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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NT

Client:
LumCAT: 3-2833-L
Luminaire: 92.70.411.00
Report No: 2024425-B003
Ballast type: AC

Test No: 2024425-C003	Voltage(V): 36.260
LampCAT: NICHIA NFCWJ130B-V3	Current(A): 0.576
Lamp flux(lm): 2924.0	Power (W): 20.885
Number of Lamps: 1	PF: 0.000
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2477.64, Efficiency(%): 84.73% , Luminous Efficacy(lm/W): 118.63
Central intensity(cd): 8494.745, Maximum intensity(cd): 8494.745
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=24.4
[C90/270]Total=24.4
Field angle(10%Imax): [C0/180]Total=59.6
[C90/270]Total=59.6
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.73%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.935%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8494.746	0.000	0	0.00%	0.00%
1.0	8463.582	8.114	8.114	0.28%	0.33%
2.0	8370.385	24.162	32.276	0.83%	1.30%
3.0	8195.257	39.620	71.896	1.35%	2.90%
4.0	7938.050	54.003	125.899	1.85%	5.08%
5.0	7581.136	66.763	192.662	2.28%	7.78%
6.0	7160.579	77.472	270.133	2.65%	10.90%
7.0	6707.103	86.076	356.21	2.94%	14.38%
8.0	6223.122	92.539	448.749	3.16%	18.11%
9.0	5709.221	96.705	545.454	3.31%	22.02%
10.0	5230.726	99.003	644.457	3.39%	26.01%
11.0	4786.467	100.092	744.549	3.42%	30.05%
12.0	4329.699	99.653	844.202	3.41%	34.07%
13.0	3927.723	97.995	942.196	3.35%	38.03%
14.0	3559.031	95.830	1038.026	3.28%	41.90%
15.0	3218.796	93.049	1131.075	3.18%	45.65%
16.0	2916.381	89.898	1220.973	3.07%	49.28%
17.0	2659.101	86.825	1307.798	2.97%	52.78%
18.0	2411.405	83.602	1391.4	2.86%	56.16%
19.0	2200.943	80.245	1471.645	2.74%	59.40%
20.0	2008.624	77.047	1548.692	2.63%	62.51%
21.0	1845.858	74.014	1622.706	2.53%	65.49%
22.0	1680.532	70.864	1693.57	2.42%	68.35%
23.0	1509.368	66.933	1760.503	2.29%	71.06%
24.0	1346.947	62.449	1822.952	2.14%	73.58%
25.0	1247.407	58.990	1881.942	2.02%	75.96%
26.0	1157.495	56.768	1938.71	1.94%	78.25%
27.0	1066.719	54.416	1993.126	1.86%	80.44%
28.0	993.924	52.171	2045.297	1.78%	82.55%
29.0	916.426	49.980	2095.277	1.71%	84.57%
30.0	832.973	47.233	2142.511	1.62%	86.47%
31.0	721.114	43.248	2185.759	1.48%	88.22%
32.0	613.382	38.232	2223.99	1.31%	89.76%
33.0	499.460	32.785	2256.775	1.12%	91.09%
34.0	384.368	26.747	2283.522	0.91%	92.17%
35.0	287.367	20.862	2304.384	0.71%	93.01%
36.0	228.399	16.422	2320.806	0.56%	93.67%
37.0	171.369	13.038	2333.844	0.45%	94.20%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	100.505	9.075	2342.919	0.31%	94.56%
39.0	88.076	6.437	2349.356	0.22%	94.82%
40.0	80.395	5.876	2355.231	0.20%	95.06%
41.0	73.387	5.476	2360.708	0.19%	95.28%
42.0	67.067	5.103	2365.811	0.17%	95.49%
43.0	61.683	4.769	2370.58	0.16%	95.68%
44.0	57.089	4.483	2375.063	0.15%	95.86%
45.0	52.758	4.222	2379.284	0.14%	96.03%
46.0	48.939	3.977	2383.261	0.14%	96.19%
47.0	45.765	3.767	2387.028	0.13%	96.34%
48.0	42.765	3.579	2390.607	0.12%	96.49%
49.0	40.271	3.410	2394.017	0.12%	96.62%
50.0	38.208	3.272	2397.289	0.11%	96.76%
51.0	36.416	3.157	2400.446	0.11%	96.88%
52.0	35.011	3.065	2403.511	0.10%	97.01%
53.0	33.863	2.996	2406.507	0.10%	97.13%
54.0	32.963	2.945	2409.452	0.10%	97.25%
55.0	32.268	2.912	2412.364	0.10%	97.37%
56.0	31.697	2.890	2415.254	0.10%	97.48%
57.0	31.090	2.871	2418.125	0.10%	97.60%
58.0	30.410	2.844	2420.969	0.10%	97.71%
59.0	29.400	2.796	2423.765	0.10%	97.83%
60.0	28.244	2.723	2426.489	0.09%	97.94%
61.0	27.023	2.637	2429.126	0.09%	98.04%
62.0	25.662	2.539	2431.665	0.09%	98.14%
63.0	24.389	2.434	2434.099	0.08%	98.24%
64.0	23.094	2.330	2436.429	0.08%	98.34%
65.0	21.917	2.228	2438.657	0.08%	98.43%
66.0	20.702	2.126	2440.783	0.07%	98.51%
67.0	19.700	2.032	2442.815	0.07%	98.59%
68.0	18.735	1.947	2444.762	0.07%	98.67%
69.0	17.959	1.872	2446.633	0.06%	98.75%
70.0	17.293	1.811	2448.444	0.06%	98.82%
71.0	16.759	1.760	2450.204	0.06%	98.89%
72.0	16.306	1.719	2451.923	0.06%	98.96%
73.0	16.050	1.692	2453.615	0.06%	99.03%
74.0	15.816	1.675	2455.291	0.06%	99.10%
75.0	15.647	1.662	2456.953	0.06%	99.16%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	15.450	1.651	2458.604	0.06%	99.23%
77.0	15.157	1.632	2460.236	0.06%	99.30%
78.0	14.814	1.604	2461.84	0.05%	99.36%
79.0	14.360	1.567	2463.407	0.05%	99.43%
80.0	13.826	1.520	2464.927	0.05%	99.49%
81.0	13.116	1.457	2466.384	0.05%	99.55%
82.0	12.480	1.388	2467.772	0.05%	99.60%
83.0	12.107	1.337	2469.109	0.05%	99.66%
84.0	11.851	1.305	2470.414	0.04%	99.71%
85.0	11.566	1.278	2471.692	0.04%	99.76%
86.0	11.229	1.246	2472.938	0.04%	99.81%
87.0	10.929	1.213	2474.15	0.04%	99.86%
88.0	10.680	1.184	2475.334	0.04%	99.91%
89.0	10.505	1.161	2476.495	0.04%	99.95%
90.0	10.461	1.150	2477.645	0.04%	100.00%

