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-B012
Ballast type: AC

Test No: 2024423-C012	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): 2409.54, Efficiency(%): 82.52% , Luminous Efficacy(lm/W): 115.43
Central intensity(cd): 5369.352, Maximum intensity(cd): 5369.352
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=37.2
[C90/270]Total=37.2
Field angle(10%Imax): [C0/180]Total=64.8
[C90/270]Total=64.8
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.60 C90_270=0.60
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.52%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.959%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5369.352	0.000	0	0.00%	0.00%
1.0	5362.402	5.135	5.135	0.18%	0.21%
2.0	5332.117	15.350	20.485	0.53%	0.85%
3.0	5288.078	25.400	45.885	0.87%	1.90%
4.0	5221.363	35.178	81.063	1.20%	3.36%
5.0	5143.016	44.587	125.65	1.53%	5.21%
6.0	5041.845	53.524	179.174	1.83%	7.44%
7.0	4917.558	61.818	240.992	2.12%	10.00%
8.0	4782.444	69.421	310.413	2.38%	12.88%
9.0	4629.847	76.281	386.695	2.61%	16.05%
10.0	4463.789	82.294	468.989	2.82%	19.46%
11.0	4279.297	87.361	556.35	2.99%	23.09%
12.0	4093.268	91.524	647.874	3.13%	26.89%
13.0	3896.706	94.821	742.695	3.25%	30.82%
14.0	3687.415	97.076	839.771	3.32%	34.85%
15.0	3479.148	98.386	938.157	3.37%	38.94%
16.0	3265.687	98.831	1036.988	3.38%	43.04%
17.0	3054.348	98.420	1135.408	3.37%	47.12%
18.0	2819.453	96.846	1232.254	3.32%	51.14%
19.0	2597.945	94.252	1326.506	3.23%	55.05%
20.0	2375.340	91.025	1417.531	3.12%	58.83%
21.0	2151.931	86.933	1504.463	2.98%	62.44%
22.0	1949.955	82.429	1586.893	2.82%	65.86%
23.0	1736.714	77.356	1664.249	2.65%	69.07%
24.0	1575.192	72.410	1736.659	2.48%	72.07%
25.0	1369.902	66.965	1803.624	2.29%	74.85%
26.0	1247.692	61.789	1865.412	2.12%	77.42%
27.0	1151.642	58.700	1924.113	2.01%	79.85%
28.0	1013.734	54.823	1978.935	1.88%	82.13%
29.0	892.300	49.867	2028.803	1.71%	84.20%
30.0	776.228	45.050	2073.853	1.54%	86.07%
31.0	667.281	40.171	2114.023	1.38%	87.74%
32.0	571.882	35.501	2149.524	1.22%	89.21%
33.0	482.672	31.068	2180.591	1.06%	90.50%
34.0	399.482	26.697	2207.288	0.91%	91.61%
35.0	321.574	22.393	2229.681	0.77%	92.54%
36.0	264.405	18.658	2248.339	0.64%	93.31%
37.0	224.492	15.945	2264.284	0.55%	93.97%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	143.614	12.287	2276.571	0.42%	94.48%
39.0	104.404	8.466	2285.037	0.29%	94.83%
40.0	87.637	6.698	2291.734	0.23%	95.11%
41.0	79.042	5.935	2297.67	0.20%	95.36%
42.0	71.039	5.453	2303.122	0.19%	95.58%
43.0	64.901	5.036	2308.158	0.17%	95.79%
44.0	59.466	4.694	2312.852	0.16%	95.99%
45.0	54.682	4.387	2317.239	0.15%	96.17%
46.0	50.512	4.114	2321.353	0.14%	96.34%
47.0	46.460	3.857	2325.21	0.13%	96.50%
48.0	43.160	3.623	2328.832	0.12%	96.65%
49.0	39.949	3.413	2332.245	0.12%	96.79%
50.0	37.323	3.222	2335.467	0.11%	96.93%
51.0	34.667	3.046	2338.513	0.10%	97.05%
52.0	32.392	2.878	2341.39	0.10%	97.17%
53.0	30.432	2.733	2344.123	0.09%	97.29%
54.0	28.632	2.603	2346.727	0.09%	97.39%
55.0	27.162	2.491	2349.217	0.09%	97.50%
56.0	25.699	2.389	2351.606	0.08%	97.60%
57.0	24.528	2.296	2353.902	0.08%	97.69%
58.0	23.475	2.220	2356.122	0.08%	97.78%
59.0	22.582	2.153	2358.275	0.07%	97.87%
60.0	21.741	2.094	2360.369	0.07%	97.96%
61.0	21.032	2.041	2362.41	0.07%	98.04%
62.0	20.402	1.997	2364.407	0.07%	98.13%
63.0	19.846	1.958	2366.365	0.07%	98.21%
64.0	19.298	1.921	2368.285	0.07%	98.29%
65.0	18.815	1.886	2370.171	0.06%	98.37%
66.0	18.369	1.855	2372.027	0.06%	98.44%
67.0	17.996	1.829	2373.855	0.06%	98.52%
68.0	17.674	1.807	2375.662	0.06%	98.59%
69.0	17.440	1.791	2377.453	0.06%	98.67%
70.0	17.286	1.783	2379.237	0.06%	98.74%
71.0	17.242	1.785	2381.022	0.06%	98.82%
72.0	17.264	1.794	2382.816	0.06%	98.89%
73.0	17.352	1.810	2384.626	0.06%	98.97%
74.0	17.432	1.829	2386.455	0.06%	99.04%
75.0	17.352	1.838	2388.292	0.06%	99.12%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	17.154	1.832	2390.124	0.06%	99.19%
77.0	16.847	1.813	2391.937	0.06%	99.27%
78.0	16.342	1.777	2393.714	0.06%	99.34%
79.0	15.626	1.718	2395.431	0.06%	99.41%
80.0	14.506	1.624	2397.056	0.06%	99.48%
81.0	13.168	1.497	2398.552	0.05%	99.54%
82.0	12.407	1.387	2399.939	0.05%	99.60%
83.0	12.004	1.327	2401.266	0.05%	99.66%
84.0	11.748	1.294	2402.56	0.04%	99.71%
85.0	11.324	1.259	2403.819	0.04%	99.76%
86.0	10.834	1.211	2405.031	0.04%	99.81%
87.0	10.424	1.163	2406.194	0.04%	99.86%
88.0	10.234	1.132	2407.326	0.04%	99.91%
89.0	10.081	1.113	2408.439	0.04%	99.95%
90.0	10.037	1.103	2409.542	0.04%	100.00%

