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NT

Client:
LumCAT: 2-2688-L
Luminaire: 92.70.411.00
Report No: 2024424-B013
Ballast type: AC

Test No: 2024424-C013	Voltage(V): 36.470
LampCAT: NICHIA NFCWJ130B-V3	Current(A): 0.576
Lamp flux(lm): 2924.0	Power (W): 21.079
Number of Lamps: 1	PF: 0.000
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2385.96, Efficiency(%): 81.60% , Luminous Efficacy(lm/W): 113.19
Central intensity(cd): 5770.816, Maximum intensity(cd): 5773.304
Angle of maximum intensity: C=0.0 γ=1.0
Beam Angle(50%Imax): [C0/180]Total=35.4
[C90/270]Total=35.4
Field angle(10%Imax): [C0/180]Total=61.2
[C90/270]Total=61.2
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.60%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.574%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5770.816	0.000	0	0.00%	0.00%
1.0	5773.303	5.524	5.524	0.19%	0.23%
2.0	5767.890	16.565	22.089	0.57%	0.93%
3.0	5741.774	27.527	49.616	0.94%	2.08%
4.0	5700.955	38.302	87.918	1.31%	3.68%
5.0	5639.726	48.787	136.705	1.67%	5.73%
6.0	5544.407	58.776	195.481	2.01%	8.19%
7.0	5406.367	67.971	263.452	2.32%	11.04%
8.0	5223.118	76.073	339.526	2.60%	14.23%
9.0	5011.706	82.948	422.473	2.84%	17.71%
10.0	4795.026	88.747	511.221	3.04%	21.43%
11.0	4589.759	93.773	604.994	3.21%	25.36%
12.0	4343.891	97.658	702.651	3.34%	29.45%
13.0	4094.439	100.142	802.793	3.42%	33.65%
14.0	3827.869	101.405	904.198	3.47%	37.90%
15.0	3562.177	101.454	1005.652	3.47%	42.15%
16.0	3295.899	100.490	1106.142	3.44%	46.36%
17.0	3042.204	98.701	1204.843	3.38%	50.50%
18.0	2809.504	96.482	1301.325	3.30%	54.54%
19.0	2556.687	93.361	1394.686	3.19%	58.45%
20.0	2328.669	89.416	1484.102	3.06%	62.20%
21.0	2099.041	85.021	1569.123	2.91%	65.76%
22.0	1877.607	79.912	1649.035	2.73%	69.11%
23.0	1692.895	74.919	1723.954	2.56%	72.25%
24.0	1453.684	68.796	1792.749	2.35%	75.14%
25.0	1278.263	62.119	1854.868	2.12%	77.74%
26.0	1178.058	57.982	1912.849	1.98%	80.17%
27.0	1035.029	54.144	1966.993	1.85%	82.44%
28.0	889.864	48.734	2015.727	1.67%	84.48%
29.0	754.545	43.022	2058.75	1.47%	86.29%
30.0	639.271	37.633	2096.382	1.29%	87.86%
31.0	528.890	32.508	2128.891	1.11%	89.23%
32.0	442.372	27.825	2156.716	0.95%	90.39%
33.0	359.811	23.633	2180.349	0.81%	91.38%
34.0	294.215	19.793	2200.142	0.68%	92.21%
35.0	256.950	17.117	2217.259	0.59%	92.93%
36.0	202.934	14.643	2231.901	0.50%	93.54%
37.0	144.229	11.323	2243.224	0.39%	94.02%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	115.136	8.657	2251.881	0.30%	94.38%
39.0	92.568	7.089	2258.971	0.24%	94.68%
40.0	76.972	5.913	2264.884	0.20%	94.93%
41.0	65.304	5.066	2269.95	0.17%	95.14%
42.0	57.667	4.468	2274.418	0.15%	95.33%
43.0	52.224	4.071	2278.488	0.14%	95.50%
44.0	48.391	3.797	2282.286	0.13%	95.65%
45.0	45.084	3.592	2285.878	0.12%	95.81%
46.0	42.517	3.426	2289.304	0.12%	95.95%
47.0	40.315	3.294	2292.599	0.11%	96.09%
48.0	38.413	3.183	2295.781	0.11%	96.22%
49.0	36.694	3.084	2298.865	0.11%	96.35%
50.0	35.172	2.996	2301.862	0.10%	96.48%
51.0	33.833	2.920	2304.781	0.10%	96.60%
52.0	32.656	2.853	2307.634	0.10%	96.72%
53.0	31.397	2.786	2310.421	0.10%	96.83%
54.0	30.256	2.717	2313.138	0.09%	96.95%
55.0	29.152	2.652	2315.79	0.09%	97.06%
56.0	28.127	2.588	2318.378	0.09%	97.17%
57.0	27.052	2.523	2320.901	0.09%	97.27%
58.0	26.028	2.455	2323.356	0.08%	97.38%
59.0	25.026	2.387	2325.743	0.08%	97.48%
60.0	24.162	2.324	2328.066	0.08%	97.57%
61.0	23.350	2.267	2330.334	0.08%	97.67%
62.0	22.458	2.207	2332.541	0.08%	97.76%
63.0	21.763	2.151	2334.692	0.07%	97.85%
64.0	21.112	2.104	2336.796	0.07%	97.94%
65.0	20.607	2.065	2338.86	0.07%	98.03%
66.0	20.337	2.043	2340.903	0.07%	98.11%
67.0	20.359	2.046	2342.949	0.07%	98.20%
68.0	20.622	2.076	2345.025	0.07%	98.28%
69.0	21.192	2.133	2347.158	0.07%	98.37%
70.0	21.836	2.210	2349.368	0.08%	98.47%
71.0	22.656	2.300	2351.668	0.08%	98.56%
72.0	23.416	2.396	2354.064	0.08%	98.66%
73.0	23.848	2.472	2356.535	0.08%	98.77%
74.0	24.170	2.524	2359.06	0.09%	98.87%
75.0	24.148	2.553	2361.612	0.09%	98.98%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	23.489	2.529	2364.141	0.09%	99.09%
77.0	22.217	2.437	2366.578	0.08%	99.19%
78.0	20.388	2.281	2368.859	0.08%	99.28%
79.0	18.164	2.071	2370.93	0.07%	99.37%
80.0	15.947	1.839	2372.769	0.06%	99.45%
81.0	13.987	1.619	2374.388	0.06%	99.51%
82.0	13.336	1.482	2375.87	0.05%	99.58%
83.0	13.021	1.433	2377.302	0.05%	99.64%
84.0	12.912	1.413	2378.715	0.05%	99.70%
85.0	12.209	1.371	2380.086	0.05%	99.75%
86.0	11.273	1.284	2381.37	0.04%	99.81%
87.0	10.651	1.200	2382.57	0.04%	99.86%
88.0	10.373	1.152	2383.721	0.04%	99.91%
89.0	10.205	1.128	2384.849	0.04%	99.95%
90.0	10.081	1.112	2385.961	0.04%	100.00%

