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

Nata

Client:
LumCAT: 2-1678-M
Luminaire: 92.70.124.00
Report No: nata-0100
Test No:
LampCAT: CREE CMT1420
Lamp flux(lm): 1997.6
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.3000
Current(A): 0.4000
Power (W): 14.1200
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 1780.63, Efficiency(%): 89.14% , Luminous Efficacy(lm/W): 126.11
Central intensity(cd): 21787.190, Maximum intensity(cd): 21787.190
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=10.8
[C90/270]Total=10.8
Field angle(10%Imax): [C0/180]Total=21.0
[C90/270]Total=21.0
Maximum s/h(1/2): C0_180=0.19 C90_270=0.19
Maximum s/h(1/4): C0_180=0.19 C90_270=0.19
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.17%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.631%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	21787.193	20.849	20.849	1.044%	1.171%
2.0	20183.676	154.484	175.334	7.733%	9.847%
4.0	14980.434	229.179	404.512	11.472%	22.717%
6.0	9115.619	208.971	613.483	10.461%	34.453%
8.0	4856.112	148.221	761.704	7.420%	42.777%
10.0	2434.456	92.712	854.417	4.641%	47.984%
12.0	1438.713	65.602	920.019	3.284%	51.668%
14.0	1033.883	54.854	974.873	2.746%	54.749%
16.0	884.990	53.499	1028.372	2.678%	57.753%
18.0	808.565	54.798	1083.169	2.743%	60.831%
20.0	769.000	57.682	1140.852	2.888%	64.070%
22.0	740.178	60.810	1201.662	3.044%	67.485%
24.0	717.302	63.985	1265.647	3.203%	71.079%
26.0	699.801	67.279	1332.927	3.368%	74.857%
28.0	682.238	70.244	1403.171	3.516%	78.802%
30.0	661.358	72.522	1475.693	3.630%	82.875%
32.0	639.845	74.362	1550.055	3.722%	87.051%
34.0	592.661	72.683	1622.738	3.638%	91.133%
36.0	464.566	59.887	1682.625	2.998%	94.496%
38.0	283.306	38.253	1720.878	1.915%	96.644%
40.0	127.566	17.983	1738.861	.900%	97.654%
42.0	35.904	5.269	1744.13	.264%	97.950%
44.0	17.983	2.740	1746.87	.137%	98.104%
46.0	11.115	1.753	1748.623	.088%	98.202%
48.0	8.747	1.426	1750.049	.071%	98.282%
50.0	8.403	1.412	1751.46	.071%	98.362%
52.0	8.148	1.408	1752.869	.070%	98.441%
54.0	7.928	1.407	1754.275	.070%	98.520%
56.0	7.763	1.411	1755.687	.071%	98.599%
58.0	7.632	1.419	1757.106	.071%	98.679%
60.0	7.529	1.430	1758.536	.072%	98.759%
62.0	7.453	1.443	1759.979	.072%	98.840%
64.0	7.398	1.458	1761.438	.073%	98.922%
66.0	7.357	1.474	1762.912	.074%	99.005%
68.0	7.323	1.489	1764.401	.075%	99.088%
70.0	7.295	1.503	1765.904	.075%	99.173%
72.0	7.261	1.514	1767.419	.076%	99.258%
74.0	7.240	1.526	1768.945	.076%	99.344%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.219	1.536	1770.481	.077%	99.430%
78.0	7.212	1.547	1772.028	.077%	99.517%
80.0	7.206	1.556	1773.585	.078%	99.604%
82.0	7.185	1.560	1775.145	.078%	99.692%
84.0	7.185	1.567	1776.712	.078%	99.780%
86.0	7.171	1.569	1778.281	.079%	99.868%
88.0	7.150	1.567	1779.848	.078%	99.956%
90.0	7.150	0.784	1780.632	.039%	100.000%