Zonal flux distribution table

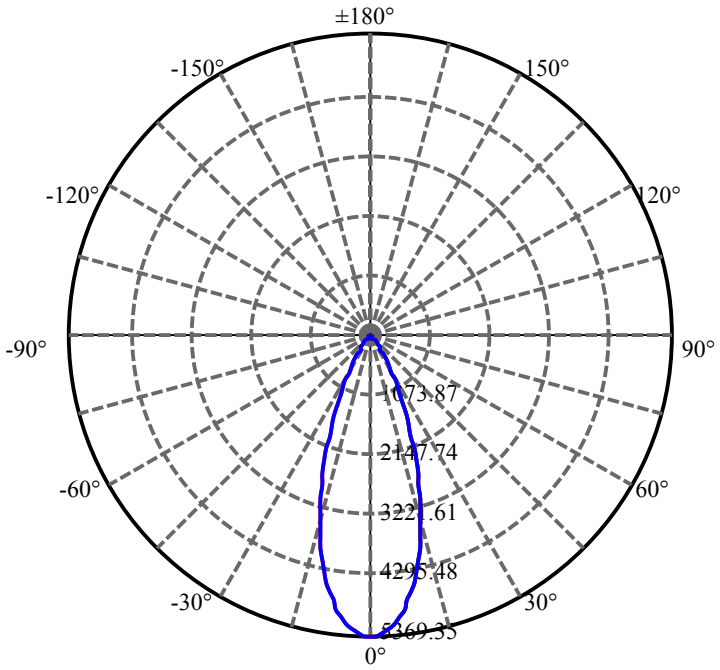
ZONAL LUMEN SUMMARY

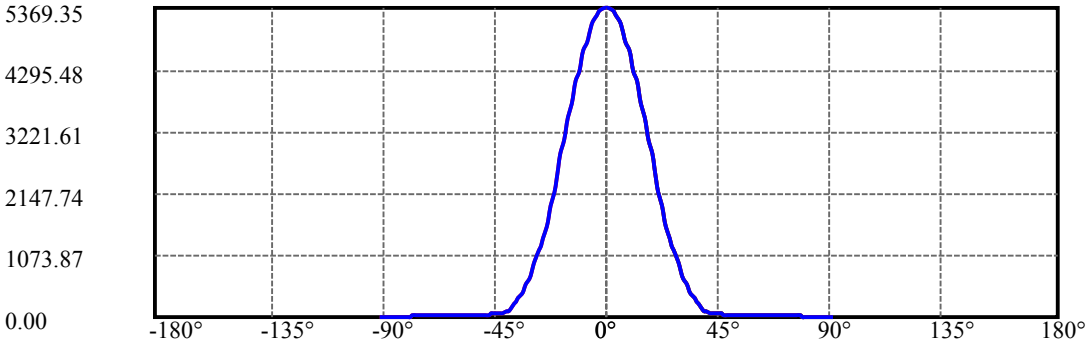
Zone	Lumens	%Lamp	%Fixt
0-30	2073.85	71.02%	86.07%
0-40	2291.73	78.48%	95.11%
0-60	2360.37	80.83%	97.96%
0-90	2408.44	82.48%	99.95%
0-120	2408.44	82.48%	99.95%
0-180	2409.54	82.52%	100.00%
60-90	48.07	1.65%	1.99%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.06	1927.63	66.01%	80.00%

ZONAL LUMEN SUMMARY

0-10	468.99
10-20	948.54
20-30	656.32
30-40	217.88
40-50	43.73
50-60	24.90
60-70	18.87
70-80	17.82
80-90	11.38
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):

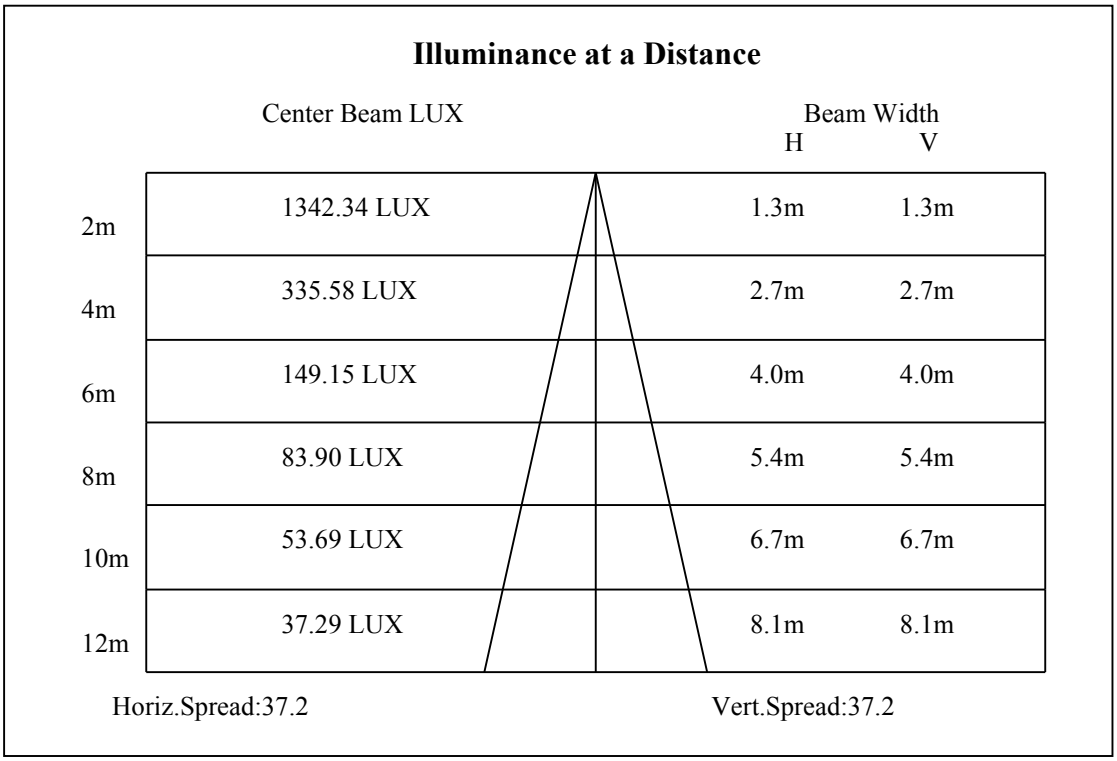
C0/C180:

