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

NT

Client:
LumCAT: 2-2680-L
Luminaire: 92.70.411.00
Report No: 2024423-B013
Ballast type: AC

Test No: 2024423-C013	Voltage(V): 36.240
LampCAT: NICHIA NFCWJ130B-V3	Current(A): 0.576
Lamp flux(lm): 2920.0	Power (W): 20.874
Number of Lamps: 1	PF: 0.000
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2415.91, Efficiency(%): 82.74% , Luminous Efficacy(lm/W): 115.74
Central intensity(cd): 5412.805, Maximum intensity(cd): 5412.805
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=37.0
[C90/270]Total=37.0
Field angle(10%Imax): [C0/180]Total=64.8
[C90/270]Total=64.8
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.74%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.077%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5412.805	0.000	0	0.00%	0.00%
1.0	5399.564	5.174	5.174	0.18%	0.21%
2.0	5376.009	15.466	20.64	0.53%	0.85%
3.0	5337.530	25.623	46.263	0.88%	1.91%
4.0	5278.495	35.535	81.798	1.22%	3.39%
5.0	5191.370	45.041	126.839	1.54%	5.25%
6.0	5080.543	53.982	180.821	1.85%	7.48%
7.0	4962.767	62.339	243.159	2.13%	10.06%
8.0	4814.997	69.978	313.137	2.40%	12.96%
9.0	4652.012	76.725	389.862	2.63%	16.14%
10.0	4477.834	82.622	472.484	2.83%	19.56%
11.0	4289.099	87.600	560.083	3.00%	23.18%
12.0	4086.612	91.559	651.642	3.14%	26.97%
13.0	3899.705	94.777	746.419	3.25%	30.90%
14.0	3680.685	97.028	843.448	3.32%	34.91%
15.0	3474.539	98.230	941.678	3.36%	38.98%
16.0	3247.984	98.504	1040.181	3.37%	43.06%
17.0	3047.106	98.031	1138.213	3.36%	47.11%
18.0	2821.282	96.757	1234.97	3.31%	51.12%
19.0	2612.064	94.529	1329.499	3.24%	55.03%
20.0	2385.655	91.472	1420.971	3.13%	58.82%
21.0	2187.995	87.823	1508.794	3.01%	62.45%
22.0	1962.391	83.404	1592.198	2.86%	65.90%
23.0	1780.240	78.531	1670.729	2.69%	69.16%
24.0	1614.255	74.216	1744.945	2.54%	72.23%
25.0	1380.736	68.100	1813.044	2.33%	75.05%
26.0	1248.768	62.070	1875.114	2.13%	77.62%
27.0	1149.279	58.669	1933.783	2.01%	80.04%
28.0	1023.346	55.006	1988.789	1.88%	82.32%
29.0	894.392	50.173	2038.962	1.72%	84.40%
30.0	783.382	45.300	2084.262	1.55%	86.27%
31.0	672.153	40.505	2124.767	1.39%	87.95%
32.0	579.080	35.846	2160.614	1.23%	89.43%
33.0	484.259	31.326	2191.94	1.07%	90.73%
34.0	407.543	26.989	2218.929	0.92%	91.85%
35.0	328.399	22.856	2241.784	0.78%	92.79%
36.0	276.204	19.251	2261.035	0.66%	93.59%
37.0	248.384	17.109	2278.144	0.59%	94.30%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	184.660	14.454	2292.599	0.50%	94.90%
39.0	129.218	10.714	2303.312	0.37%	95.34%
40.0	101.200	8.036	2311.348	0.28%	95.67%
41.0	80.783	6.480	2317.829	0.22%	95.94%
42.0	65.487	5.314	2323.143	0.18%	96.16%
43.0	55.465	4.480	2327.623	0.15%	96.35%
44.0	48.266	3.915	2331.538	0.13%	96.51%
45.0	43.080	3.511	2335.049	0.12%	96.65%
46.0	39.042	3.212	2338.26	0.11%	96.79%
47.0	35.648	2.971	2341.231	0.10%	96.91%
48.0	33.065	2.778	2344.009	0.10%	97.02%
49.0	30.717	2.619	2346.628	0.09%	97.13%
50.0	28.756	2.480	2349.108	0.08%	97.23%
51.0	27.037	2.361	2351.468	0.08%	97.33%
52.0	25.523	2.255	2353.724	0.08%	97.43%
53.0	24.316	2.168	2355.892	0.07%	97.52%
54.0	23.233	2.096	2357.987	0.07%	97.60%
55.0	22.268	2.031	2360.019	0.07%	97.69%
56.0	21.361	1.971	2361.99	0.07%	97.77%
57.0	20.658	1.921	2363.911	0.07%	97.85%
58.0	20.037	1.882	2365.793	0.06%	97.93%
59.0	19.422	1.845	2367.638	0.06%	98.00%
60.0	18.932	1.812	2369.45	0.06%	98.08%
61.0	18.500	1.786	2371.236	0.06%	98.15%
62.0	18.105	1.764	2373	0.06%	98.22%
63.0	17.784	1.745	2374.746	0.06%	98.30%
64.0	17.454	1.729	2376.475	0.06%	98.37%
65.0	17.125	1.711	2378.186	0.06%	98.44%
66.0	16.811	1.693	2379.879	0.06%	98.51%
67.0	16.547	1.677	2381.556	0.06%	98.58%
68.0	16.291	1.663	2383.22	0.06%	98.65%
69.0	16.138	1.654	2384.874	0.06%	98.72%
70.0	16.130	1.657	2386.532	0.06%	98.78%
71.0	16.160	1.669	2388.2	0.06%	98.85%
72.0	16.255	1.685	2389.886	0.06%	98.92%
73.0	16.401	1.708	2391.594	0.06%	98.99%
74.0	16.496	1.729	2393.323	0.06%	99.06%
75.0	16.518	1.744	2395.067	0.06%	99.14%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	16.408	1.748	2396.815	0.06%	99.21%
77.0	16.101	1.733	2398.548	0.06%	99.28%
78.0	15.706	1.703	2400.251	0.06%	99.35%
79.0	15.113	1.656	2401.907	0.06%	99.42%
80.0	14.155	1.578	2403.485	0.05%	99.49%
81.0	12.933	1.465	2404.95	0.05%	99.55%
82.0	12.239	1.365	2406.315	0.05%	99.60%
83.0	11.880	1.311	2407.626	0.04%	99.66%
84.0	11.705	1.285	2408.911	0.04%	99.71%
85.0	11.295	1.255	2410.166	0.04%	99.76%
86.0	10.856	1.211	2411.377	0.04%	99.81%
87.0	10.490	1.168	2412.545	0.04%	99.86%
88.0	10.307	1.139	2413.684	0.04%	99.91%
89.0	10.146	1.121	2414.805	0.04%	99.95%
90.0	10.088	1.109	2415.915	0.04%	100.00%