Zonal flux distribution table

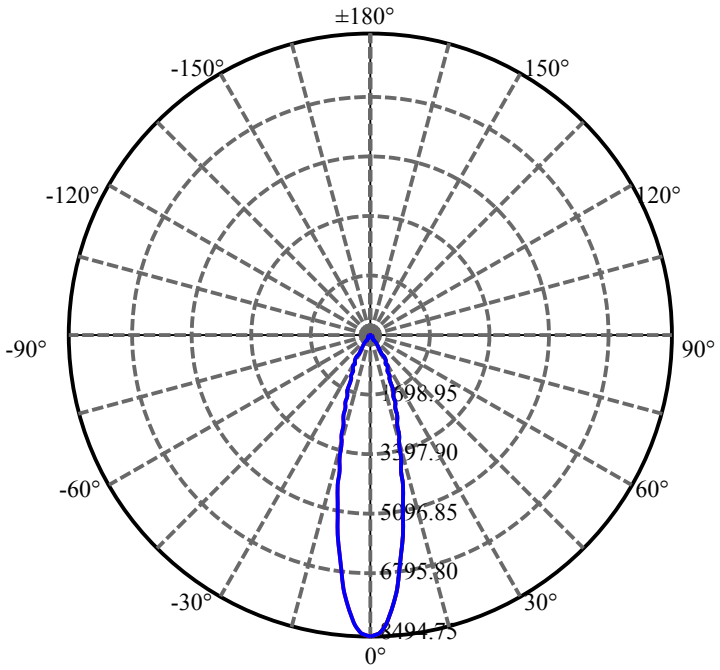
ZONAL LUMEN SUMMARY

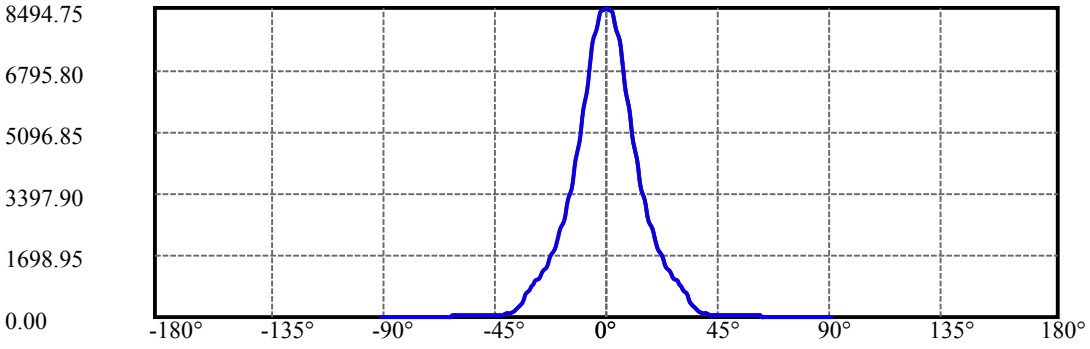
Zone	Lumens	%Lamp	%Fixt
0-30	2142.51	73.27%	86.47%
0-40	2355.23	80.55%	95.06%
0-60	2426.49	82.99%	97.94%
0-90	2476.50	84.70%	99.95%
0-120	2476.50	84.70%	99.95%
0-180	2477.64	84.73%	100.00%
60-90	50.01	1.71%	2.02%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.80	1982.12	67.79%	80.00%