C90/C270:

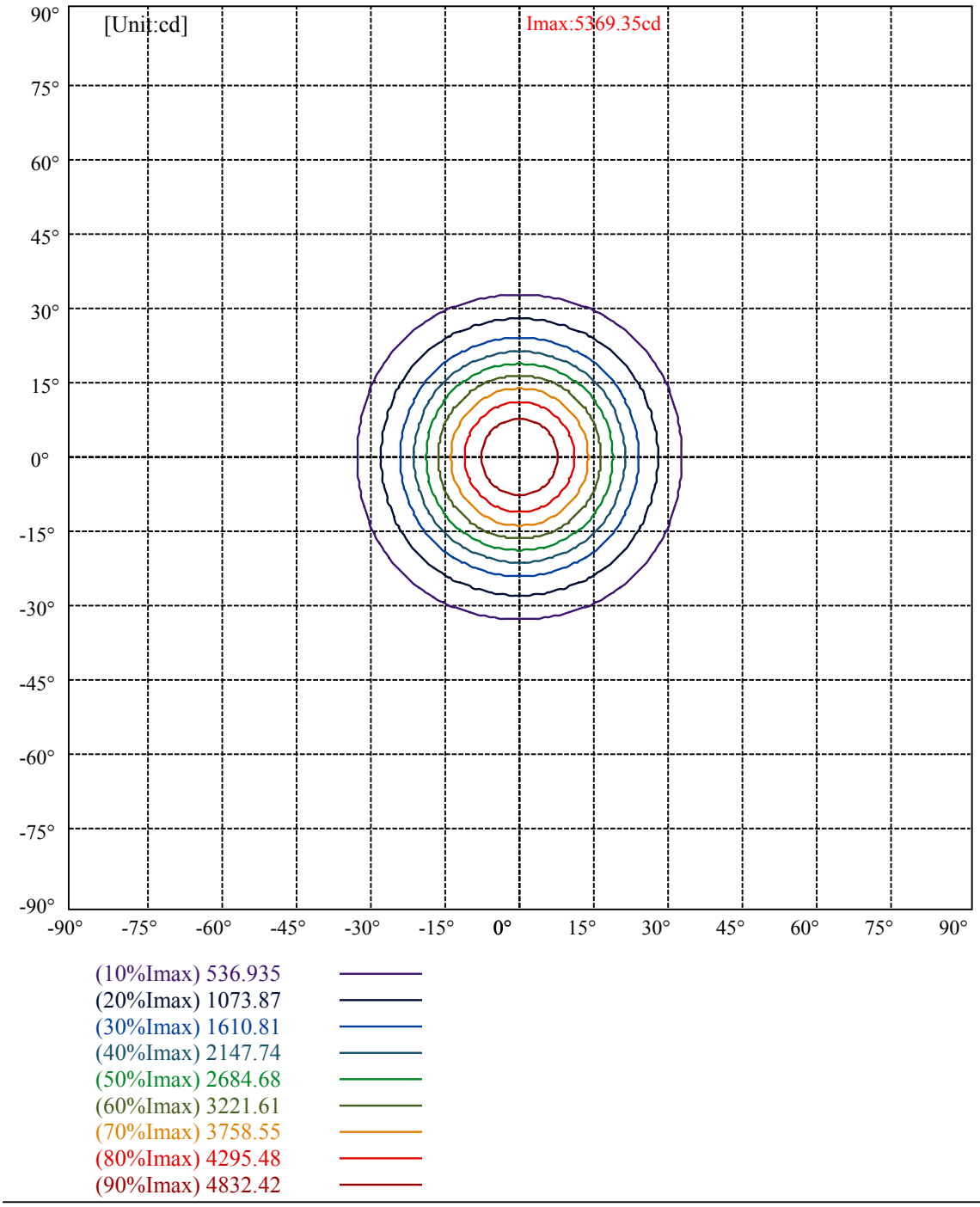
Field angle(10%Imax):C0/180Left:32.4 Right:32.4
:C90/270Left:32.4 Right:32.4

Beam Angle(50%Imax):C0/180Left:18.6 Right:18.6
:C90/270Left:18.6 Right:18.6

Lux distance Curve



ISO-Intensity(V-H)