Zonal flux distribution table

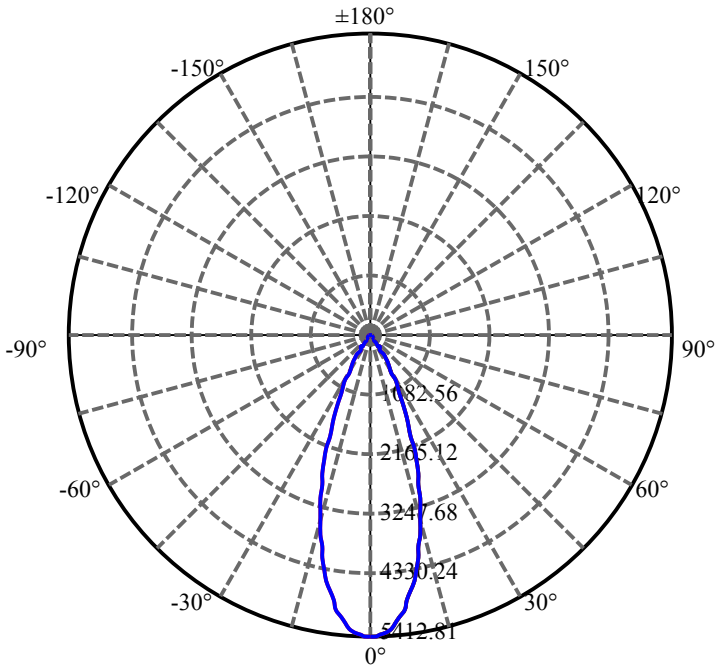
ZONAL LUMEN SUMMARY

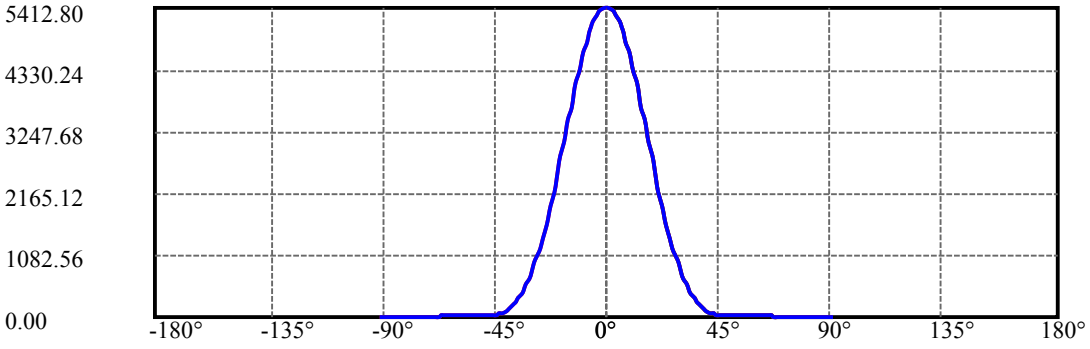
Zone	Lumens	%Lamp	%Fixt
0-30	2084.26	71.38%	86.27%
0-40	2311.35	79.16%	95.67%
0-60	2369.45	81.15%	98.08%
0-90	2414.81	82.70%	99.95%
0-120	2414.81	82.70%	99.95%
0-180	2415.91	82.74%	100.00%
60-90	45.36	1.55%	1.88%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.98	1932.73	66.19%	80.00%

ZONAL LUMEN SUMMARY

0-10	472.48
10-20	948.49
20-30	663.29
30-40	227.09
40-50	37.76
50-60	20.34
60-70	17.08
70-80	16.95
80-90	11.32
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):

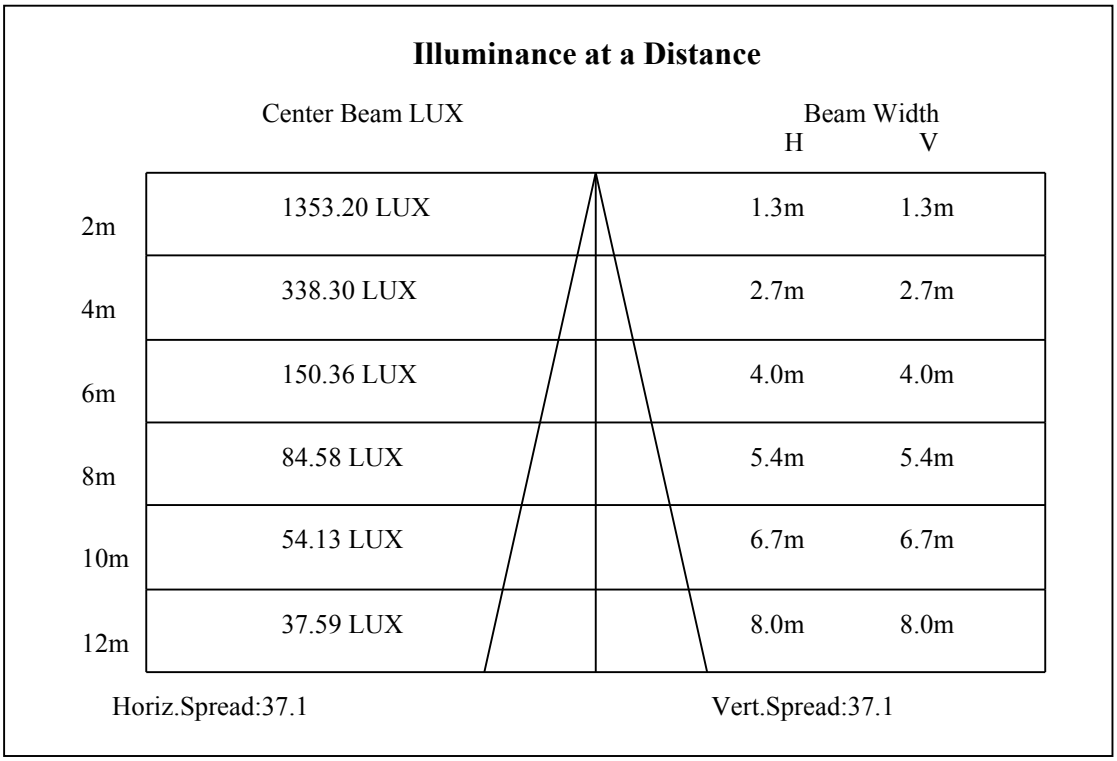
C0/C180:

C90/C270:

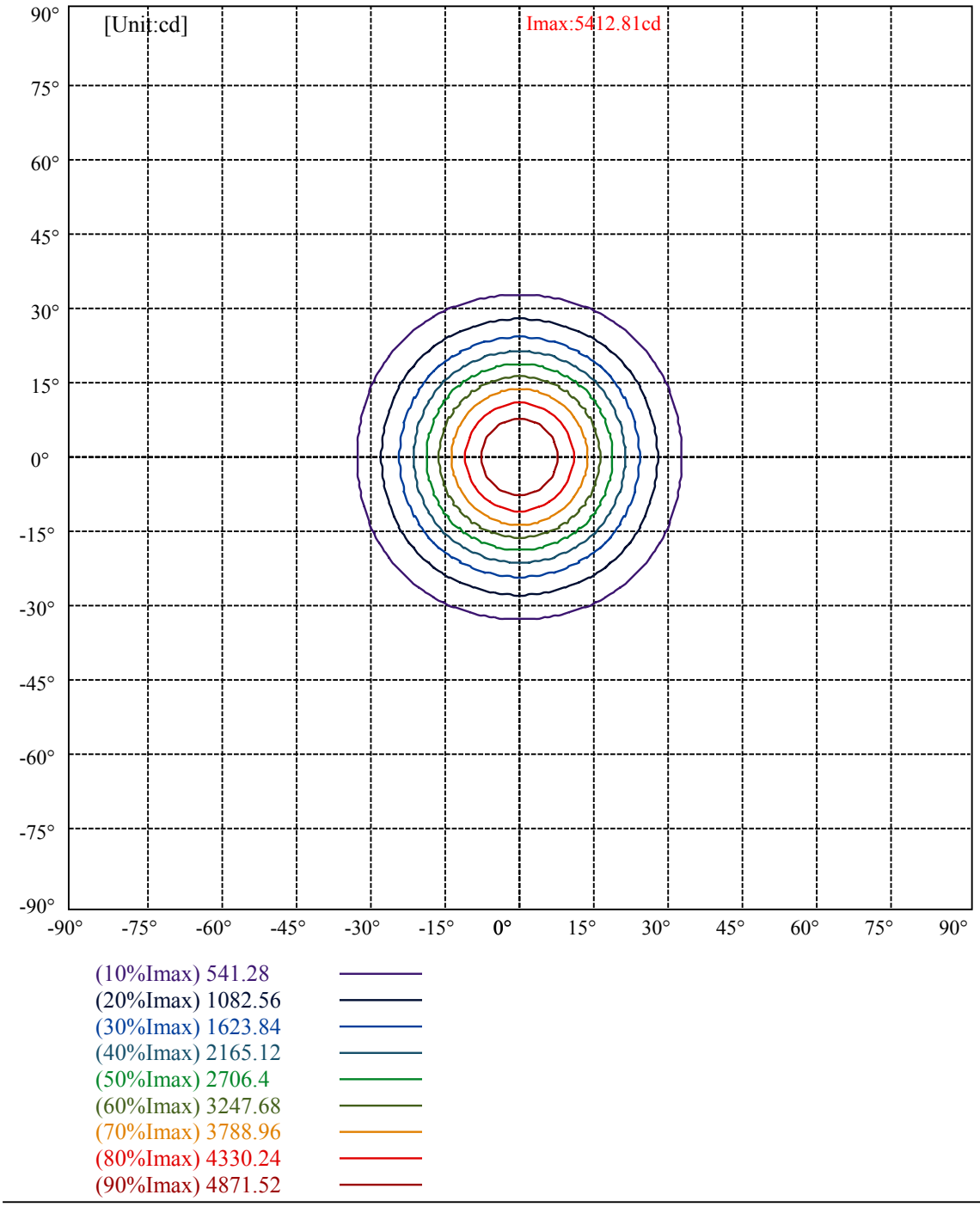
Field angle(10%Imax):C0/180Left:32.4 Right:32.4
:C90/270Left:32.4 Right:32.4

Beam Angle(50%Imax):C0/180Left:18.5 Right:18.5
:C90/270Left:18.5 Right:18.5

Lux distance Curve



ISO-Intensity(V-H)