Zonal flux distribution table

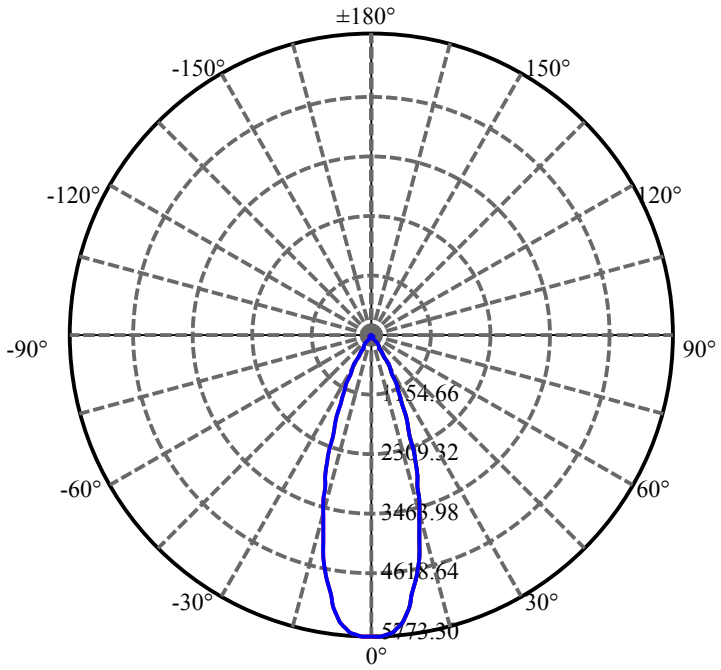
ZONAL LUMEN SUMMARY

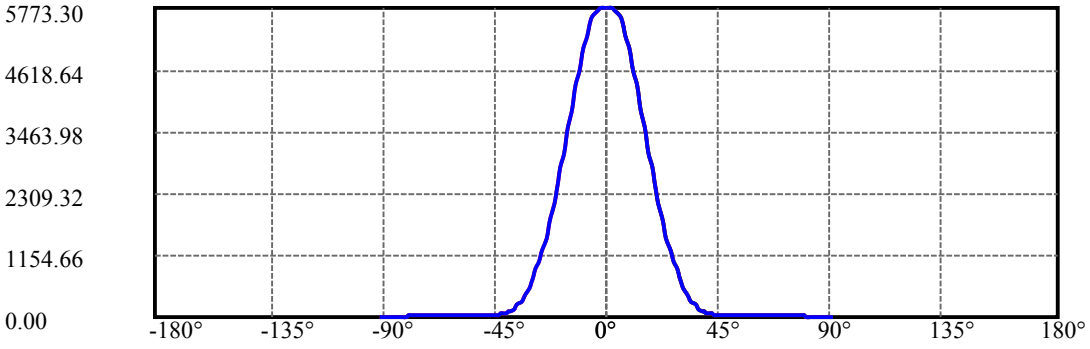
Zone	Lumens	%Lamp	%Fixt
0-30	2096.38	71.70%	87.86%
0-40	2264.88	77.46%	94.93%
0-60	2328.07	79.62%	97.57%
0-90	2384.85	81.56%	99.95%
0-120	2384.85	81.56%	99.95%
0-180	2385.96	81.60%	100.00%
60-90	56.78	1.94%	2.38%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.93	1908.77	65.28%	80.00%

ZONAL LUMEN SUMMARY

0-10	511.22
10-20	972.88
20-30	612.28
30-40	168.50
40-50	36.98
50-60	26.20
60-70	21.30
70-80	23.40
80-90	12.08
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):

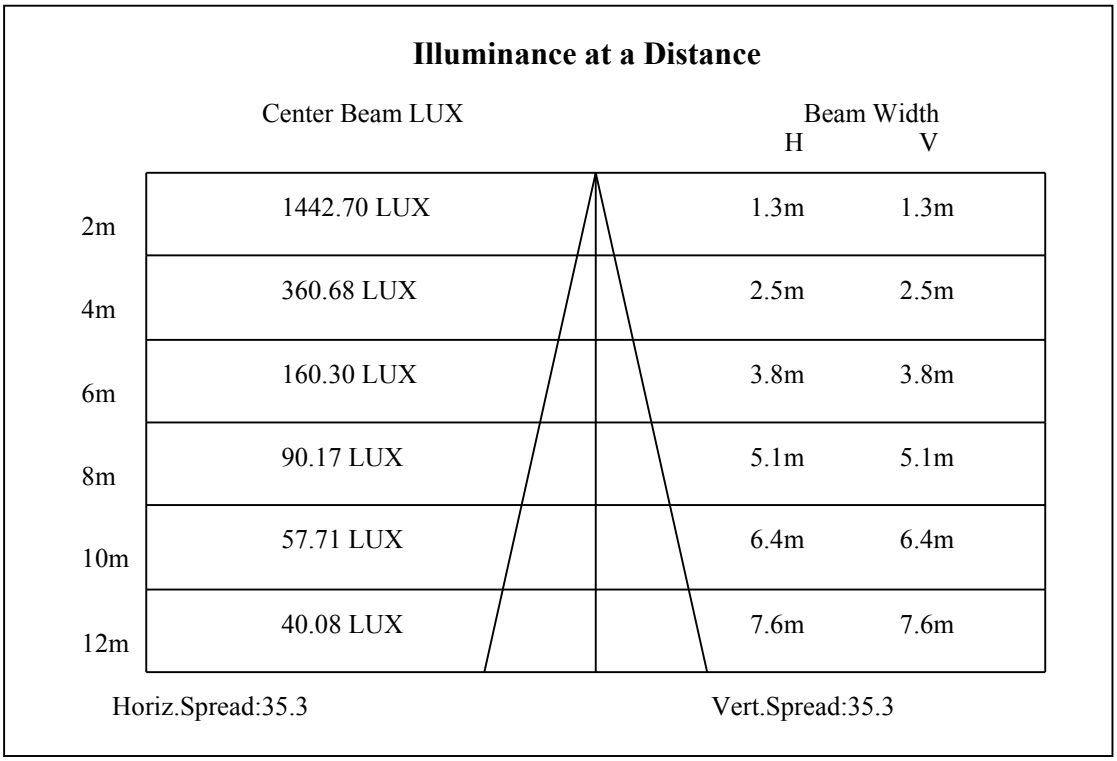
C0/C180:

C90/C270:

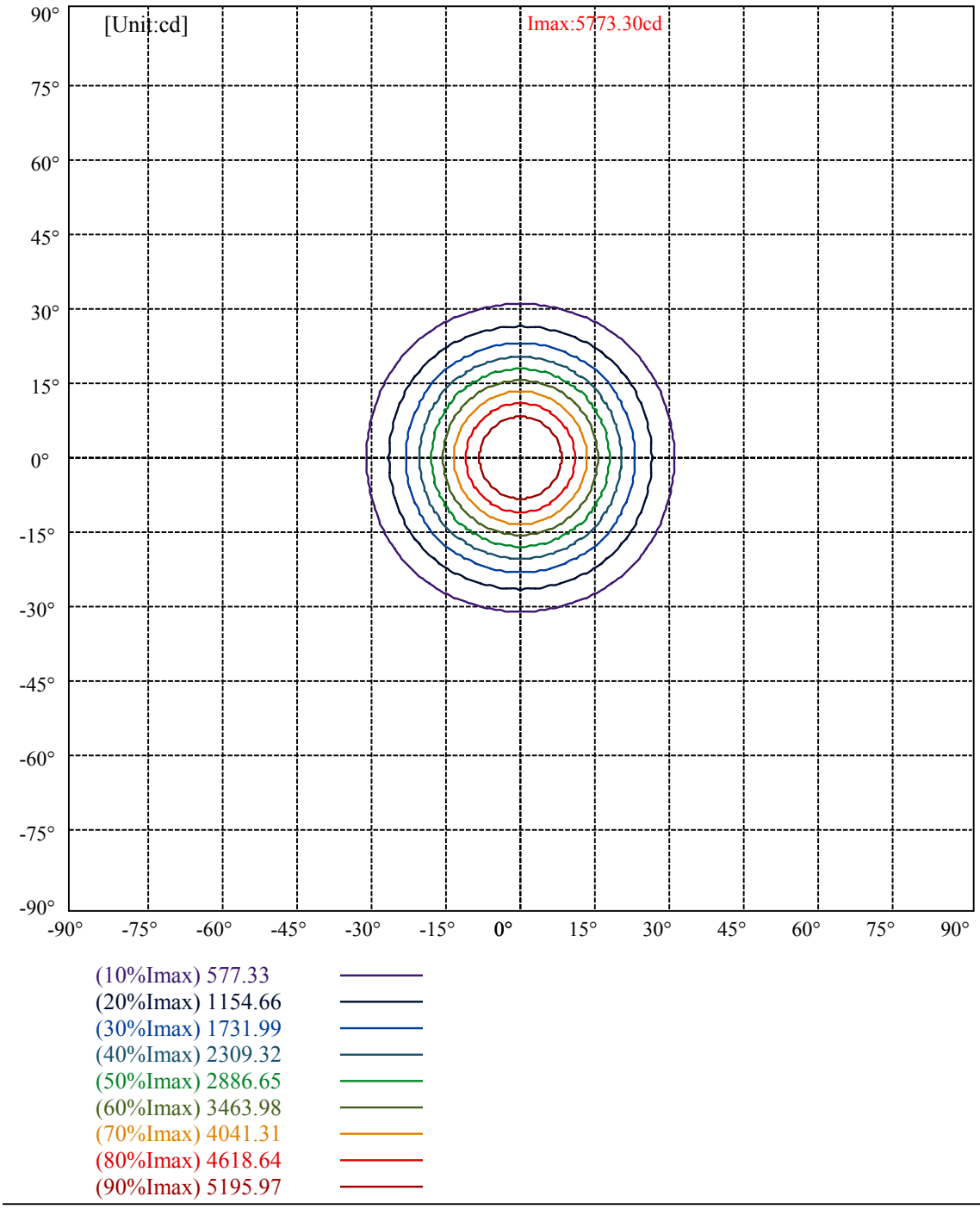
Field angle(10%Imax):C0/180Left:31.6 Right:29.6
:C90/270Left:31.6 Right:29.6

Beam Angle(50%Imax):C0/180Left:18.7 Right:16.7
:C90/270Left:18.7 Right:16.7

Lux distance Curve



ISO-Intensity(V-H)