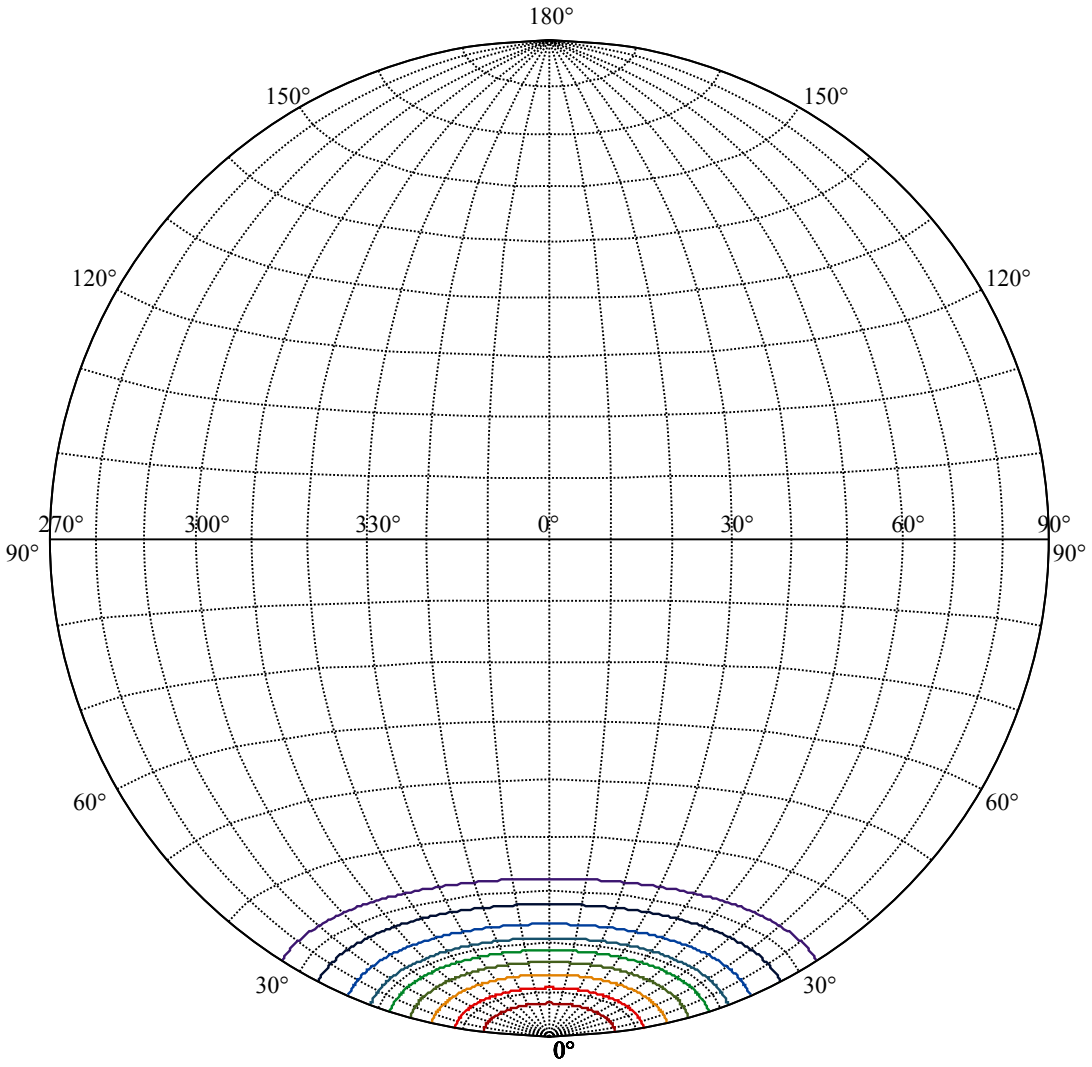


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.65

ISO candela diagram on circular web



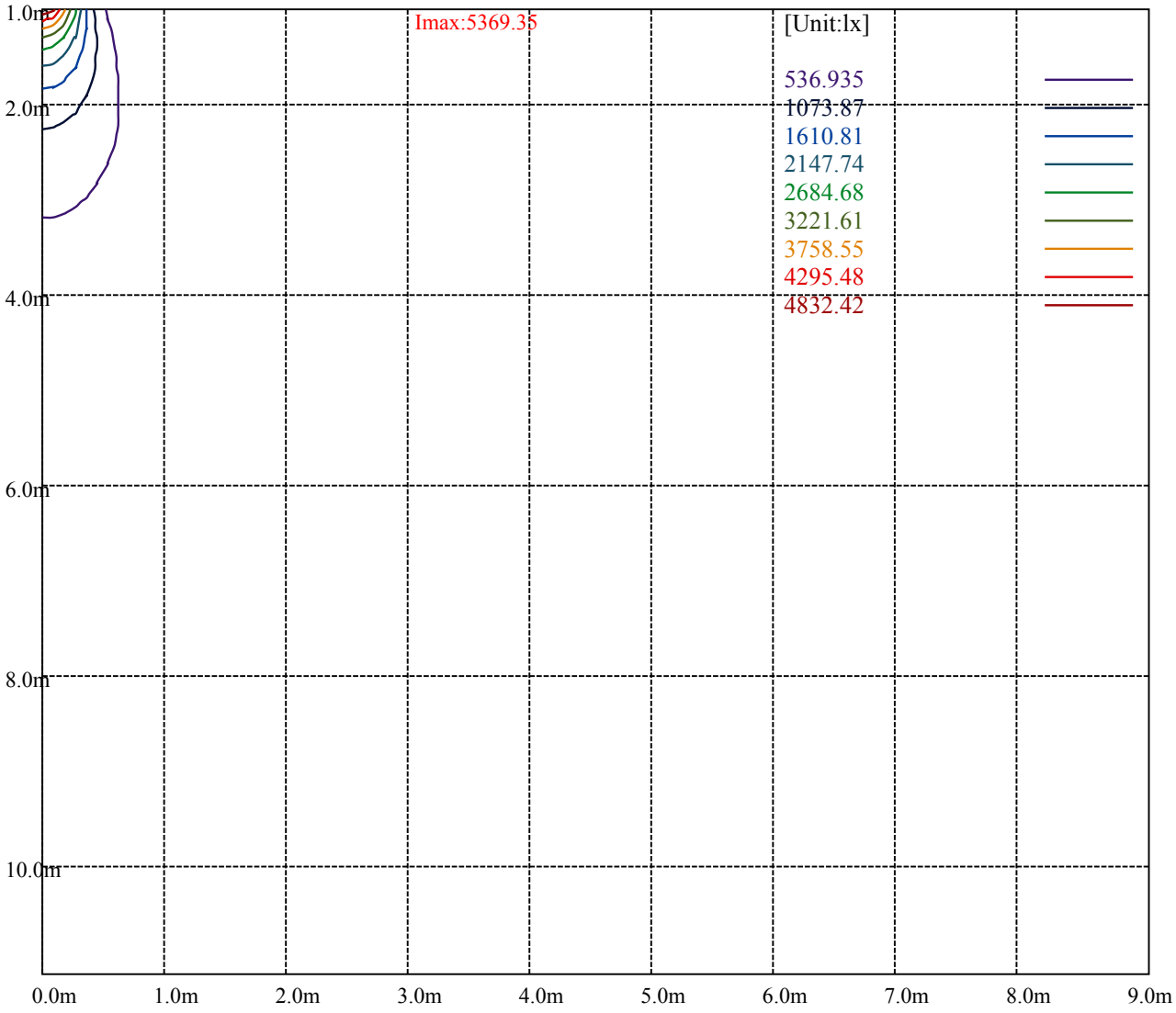
House [Unit:cd] Road

Imax:5369.35

(10%Imax) 536.935
(20%Imax) 1073.87
(30%Imax) 1610.81
(40%Imax) 2147.74
(50%Imax) 2684.68
(60%Imax) 3221.61
(70%Imax) 3758.55
(80%Imax) 4295.48
(90%Imax) 4832.42

