NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86 750 3771111
Address:Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NT

Client: NT
LumCAT: 61-0174
Luminaire:
Report No: 20260318-B001
Ballast type: AC

Test No: 20260318-C001	Voltage(V): 4.780
LampCAT: CREE XPP	Current(A): 1.691
Lamp flux(lm): 443.0	Power (W): 8.082
Number of Lamps: 1	PF: 0.000
Length(mm): 35	Width(mm): 35
Phm Type: C	Height(mm): 18

Photometric Results

Lumens(lm): 429.81, Efficiency(%): 97.03% , Luminous Efficacy(lm/W): 53.18
Central intensity(cd): 28407.380, Maximum intensity(cd): 33036.750
Angle of maximum intensity: C=180.0 γ=1.0
Beam Angle(50%Imax): [C0/180]Total=3.9
[C90/270]Total=3.8
Field angle(10%Imax): [C0/180]Total=9.2
[C90/270]Total=9.0
Maximum s/h(1/2): C0_180=0.12 C90_270=0.02
Maximum s/h(1/4): C0_180=0.11 C90_270=0.02
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 97.98%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 93.078%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	30869.719	0.000	0	0.00%	0.00%
1.0	19798.355	24.244	24.244	5.47%	5.64%
2.0	16426.238	51.993	76.237	11.74%	17.74%
3.0	9717.089	62.526	138.763	14.12%	32.28%
4.0	4166.058	46.471	185.234	10.49%	43.10%
5.0	2595.607	29.088	214.323	6.57%	49.86%
6.0	2092.718	24.638	238.961	5.56%	55.60%
7.0	1165.486	20.224	259.185	4.57%	60.30%
8.0	941.189	15.077	274.262	3.40%	63.81%
9.0	785.651	13.995	288.257	3.16%	67.07%
10.0	639.682	12.899	301.156	2.91%	70.07%
11.0	514.617	11.534	312.689	2.60%	72.75%
12.0	412.298	10.133	322.822	2.29%	75.11%
13.0	321.131	8.704	331.526	1.96%	77.13%
14.0	257.941	7.412	338.938	1.67%	78.86%
15.0	233.543	6.747	345.685	1.52%	80.43%
16.0	158.843	5.750	351.435	1.30%	81.77%
17.0	115.010	4.265	355.699	0.96%	82.76%
18.0	98.023	3.512	359.212	0.79%	83.57%
19.0	78.884	3.078	362.29	0.69%	84.29%
20.0	66.480	2.661	364.95	0.60%	84.91%
21.0	56.538	2.362	367.312	0.53%	85.46%
22.0	48.396	2.109	369.421	0.48%	85.95%
23.0	42.068	1.898	371.319	0.43%	86.39%
24.0	36.900	1.727	373.046	0.39%	86.79%
25.0	32.590	1.580	374.626	0.36%	87.16%
26.0	28.962	1.453	376.079	0.33%	87.50%
27.0	25.699	1.337	377.416	0.30%	87.81%
28.0	22.556	1.222	378.638	0.28%	88.09%
29.0	19.884	1.110	379.748	0.25%	88.35%
30.0	17.585	1.012	380.76	0.23%	88.59%
31.0	15.764	0.928	381.688	0.21%	88.80%
32.0	14.449	0.866	382.553	0.20%	89.01%
33.0	13.430	0.821	383.375	0.19%	89.20%
34.0	12.607	0.788	384.163	0.18%	89.38%
35.0	11.820	0.759	384.921	0.17%	89.56%
36.0	11.229	0.734	385.655	0.17%	89.73%
37.0	10.744	0.717	386.372	0.16%	89.89%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	10.322	0.703	387.075	0.16%	90.06%
39.0	9.998	0.694	387.769	0.16%	90.22%
40.0	9.703	0.687	388.456	0.16%	90.38%
41.0	9.499	0.684	389.139	0.15%	90.54%
42.0	9.281	0.682	389.822	0.15%	90.70%
43.0	9.120	0.682	390.503	0.15%	90.85%
44.0	8.979	0.683	391.187	0.15%	91.01%
45.0	8.916	0.688	391.874	0.16%	91.17%
46.0	8.895	0.697	392.571	0.16%	91.34%
47.0	8.951	0.710	393.281	0.16%	91.50%
48.0	8.986	0.725	394.006	0.16%	91.67%
49.0	9.084	0.742	394.748	0.17%	91.84%
50.0	9.134	0.760	395.507	0.17%	92.02%
51.0	9.232	0.777	396.284	0.18%	92.20%
52.0	9.204	0.791	397.075	0.18%	92.38%
53.0	9.302	0.805	397.88	0.18%	92.57%
54.0	9.394	0.824	398.704	0.19%	92.76%
55.0	9.443	0.841	399.545	0.19%	92.96%
56.0	9.506	0.856	400.402	0.19%	93.16%
57.0	9.555	0.872	401.273	0.20%	93.36%
58.0	9.612	0.886	402.159	0.20%	93.57%
59.0	9.654	0.901	403.06	0.20%	93.78%
60.0	9.605	0.910	403.97	0.21%	93.99%
61.0	9.682	0.920	404.89	0.21%	94.20%
62.0	9.766	0.937	405.827	0.21%	94.42%
63.0	9.942	0.959	406.786	0.22%	94.64%
64.0	10.259	0.991	407.777	0.22%	94.87%
65.0	10.463	1.025	408.803	0.23%	95.11%
66.0	10.821	1.062	409.865	0.24%	95.36%
67.0	11.088	1.102	410.966	0.25%	95.62%
68.0	11.363	1.137	412.104	0.26%	95.88%
69.0	11.496	1.166	413.27	0.26%	96.15%
70.0	11.433	1.178	414.447	0.27%	96.43%
71.0	11.123	1.166	415.613	0.26%	96.70%
72.0	10.800	1.140	416.753	0.26%	96.96%
73.0	10.378	1.107	417.861	0.25%	97.22%
74.0	9.907	1.066	418.927	0.24%	97.47%
75.0	9.527	1.027	419.954	0.23%	97.71%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.895	0.978	420.932	0.22%	97.93%
77.0	8.445	0.924	421.856	0.21%	98.15%
78.0	8.114	0.886	422.743	0.20%	98.36%
79.0	7.763	0.853	423.596	0.19%	98.55%
80.0	7.418	0.818	424.414	0.18%	98.74%
81.0	6.792	0.768	425.183	0.17%	98.92%
82.0	6.251	0.707	425.89	0.16%	99.09%
83.0	5.794	0.655	426.545	0.15%	99.24%
84.0	5.273	0.603	427.147	0.14%	99.38%
85.0	4.823	0.551	427.699	0.12%	99.51%
86.0	4.366	0.502	428.201	0.11%	99.63%
87.0	3.973	0.456	428.657	0.10%	99.73%
88.0	3.635	0.417	429.074	0.09%	99.83%
89.0	3.333	0.382	429.456	0.09%	99.92%
90.0	3.129	0.354	429.81	0.08%	100.00%