Zonal flux distribution table

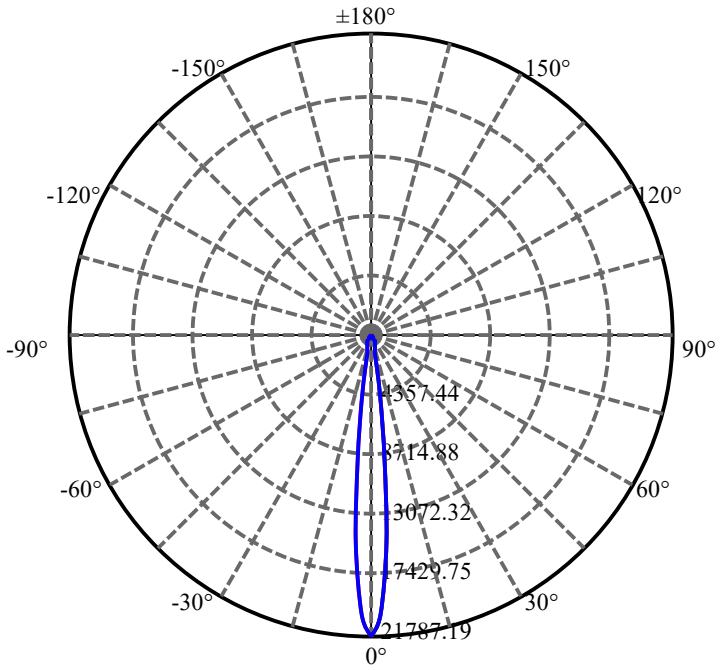
ZONAL LUMEN SUMMARY

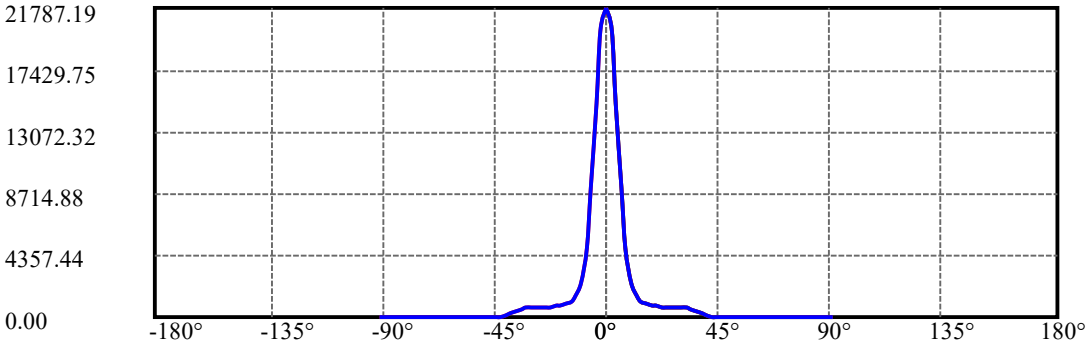
Zone	Lumens	%Lamp	%Fixt
0-30	1475.69	73.87%	82.87%
0-40	1738.86	87.05%	97.65%
0-60	1758.54	88.03%	98.76%
0-90	1779.85	89.10%	99.96%
0-120	1779.85	89.10%	99.96%
0-180	1780.63	89.14%	100.00%
60-90	22.74	1.14%	1.28%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.59	1424.51	71.31%	80.00%

ZONAL LUMEN SUMMARY

0-10	854.42
10-20	286.44
20-30	334.84
30-40	263.17
40-50	12.60
50-60	7.08
60-70	7.37
70-80	7.68
80-90	6.26
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):

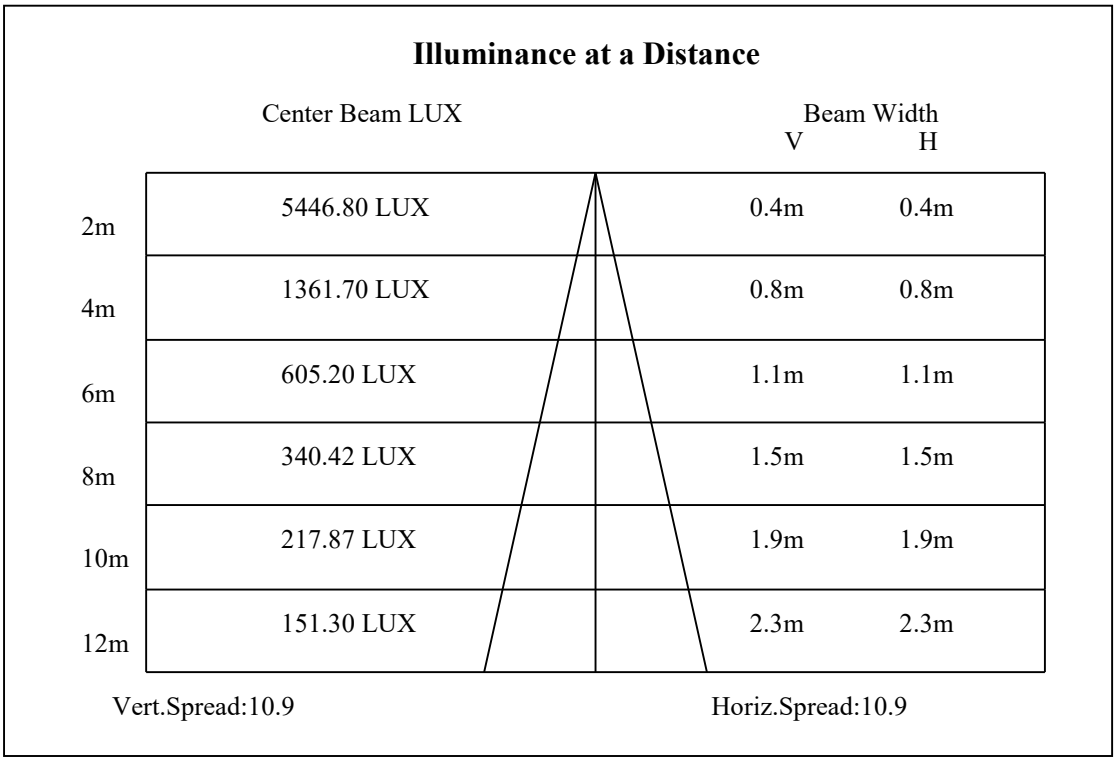
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:10.5 Right:10.5
:C90/270Left:10.5 Right:10.5

