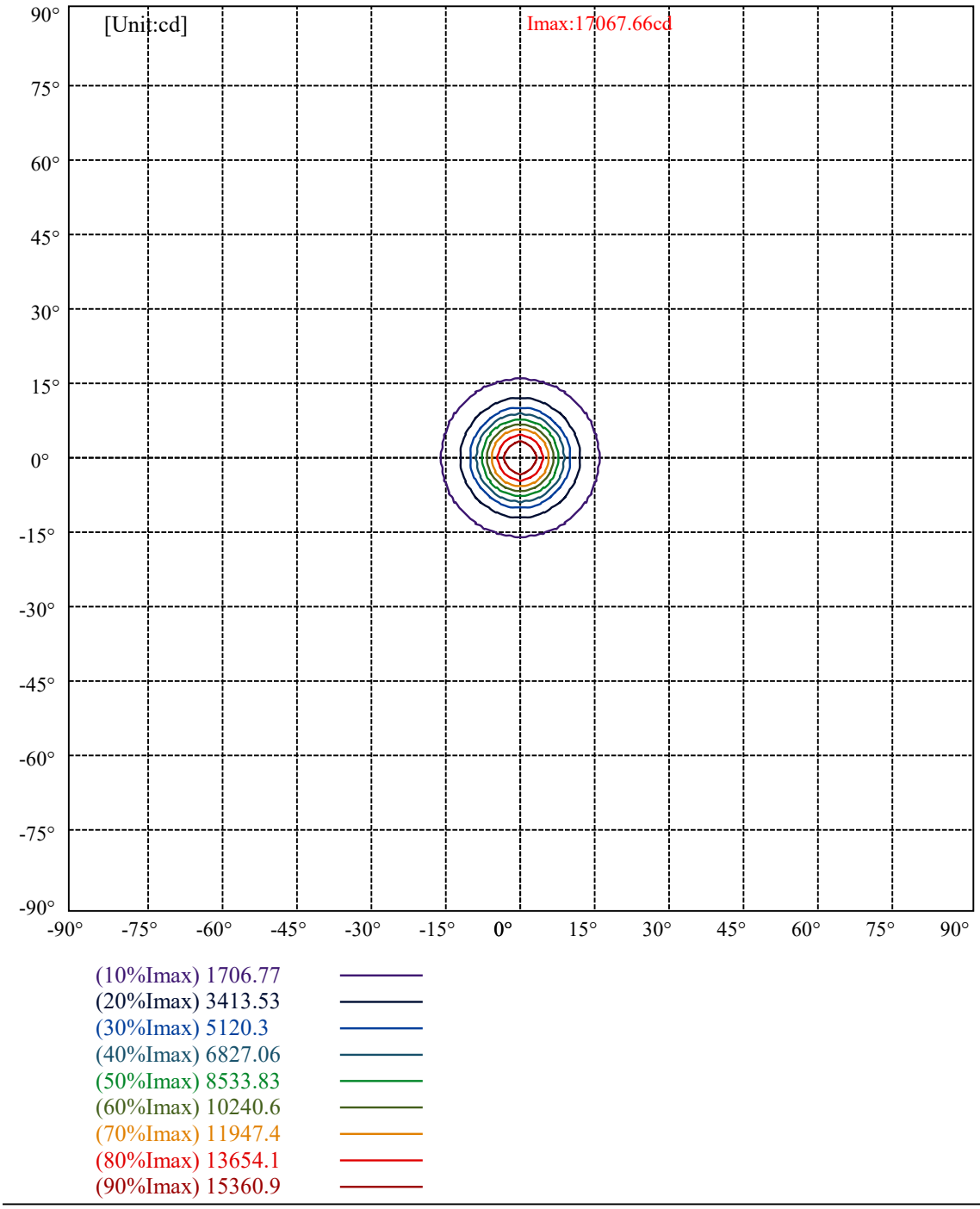
Field angle(10%Imax):C0/180Left:15.7 Right:15.7
:C90/270Left:15.7 Right:15.7

Beam Angle(50%Imax):C0/180Left:7.7 Right:7.7
:C90/270Left:7.7 Right:7.7

Lux distance Curve



ISO-Intensity(V-H)