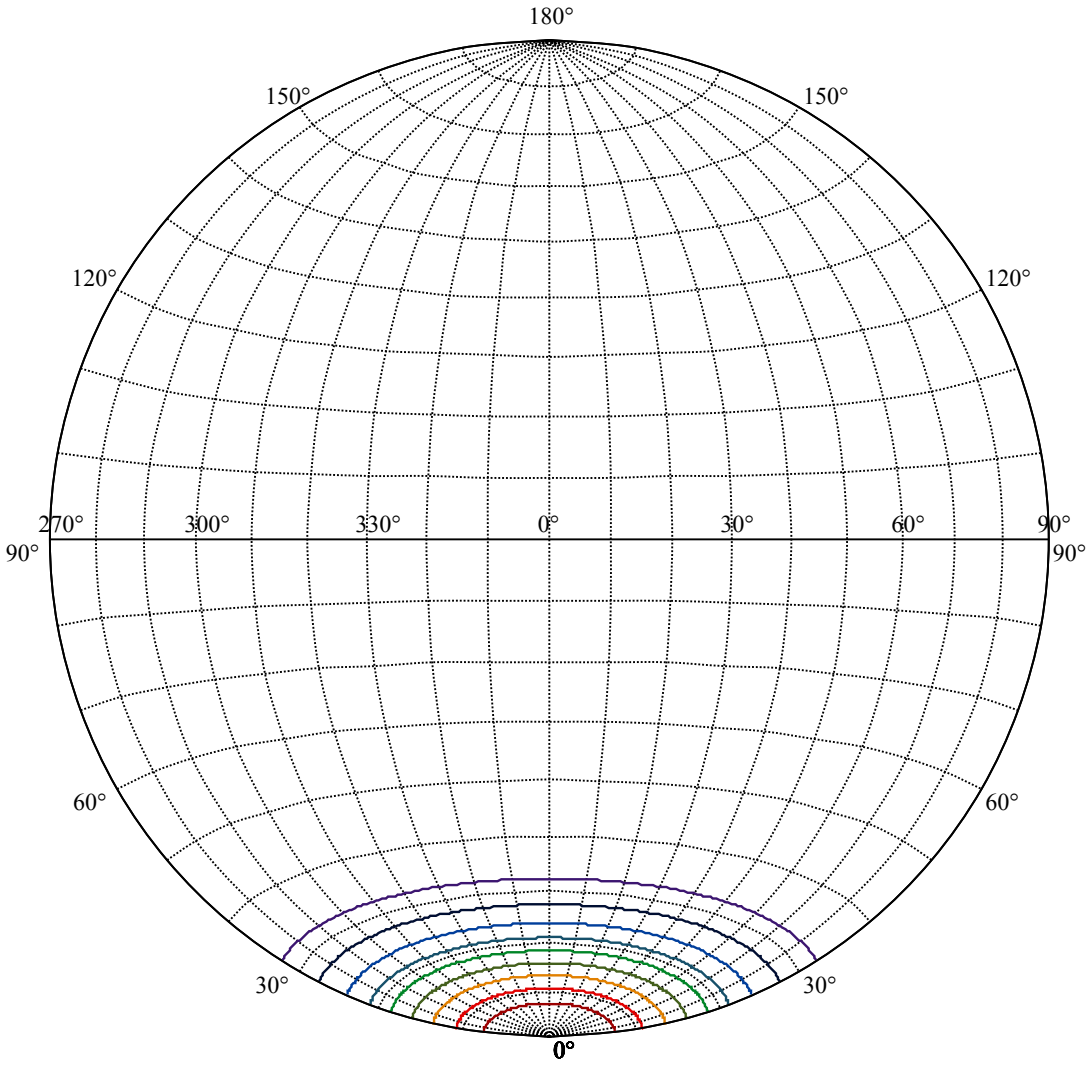


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/23
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

ISO candela diagram on circular web



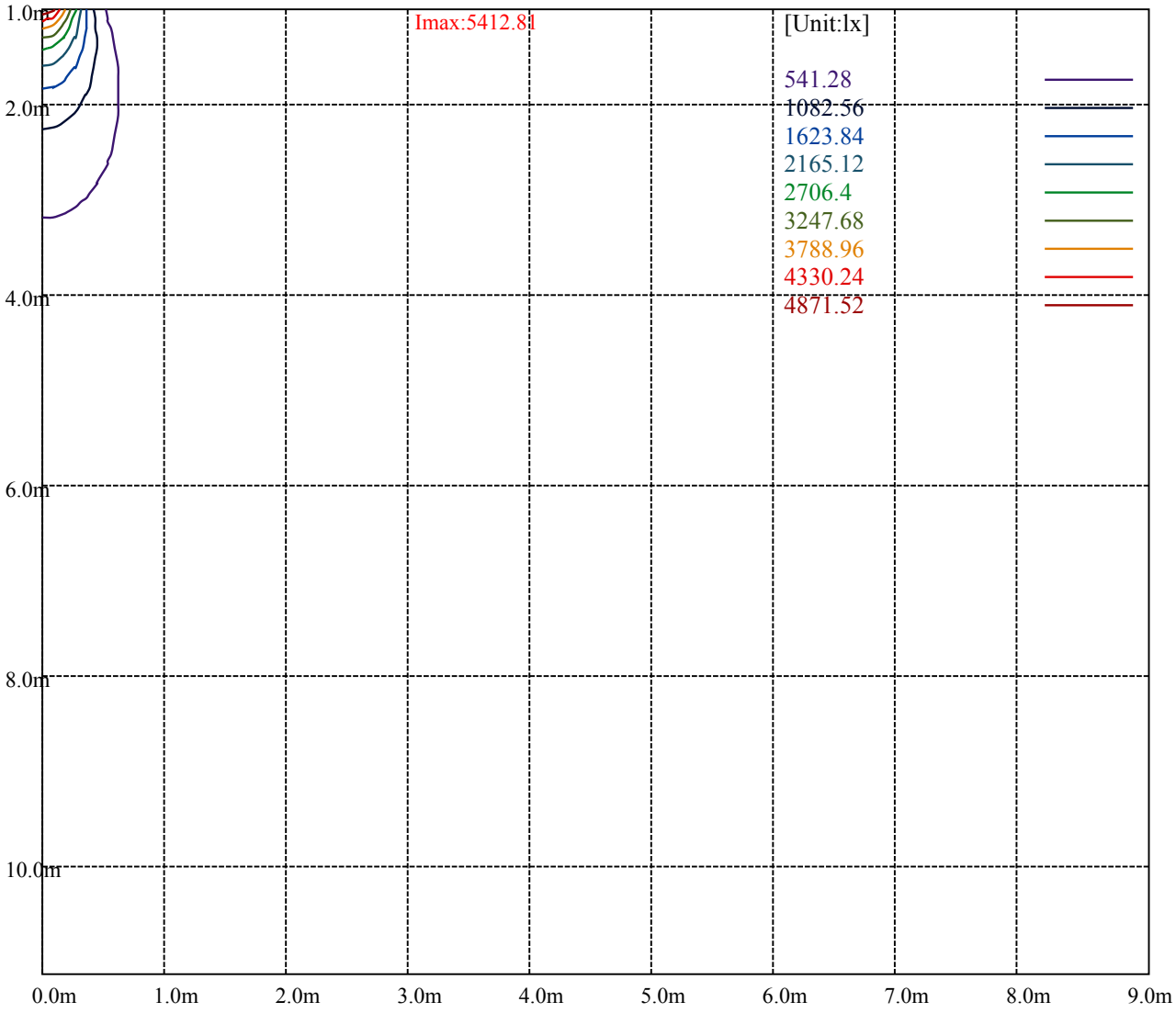
House [Unit:cd] Road

Imax:5412.81

(10%Imax) 541.28
(20%Imax) 1082.56
(30%Imax) 1623.84
(40%Imax) 2165.12
(50%Imax) 2706.4
(60%Imax) 3247.68
(70%Imax) 3788.96
(80%Imax) 4330.24
(90%Imax) 4871.52