ZONAL LUMEN SUMMARY

0-10	644.46
10-20	904.24
20-30	593.82
30-40	212.72
40-50	42.06
50-60	29.20
60-70	21.96
70-80	16.48
80-90	11.57
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):

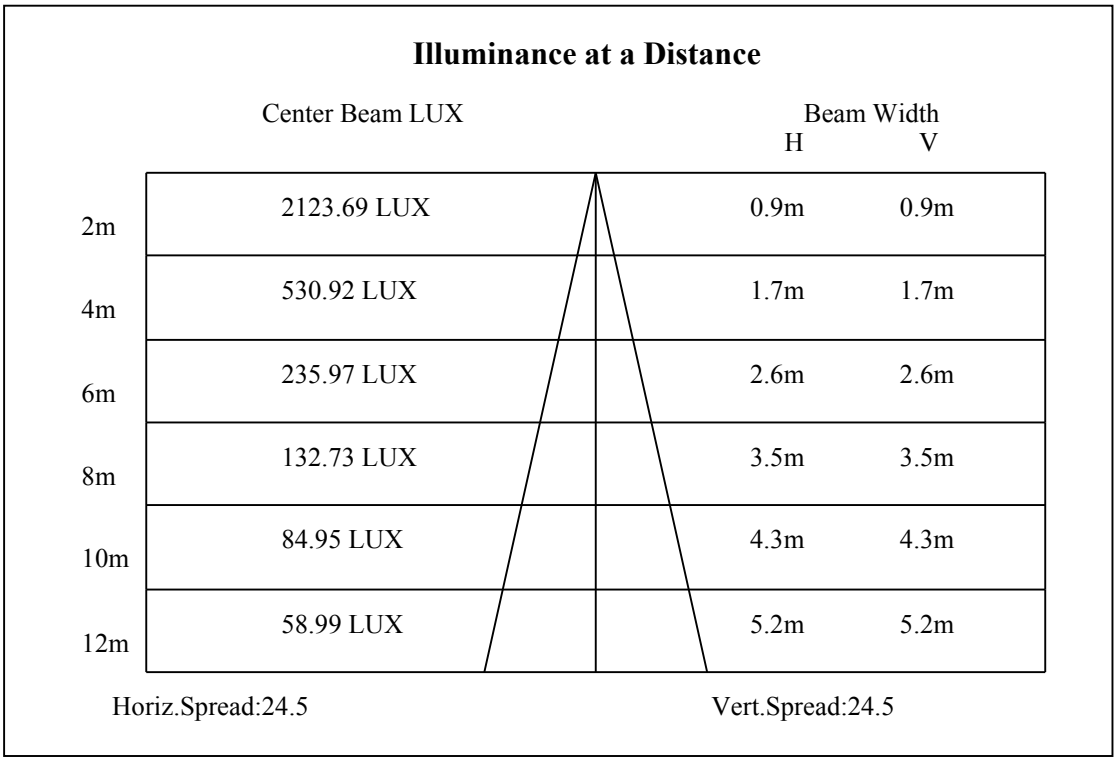
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:29.8 Right:29.8
:C90/270Left:29.8 Right:29.8