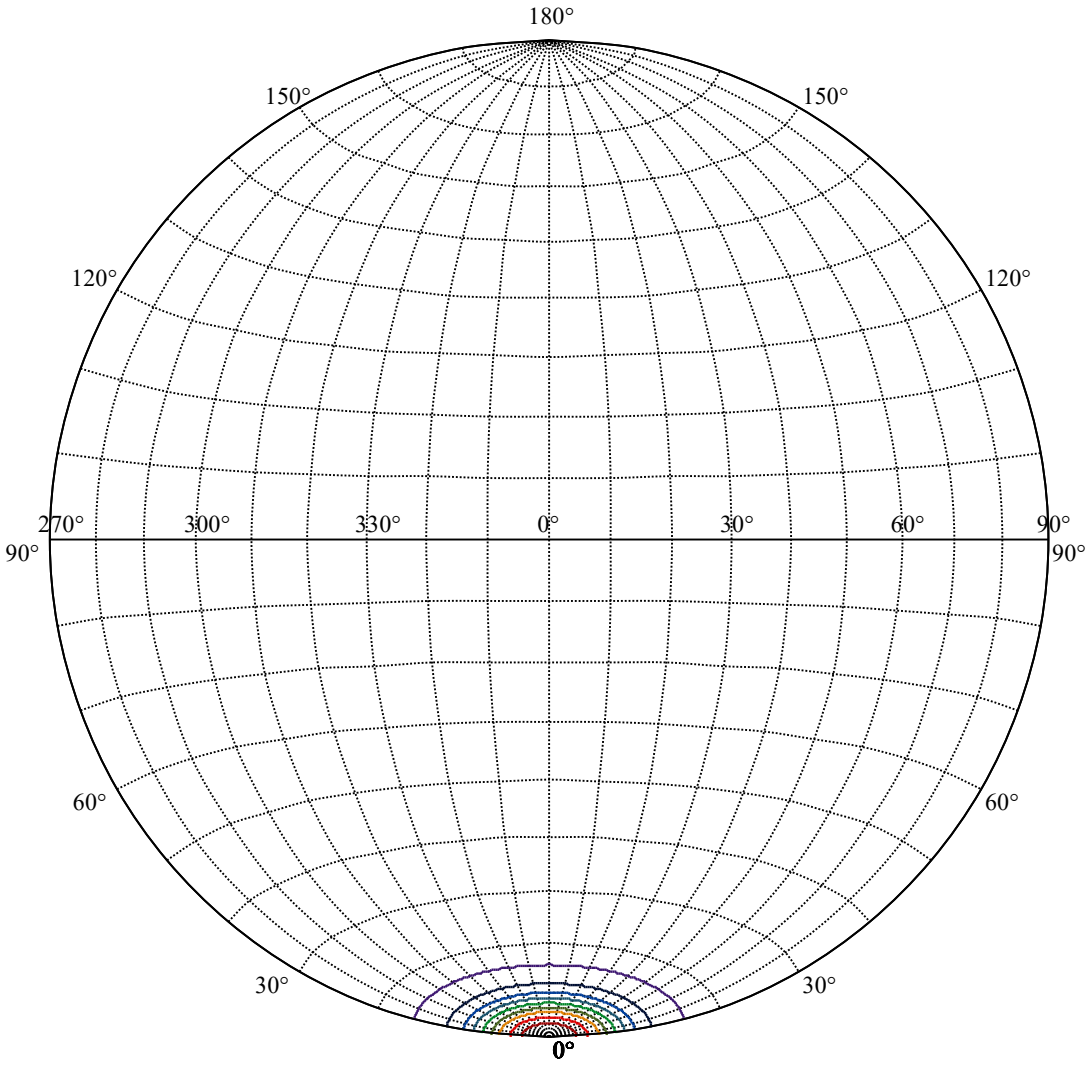


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



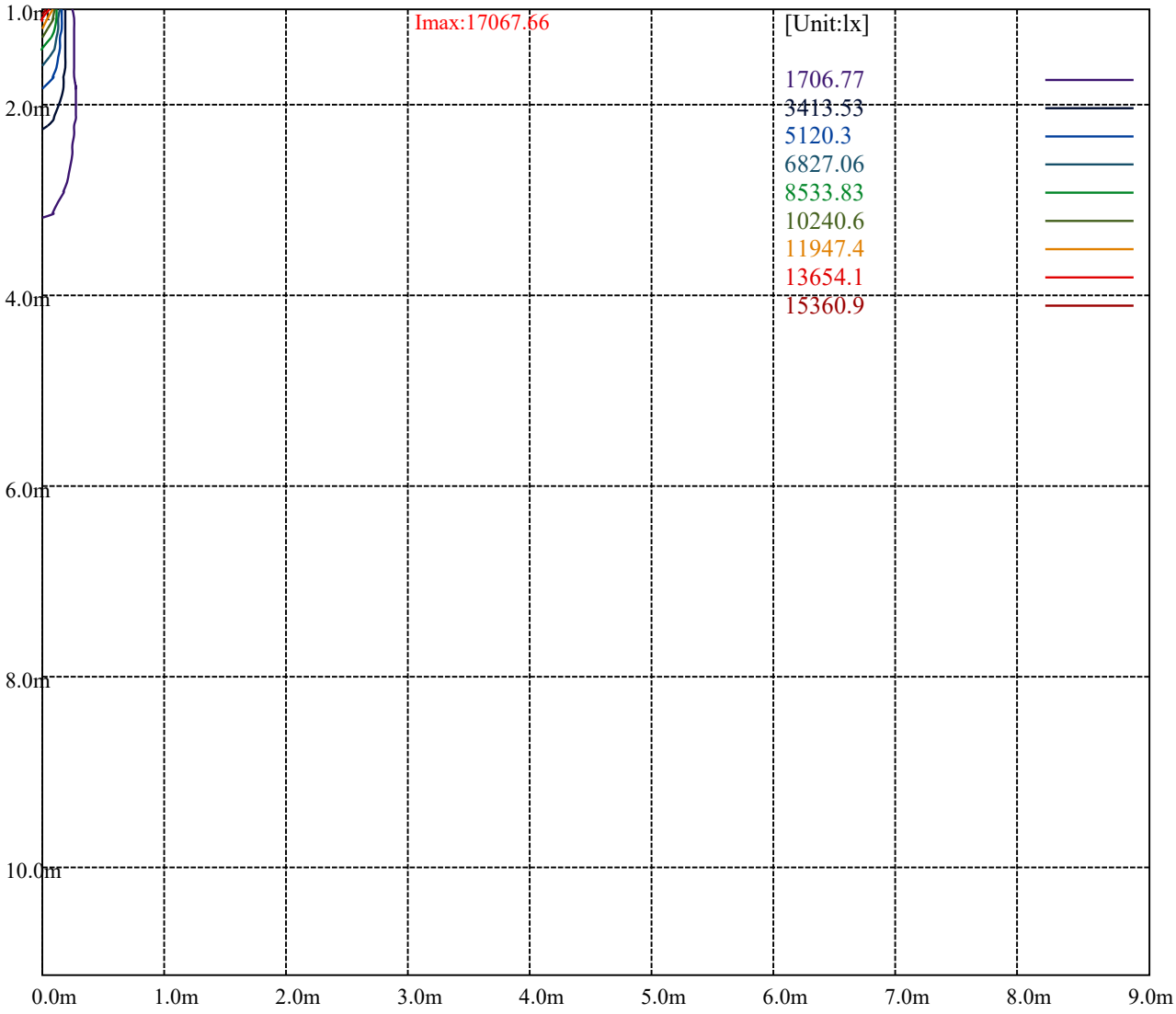
House [Unit:cd] Road

Imax:17067.66

(10%Imax) 1706.77
(20%Imax) 3413.53
(30%Imax) 5120.3
(40%Imax) 6827.06
(50%Imax) 8533.83
(60%Imax) 10240.6
(70%Imax) 11947.4
(80%Imax) 13654.1