Equipment: GMS1980	Date: 2024/4/23	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/23
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

Luminance Limitting Curve(no luminous side)

Luminance Table

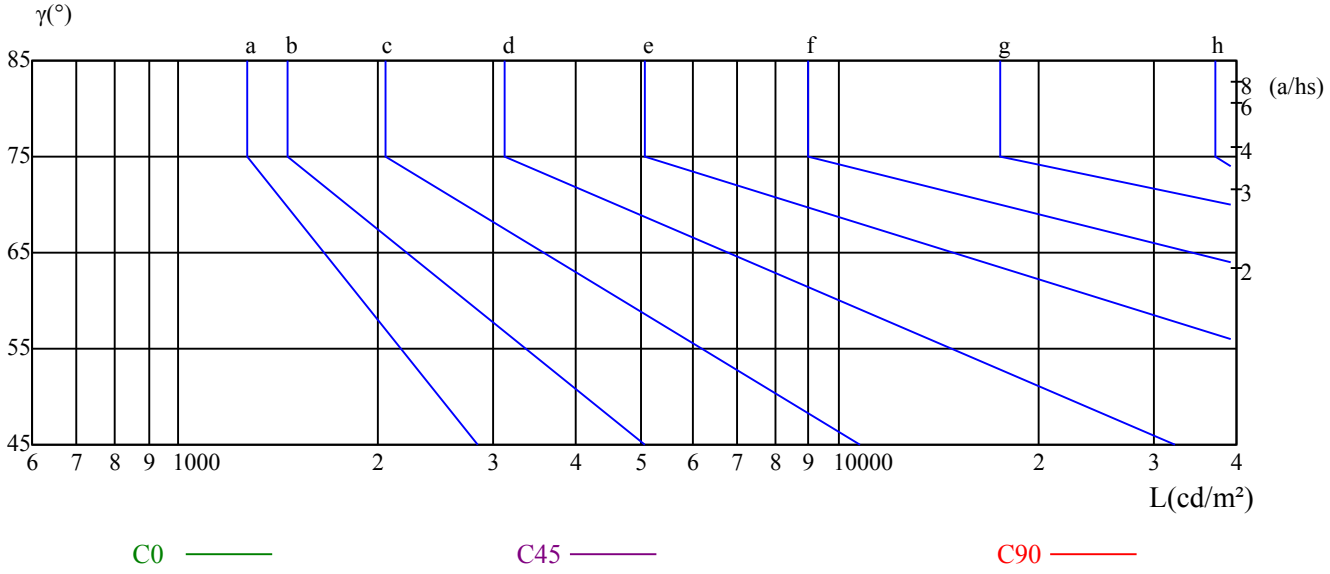
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