Zonal flux distribution table

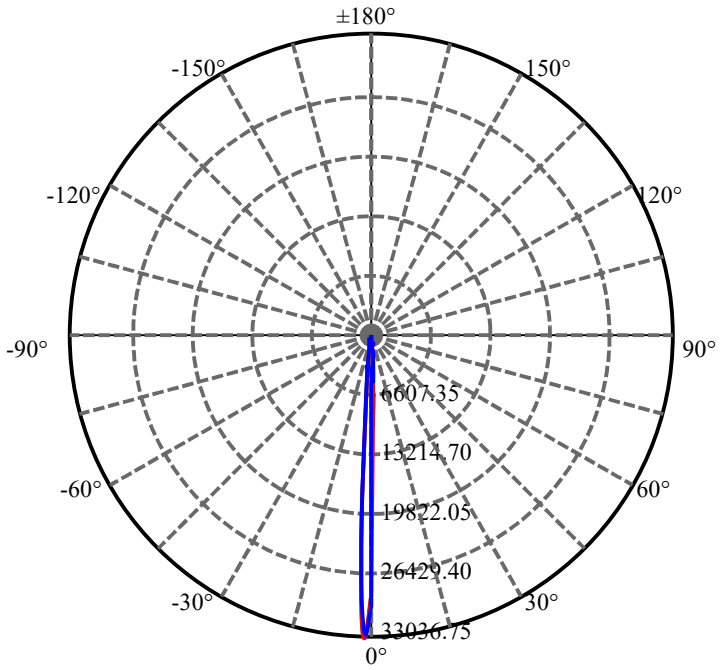
ZONAL LUMEN SUMMARY

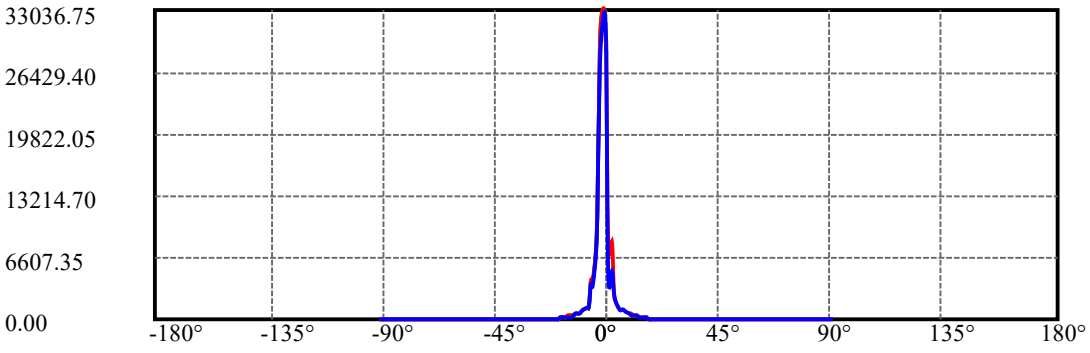
Zone	Lumens	%Lamp	%Fixt
0-30	380.76	85.96%	88.59%
0-40	388.46	87.69%	90.38%
0-60	403.97	91.20%	93.99%
0-90	429.46	96.95%	99.92%
0-120	429.46	96.95%	99.92%
0-180	429.81	97.03%	100.00%
60-90	25.49	5.75%	5.93%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-14.73	343.85	77.62%	80.00%

ZONAL LUMEN SUMMARY

0-10	301.16
10-20	63.79
20-30	15.81
30-40	7.70
40-50	7.05
50-60	8.46
60-70	10.48
70-80	9.97
80-90	5.04
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]





C180(Max):

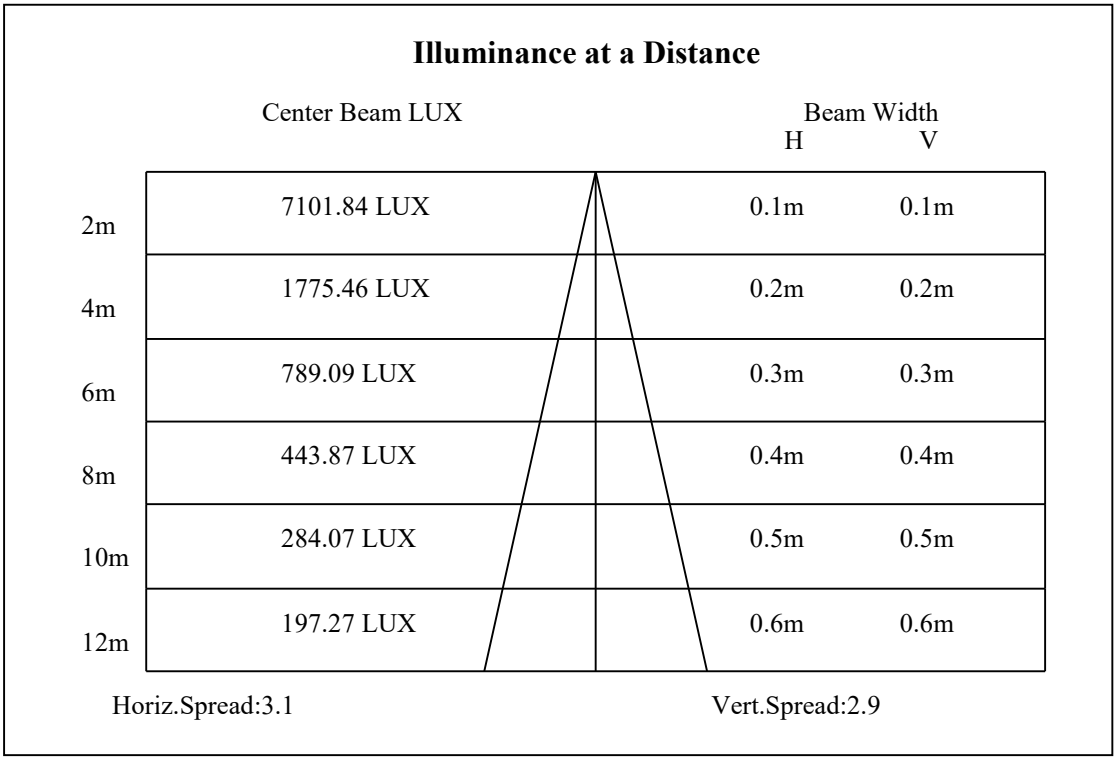
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:5.3 Right:3.9
:C90/270Left:5.2 Right:3.8