(90%Imax) 15360.9

Equipment: GMS1980 Date: 2018/11/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

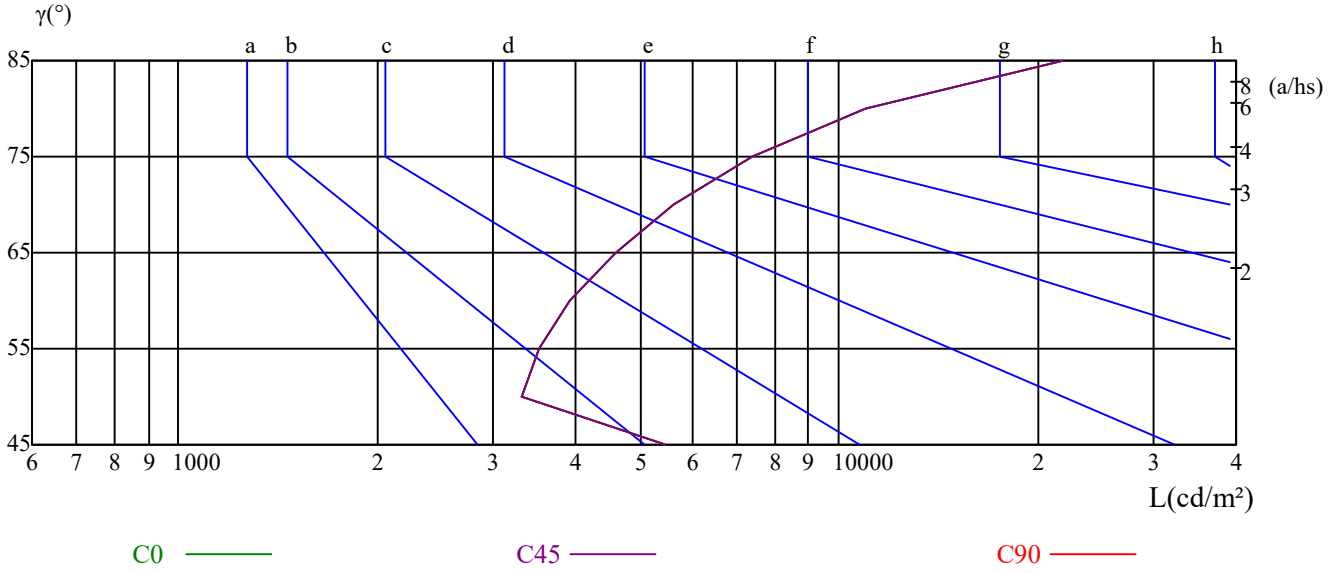
γ	45	50	55	60	65	70	75	80	85
C0	5488	3305	3507	3919	4588	5636	7405	10980	21877
C45	5488	3305	3507	3919	4588	5636	7405	10980	21877
C90	5488	3305	3507	3919	4588	5636	7405	10980	21877