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

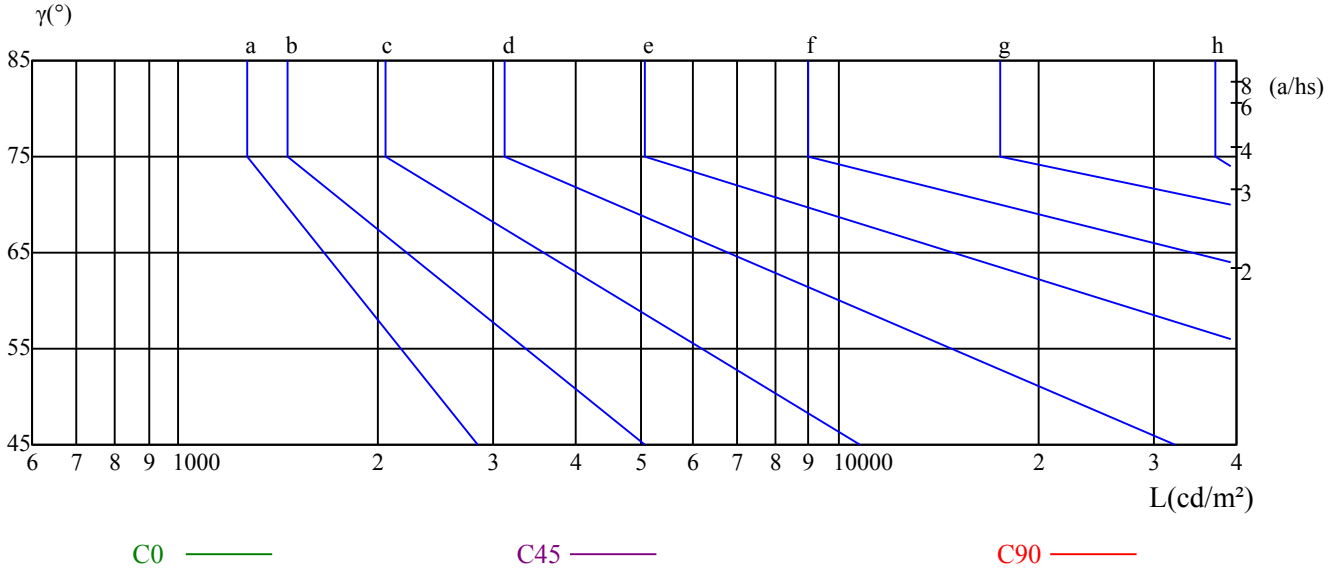
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