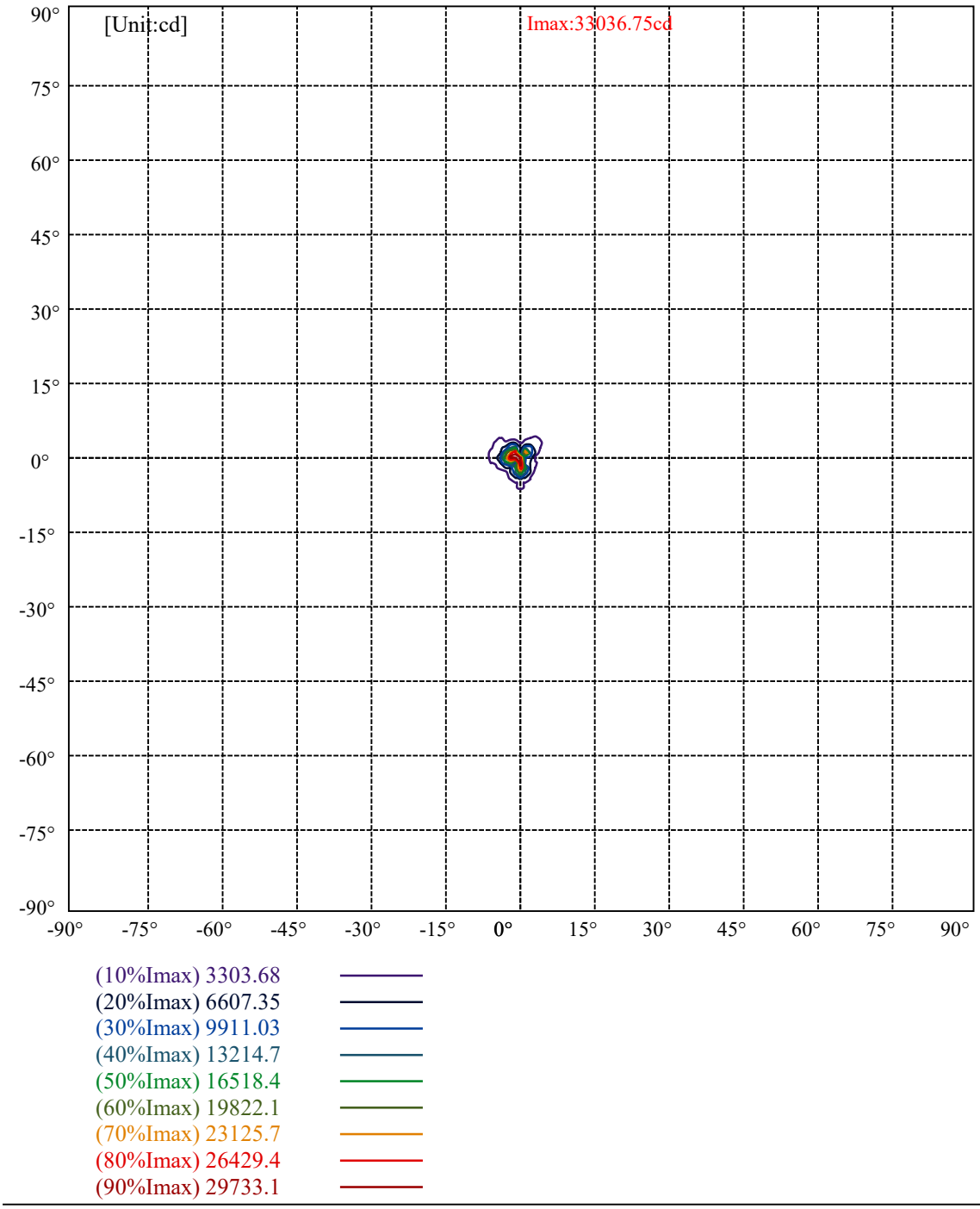
Beam Angle(50%Imax):C0/180Left:2.3 Right:1.6
:C90/270Left:2.3 Right:1.5

Lux distance Curve



Equipment: GMS 1800
Date: 2026/3/18
Operator: 杨泽全
Temperature(°C): 25.0
Humidity(%): 60.0%
Distance(m): 7.50

ISO-Intensity(V-H)