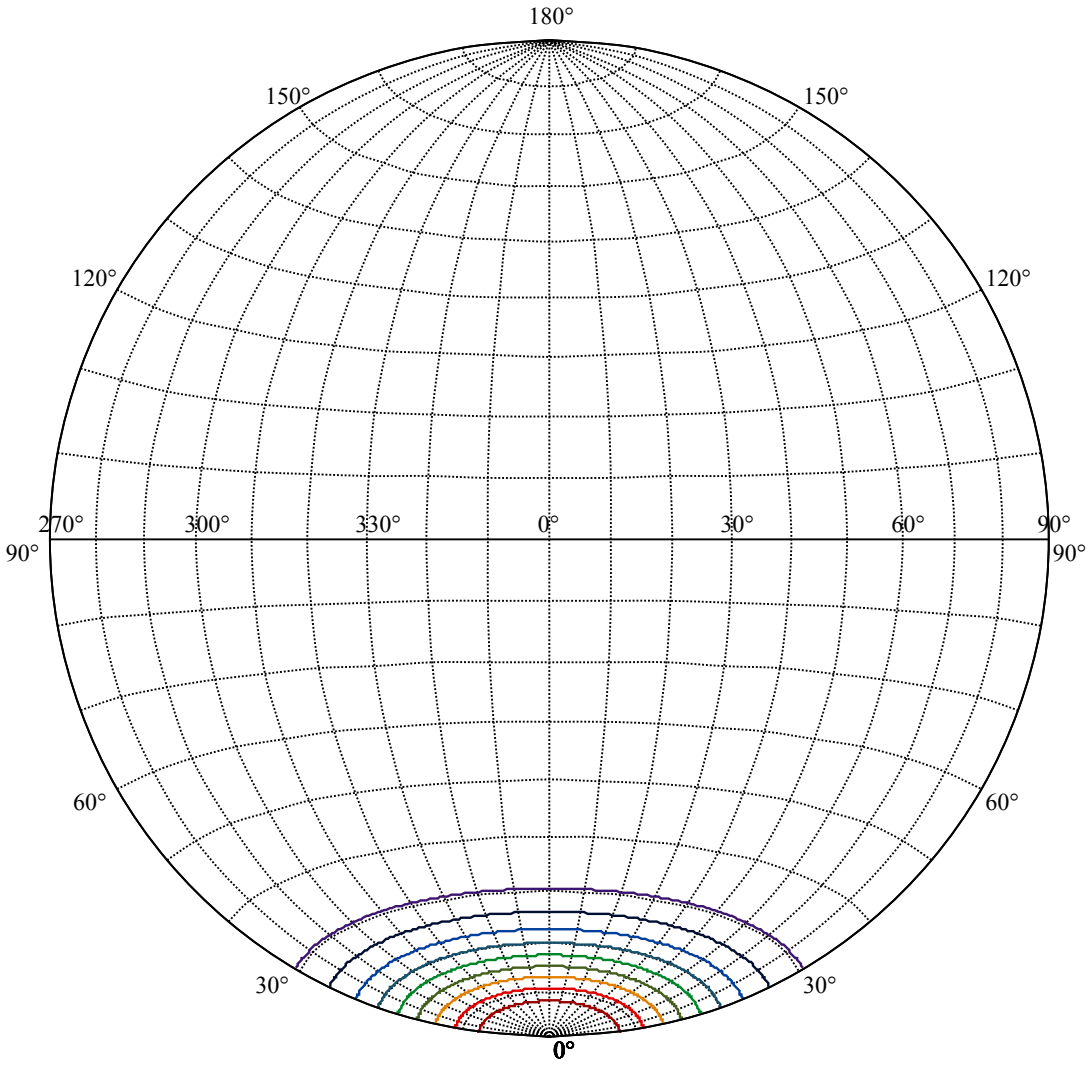


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/24
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

ISO candela diagram on circular web



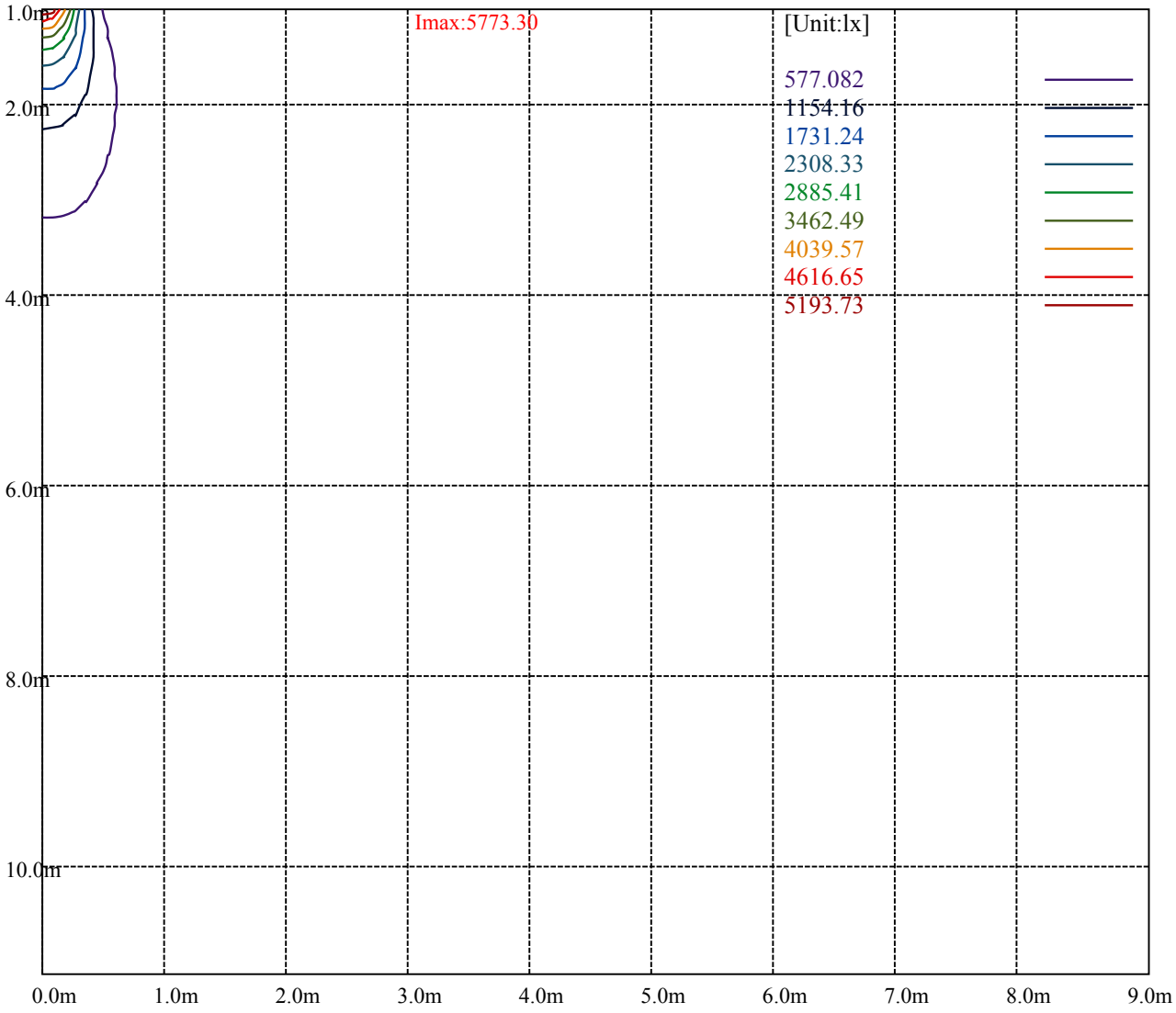
[Unit:cd]