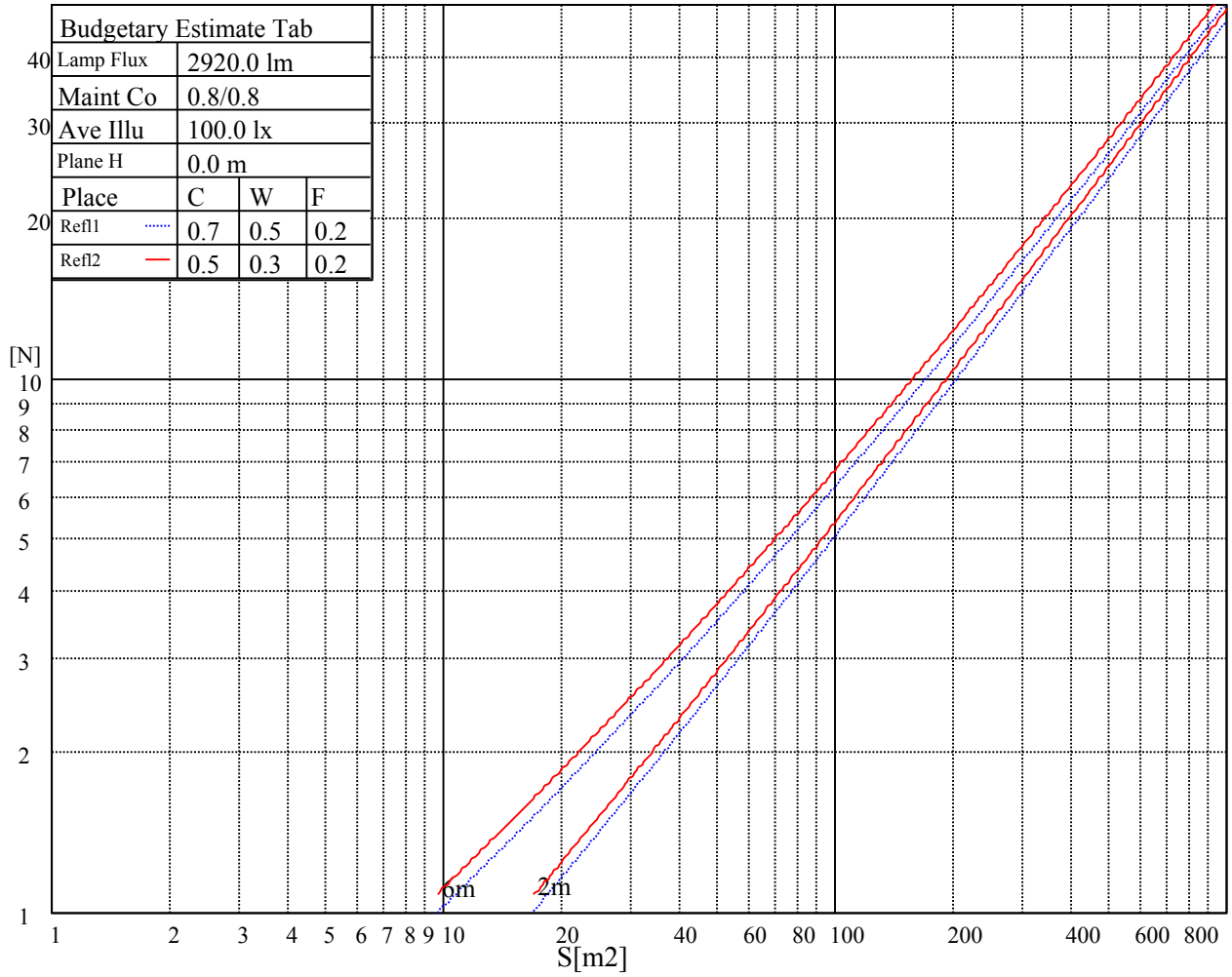
Glare Table

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

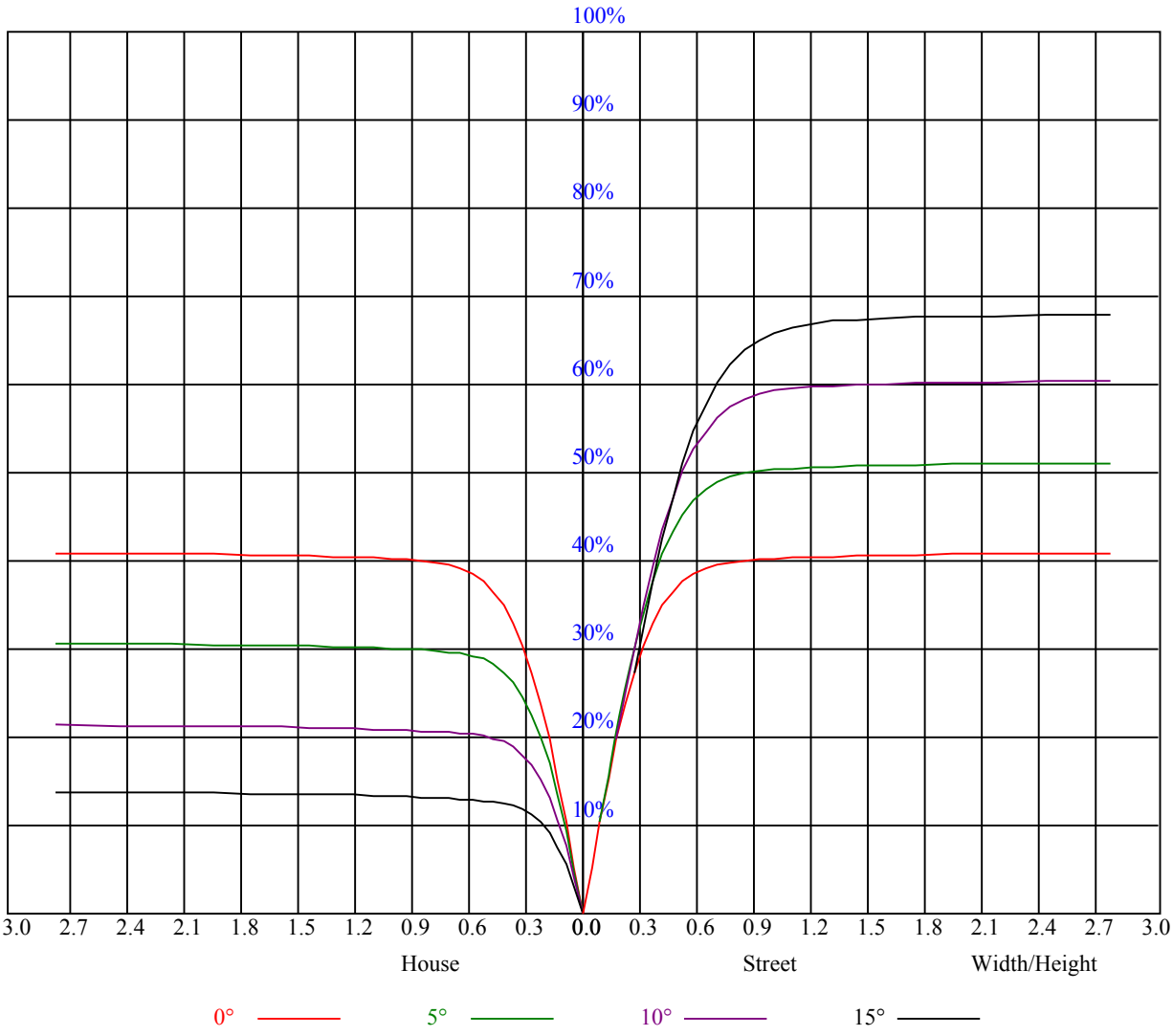


Equipment: GMS1980 Date: 2024/4/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