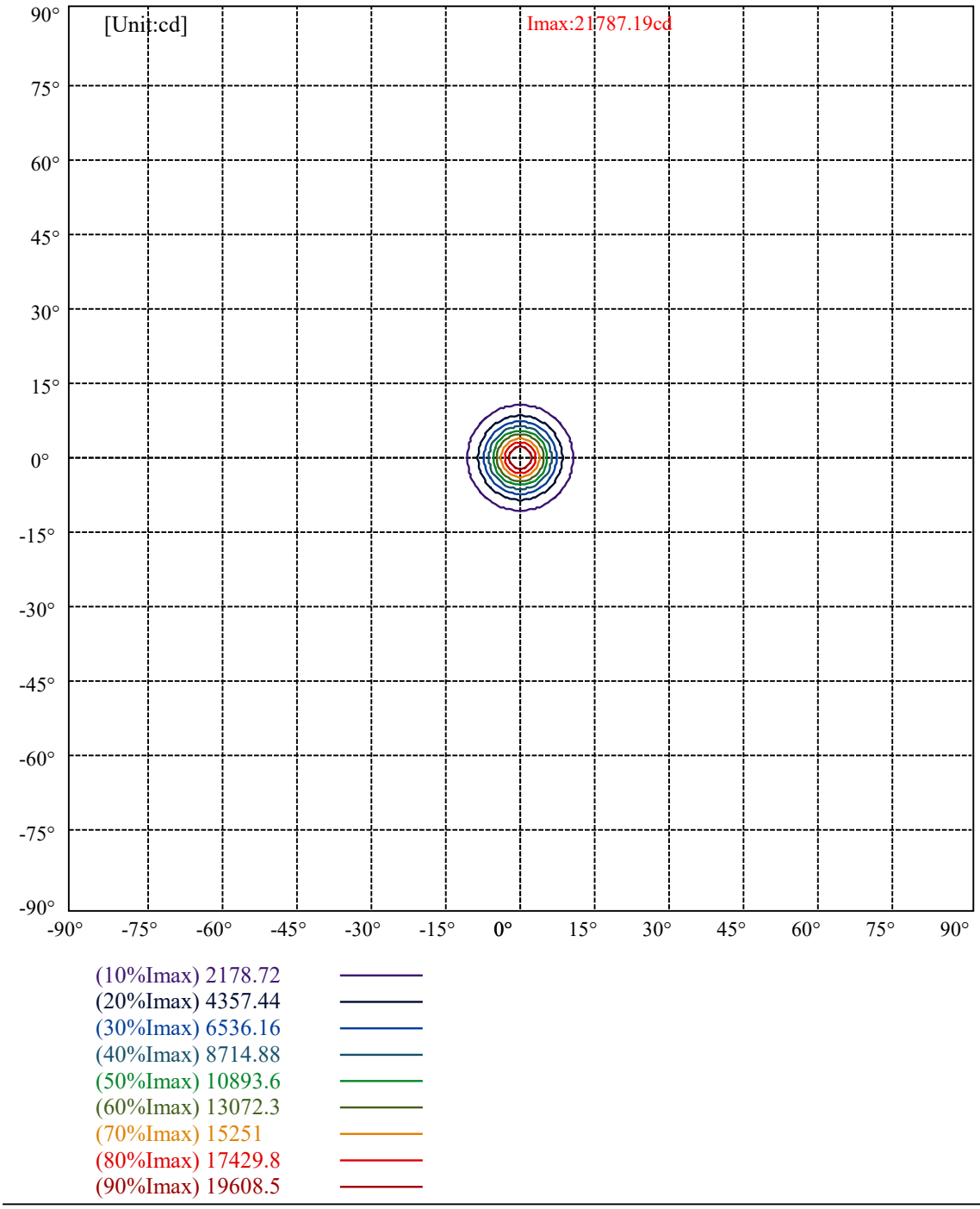
Beam Angle(50%Imax):C0/180Left:5.4 Right:5.4
:C90/270Left:5.4 Right:5.4