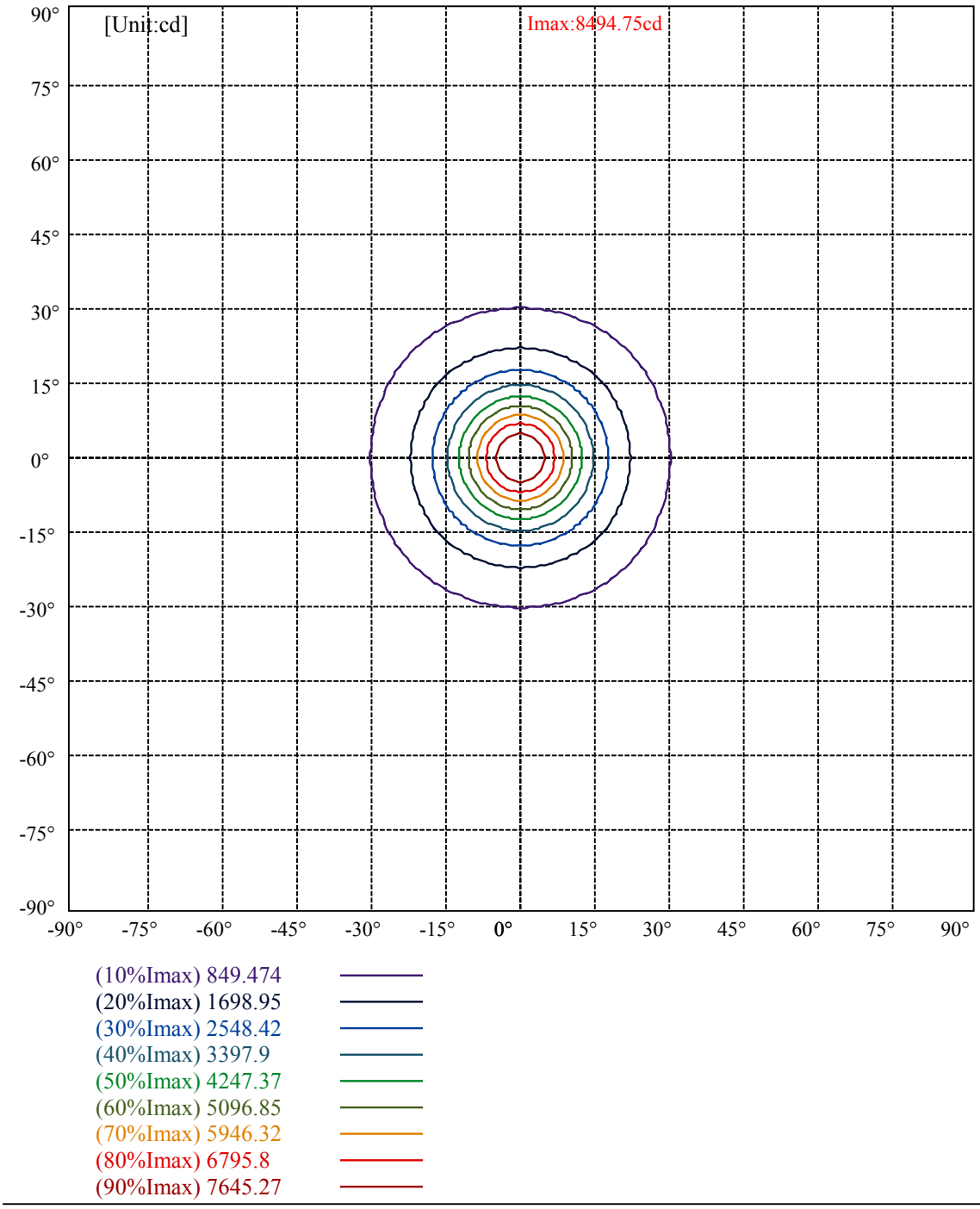
Beam Angle(50%Imax):C0/180Left:12.2 Right:12.2
:C90/270Left:12.2 Right:12.2

Lux distance Curve



Equipment: GMS1980 Date: 2024/4/25 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

ISO-Intensity(V-H)