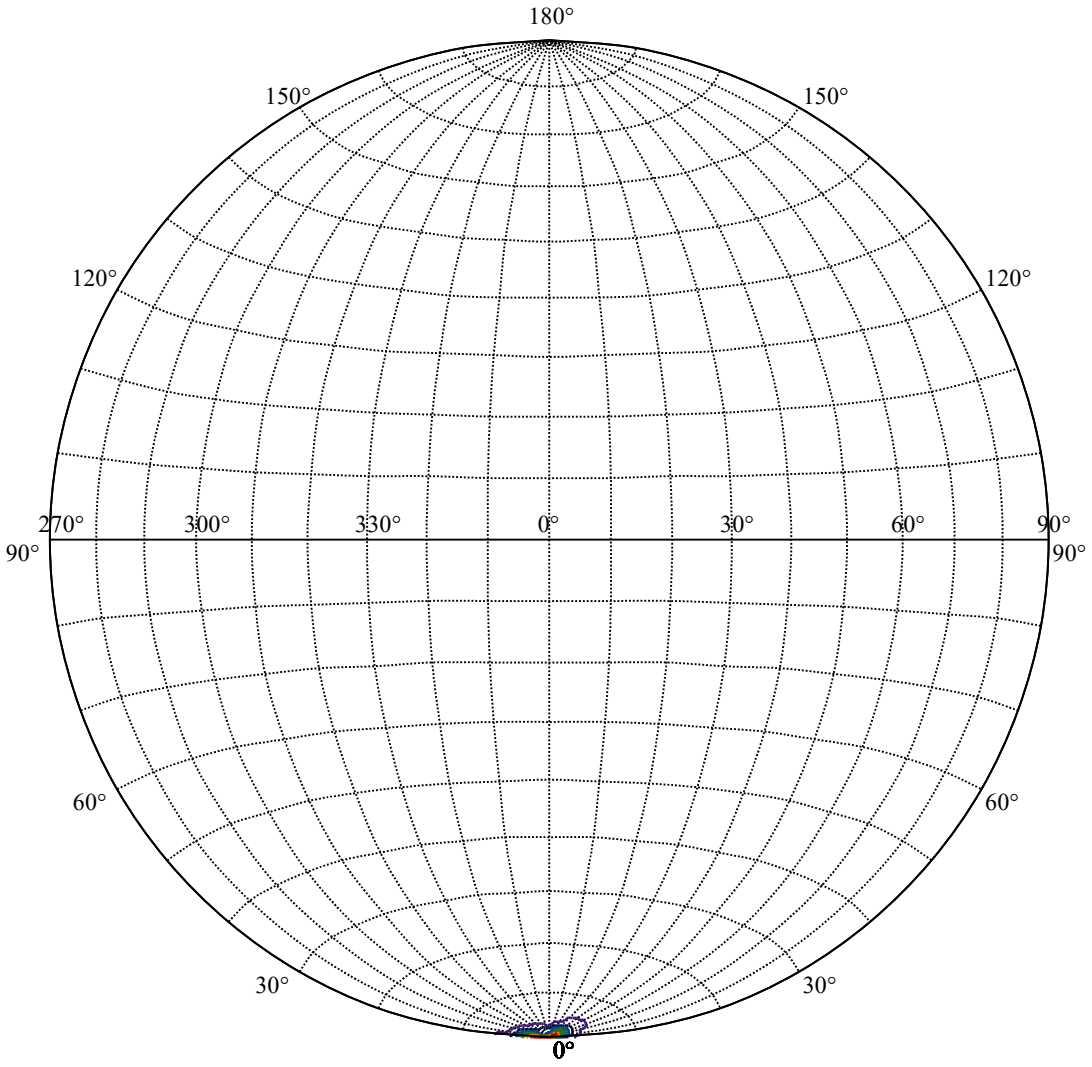
(10%Imax) 3303.68
(20%Imax) 6607.35
(30%Imax) 9911.03
(40%Imax) 13214.7
(50%Imax) 16518.4
(60%Imax) 19822.1
(70%Imax) 23125.7
(80%Imax) 26429.4
(90%Imax) 29733.1

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 7.50

ISO candela diagram on circular web



[Unit:cd]

Imax:33036.75

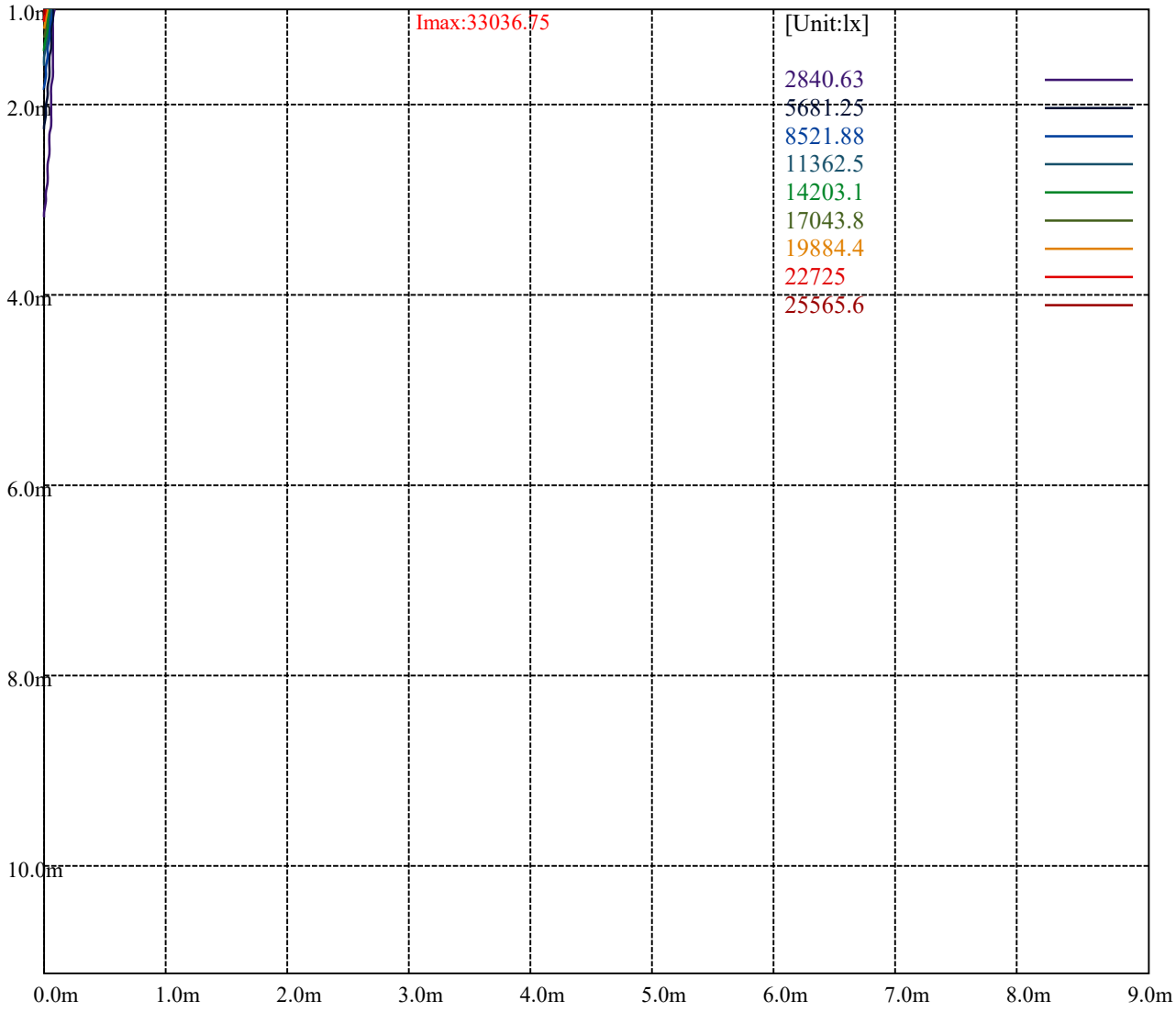
(10%Imax) 3303.56
(20%Imax) 6607.13
(30%Imax) 9910.69
(40%Imax) 13214.3
(50%Imax) 16517.8
(60%Imax) 19821.4
(70%Imax) 23124.9
(80%Imax) 26428.5
(90%Imax) 29732.1