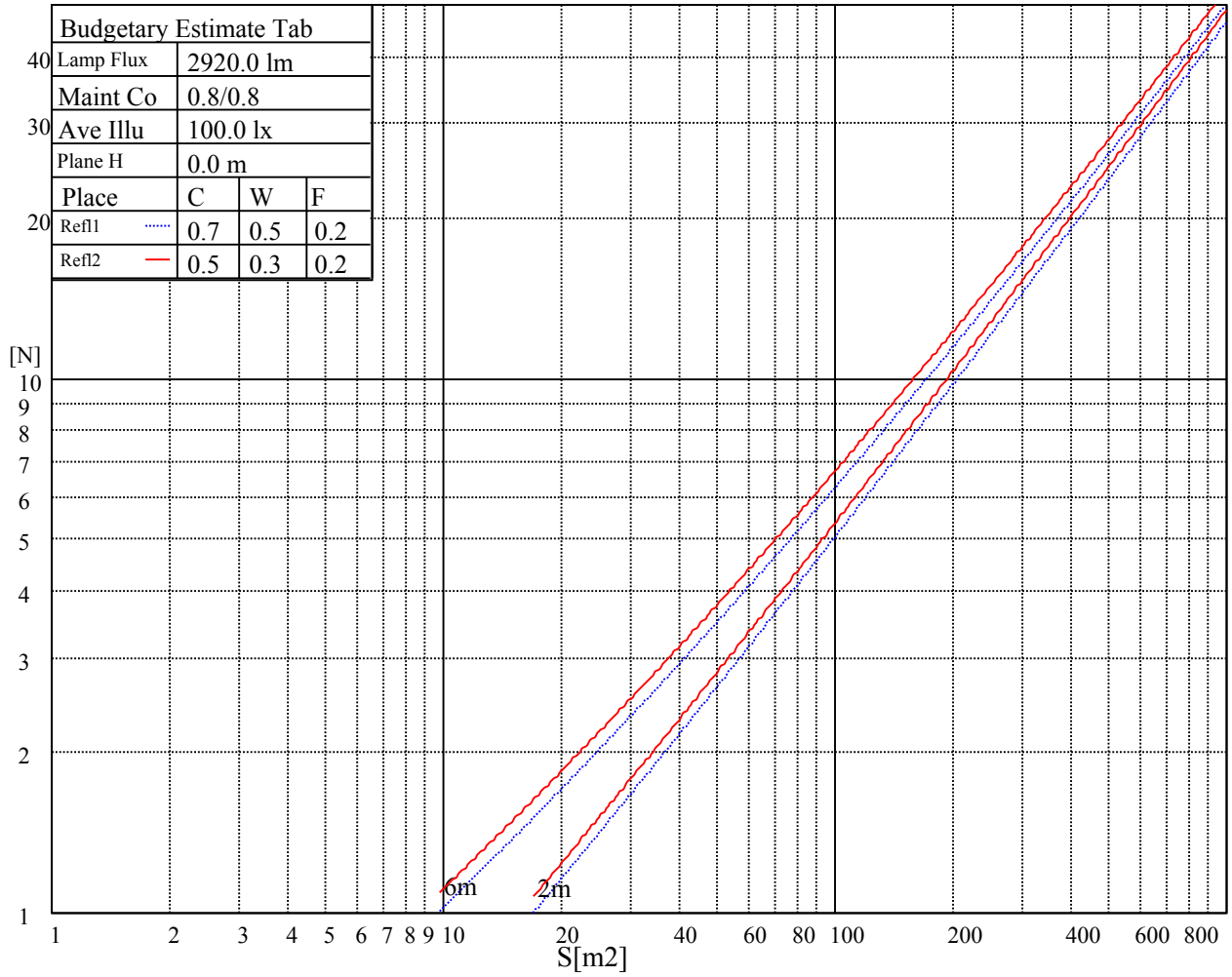
Glare Table

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

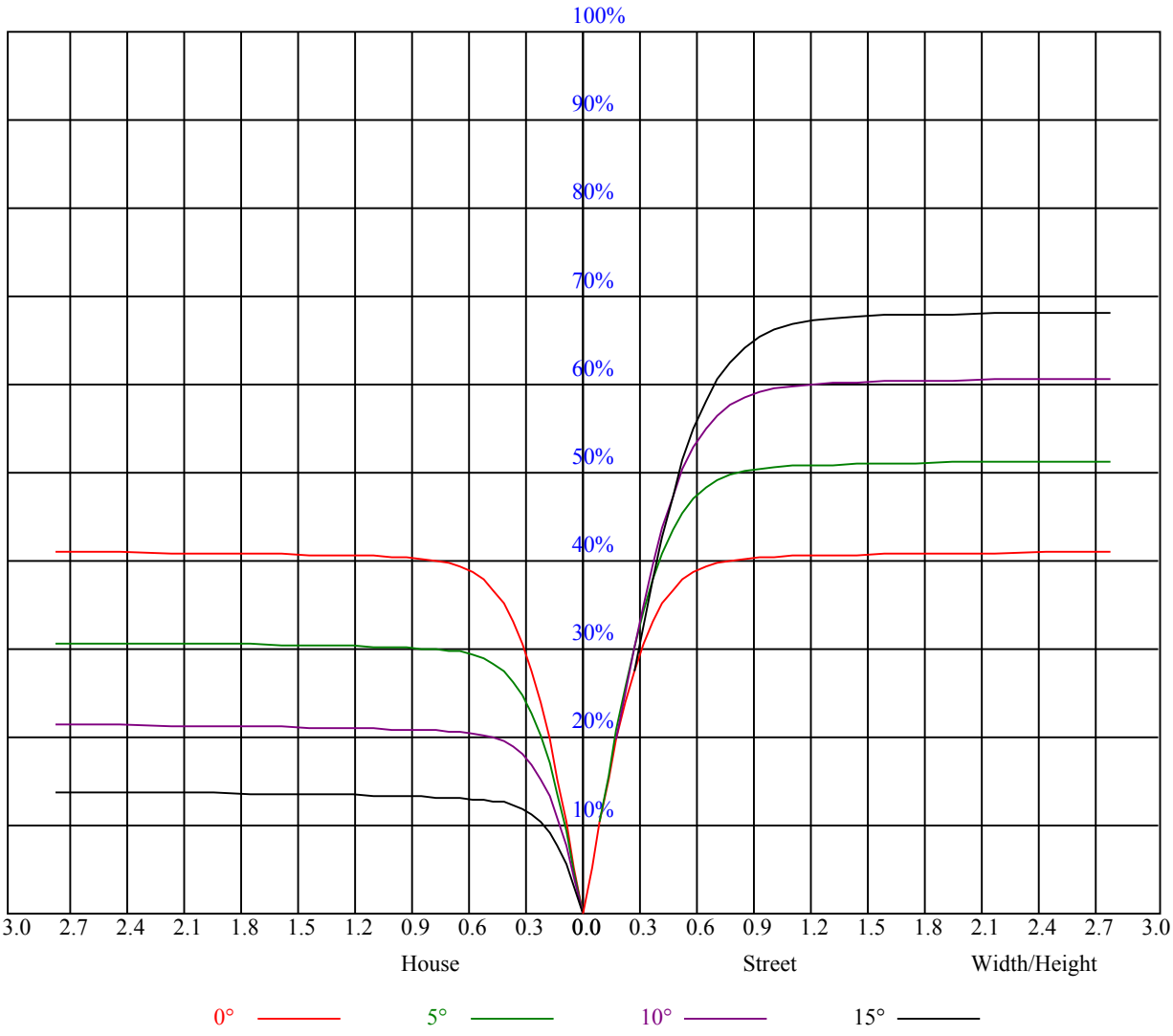


Equipment: GMS1980 Date: 2024/4/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

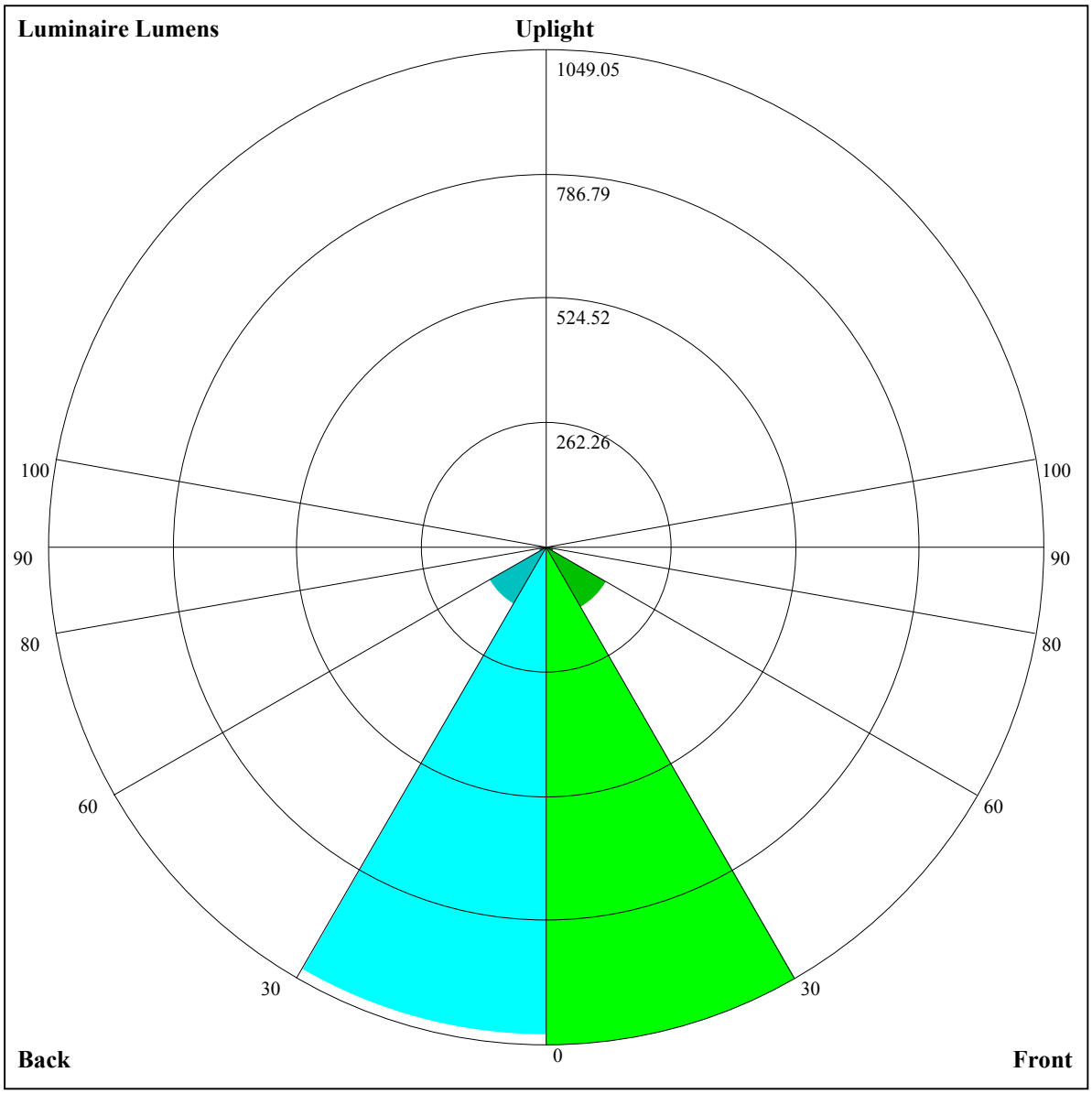
Utilization factor table for indoor luminaire