Imax:5773.30

(10%Imax) 577.33
(20%Imax) 1154.66
(30%Imax) 1731.99
(40%Imax) 2309.32
(50%Imax) 2886.65
(60%Imax) 3463.98
(70%Imax) 4041.31
(80%Imax) 4618.64
(90%Imax) 5195.97

Equipment: GMS1980	Date: 2024/4/24	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/24
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

NT 2-2688-L

Luminance Limitting Curve(no luminous side)

Luminance Table

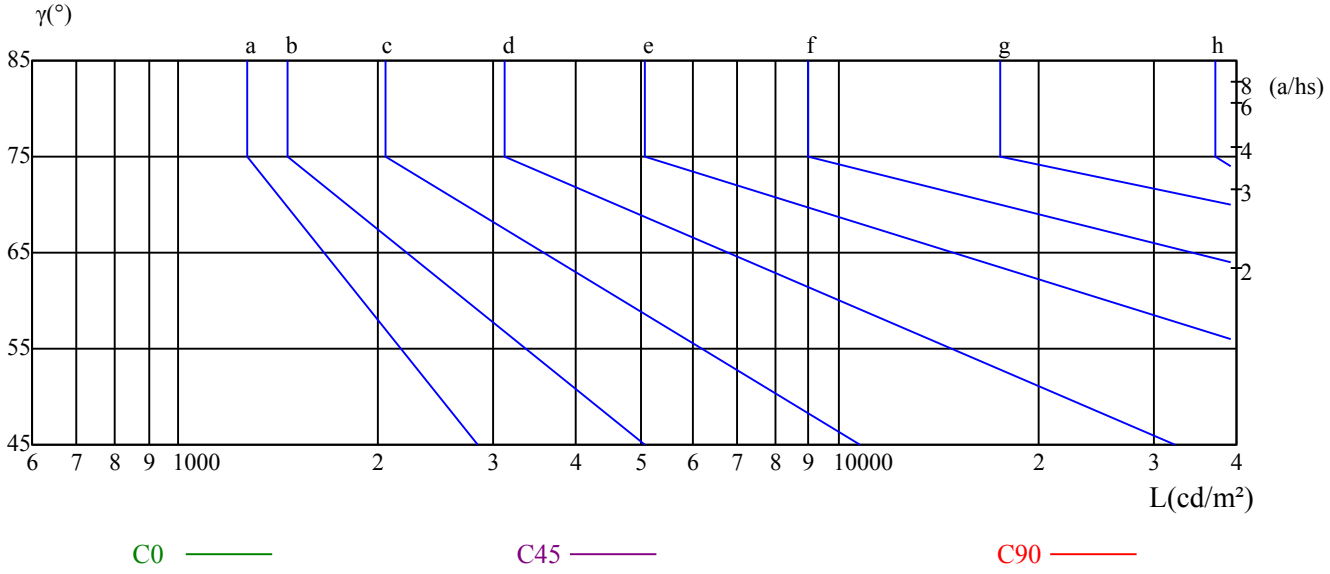
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