Lux distance Curve



Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

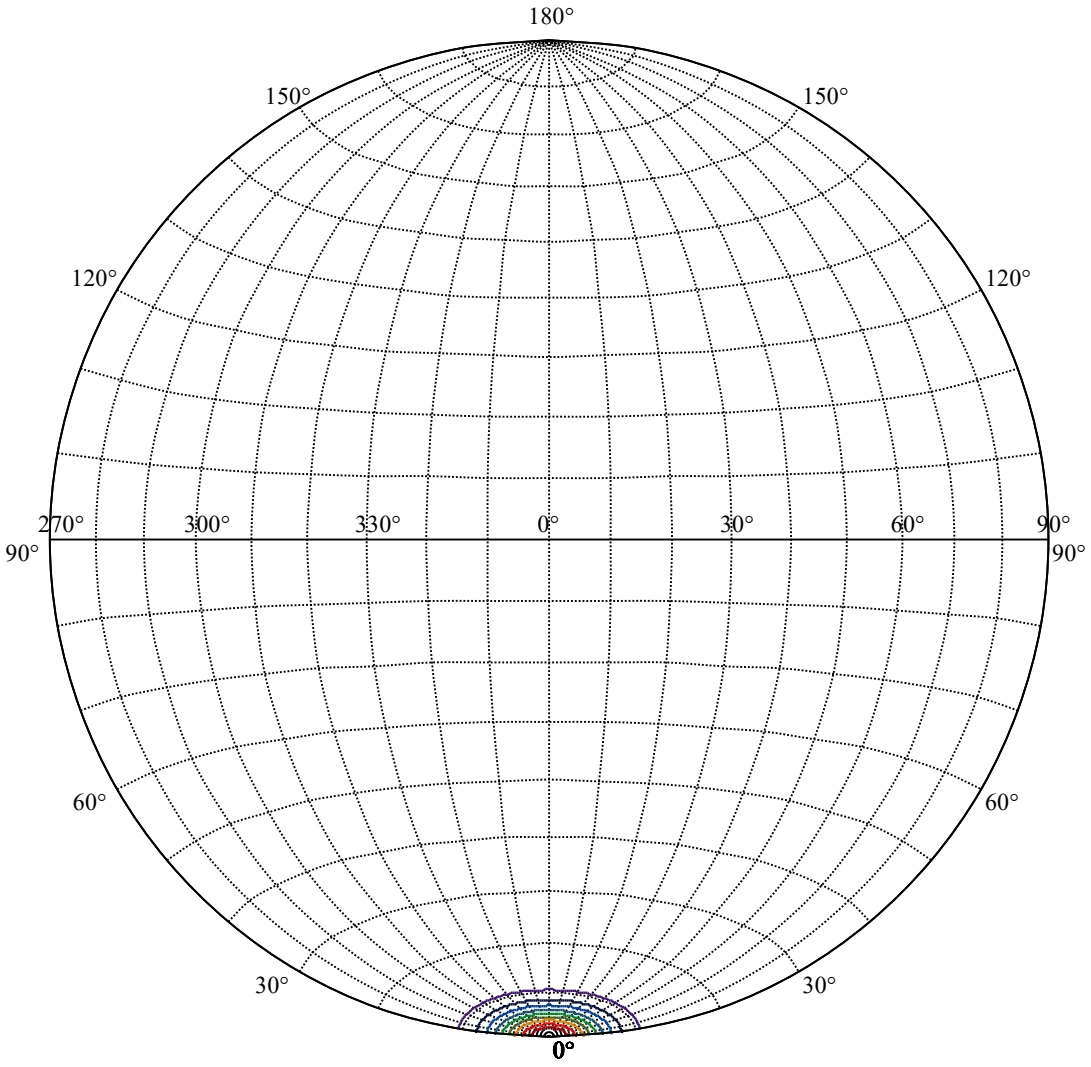


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/5/21
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