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

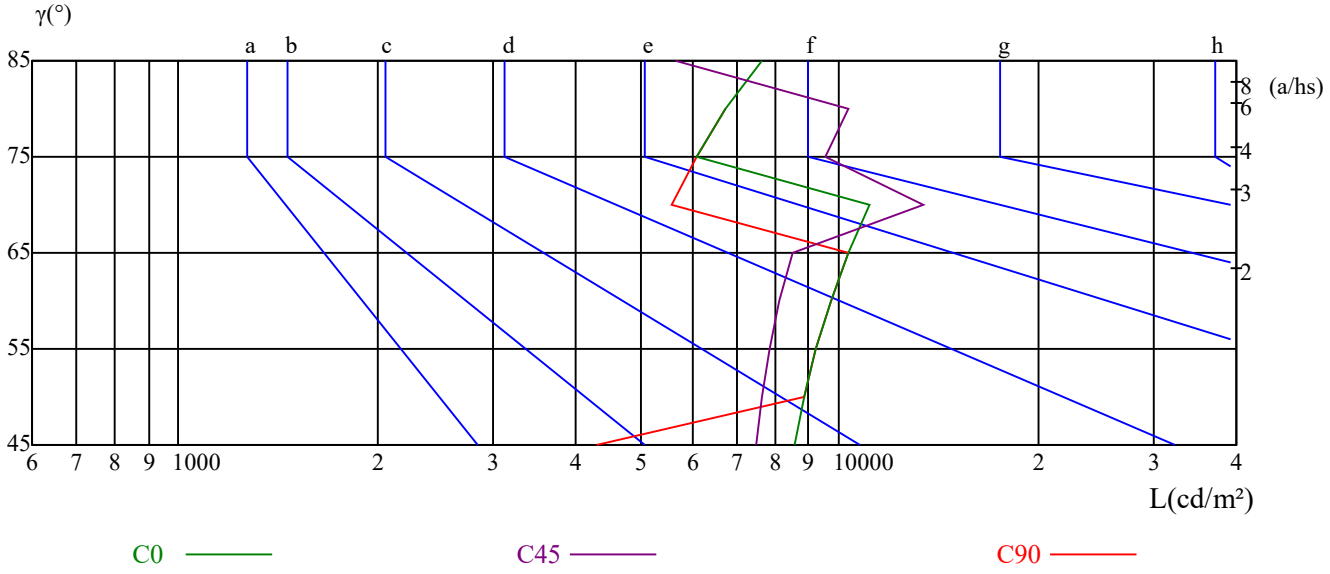
γ	45	50	55	60	65	70	75	80	85
C0	8577	8858	9231	9714	10334	11128	6077	6752	7660
C45	7519	7653	7854	8128	8489	13433	9553	10320	5657
C90	4288	8858	9231	9714	10334	5564	6077	6752	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
27163	21730	21730	35483	17741	26612	79028	26343	52685