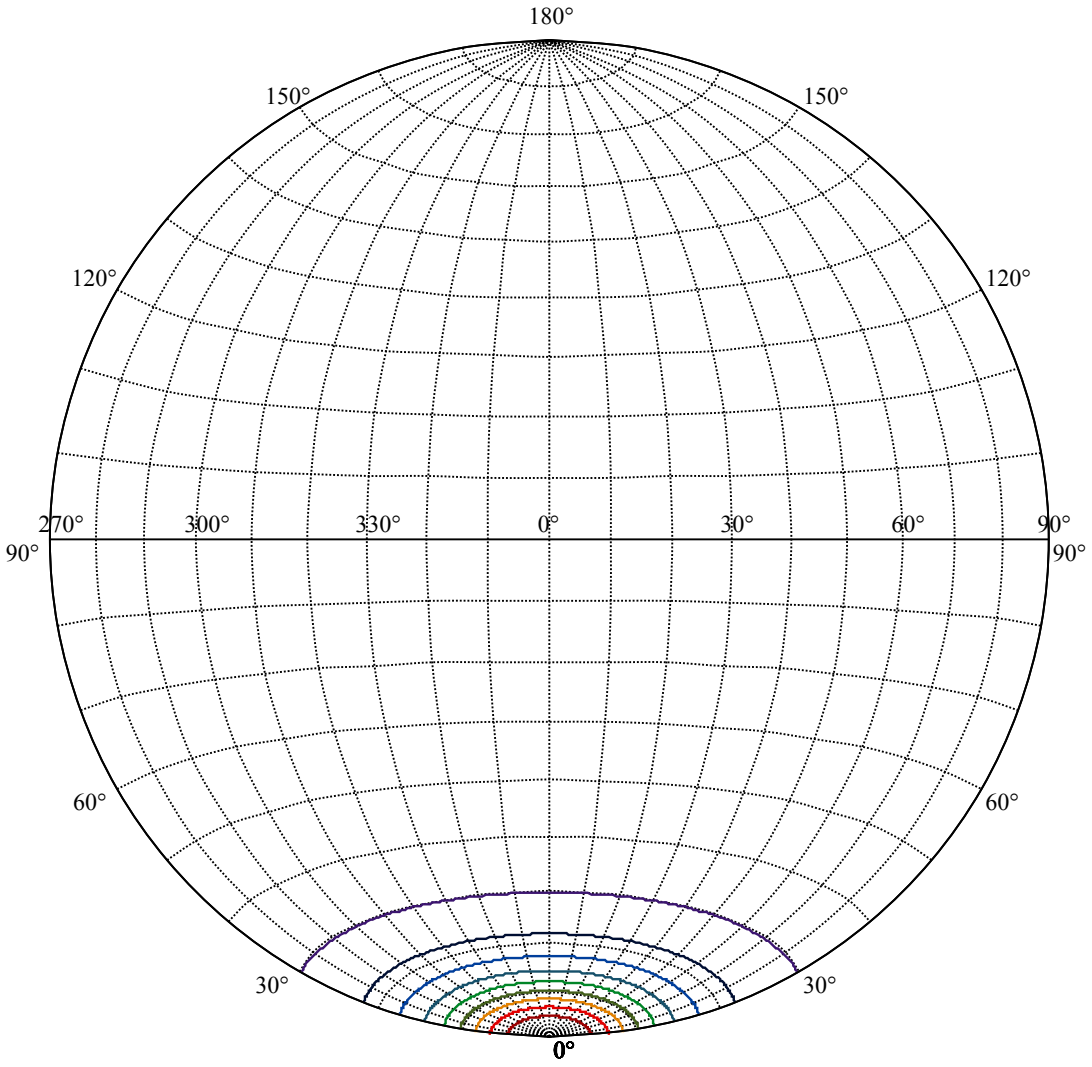


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

ISO candela diagram on circular web



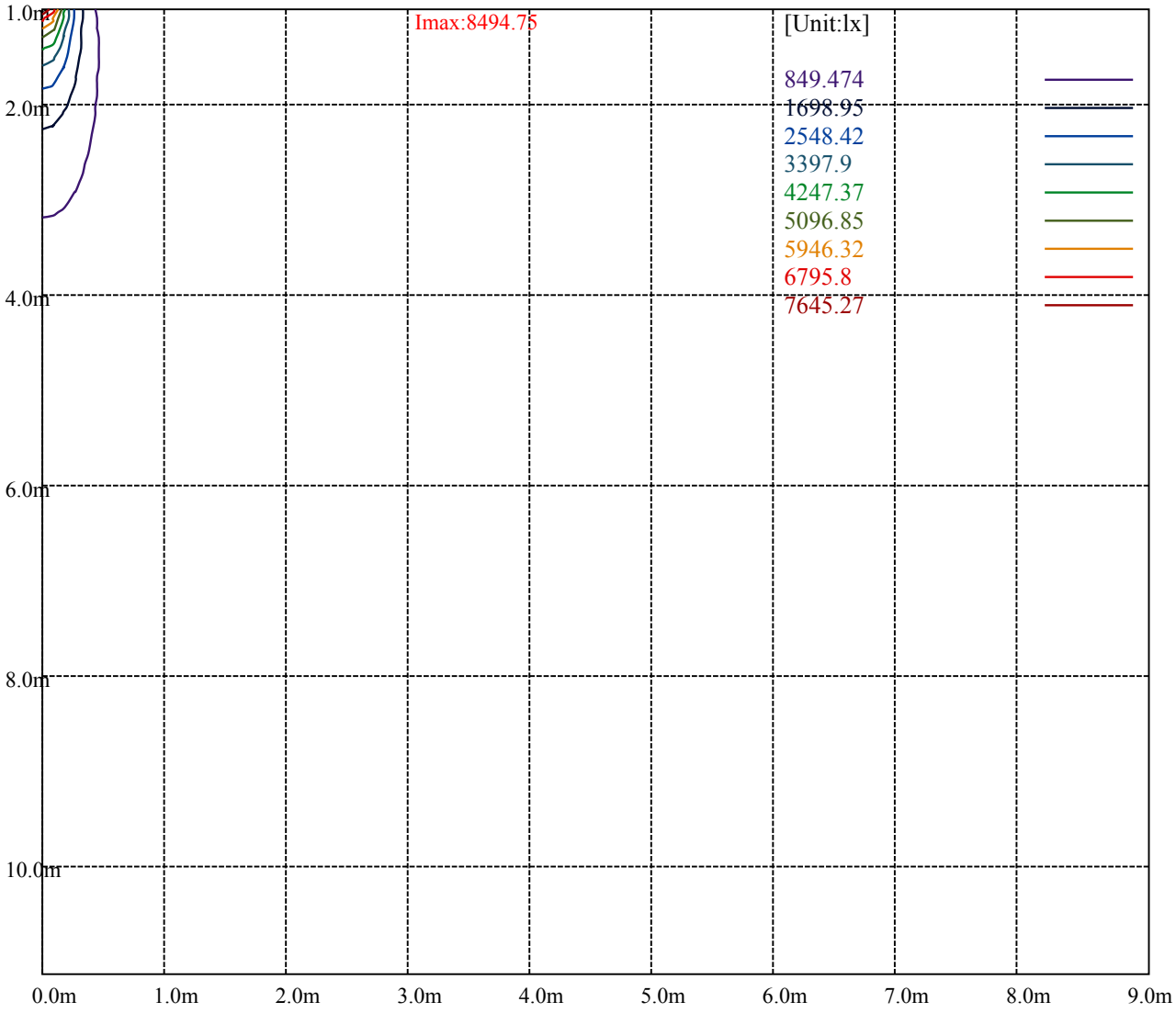
House [Unit:cd] Road

Imax:8494.75

(10%Imax) 849.474
(20%Imax) 1698.95
(30%Imax) 2548.42
(40%Imax) 3397.9
(50%Imax) 4247.37
(60%Imax) 5096.85
(70%Imax) 5946.32
(80%Imax) 6795.8
(90%Imax) 7645.27