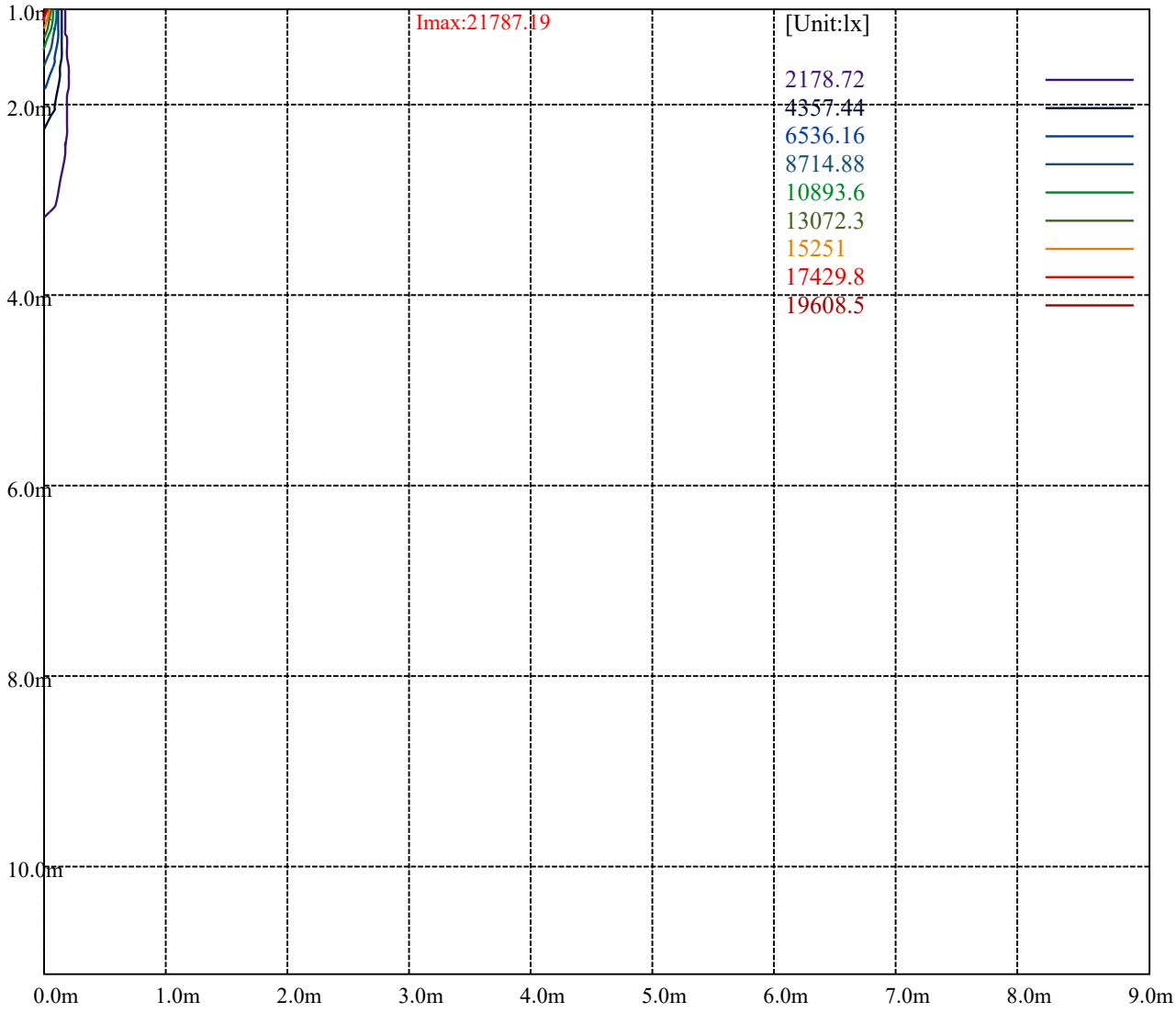
House [Unit:cd] Road

Imax:21787.19

(10%Imax) 2178.72
(20%Imax) 4357.44
(30%Imax) 6536.16
(40%Imax) 8714.88
(50%Imax) 10893.6
(60%Imax) 13072.3
(70%Imax) 15251
(80%Imax) 17429.8
(90%Imax) 19608.5

Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/5/21
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

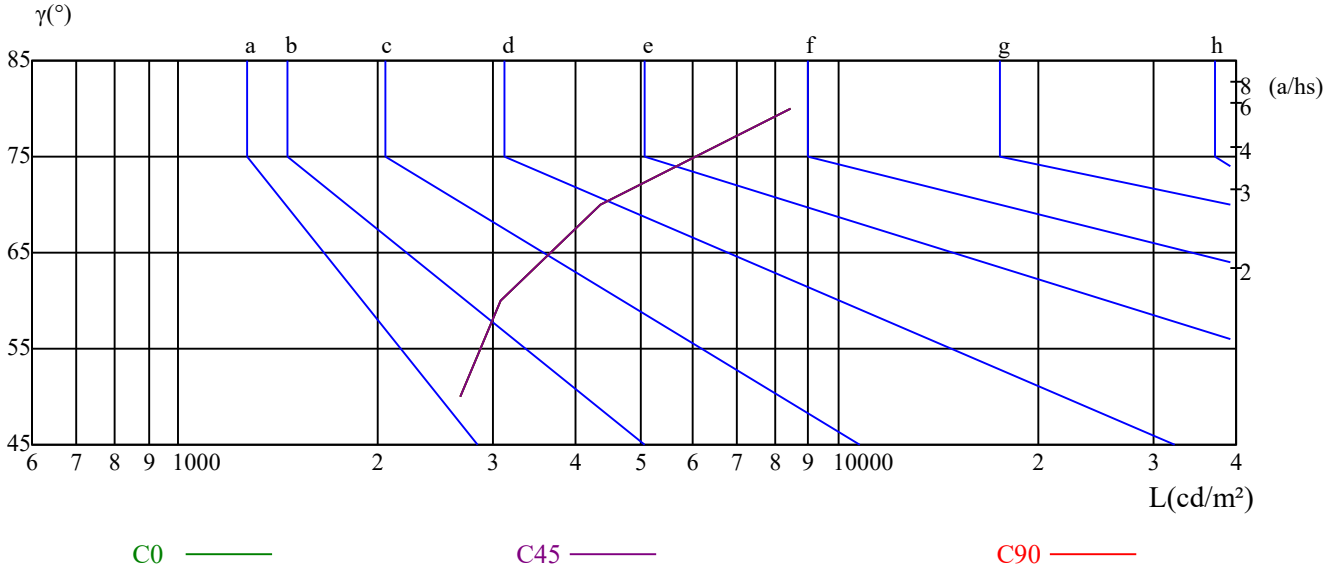
γ	45	50	55	60	65	70	75	80	85
C0	0	2668	0	3073	0	4353	0	8468	0
C45	0	2668	0	3073	0	4353	0	8468	0
C90	0	2668	0	3073	0	4353	0	8468	0