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4588	4588	4588	7405	7405	7405	21877	21877	21877

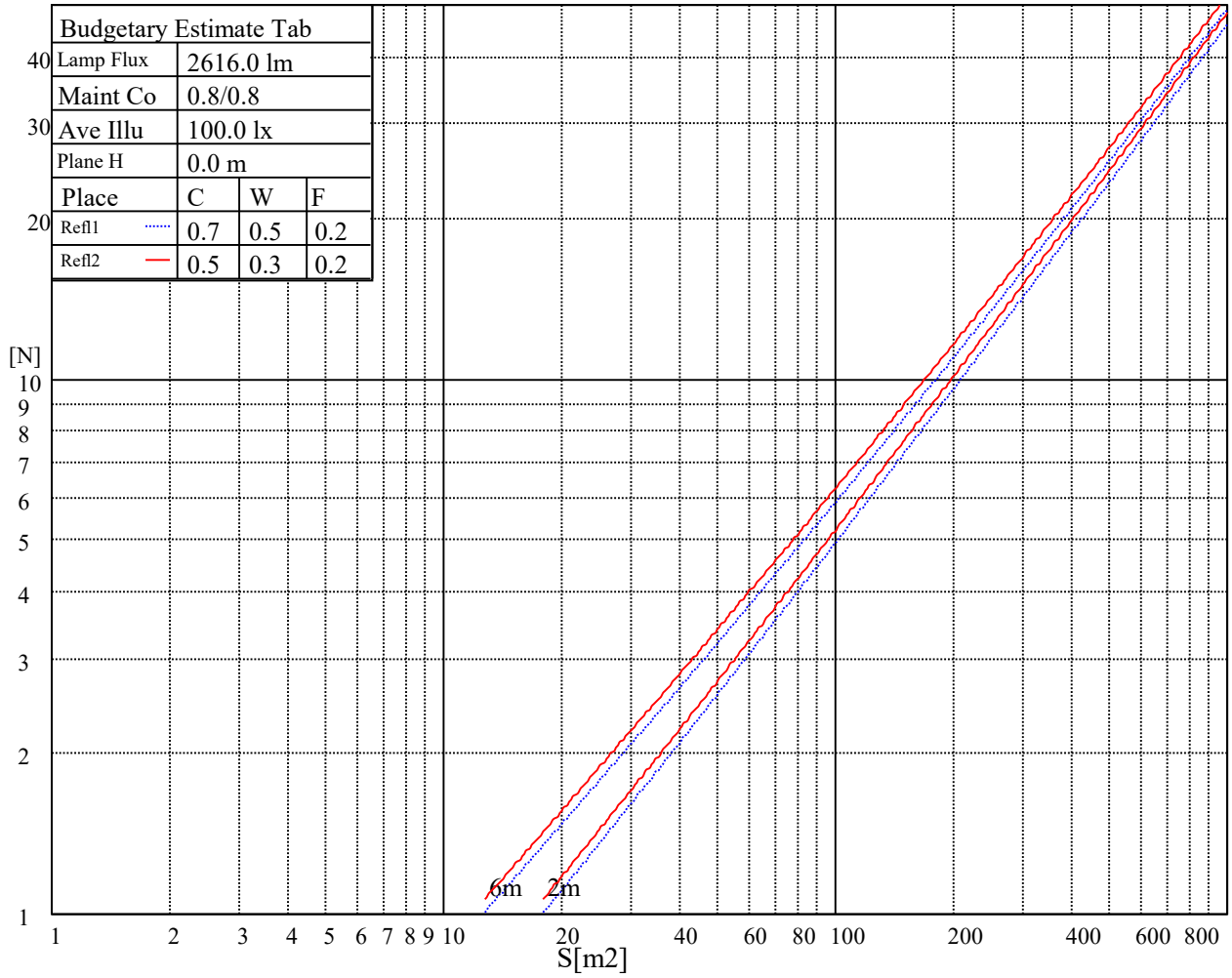
Glare Table

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