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

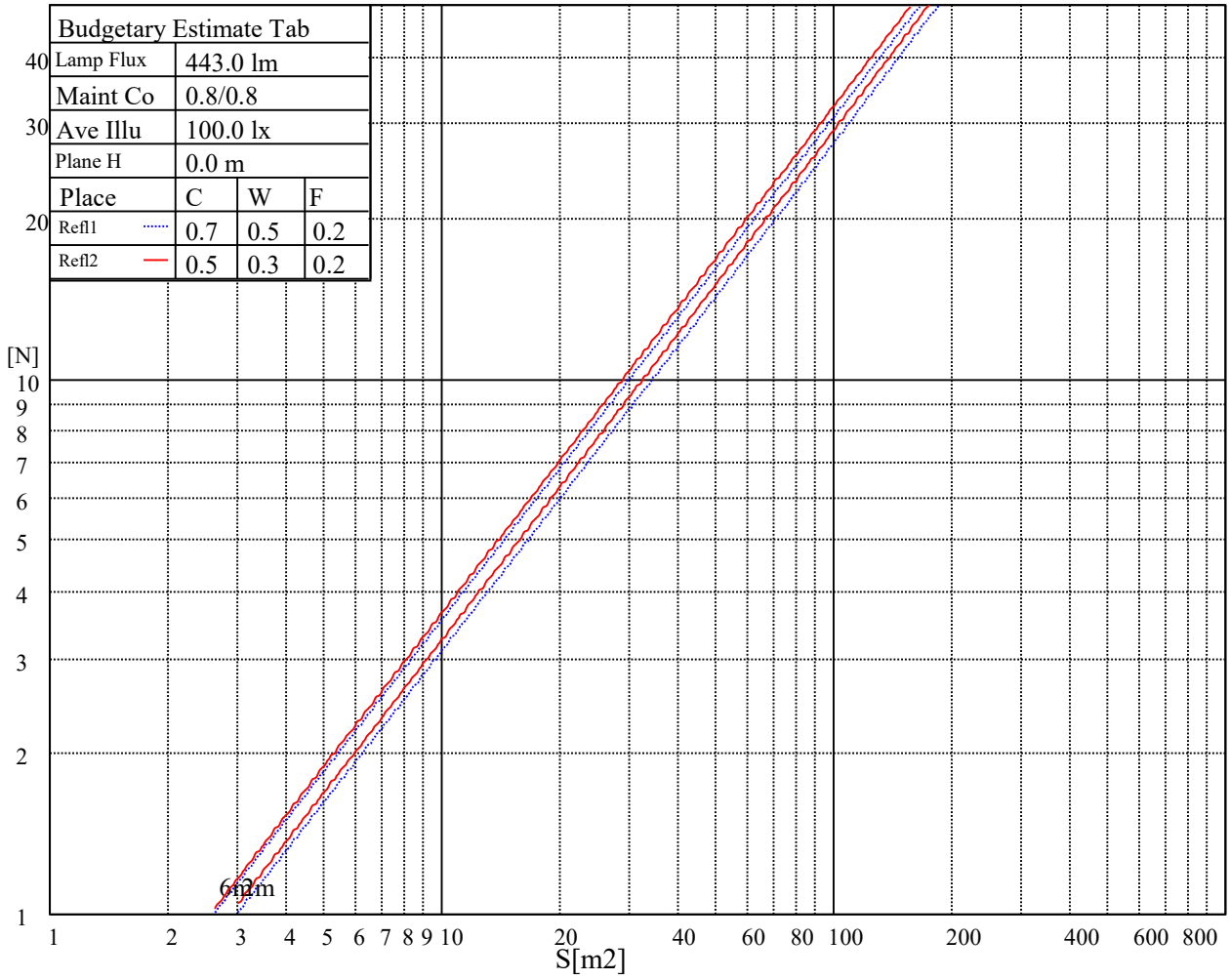


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 7.50

Budgetary Estimate Table



Equipment: GMS 1800
Temperature(°C): 25.0

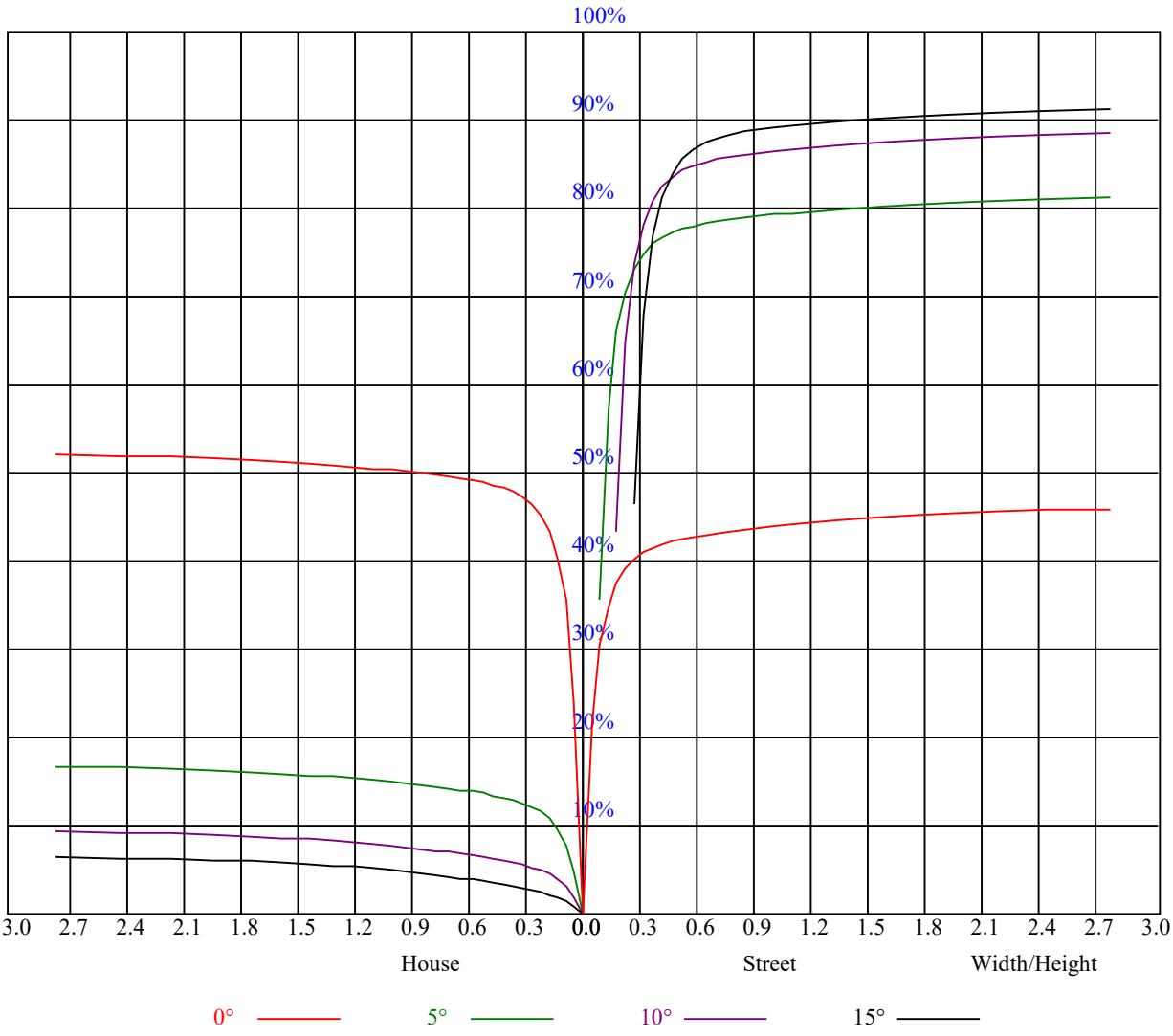
Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
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	1.17	1.17	1.17	1.14	1.14	1.14	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.98
1	1.09	1.07	1.05	1.07	1.05	1.03	1.03	1.02	1.00	1.00	0.98	0.97	0.96	0.95	0.94	0.93
2	1.04	1.01	0.98	1.03	1.00	0.97	1.00	0.97	0.95	0.97	0.95	0.93	0.94	0.93	0.91	0.90
3	1.00	0.97	0.94	0.99	0.96	0.93	0.97	0.94	0.92	0.94	0.92	0.90	0.92	0.90	0.89	0.88
4	0.97	0.93	0.91	0.96	0.93	0.90	0.94	0.91	0.89	0.93	0.90	0.88	0.91	0.89	0.87	0.86
5	0.95	0.91	0.88	0.94	0.90	0.88	0.92	0.89	0.87	0.91	0.88	0.86	0.90	0.87	0.86	0.85
6	0.93	0.89	0.86	0.92	0.88	0.86	0.91	0.88	0.85	0.90	0.87	0.85	0.88	0.86	0.84	0.83
7	0.91	0.87	0.85	0.90	0.87	0.84	0.89	0.86	0.84	0.88	0.86	0.84	0.87	0.85	0.83	0.82
8	0.89	0.86	0.83	0.89	0.86	0.83	0.88	0.85	0.83	0.87	0.85	0.83	0.87	0.84	0.82	0.82
9	0.88	0.85	0.82	0.88	0.84	0.82	0.87	0.84	0.82	0.86	0.84	0.82	0.86	0.83	0.82	0.81
10	0.87	0.84	0.81	0.87	0.83	0.81	0.86	0.83	0.81	0.85	0.83	0.81	0.85	0.83	0.81	0.80