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

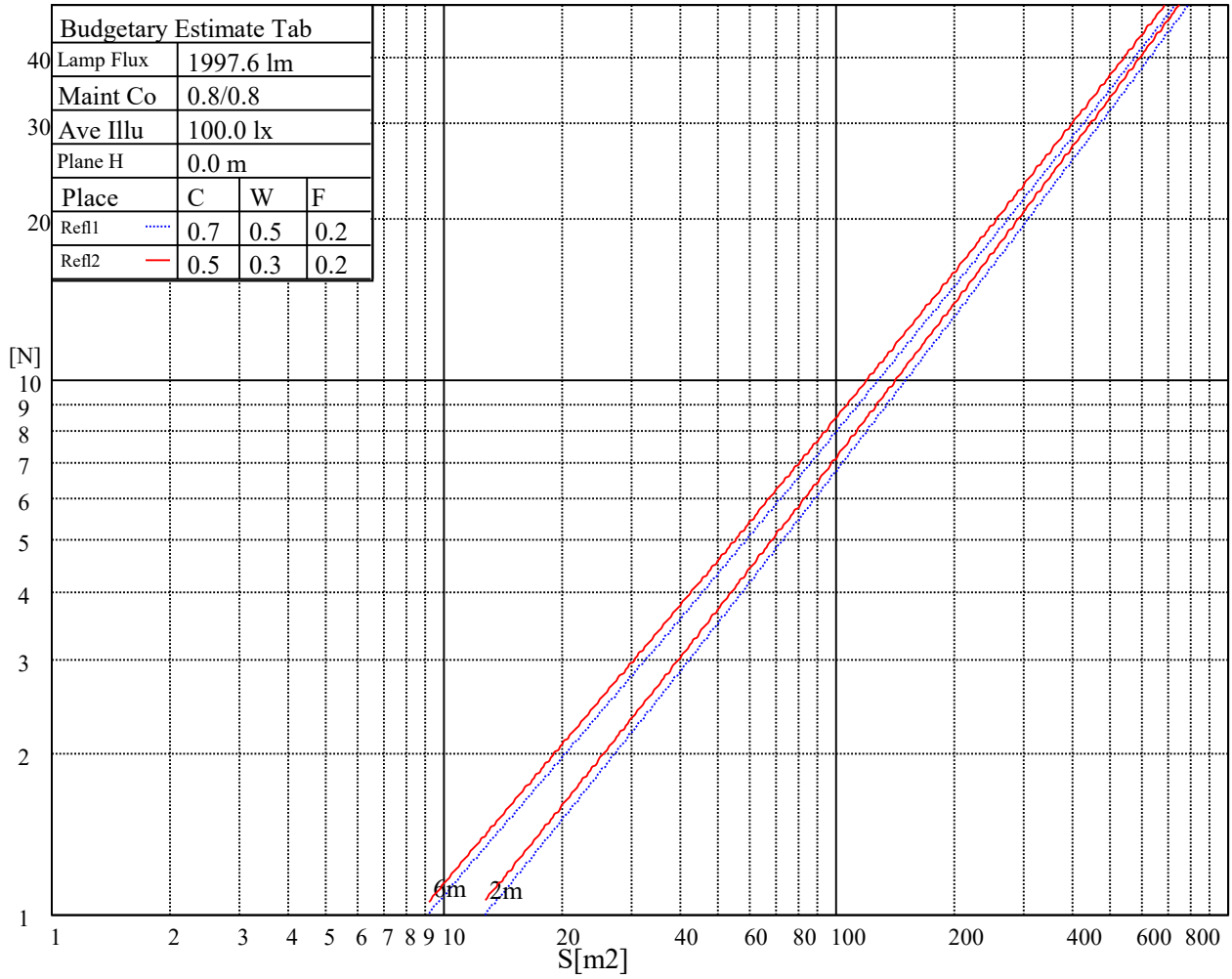
Glare Table

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