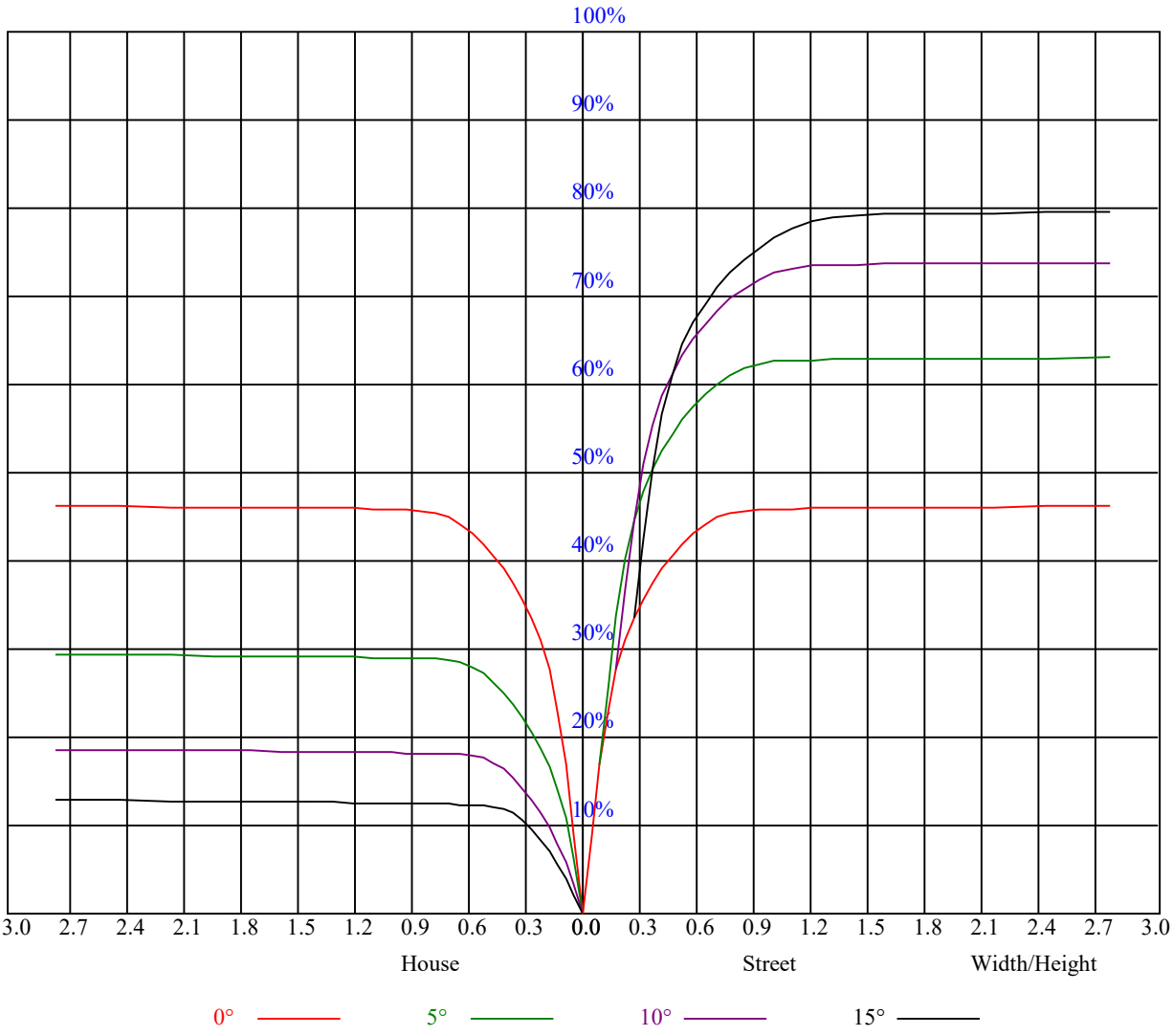


Equipment: GMS1980 Date: 2018/11/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Utilization factor table for indoor luminaire