Coefficient Utilization Curve

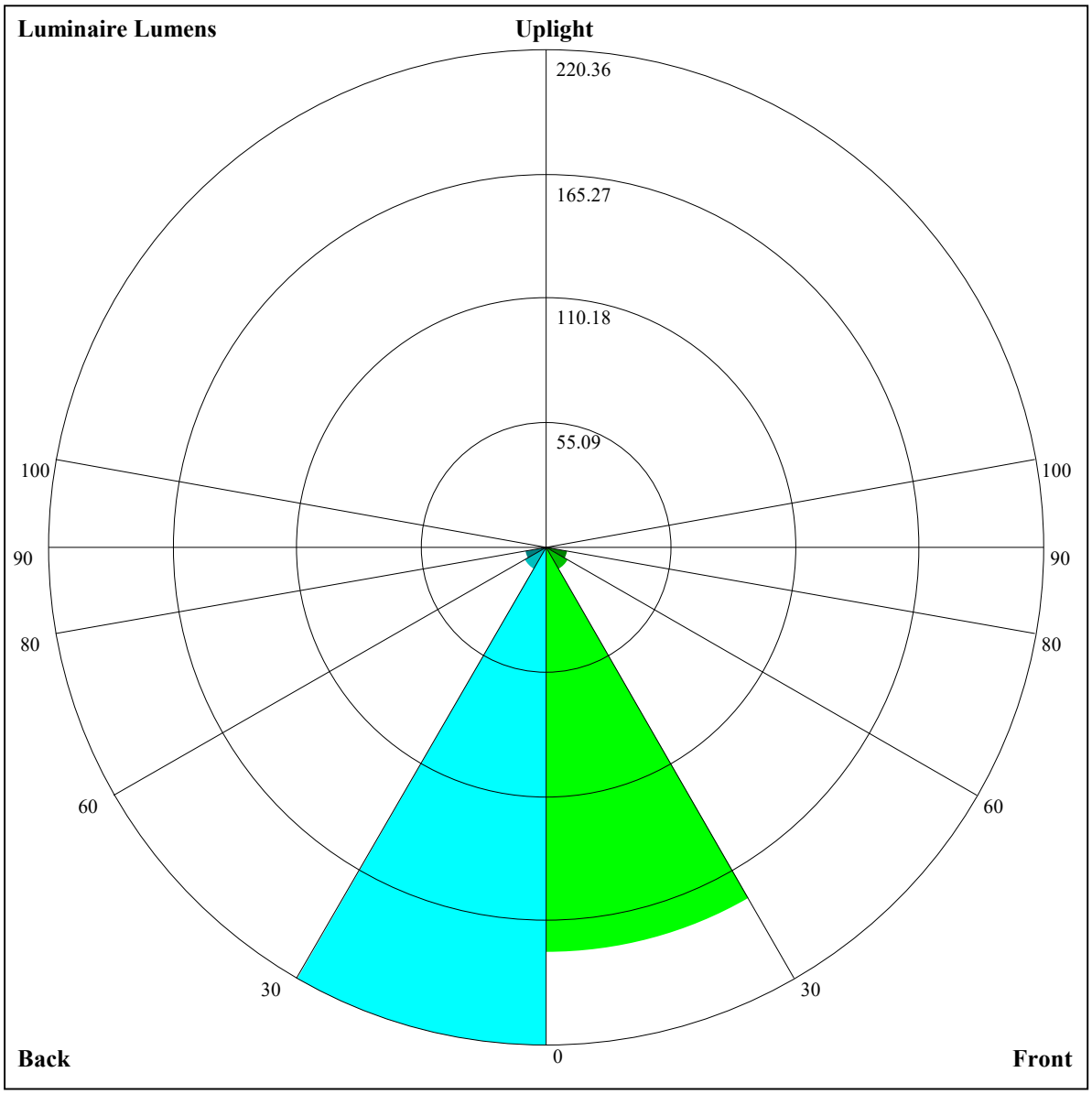


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2026/3/18
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 7.50

LCS Graph



Luminaire Lumens:

FL=179.35,FM=11.54,FH=9.58,FVH=2.44

BL=220.36,BM=11.38,BH=9.91,BVH=2.72

UL=0,UH=0

BUG Rating:B1-U0-G0

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	28407.38	8197.26	8197.26	2854.63	1847.19	1055.25	1055.25	939.54	779.91
45.0	32924.25	29352.38	20397.38	8956.13	4647.38	4647.38	1457.94	1266.13	965.76
90.0	29571.75	5230.63	5230.63	2891.19	1902.88	1063.80	1063.80	934.82	754.43
135.0	32575.50	32159.25	24571.13	11622.38	3409.88	3409.88	3409.88	1248.13	1010.19
180.0	28407.38	33036.75	31039.88	20144.25	8843.63	4028.63	4028.63	1452.32	1167.13
225.0	32924.25	10403.94	5932.63	5932.63	2095.26	1771.82	1024.03	1024.03	895.33
270.0	29571.75	32738.63	28773.00	19778.63	8314.88	3691.13	3691.13	1447.82	1162.07
315.0	32575.50	7268.01	7268.01	5556.88	2267.38	1096.99	1011.09	1011.09	794.70
360.0	28407.38	8197.26	8197.26	2854.63	1847.19	1055.25	1055.25	939.54	779.91

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	611.44	534.94	422.44	328.56	256.73	192.21	150.02	119.36	94.22
45.0	774.51	623.19	500.57	437.57	329.01	296.94	296.94	146.64	106.82
90.0	607.50	462.54	405.79	319.28	245.59	188.61	142.03	123.36	93.04
135.0	894.88	709.26	579.32	469.07	373.44	323.38	323.38	172.13	146.42
180.0	947.76	839.19	654.13	527.57	419.01	311.57	311.57	280.07	141.41
225.0	721.18	579.99	460.69	341.38	292.89	225.62	172.29	126.79	101.87
270.0	1024.26	797.01	593.94	520.26	393.69	304.82	304.82	172.01	132.30
315.0	703.69	571.33	500.06	354.71	258.69	220.39	167.29	130.39	104.01
360.0	611.44	534.94	422.44	328.56	256.73	192.21	150.02	119.36	94.22

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	83.64	71.27	61.37	53.10	44.94	41.63	36.90	32.79	29.03
45.0	94.39	78.41	70.65	53.61	44.94	40.89	34.76	30.71	27.23
90.0	81.96	67.39	55.29	47.14	40.84	34.54	31.73	27.84	24.41
135.0	110.08	89.44	73.69	61.76	56.14	45.84	39.21	34.20	30.15
180.0	128.70	98.83	76.67	70.09	58.56	50.40	43.76	38.19	35.44
225.0	91.18	70.43	58.67	53.38	46.01	39.43	35.21	30.49	28.41
270.0	113.18	82.58	73.74	60.92	52.59	45.90	40.05	36.96	31.61
315.0	81.06	72.73	61.76	52.31	43.14	37.91	33.58	29.53	25.43
360.0	83.64	71.27	61.37	53.10	44.94	41.63	36.90	32.79	29.03