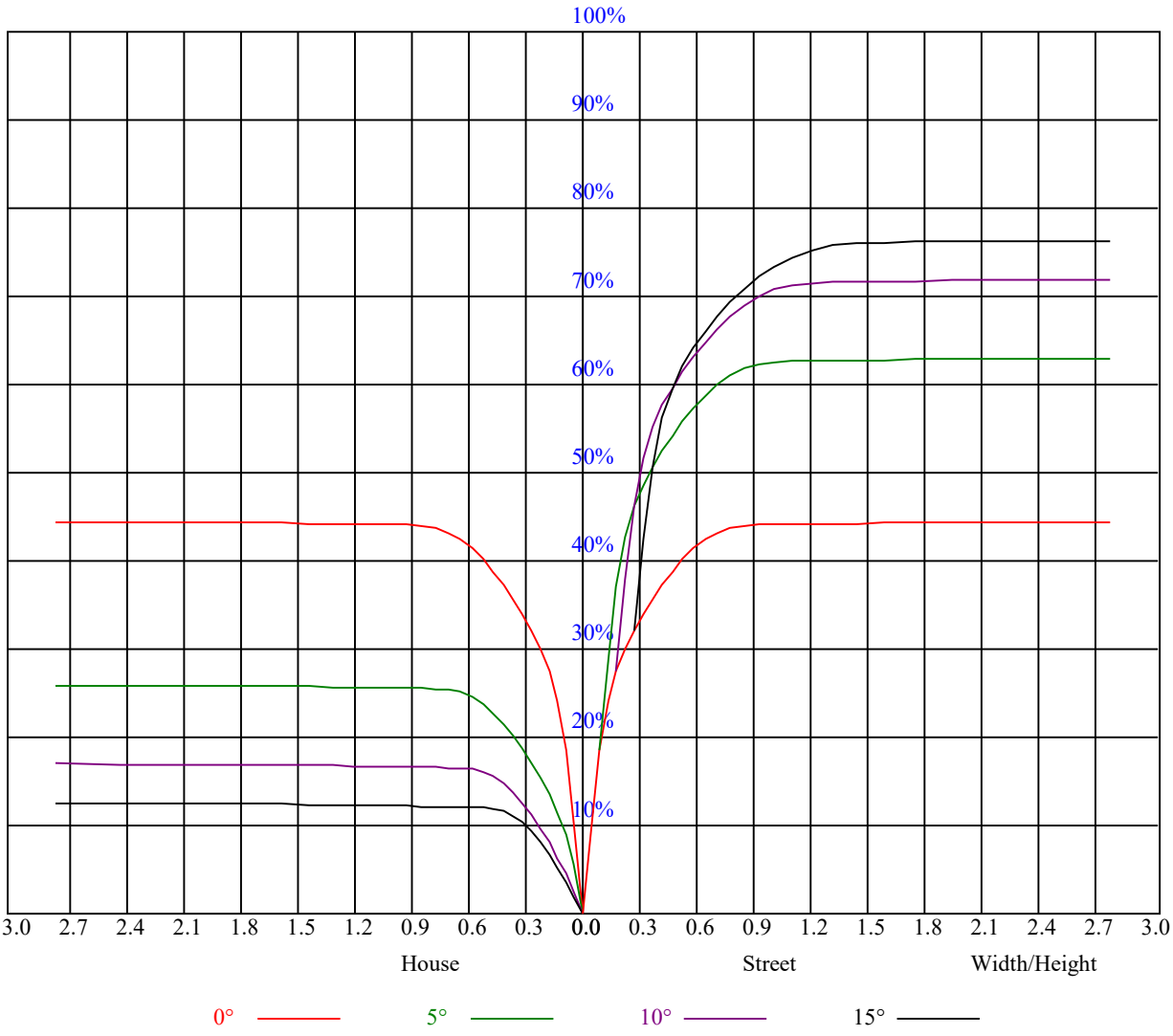


Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

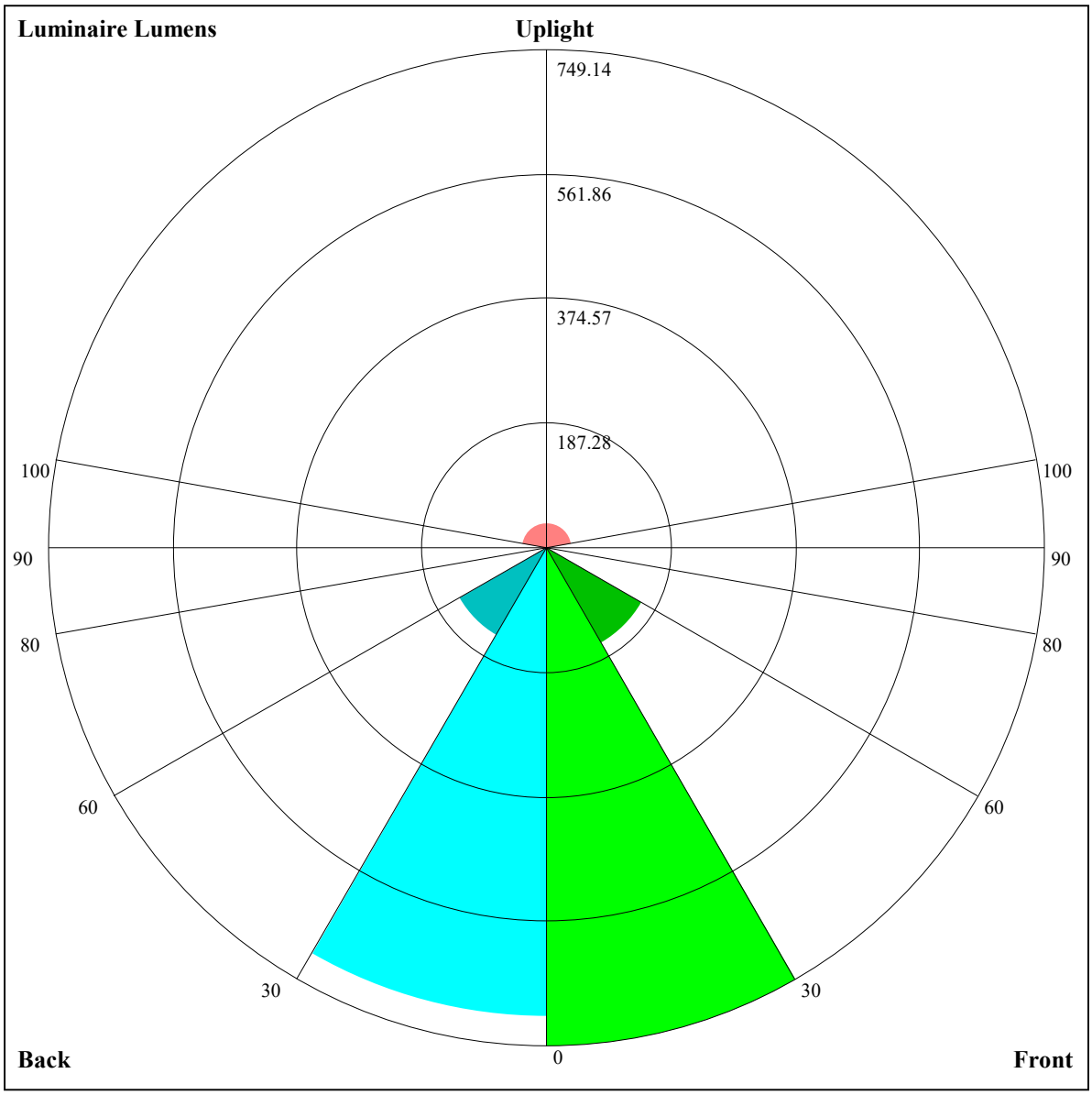
Utilization factor table for indoor luminaire