Equipment: GMS1980	Date: 2024/4/25	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

Luminance Limitting Curve(no luminous side)

Luminance Table

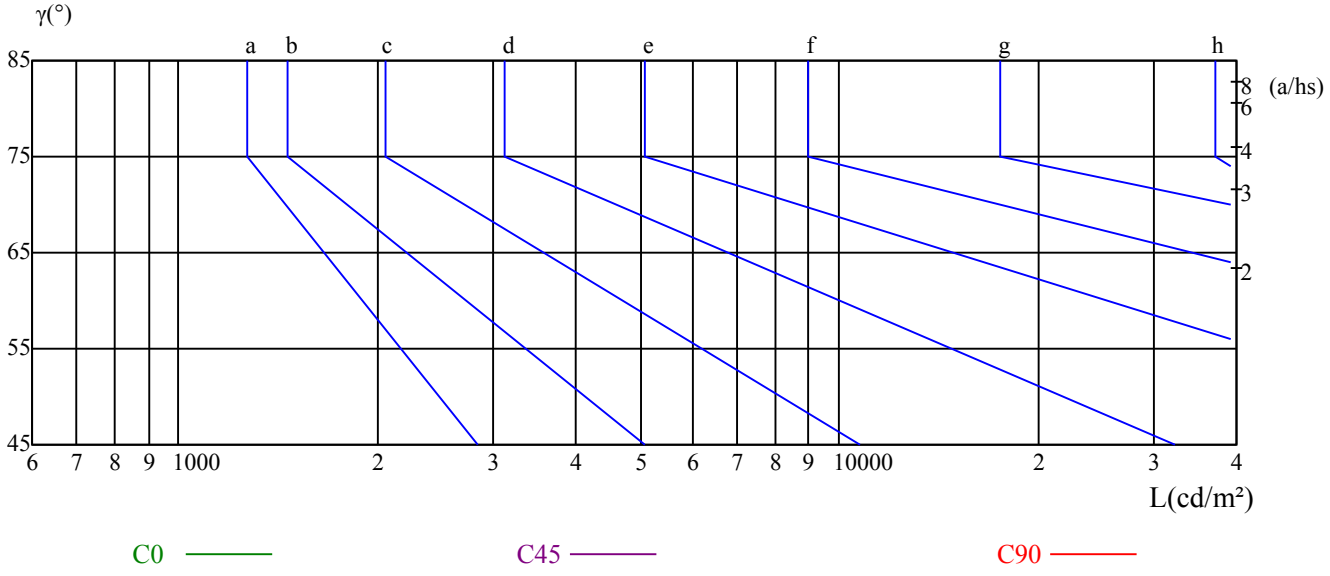
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