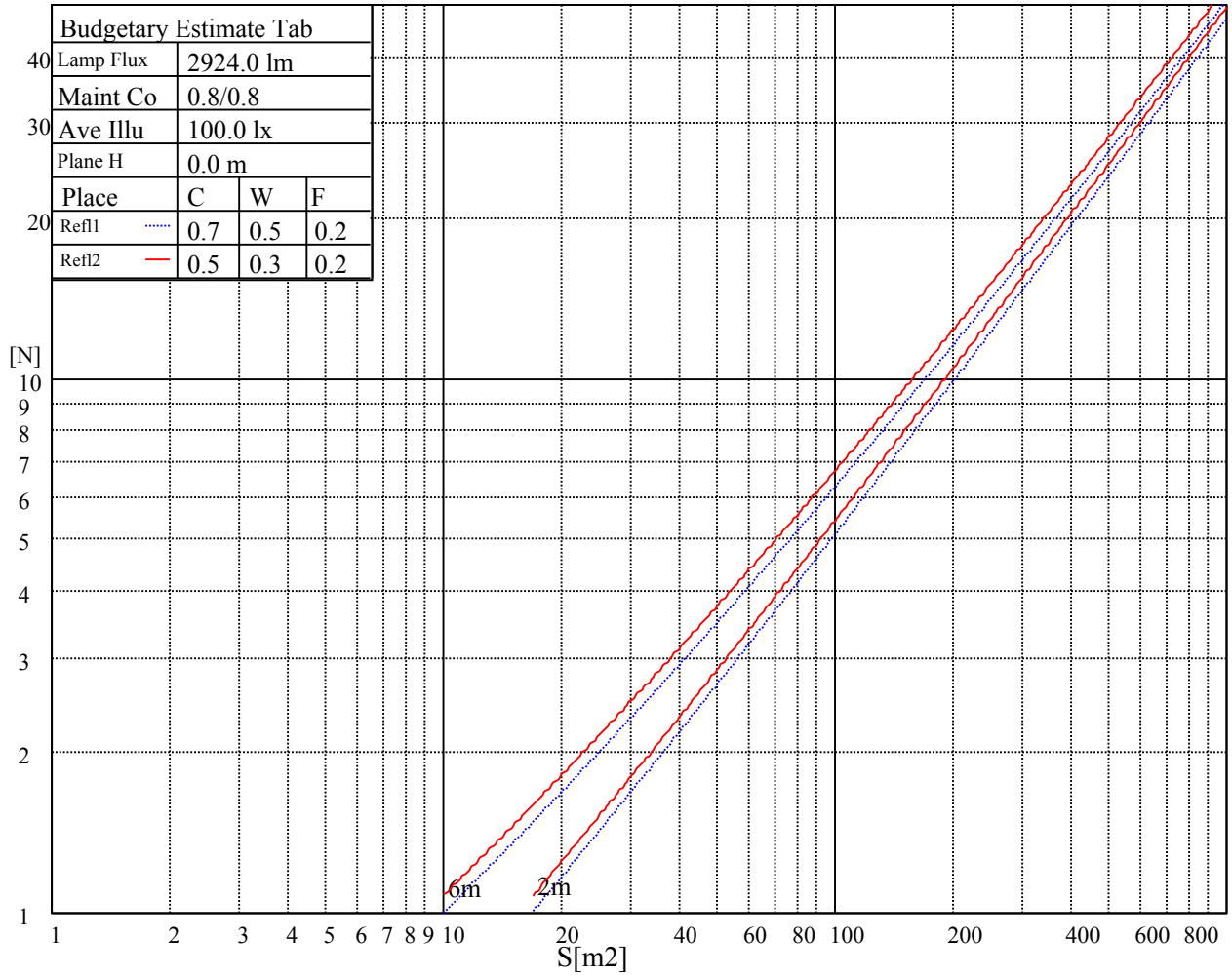
Glare Table

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

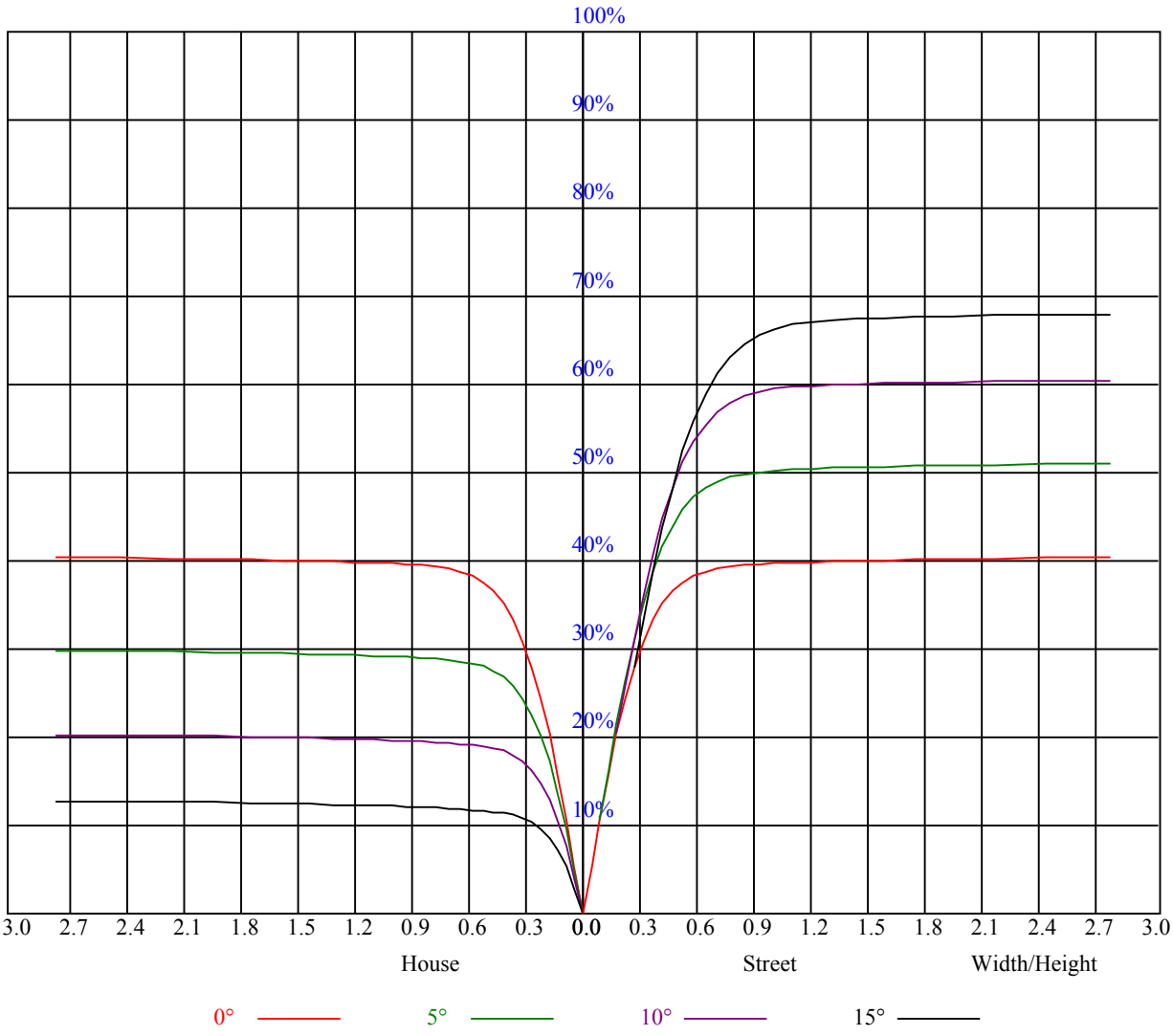


Equipment: GMS1980 Date: 2024/4/24 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