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	25.03	23.23	20.48	18.62	17.83	16.76	15.92	15.08	14.12
45.0	24.19	22.50	19.35	17.27	15.58	13.84	12.83	12.32	11.36
90.0	21.21	18.00	16.59	14.18	12.71	12.04	11.19	10.41	9.90
135.0	27.96	22.44	19.74	18.28	15.92	14.46	13.22	12.26	11.87
180.0	30.71	27.06	23.63	20.59	17.83	16.09	14.74	14.06	12.94
225.0	25.03	22.05	19.35	16.93	15.30	13.89	12.94	12.38	11.59
270.0	27.96	24.58	21.71	18.56	16.59	14.91	14.01	12.49	11.53
315.0	23.51	20.59	18.23	16.26	14.34	13.61	12.60	11.87	11.25
360.0	25.03	23.23	20.48	18.62	17.83	16.76	15.92	15.08	14.12

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	13.73	12.99	12.38	11.76	11.14	10.97	10.58	10.35	10.18
45.0	10.97	10.41	10.13	9.96	9.84	9.62	9.51	9.34	9.23
90.0	9.45	9.23	8.94	8.72	8.44	8.38	8.21	8.16	8.16
135.0	11.03	10.52	9.96	9.51	9.39	9.11	8.83	8.78	8.66
180.0	12.26	11.81	11.31	11.25	10.80	10.58	10.35	9.90	9.68
225.0	11.03	10.41	9.84	9.68	9.34	9.06	8.83	8.72	8.55
270.0	10.86	10.35	10.07	9.62	9.17	9.06	8.94	8.78	8.61
315.0	10.52	10.24	9.96	9.51	9.51	9.23	9.00	8.94	8.78
360.0	13.73	12.99	12.38	11.76	11.14	10.97	10.58	10.35	10.18

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	10.13	10.07	10.24	10.24	10.41	10.29	10.35	10.46	10.41
45.0	9.17	9.06	9.11	9.17	9.17	9.28	9.28	9.34	9.45
90.0	8.21	8.44	8.49	8.49	8.72	8.66	8.78	8.61	8.72
135.0	8.72	8.78	8.78	9.00	9.06	9.23	9.45	9.45	9.68
180.0	9.17	8.94	8.94	8.72	8.89	8.89	8.89	9.00	8.94
225.0	8.55	8.61	8.78	8.89	8.89	9.00	9.23	9.28	9.34
270.0	8.49	8.49	8.38	8.44	8.66	8.72	8.83	8.44	8.72
315.0	8.89	8.78	8.89	8.94	8.89	9.00	9.06	9.06	9.17
360.0	10.13	10.07	10.24	10.24	10.41	10.29	10.35	10.46	10.41

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.46	10.52	10.46	10.52	10.46	10.35	10.29	10.13	10.13
45.0	9.39	9.51	9.62	9.56	9.62	9.56	9.68	9.84	9.90
90.0	9.11	8.94	9.06	9.17	9.23	9.17	8.55	8.38	8.66
135.0	9.73	9.68	9.84	9.79	9.84	9.84	9.79	9.84	9.56
180.0	9.11	9.28	9.39	9.56	9.90	10.46	10.86	11.53	11.98
225.0	9.39	9.62	9.62	9.73	9.79	9.68	9.73	9.56	9.45
270.0	8.89	8.94	8.94	9.00	8.78	8.94	8.72	8.83	8.94
315.0	9.06	9.06	9.11	9.11	9.28	9.23	9.23	9.34	9.51
360.0	10.46	10.52	10.46	10.52	10.46	10.35	10.29	10.13	10.13

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.90	9.73	9.62	9.23	9.11	8.89	8.72	8.78	8.38
45.0	10.52	11.19	12.32	13.56	14.57	16.76	17.72	17.78	16.93
90.0	8.83	9.11	8.78	8.38	8.21	7.93	7.71	7.59	7.31
135.0	9.51	9.56	9.34	9.39	9.11	8.72	8.61	8.16	7.93
180.0	12.77	13.95	14.91	16.82	18.17	19.29	20.25	20.76	21.15
225.0	9.51	9.39	9.34	9.11	8.89	8.55	8.16	7.99	7.65
270.0	8.89	9.00	8.83	9.00	9.23	9.06	9.00	8.83	8.55
315.0	9.62	10.13	10.58	11.08	11.42	11.70	11.81	11.59	11.08
360.0	9.90	9.73	9.62	9.23	9.11	8.89	8.72	8.78	8.38

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.16	7.93	7.26	7.09	6.81	6.69	6.64	6.19	6.08
45.0	16.09	15.08	13.89	13.84	12.26	11.08	10.80	10.24	10.07
90.0	6.86	6.58	6.24	5.85	5.57	5.34	5.34	5.40	4.67
135.0	7.71	7.43	7.31	6.97	6.81	6.47	6.08	6.02	5.85
180.0	21.26	20.98	20.53	19.58	18.23	17.21	16.37	15.24	14.23
225.0	7.20	7.09	6.86	6.64	6.30	6.02	5.91	5.74	5.68
270.0	8.49	7.88	7.54	7.31	6.98	6.86	6.36	6.13	6.02
315.0	10.63	10.07	9.62	8.94	8.21	7.88	7.43	7.14	6.75
360.0	8.16	7.93	7.26	7.09	6.81	6.69	6.64	6.19	6.08

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.63	5.18	5.01	4.67	4.33	4.05	3.71	3.43	3.26
45.0	8.66	7.37	7.09	6.02	5.34	4.78	4.39	3.94	3.66
90.0	4.39	4.11	3.71	3.04	2.70	2.64	2.31	2.19	1.86
135.0	5.57	5.46	5.01	4.61	4.33	3.99	3.71	3.38	3.21
180.0	13.16	11.87	10.58	9.96	8.72	7.71	6.75	5.96	5.06
225.0	5.18	4.95	4.61	4.39	4.05	3.77	3.49	3.21	3.04
270.0	5.68	5.34	4.95	4.61	4.67	3.83	3.60	3.43	3.26
315.0	6.08	5.74	5.40	4.89	4.44	4.16	3.83	3.54	3.32
360.0	5.63	5.18	5.01	4.67	4.33	4.05	3.71	3.43	3.26

Intensity data(cd)

C/γ(°)	90.0
0.0	3.15
45.0	3.26
90.0	2.03
135.0	3.09
180.0	4.61
225.0	2.93
270.0	2.70
315.0	3.26
360.0	3.15