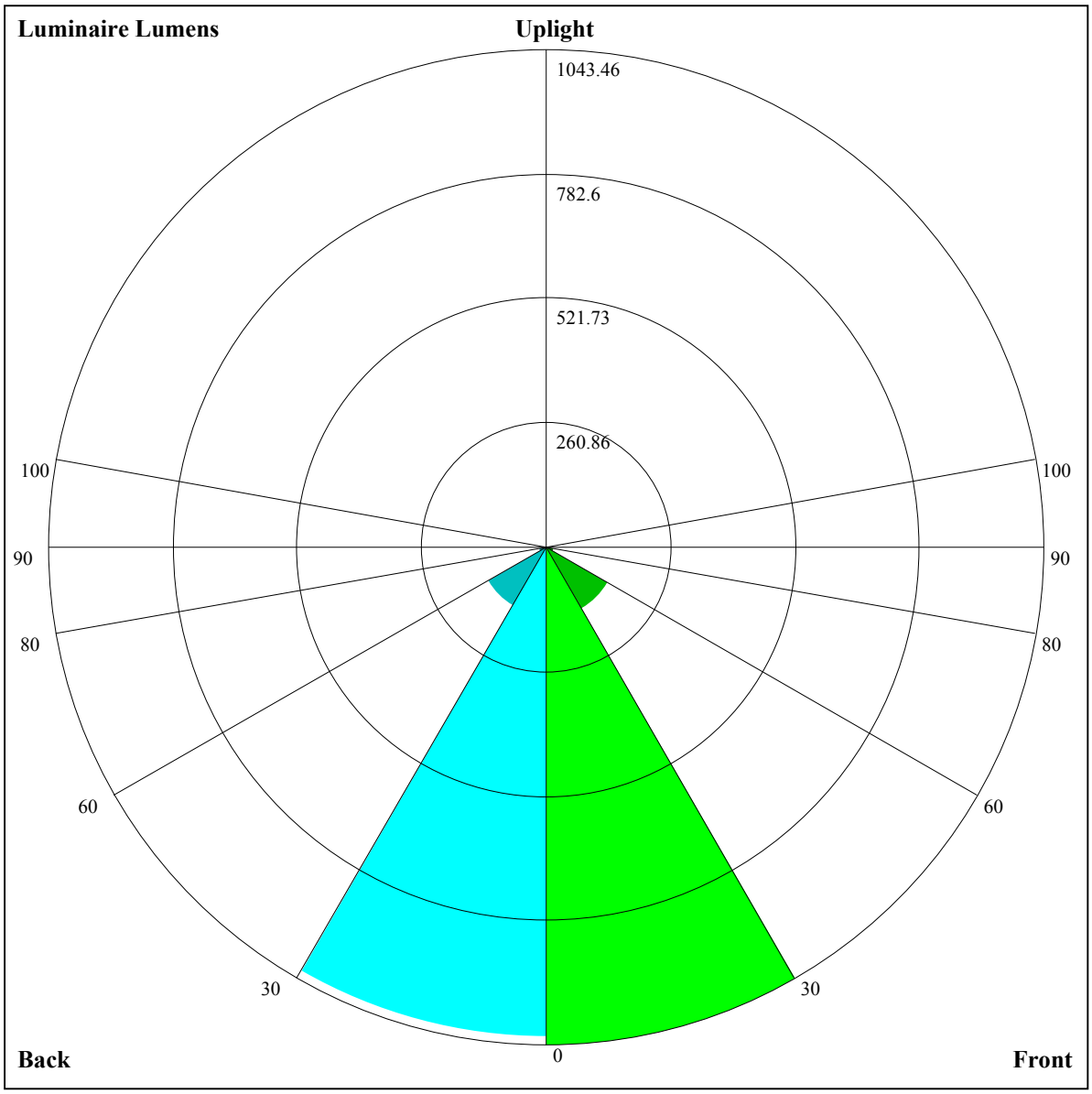
Utilization factor table for indoor luminaire

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	0.88	0.87	0.87	0.85	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.78
2	0.86	0.83	0.81	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.75	0.74
3	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.75	0.73	0.71	0.70
4	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.71	0.69	0.73	0.70	0.68	0.72	0.69	0.67	0.66
5	0.73	0.69	0.66	0.73	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	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
7	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.63	0.61	0.58	0.57
8	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.56	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	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53
10	0.59	0.55	0.52	0.58	0.54	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.57	0.54	0.51	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=1043.46,FM=148.77,FH=18.11,FVH=6.3
BL=1027.26,BM=140.17,BH=18.37,BVH=6.29
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	5377.11	5363.65	5333.21	5292.83	5214.41	5134.24	5041.19	4903.07	4772.57
45.0	5373.01	5378.28	5360.13	5314.49	5259.48	5196.27	5089.18	4982.08	4836.36
90.0	5358.96	5330.87	5278.20	5209.73	5131.90	5038.26	4928.24	4771.98	4629.77
135.0	5368.33	5356.62	5329.12	5281.71	5202.71	5124.29	5024.80	4882.01	4753.26
180.0	5377.11	5377.11	5349.02	5308.63	5250.70	5162.33	5072.20	4964.52	4800.07
225.0	5373.01	5360.13	5311.56	5262.99	5192.17	5114.34	4989.69	4867.37	4732.19
270.0	5358.96	5374.18	5363.65	5338.48	5298.10	5224.95	5154.14	5043.53	4934.68
315.0	5368.33	5358.38	5332.04	5295.76	5221.44	5149.45	5035.33	4925.90	4800.66
360.0	5377.11	5363.65	5333.21	5292.83	5214.41	5134.24	5041.19	4903.07	4772.57

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4584.71	4424.94	4252.30	4072.05	3839.72	3646.60	3454.06	3248.06	2990.56
45.0	4701.76	4550.18	4390.42	4182.08	4002.41	3811.63	3618.50	3373.30	3167.88
90.0	4476.44	4309.66	4093.12	3914.04	3674.69	3482.15	3281.42	3023.33	2814.99
135.0	4612.22	4418.51	4251.13	4079.08	3895.90	3658.30	3461.08	3258.59	3050.84
180.0	4662.55	4507.46	4294.44	4116.53	3929.26	3689.32	3493.27	3297.22	3095.90
225.0	4539.65	4375.79	4197.88	3973.15	3788.81	3593.34	3345.20	3142.72	2941.98
270.0	4807.10	4664.89	4463.57	4293.27	4113.02	3925.75	3681.71	3486.83	3283.76
315.0	4654.35	4458.89	4291.51	4115.95	3929.84	3692.24	3497.95	3295.46	3088.88
360.0	4584.71	4424.94	4252.30	4072.05	3839.72	3646.60	3454.06	3248.06	2990.56

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2781.05	2575.63	2366.71	2113.89	1917.84	1697.21	1547.39	1315.64	1154.53
45.0	2961.30	2752.96	2491.95	2285.36	2082.87	1844.69	1678.48	1496.48	1365.97
90.0	2604.89	2348.57	2146.08	1948.27	1765.68	1567.29	1429.18	1148.50	1148.50
135.0	2791.58	2585.00	2378.41	2123.84	1927.20	1703.65	1550.90	1414.55	1285.80
180.0	2836.64	2624.79	2402.41	2196.99	1949.44	1760.42	1595.97	1429.18	1299.84
225.0	2727.79	2467.37	2260.20	2058.29	1868.10	1648.05	1501.16	1140.84	1140.84
270.0	3025.67	2814.41	2597.87	2332.18	2125.01	1928.37	1707.75	1560.27	1423.91
315.0	2826.70	2614.84	2359.10	2156.61	1963.49	1744.03	1590.70	1453.76	1162.14
360.0	2781.05	2575.63	2366.71	2113.89	1917.84	1697.21	1547.39	1315.64	1154.53