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	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.83
1	0.92	0.90	0.88	0.90	0.89	0.87	0.87	0.86	0.84	0.84	0.83	0.82	0.81	0.80	0.80	0.78
2	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.80	0.78	0.80	0.78	0.77	0.78	0.76	0.75	0.74
3	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
4	0.78	0.74	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.73	0.71	0.68	0.72	0.70	0.68	0.67
5	0.74	0.70	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.70	0.67	0.65	0.69	0.66	0.64	0.63
6	0.70	0.66	0.63	0.70	0.66	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.61	0.60
7	0.67	0.63	0.60	0.67	0.62	0.60	0.66	0.62	0.59	0.65	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	0.56	0.61	0.58	0.56	0.55
9	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.53
10	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.57	0.54	0.52	0.51

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2024/4/23	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65



Luminaire Lumens:
FL=1049.05,FM=147.53,FH=16.7,FVH=6.24
BL=1029.57,BM=140.23,BH=17.18,BVH=6.27
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	5428.02	5409.88	5390.57	5351.94	5281.13	5162.91	5061.67	4948.14	4815.88
45.0	5411.63	5418.66	5399.34	5367.16	5331.46	5268.84	5145.94	5039.43	4884.93
90.0	5404.61	5363.65	5323.27	5268.84	5207.98	5079.81	4965.11	4829.92	4687.71
135.0	5406.95	5395.83	5364.82	5322.68	5255.38	5175.20	5066.94	4956.33	4781.93
180.0	5428.02	5412.80	5392.32	5346.67	5303.37	5228.46	5105.56	4993.78	4828.16
225.0	5411.63	5388.23	5360.72	5325.02	5238.41	5146.53	5048.21	4891.37	4746.82
270.0	5404.61	5412.22	5396.42	5378.86	5340.24	5281.71	5177.54	5085.66	4941.11
315.0	5406.95	5395.25	5380.62	5339.07	5270.01	5187.49	5073.37	4957.50	4833.43
360.0	5428.02	5409.88	5390.57	5351.94	5281.13	5162.91	5061.67	4948.14	4815.88

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4626.26	4454.21	4248.79	4060.93	3874.83	3627.28	3429.48	3231.09	3030.35
45.0	4753.26	4589.98	4380.47	4204.31	4025.82	3792.32	3599.19	3395.53	3191.88
90.0	4484.64	4306.73	4081.42	3892.98	3701.02	3454.64	3255.08	3050.84	2851.27
135.0	4640.89	4471.76	4295.61	4069.71	3882.44	3689.90	3441.77	3239.28	3036.21
180.0	4684.20	4509.22	4331.89	4104.83	3914.63	3724.43	3523.11	3265.03	3067.22
225.0	4539.06	4364.67	4184.42	3956.18	3765.40	3565.83	3361.01	3111.70	2906.87
270.0	4812.36	4652.01	4487.56	4273.96	4090.20	3890.05	3688.15	3438.84	3243.38
315.0	4675.42	4474.10	4302.63	4129.99	3943.30	3701.02	3498.53	3251.57	3049.67
360.0	4626.26	4454.21	4248.79	4060.93	3874.83	3627.28	3429.48	3231.09	3030.35

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2779.29	2579.15	2384.27	2184.12	1949.44	1772.71	1607.09	1316.23	1151.43
45.0	2943.74	2746.52	2546.96	2350.32	2108.62	1926.03	1746.37	1542.13	1393.48
90.0	2596.12	2395.97	2202.26	2011.48	1784.99	1618.21	1459.61	1157.75	1157.75
135.0	2785.14	2587.92	2340.37	2149.00	1959.98	1784.99	1615.86	1425.08	1285.80
180.0	2867.66	2665.17	2402.41	2197.58	1953.54	1772.71	1608.84	1430.35	1288.72
225.0	2704.38	2496.63	2244.98	2047.18	1862.24	1650.98	1497.06	1146.87	1146.87
270.0	3044.98	2831.96	2569.20	2363.78	2114.48	1922.52	1749.88	1555.00	1403.43
315.0	2848.93	2593.19	2394.80	2200.50	1965.83	1793.77	1629.32	1472.48	1162.67
360.0	2779.29	2579.15	2384.27	2184.12	1949.44	1772.71	1607.09	1316.23	1151.43