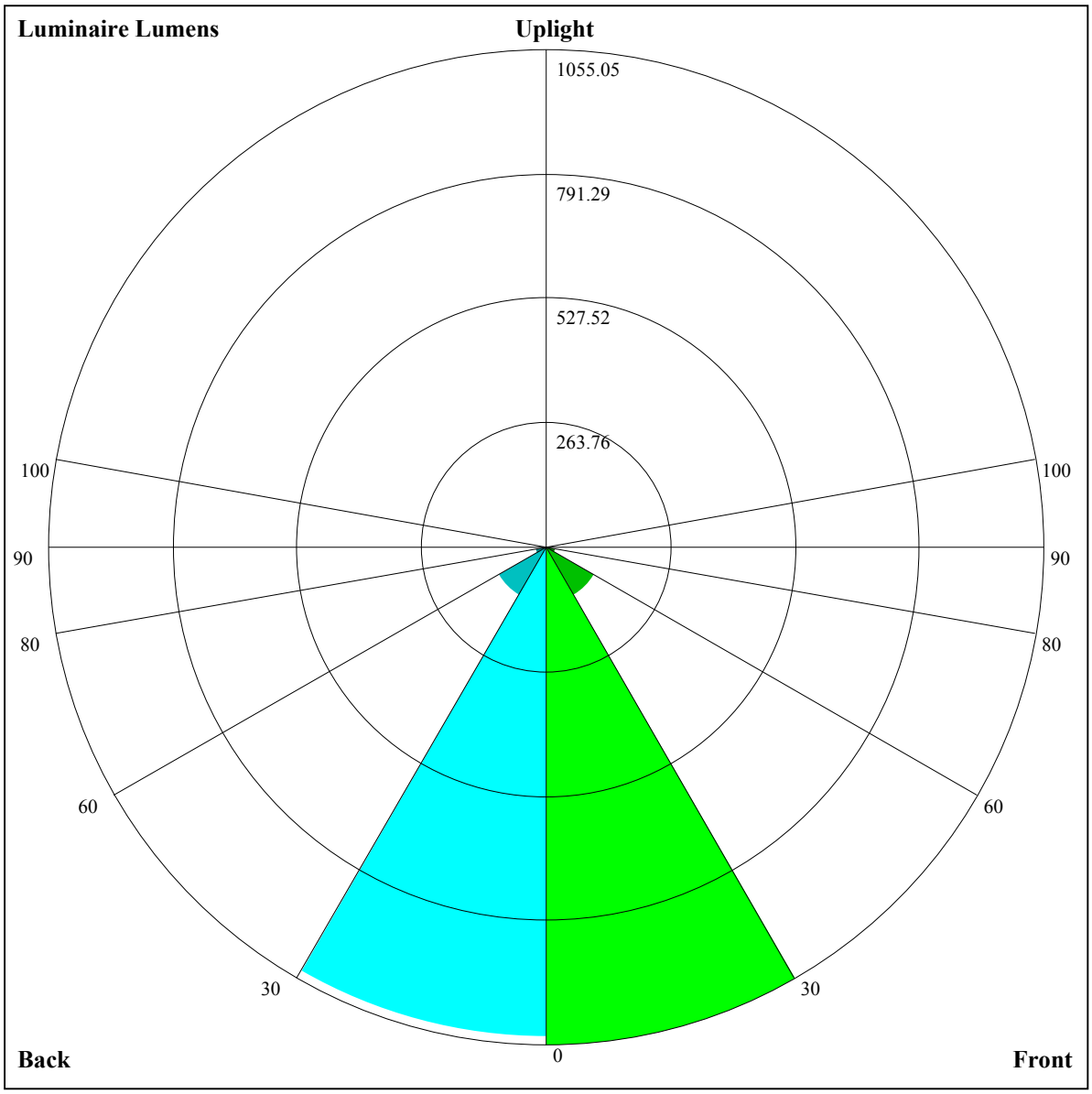
Utilization factor table for indoor luminaire

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	0.97	0.97	0.97	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.82
1	0.91	0.89	0.87	0.89	0.87	0.86	0.86	0.84	0.83	0.83	0.82	0.81	0.80	0.79	0.78	0.77
2	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.77	0.79	0.77	0.76	0.77	0.76	0.74	0.73
3	0.81	0.77	0.74	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.73	0.72	0.74	0.72	0.71	0.69
4	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.66
5	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
6	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
7	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.58
8	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.58	0.56	0.55
9	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.54	0.59	0.56	0.54	0.53
10	0.59	0.55	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.58	0.55	0.52	0.57	0.54	0.52	0.51

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2024/4/24	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65



Luminaire Lumens:
FL=1055.05,FM=119.17,FH=22.09,FVH=6.71
BL=1039.33,BM=116.37,BH=22.71,BVH=6.63
UL=0,UH=0

BUG Rating:B3-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	5770.96	5776.23	5778.57	5747.55	5703.66	5633.43	5543.31	5400.51	5219.10
45.0	5763.35	5778.57	5800.22	5795.54	5763.35	5732.92	5676.74	5529.26	5363.65
90.0	5783.84	5805.49	5783.25	5752.24	5706.00	5610.61	5437.38	5257.13	5075.13
135.0	5765.11	5782.08	5793.20	5758.09	5723.56	5673.81	5579.01	5436.21	5206.81
180.0	5770.96	5775.06	5769.79	5737.60	5686.10	5638.70	5558.53	5417.49	5234.90
225.0	5763.35	5758.09	5734.68	5697.22	5649.82	5570.23	5439.14	5275.28	5082.15
270.0	5783.84	5769.21	5745.80	5741.70	5704.25	5640.46	5597.15	5526.92	5365.99
315.0	5765.11	5741.70	5737.60	5704.25	5670.89	5617.63	5524.00	5408.12	5237.24
360.0	5770.96	5776.23	5778.57	5747.55	5703.66	5633.43	5543.31	5400.51	5219.10

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4965.69	4767.89	4571.84	4351.21	4050.40	3805.19	3554.13	3247.47	3025.09
45.0	5171.69	4941.11	4750.33	4547.84	4263.42	4020.55	3758.37	3441.77	3202.41
90.0	4842.80	4656.11	4440.75	4134.67	3880.10	3630.21	3328.23	3093.56	2868.83
135.0	5016.61	4829.92	4628.60	4350.04	4120.04	3812.21	3551.79	3304.24	3012.80
180.0	5002.56	4810.02	4612.80	4354.72	4106.00	3862.54	3606.80	3301.31	3020.40
225.0	4867.37	4614.56	4396.27	4170.37	3933.36	3624.36	3381.49	3150.91	2920.92
270.0	5193.35	4982.66	4768.47	4506.29	4300.29	4065.62	3756.62	3507.31	3263.86
315.0	5033.58	4757.94	4549.01	4335.99	4101.90	3802.27	3559.98	3320.63	3023.33
360.0	4965.69	4767.89	4571.84	4351.21	4050.40	3805.19	3554.13	3247.47	3025.09

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2804.46	2524.13	2299.41	2086.97	1841.76	1665.02	1497.06	1150.38	1150.38
45.0	2975.34	2757.05	2477.90	2256.69	2047.18	1854.05	1634.59	1470.73	1271.17
90.0	2642.93	2365.54	2154.27	1958.81	1729.98	1559.10	1138.79	1138.79	1068.45
135.0	2791.00	2568.61	2352.66	2093.41	1897.36	1718.28	1550.32	1351.34	1198.60
180.0	2802.12	2563.34	2330.42	2067.66	1870.44	1692.53	1526.33	1334.37	1188.07
225.0	2637.08	2410.02	2196.99	1941.25	1751.64	1538.03	1150.73	1150.73	1079.56
270.0	3027.43	2748.86	2516.53	2292.38	2030.20	1839.42	1619.96	1463.12	1301.60
315.0	2795.68	2515.94	2301.16	2095.16	1852.30	1676.73	1511.69	1166.65	1166.65
360.0	2804.46	2524.13	2299.41	2086.97	1841.76	1665.02	1497.06	1150.38	1150.38