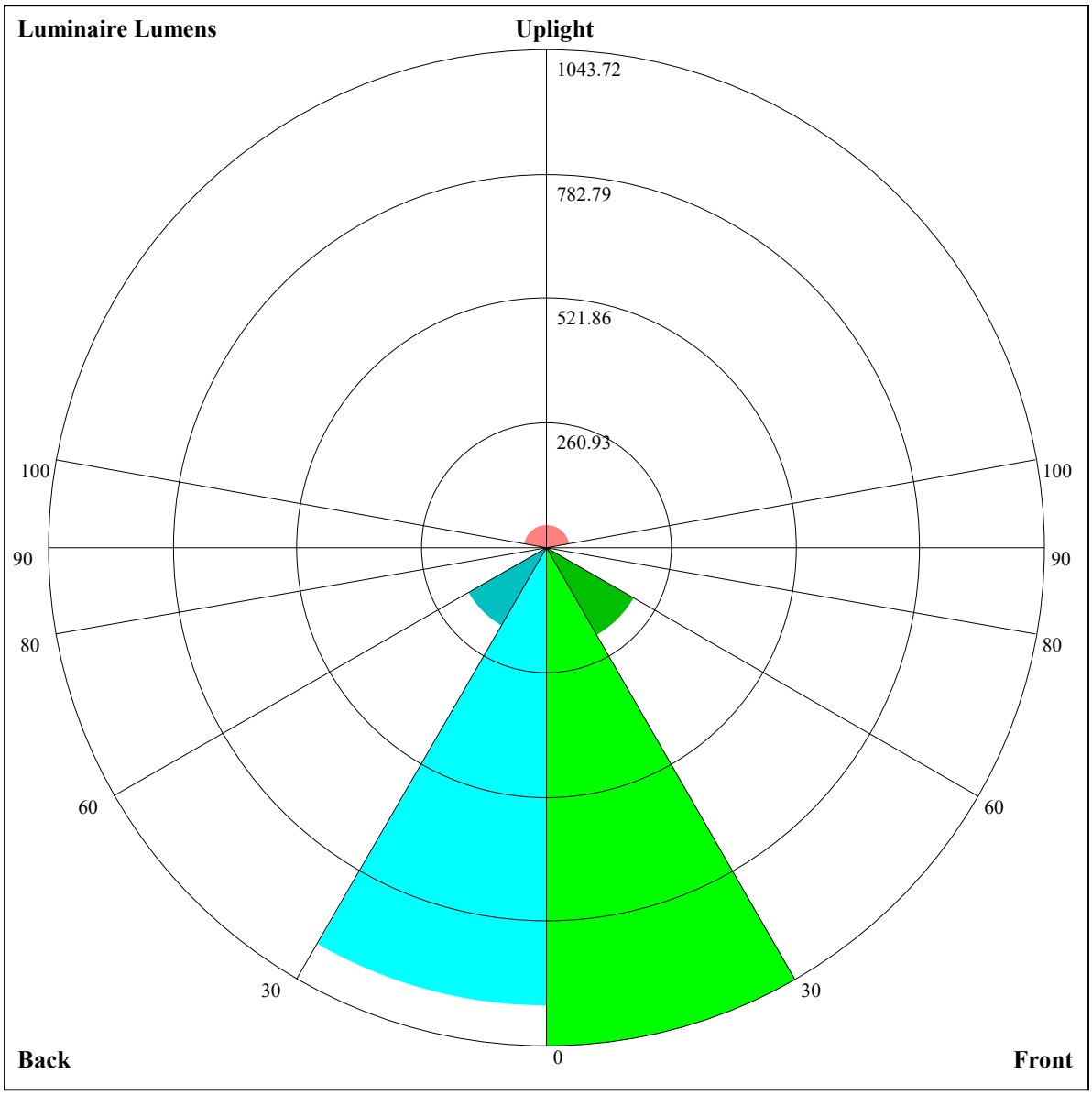
RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.11	1.11	1.11	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.04	1.02	1.00	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
2	0.99	0.96	0.93	0.97	0.94	0.92	0.94	0.92	0.90	0.92	0.90	0.88	0.89	0.88	0.86	0.85
3	0.94	0.90	0.87	0.93	0.89	0.87	0.90	0.88	0.85	0.88	0.86	0.84	0.86	0.84	0.83	0.82
4	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.83	0.80	0.84	0.81	0.80	0.78
5	0.86	0.82	0.79	0.85	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.79	0.77	0.76
6	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.73
7	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.71
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
9	0.75	0.71	0.68	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/11/15	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

LCS Graph



Luminaire Lumens:

FL=1043.72,FM=213.85,FH=9.96,FVH=5.23

BL=961.32,BM=190.67,BH=9.97,BVH=5.23

UL=10.38,UH=49.39

BUG Rating:B2-U2-G0

Equipment: GMS1980	Date: 2018/11/15	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	16998.75	17229.38	17195.63	16942.50	16295.63	15204.38	13893.75	12150.00	10456.88
45.0	17178.75	16863.75	16121.25	14968.13	13635.00	11835.00	9866.25	8139.38	6541.88
90.0	16942.50	16402.50	15502.50	13910.63	11090.25	10652.63	8867.25	6769.69	5339.25
135.0	17150.63	16717.50	15901.88	14788.13	13179.38	11334.38	9568.13	7644.38	6120.00
180.0	16998.75	16498.13	15648.75	14118.75	11159.44	10944.00	8969.63	7081.88	5627.81
225.0	17178.75	17268.75	17111.25	16633.13	15733.13	14585.63	13162.50	11108.25	9385.31
270.0	16942.50	17223.75	17235.00	17049.38	16430.63	15401.25	14310.00	12420.00	10749.38
315.0	17150.63	17263.13	17184.38	16745.63	16031.25	15018.75	13314.38	11026.69	9932.06
360.0	16998.75	17229.38	17195.63	16942.50	16295.63	15204.38	13893.75	12150.00	10456.88

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8538.75	6733.13	5349.38	4258.13	3279.38	2840.63	2294.44	1904.63	1677.38
45.0	4860.00	3858.75	3116.25	2891.25	2090.81	1809.00	1598.63	1397.25	1275.75
90.0	4212.56	3204.00	2639.81	2221.31	1879.88	1635.19	1469.81	1324.69	1226.81
135.0	4702.50	3656.25	2981.25	2846.25	2050.31	1790.44	1593.00	1398.94	1279.69
180.0	4217.63	3398.63	2795.63	2254.50	1980.00	1724.06	1515.94	1396.13	1281.94
225.0	7703.44	5835.38	4636.13	3714.75	2963.81	2429.44	2085.19	1796.63	1594.69
270.0	9028.13	6991.88	5574.38	4426.88	3386.25	2851.88	2346.75	1941.75	1704.94
315.0	8226.00	6276.94	4978.13	3972.38	3146.63	2552.06	2165.06	1838.25	1618.88
360.0	8538.75	6733.13	5349.38	4258.13	3279.38	2840.63	2294.44	1904.63	1677.38

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1502.44	1368.56	1251.56	1187.44	1139.06	1090.13	1052.44	1016.44	979.31
45.0	1189.69	1122.19	1072.13	1035.56	1001.25	970.31	945.00	920.81	902.25
90.0	1119.21	1090.86	1050.30	1009.18	971.10	941.57	916.71	891.96	875.59
135.0	1194.75	1126.13	1072.13	1029.38	992.25	958.50	933.75	910.69	891.00
180.0	1167.19	1119.26	1073.98	1030.05	989.21	956.93	928.86	901.46	883.35
225.0	1416.94	1287.56	1203.75	1120.11	1077.86	1047.32	1015.09	974.81	951.92
270.0	1523.81	1369.69	1259.44	1190.25	1135.13	1090.69	1054.69	1016.44	984.38
315.0	1434.94	1307.25	1225.13	1115.72	1099.01	1058.96	1024.71	988.31	964.07
360.0	1502.44	1368.56	1251.56	1187.44	1139.06	1090.13	1052.44	1016.44	979.31

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	948.38	924.75	903.38	885.38	866.25	849.38	834.75	812.81	766.13
45.0	882.56	862.31	846.56	831.94	814.50	786.38	734.63	653.06	572.06
90.0	859.05	840.26	826.37	812.87	785.14	732.38	658.58	559.91	487.97
135.0	869.06	851.06	833.63	818.44	794.25	750.94	689.06	595.13	513.56
180.0	865.24	843.58	828.34	813.88	792.96	745.37	674.61	583.82	500.74
225.0	928.58	905.06	883.52	865.13	846.51	829.24	812.76	774.11	716.06
270.0	952.88	926.44	906.75	888.19	865.69	850.50	834.75	812.25	775.69
315.0	942.08	919.01	897.75	878.40	859.05	840.83	825.47	792.56	741.04
360.0	948.38	924.75	903.38	885.38	866.25	849.38	834.75	812.81	766.13

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	695.81	626.06	509.63	420.75	343.13	286.88	141.19	74.64	38.36
45.0	482.63	380.81	288.56	194.40	117.68	63.39	34.71	25.76	20.87
90.0	394.65	290.70	219.71	131.46	56.42	36.45	27.23	21.26	17.10
135.0	426.38	326.25	285.75	157.44	103.61	45.96	27.00	24.13	17.72
180.0	405.39	310.95	229.39	142.37	68.40	37.29	25.48	20.25	15.47
225.0	634.33	550.63	444.15	338.29	238.28	161.44	98.66	47.08	26.38
270.0	705.38	614.25	517.50	429.19	329.63	286.31	151.09	74.81	39.60
315.0	662.91	569.53	482.63	378.68	278.66	198.96	127.29	60.53	32.23
360.0	695.81	626.06	509.63	420.75	343.13	286.88	141.19	74.64	38.36