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1151.43	1004.89	895.22	790.52	669.20	577.68	493.17	415.16	330.77
45.0	1218.50	1095.01	978.55	870.29	741.54	646.73	557.78	476.43	385.72
90.0	1037.43	897.09	790.40	690.62	574.11	488.55	411.71	342.88	268.03
135.0	1154.71	1032.40	890.77	786.60	687.70	573.58	487.55	412.64	331.88
180.0	1154.12	1041.76	896.04	784.85	676.58	591.72	488.14	407.38	337.73
225.0	1053.58	935.07	796.20	692.44	595.82	507.45	410.71	343.35	268.21
270.0	1261.80	1138.91	984.99	866.19	749.73	659.02	544.90	457.70	382.21
315.0	1162.67	1041.64	922.96	785.55	682.55	587.92	480.12	404.80	322.63
360.0	1151.43	1004.89	895.22	790.52	669.20	577.68	493.17	415.16	330.77

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	269.67	216.30	161.00	126.35	100.25	77.02	64.20	55.07	46.99
45.0	322.52	307.30	307.30	156.43	123.95	98.96	76.55	63.97	53.14
90.0	216.36	173.52	138.23	104.87	85.56	70.75	57.64	50.39	45.00
135.0	302.03	302.03	163.04	128.75	102.47	78.77	65.37	55.89	49.10
180.0	297.94	297.94	171.12	138.05	103.58	83.80	66.89	56.59	49.28
225.0	216.01	172.17	136.30	101.89	81.87	67.53	57.35	48.52	43.54
270.0	321.35	305.55	231.22	150.93	111.49	88.37	68.82	58.05	50.50
315.0	263.76	212.26	169.07	126.47	100.42	81.05	67.07	55.25	48.57
360.0	269.67	216.30	161.00	126.35	100.25	77.02	64.20	55.07	46.99

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	42.31	38.68	35.11	32.71	30.67	28.91	27.04	25.69	24.52
45.0	46.94	42.25	38.57	34.82	32.30	30.14	28.27	26.39	25.11
90.0	39.91	36.69	33.42	31.19	29.32	27.68	25.93	24.70	23.64
135.0	42.90	39.15	36.05	33.47	30.67	28.85	26.86	25.57	24.46
180.0	44.42	39.44	36.23	33.83	31.66	29.26	27.68	25.98	24.81
225.0	39.68	36.58	33.30	31.13	28.85	27.21	25.81	24.29	23.23
270.0	44.89	39.74	36.52	33.88	31.54	29.09	27.45	25.98	24.40
315.0	43.60	39.80	35.99	33.47	30.72	28.91	27.27	25.57	24.35
360.0	42.31	38.68	35.11	32.71	30.67	28.91	27.04	25.69	24.52

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	23.53	22.59	21.59	20.89	20.25	19.55	19.08	18.55	18.20
45.0	23.94	22.65	21.83	21.07	20.25	19.66	19.14	18.61	18.14
90.0	22.71	21.59	20.89	20.25	19.66	19.02	18.67	18.14	17.85
135.0	23.17	22.36	21.59	20.89	20.25	19.72	19.25	18.90	18.43
180.0	23.70	22.82	21.83	21.13	20.48	19.78	19.31	18.90	18.49
225.0	22.30	21.48	20.54	19.90	19.37	18.90	18.38	18.08	17.73
270.0	23.23	22.30	21.24	20.48	19.96	19.20	18.73	18.26	17.85
315.0	23.29	22.36	21.36	20.66	20.07	19.55	18.90	18.55	18.14
360.0	23.53	22.59	21.59	20.89	20.25	19.55	19.08	18.55	18.20

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	17.91	17.50	17.21	16.91	16.56	16.21	16.04	16.50	17.21
45.0	17.85	17.44	17.15	16.85	16.56	16.09	15.80	15.51	15.22
90.0	17.56	17.15	16.85	16.50	16.15	15.80	15.51	15.22	14.92
135.0	18.14	17.85	17.38	17.15	16.74	16.44	16.15	16.09	16.15
180.0	18.14	17.85	17.50	17.21	17.32	17.79	18.43	19.43	20.25
225.0	17.38	17.09	16.80	16.44	16.15	15.74	15.45	15.16	14.92
270.0	17.50	17.26	16.97	16.62	16.39	16.15	15.86	15.57	15.27
315.0	17.79	17.50	17.15	16.80	16.50	16.09	15.86	15.57	15.33
360.0	17.91	17.50	17.21	16.91	16.56	16.21	16.04	16.50	17.21

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	17.85	17.91	17.56	16.85	16.15	15.27	14.57	13.87	12.76
45.0	14.81	14.57	14.22	13.99	13.75	13.40	13.17	12.99	12.76
90.0	14.86	15.33	15.63	15.86	15.80	15.57	15.27	14.46	13.52
135.0	16.27	16.39	16.74	17.26	17.62	17.79	17.26	16.68	15.74
180.0	21.30	21.54	21.30	20.48	19.66	18.79	17.97	16.97	15.92
225.0	14.63	14.28	14.05	13.81	13.58	13.23	13.05	12.87	12.64
270.0	15.04	15.45	16.15	17.09	17.32	17.38	17.32	16.80	15.27
315.0	15.27	15.74	16.33	16.80	17.38	17.38	17.03	16.27	14.63
360.0	17.85	17.91	17.56	16.85	16.15	15.27	14.57	13.87	12.76

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.23	11.94	11.65	11.41	11.24	10.89	10.53	10.36	10.36
45.0	12.58	12.41	12.29	12.29	12.29	12.00	10.65	10.36	10.36
90.0	12.06	11.76	11.65	11.65	10.89	10.53	10.30	10.36	10.01
135.0	14.16	12.99	11.82	11.41	11.06	10.65	10.42	10.24	10.07
180.0	13.64	12.11	11.76	11.47	11.12	10.77	10.53	10.24	10.07
225.0	12.41	12.35	12.29	12.11	10.83	10.53	10.42	10.24	10.07
270.0	13.28	12.23	12.06	12.00	11.82	10.89	10.65	10.42	10.18
315.0	13.11	12.11	11.53	11.29	11.12	10.59	10.42	10.24	10.07
360.0	12.23	11.94	11.65	11.41	11.24	10.89	10.53	10.36	10.36

Intensity data(cd)

C/γ(°)	90.0
0.0	10.18
45.0	10.12
90.0	10.24
135.0	10.07
180.0	10.07
225.0	10.07
270.0	10.01
315.0	9.95
360.0	10.18