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1009.16	877.60	754.65	618.64	527.35	444.89	351.84	287.11	232.63
45.0	1157.63	977.38	814.11	698.23	596.40	507.45	405.03	333.05	300.28
90.0	930.68	801.88	660.66	563.04	453.84	374.90	304.96	244.86	194.94
135.0	1052.88	883.16	757.34	647.32	530.27	443.66	347.68	297.94	297.94
180.0	1044.69	918.28	762.61	645.56	522.66	444.24	370.51	303.79	303.79
225.0	908.44	783.50	668.50	568.25	460.28	382.62	315.26	257.21	197.98
270.0	1150.61	983.82	852.15	722.23	611.62	497.50	416.15	344.17	296.77
315.0	1026.13	893.29	766.35	650.89	528.69	443.72	367.05	285.59	231.28
360.0	1009.16	877.60	754.65	618.64	527.35	444.89	351.84	287.11	232.63

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	177.97	143.67	116.34	90.65	76.25	65.90	57.18	52.38	48.69
45.0	300.28	161.87	130.04	105.11	86.61	70.58	61.98	55.83	50.39
90.0	146.72	118.16	95.92	76.20	65.66	58.41	53.14	48.28	45.41
135.0	179.96	136.94	110.96	91.12	76.78	64.67	58.11	53.31	49.57
180.0	185.46	150.05	115.23	95.57	79.65	66.66	59.17	53.72	49.86
225.0	159.36	128.69	99.43	82.11	69.29	58.87	53.31	48.16	45.06
270.0	296.77	171.82	137.70	105.34	86.38	72.57	60.80	54.54	50.15
315.0	176.97	142.62	115.46	94.46	75.14	64.78	57.64	51.56	47.99
360.0	177.97	143.67	116.34	90.65	76.25	65.90	57.18	52.38	48.69

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	45.65	42.60	40.44	38.68	36.69	35.23	34.00	32.83	31.43
45.0	47.11	43.83	41.49	39.50	37.40	35.87	34.41	33.24	31.95
90.0	42.31	40.20	38.51	36.64	35.17	33.94	32.77	31.49	30.37
135.0	45.88	43.54	41.43	39.27	37.69	35.82	34.59	33.42	32.36
180.0	46.06	43.54	41.32	39.15	37.57	36.11	34.41	33.24	32.07
225.0	42.60	40.38	38.10	36.52	35.11	33.77	32.36	31.25	30.14
270.0	46.00	43.37	41.08	39.09	36.99	35.46	34.18	32.95	31.49
315.0	45.06	42.66	40.15	38.45	36.93	35.17	33.94	32.83	31.37
360.0	45.65	42.60	40.44	38.68	36.69	35.23	34.00	32.83	31.43

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	30.31	29.03	28.03	26.98	25.93	24.87	24.05	23.17	22.36
45.0	30.84	29.73	28.73	27.51	26.57	25.57	24.52	23.70	22.77
90.0	29.38	28.44	27.27	26.28	25.46	24.46	23.64	22.88	22.18
135.0	31.02	29.96	28.97	28.03	26.80	25.87	25.05	24.29	23.23
180.0	30.67	29.61	28.68	27.62	26.57	25.34	24.52	23.70	22.65
225.0	29.09	27.97	27.04	25.75	24.81	23.99	23.06	22.18	21.42
270.0	30.43	29.38	28.15	27.15	25.98	25.05	24.17	23.41	22.41
315.0	30.31	29.09	28.15	27.10	26.10	25.05	24.29	23.47	22.65
360.0	30.31	29.03	28.03	26.98	25.93	24.87	24.05	23.17	22.36

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	21.54	20.89	20.42	20.72	21.42	22.24	23.64	24.87	26.22
45.0	21.95	21.30	20.48	19.84	19.31	18.84	18.38	17.79	17.38
90.0	21.59	21.07	20.54	20.48	20.54	21.48	22.36	23.47	24.64
135.0	22.65	21.89	21.42	20.83	20.66	20.78	21.77	22.77	24.35
180.0	22.00	21.42	21.71	22.36	23.47	24.52	25.69	26.86	28.44
225.0	20.72	20.13	19.31	18.79	18.26	17.73	17.21	16.80	16.33
270.0	21.65	21.01	20.37	19.66	19.37	19.43	19.78	20.60	21.42
315.0	22.00	21.19	20.60	20.01	19.84	19.96	20.72	21.54	22.47
360.0	21.54	20.89	20.42	20.72	21.42	22.24	23.64	24.87	26.22

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	26.98	26.98	26.57	25.93	24.99	24.11	22.88	19.49	16.04
45.0	17.03	16.74	16.27	15.92	15.63	15.39	15.16	14.86	14.69
90.0	25.93	26.86	27.56	27.51	26.10	23.06	19.37	17.21	15.22
135.0	25.52	26.57	27.86	29.03	29.09	28.27	24.93	21.54	18.02
180.0	29.44	29.79	29.67	28.91	28.15	27.27	25.98	22.71	19.25
225.0	15.98	15.51	15.22	14.92	14.57	14.16	13.87	13.58	13.34
270.0	22.71	23.82	24.87	25.46	24.81	23.23	21.24	19.02	16.56
315.0	23.76	24.52	25.34	25.52	24.58	22.24	19.66	16.91	14.46
360.0	26.98	26.98	26.57	25.93	24.99	24.11	22.88	19.49	16.04

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.28	12.47	12.17	11.94	11.70	11.12	10.71	10.42	10.18
45.0	14.51	14.40	14.22	14.05	13.99	12.99	10.89	10.48	10.42
90.0	13.99	14.05	14.10	14.22	11.47	11.06	10.48	10.24	10.07
135.0	14.28	13.52	12.99	12.87	12.00	10.89	10.53	10.30	10.01
180.0	14.92	13.11	12.35	12.11	11.53	10.89	10.53	10.42	10.42
225.0	13.11	12.87	12.70	12.58	11.18	10.77	10.42	10.36	10.07
270.0	14.05	13.11	12.76	12.64	12.70	11.35	10.94	10.48	10.30
315.0	13.75	13.17	12.87	12.87	13.11	11.12	10.71	10.30	10.18
360.0	13.28	12.47	12.17	11.94	11.70	11.12	10.71	10.42	10.18

Intensity data(cd)

C/γ(°)	90.0
0.0	10.18
45.0	10.07
90.0	10.07
135.0	10.01
180.0	10.12
225.0	10.12
270.0	10.07
315.0	10.01
360.0	10.18