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	26.72	22.16	16.43	13.61	12.54	11.08	10.74	10.63	10.46
45.0	15.86	13.50	12.26	10.80	10.63	10.46	10.35	10.29	10.18
90.0	14.51	13.05	10.86	10.69	10.52	10.41	10.24	10.13	10.13
135.0	13.73	12.77	11.59	10.80	10.63	10.52	10.41	10.29	10.24
180.0	12.71	11.93	11.08	10.91	10.69	10.52	10.35	10.29	10.24
225.0	22.33	17.38	12.83	12.04	11.42	10.74	10.58	10.41	10.29
270.0	25.65	21.04	15.36	12.94	12.09	10.91	10.69	10.58	10.41
315.0	24.98	19.13	14.01	12.71	11.93	11.03	10.86	10.69	10.58
360.0	26.72	22.16	16.43	13.61	12.54	11.08	10.74	10.63	10.46

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.35	10.29	10.18	10.13	10.07	10.01	9.96	9.90	9.90
45.0	10.13	10.07	10.01	9.96	9.90	9.84	9.84	9.79	9.79
90.0	10.01	10.01	9.96	9.90	9.84	9.79	9.79	9.79	9.79
135.0	10.13	10.07	10.01	10.01	9.96	9.90	9.90	9.84	9.84
180.0	10.13	10.07	10.01	10.01	9.90	9.90	9.84	9.84	9.84
225.0	10.24	10.13	10.07	10.01	9.96	9.90	9.90	9.84	9.84
270.0	10.29	10.24	10.13	10.07	10.01	9.96	9.90	9.90	9.84
315.0	10.35	10.24	10.18	10.13	10.01	9.96	9.90	9.90	9.84
360.0	10.35	10.29	10.18	10.13	10.07	10.01	9.96	9.90	9.90

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.84	9.84	9.79	9.79	9.79	9.73	9.73	9.73	9.68
45.0	9.79	9.73	9.73	9.73	9.68	9.68	9.68	9.68	9.62
90.0	9.79	9.73	9.73	9.73	9.68	9.68	9.68	9.68	9.68
135.0	9.84	9.84	9.79	9.79	9.79	9.73	9.73	9.73	9.73
180.0	9.79	9.79	9.79	9.79	9.79	9.73	9.73	9.73	9.73
225.0	9.84	9.79	9.79	9.73	9.73	9.73	9.73	9.73	9.68
270.0	9.84	9.79	9.79	9.79	9.79	9.79	9.73	9.73	9.73
315.0	9.84	9.79	9.79	9.73	9.73	9.73	9.73	9.73	9.68
360.0	9.84	9.84	9.79	9.79	9.79	9.73	9.73	9.73	9.68

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.68	9.68	9.68	9.68	9.62	9.62	9.68	9.62	9.62
45.0	9.68	9.62	9.62	9.62	9.62	9.62	9.62	9.62	9.56
90.0	9.68	9.68	9.62	9.62	9.62	9.62	9.62	9.62	9.56
135.0	9.73	9.68	9.68	9.68	9.68	9.62	9.62	9.62	9.62
180.0	9.68	9.68	9.68	9.68	9.62	9.62	9.62	9.62	9.62
225.0	9.68	9.62	9.62	9.68	9.68	9.62	9.62	9.62	9.62
270.0	9.73	9.73	9.68	9.68	9.68	9.68	9.68	9.62	9.68
315.0	9.73	9.68	9.68	9.68	9.68	9.68	9.68	9.62	9.62
360.0	9.68	9.68	9.68	9.68	9.62	9.62	9.68	9.62	9.62

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.62	9.62	9.62	9.62	9.62	9.62	9.56	9.56	9.56
45.0	9.62	9.56	9.56	9.56	9.56	9.56	9.51	9.51	9.51
90.0	9.56	9.56	9.56	9.56	9.62	9.51	9.51	9.51	9.51
135.0	9.62	9.62	9.56	9.62	9.56	9.56	9.51	9.56	9.56
180.0	9.62	9.56	9.62	9.62	9.62	9.51	9.51	9.51	9.56
225.0	9.62	9.56	9.62	9.62	9.62	9.73	9.90	9.51	9.51
270.0	9.62	9.62	9.62	9.62	9.68	9.68	9.68	9.56	9.51
315.0	9.62	9.62	9.62	9.62	9.62	9.62	9.56	9.56	9.51
360.0	9.62	9.62	9.62	9.62	9.62	9.62	9.56	9.56	9.56

Intensity data(cd)

C/γ(°)	90.0
0.0	9.51
45.0	9.51
90.0	9.51
135.0	9.56
180.0	9.51
225.0	9.51
270.0	9.51
315.0	9.51
360.0	9.51