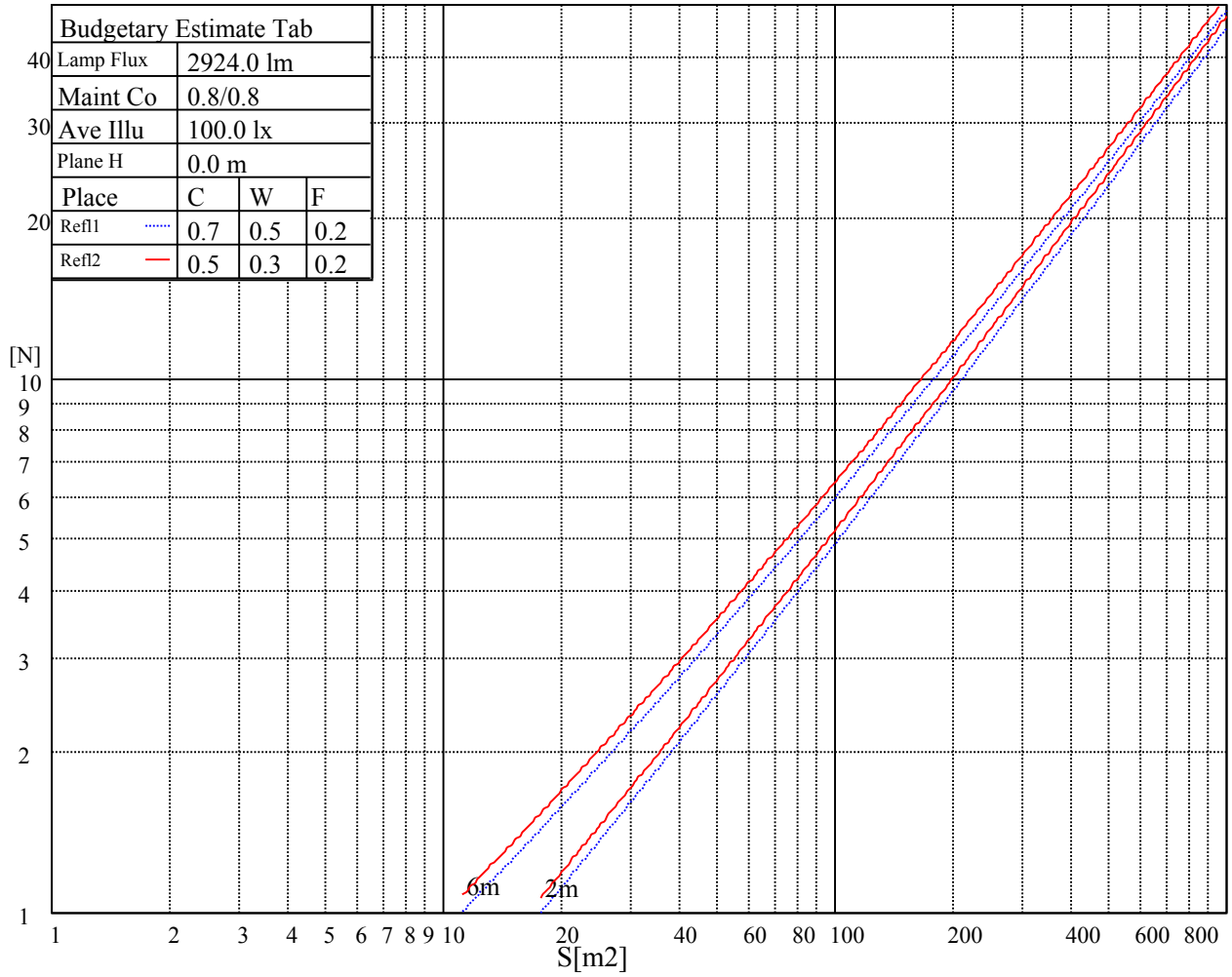
Glare Table

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

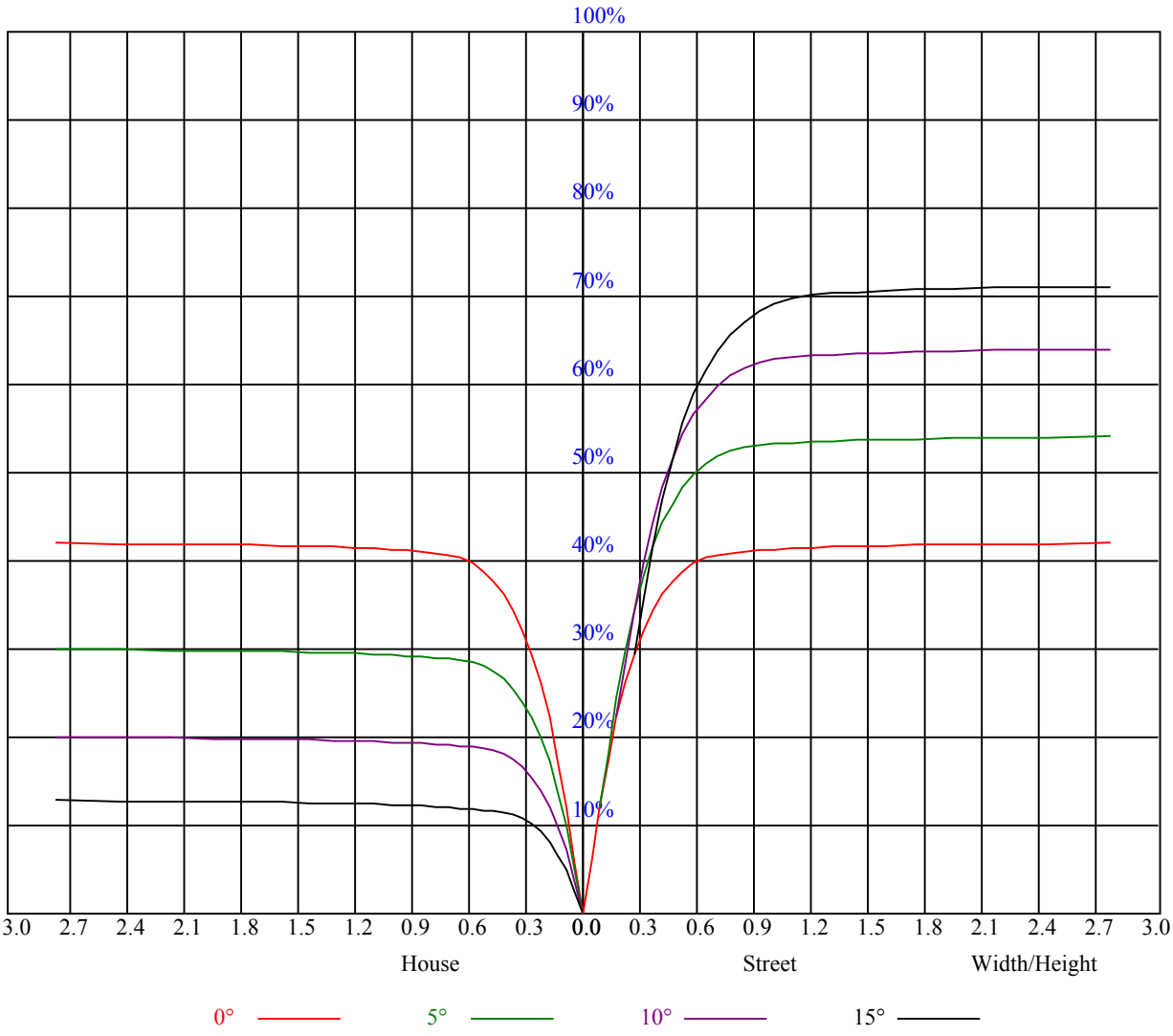


Equipment: GMS1980 Date: 2024/4/25 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