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1122.58	999.86	855.89	750.96	657.62	569.13	467.01	392.92	322.87
45.0	1241.32	1084.48	963.34	855.07	752.07	635.03	548.41	468.24	389.82
90.0	1057.50	910.79	803.81	678.86	587.62	501.65	400.18	326.38	258.79
135.0	1126.03	1001.96	886.09	781.92	661.36	573.58	491.06	393.33	321.93
180.0	1136.57	1018.35	897.79	753.24	656.10	567.14	481.11	388.65	317.84
225.0	1077.69	921.79	807.73	701.45	583.53	497.91	418.79	345.69	263.99
270.0	1289.31	1138.32	1011.33	888.43	768.46	652.00	560.70	465.31	371.68
315.0	1162.14	1034.33	912.42	799.89	671.49	578.61	494.11	415.33	325.68
360.0	1122.58	999.86	855.89	750.96	657.62	569.13	467.01	392.92	322.87

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	257.62	187.68	142.33	105.16	92.64	83.92	74.67	68.71	63.44
45.0	301.45	301.45	221.80	120.56	97.50	87.08	76.78	70.34	64.78
90.0	185.11	138.00	104.76	87.61	77.25	69.99	64.26	59.17	53.61
135.0	304.38	224.96	128.11	98.43	82.87	75.49	68.88	62.27	57.64
180.0	300.86	300.86	132.85	102.18	85.79	77.83	68.94	63.44	57.47
225.0	205.24	154.15	115.41	89.60	80.94	73.04	65.19	60.04	54.25
270.0	299.69	299.69	161.00	120.67	92.88	82.40	74.85	68.12	62.68
315.0	260.89	189.14	142.68	111.02	91.24	82.58	74.73	67.13	61.86
360.0	257.62	187.68	142.33	105.16	92.64	83.92	74.67	68.71	63.44

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	58.64	54.25	49.39	46.00	42.84	39.97	36.87	34.70	32.19
45.0	58.70	54.31	50.33	46.82	42.78	39.85	37.22	34.82	32.30
90.0	49.57	45.00	41.90	39.09	35.87	33.53	31.66	29.44	27.92
135.0	53.43	49.63	45.24	42.19	39.33	36.81	33.94	32.01	30.31
180.0	53.20	49.33	45.06	41.96	39.21	36.69	33.88	31.89	30.14
225.0	50.10	46.35	43.01	39.27	36.64	34.29	32.07	29.73	28.03
270.0	56.59	52.32	48.46	45.06	41.14	38.39	35.87	32.95	30.96
315.0	57.24	52.90	48.28	44.89	41.79	39.03	35.82	33.59	31.60
360.0	58.64	54.25	49.39	46.00	42.84	39.97	36.87	34.70	32.19

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	30.43	28.85	27.10	25.81	24.76	23.53	22.65	21.95	21.19
45.0	30.49	28.85	27.04	25.81	24.35	23.35	22.41	21.77	20.89
90.0	26.45	25.22	24.17	22.94	22.12	21.36	20.60	20.01	19.55
135.0	28.32	26.98	25.52	24.52	23.58	22.82	21.89	21.24	20.72
180.0	28.56	26.80	25.69	24.58	23.47	22.59	21.89	21.13	20.54
225.0	26.57	25.34	23.94	23.00	22.00	21.30	20.60	19.90	19.37
270.0	28.79	27.33	25.87	24.46	23.53	22.53	21.83	20.83	20.25
315.0	29.44	27.92	26.28	25.11	23.99	23.17	22.06	21.42	20.72
360.0	30.43	28.85	27.10	25.81	24.76	23.53	22.65	21.95	21.19

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	20.42	19.84	19.37	18.90	18.32	17.91	17.67	18.14	18.73
45.0	20.31	19.78	19.31	18.67	18.26	17.79	17.38	16.85	16.44
90.0	19.02	18.55	18.08	17.67	17.26	16.91	16.44	16.04	15.80
135.0	20.25	19.66	19.20	18.79	18.38	17.85	17.50	17.32	17.32
180.0	20.01	19.43	18.96	18.67	18.79	19.31	19.96	20.66	21.36
225.0	18.96	18.49	17.97	17.62	17.21	16.68	16.39	15.98	15.68
270.0	19.61	19.14	18.61	18.14	17.79	17.38	16.97	16.56	16.21
315.0	20.19	19.49	19.02	18.49	17.97	17.56	17.21	16.74	16.39
360.0	20.42	19.84	19.37	18.90	18.32	17.91	17.67	18.14	18.73

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	19.25	19.14	18.73	18.08	17.09	16.33	15.51	14.46	13.11
45.0	15.92	15.57	15.22	14.75	14.46	14.05	13.75	13.46	13.17
90.0	15.80	16.33	16.62	16.80	16.62	16.50	15.98	14.92	13.64
135.0	17.32	17.44	17.91	18.26	18.67	18.67	18.14	17.38	16.27
180.0	22.41	22.47	22.18	21.36	20.42	19.55	18.38	17.50	15.98
225.0	15.22	14.86	14.57	14.22	13.87	13.58	13.34	13.05	12.82
270.0	15.92	16.27	16.97	17.67	17.91	17.97	17.91	17.44	16.04
315.0	16.27	16.74	17.26	17.67	18.20	18.14	17.73	16.80	15.04
360.0	19.25	19.14	18.73	18.08	17.09	16.33	15.51	14.46	13.11

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.52	12.11	11.82	11.59	11.35	10.89	10.59	10.36	10.18
45.0	13.05	12.76	12.64	12.58	12.47	12.17	10.59	10.36	10.18
90.0	12.23	12.00	11.82	11.82	10.89	10.53	10.30	10.07	10.07
135.0	14.51	12.93	11.88	11.35	11.06	10.59	10.36	10.18	9.95
180.0	13.46	12.23	11.76	11.47	11.06	10.59	10.42	10.24	10.07
225.0	12.58	12.41	12.35	11.88	10.77	10.53	10.36	10.12	10.01
270.0	13.46	12.52	12.17	12.00	11.88	10.77	10.48	10.36	10.18
315.0	13.52	12.29	11.59	11.29	11.12	10.59	10.30	10.18	10.01
360.0	12.52	12.11	11.82	11.59	11.35	10.89	10.59	10.36	10.18

Intensity data(cd)

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