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	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
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	0.84
2	0.95	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.79	0.85	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.73
6	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	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/5/21	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42



Luminaire Lumens:
FL=749.14,FM=164.2,FH=7.5,FVH=3.92
BL=706.65,BM=153.18,BH=7.49,BVH=3.91
UL=7.8,UH=37.13

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	21549.07	20800.31	17100.52	10581.84	5456.09	2807.88	1651.14	1121.50	923.85
45.0	21708.74	21780.31	18950.41	13340.17	7256.43	3396.98	1932.48	1232.71	959.63
90.0	22198.74	22154.70	19379.85	10742.60	7167.24	3259.34	1802.55	1085.66	946.92
135.0	21692.22	21670.20	19148.62	12574.88	6535.19	3237.32	1713.91	1135.81	921.64
180.0	21549.07	18895.36	10831.80	7008.68	3290.17	1765.11	1087.36	945.65	841.10
225.0	21708.74	18702.66	10863.73	6095.29	2960.93	1590.03	1092.10	903.75	823.09
270.0	22198.74	18977.94	12872.19	6265.42	3044.62	1705.10	1146.82	916.14	825.85
315.0	21692.22	18487.94	10696.36	6316.07	3138.21	1713.91	1083.34	929.85	837.85
360.0	21549.07	20800.31	17100.52	10581.84	5456.09	2807.88	1651.14	1121.50	923.85

C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	828.60	779.60	749.87	723.99	704.17	686.55	666.73	647.46	627.09
45.0	848.42	792.81	759.78	729.50	712.43	697.56	676.64	655.72	637.55
90.0	833.94	789.84	754.38	729.83	711.33	695.25	674.33	651.76	631.06
135.0	830.80	780.70	747.12	722.34	704.17	687.65	666.18	644.71	623.24
180.0	785.27	750.97	723.06	703.18	687.27	668.60	645.04	624.89	568.95
225.0	776.57	750.86	728.40	710.72	691.78	673.89	652.91	629.68	540.49
270.0	778.50	749.32	725.64	705.27	690.41	671.14	654.07	630.95	551.11
315.0	786.43	757.91	733.19	713.59	696.85	677.25	654.95	633.59	561.80
360.0	828.60	779.60	749.87	723.99	704.17	686.55	666.73	647.46	627.09

C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	535.70	357.32	163.96	39.42	21.25	10.90	9.08	8.70	8.37
45.0	576.44	400.81	285.74	59.02	25.82	14.81	9.03	8.64	8.37
90.0	556.46	394.75	195.12	58.25	23.73	13.38	8.86	8.48	8.20
135.0	542.31	355.11	179.92	43.33	23.45	14.09	8.86	8.48	8.20
180.0	398.61	223.64	63.26	26.54	15.42	8.97	8.59	8.31	8.09
225.0	357.87	169.57	39.31	20.76	11.07	8.92	8.53	8.20	7.98
270.0	373.83	166.77	44.10	19.66	11.51	8.92	8.53	8.20	7.98
315.0	375.32	198.48	49.11	20.26	11.62	8.92	8.48	8.20	7.98
360.0	535.70	357.32	163.96	39.42	21.25	10.90	9.08	8.70	8.37

C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	8.09	7.87	7.71	7.60	7.49	7.43	7.38	7.32	7.27
45.0	8.09	7.93	7.76	7.65	7.54	7.49	7.43	7.38	7.38
90.0	7.98	7.82	7.65	7.54	7.49	7.43	7.38	7.32	7.32
135.0	7.98	7.82	7.71	7.60	7.49	7.43	7.38	7.38	7.32
180.0	7.87	7.71	7.60	7.49	7.43	7.38	7.32	7.32	7.27
225.0	7.82	7.65	7.54	7.49	7.38	7.32	7.32	7.27	7.27
270.0	7.82	7.65	7.54	7.43	7.43	7.38	7.32	7.32	7.27
315.0	7.76	7.65	7.54	7.43	7.38	7.32	7.32	7.27	7.27
360.0	8.09	7.87	7.71	7.60	7.49	7.43	7.38	7.32	7.27

C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	7.27	7.21	7.21	7.21	7.21	7.16	7.16	7.16	7.16
45.0	7.32	7.27	7.27	7.21	7.21	7.21	7.21	7.21	7.16
90.0	7.27	7.27	7.21	7.21	7.21	7.21	7.16	7.16	7.16
135.0	7.27	7.27	7.27	7.27	7.21	7.21	7.21	7.16	7.16
180.0	7.27	7.16	7.16	7.16	7.16	7.16	7.16	7.10	7.10
225.0	7.21	7.21	7.21	7.21	7.16	7.16	7.16	7.16	7.16
270.0	7.27	7.27	7.21	7.21	7.27	7.21	7.21	7.21	7.16
315.0	7.21	7.27	7.21	7.21	7.21	7.16	7.21	7.21	7.16
360.0	7.27	7.21	7.21	7.21	7.21	7.16	7.16	7.16	7.16

Intensity data(cd)

C/γ(°)	90.0
0.0	7.10
45.0	7.16
90.0	7.16
135.0	7.16
180.0	7.16
225.0	7.16
270.0	7.16
315.0	7.16
360.0	7.10