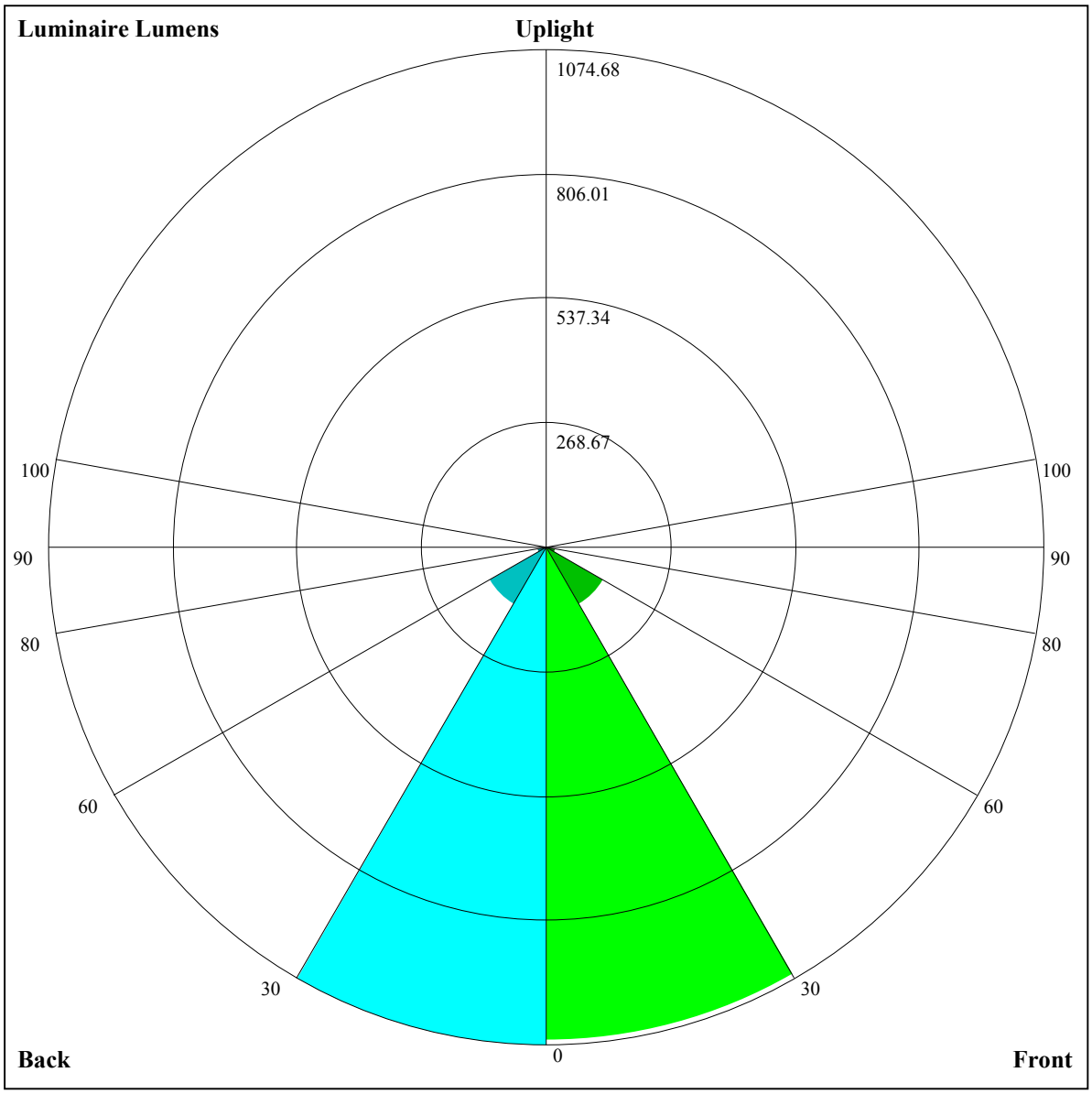
Utilization factor table for indoor luminaire

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	1.01	1.01	1.01	0.99	0.99	0.99	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.85
1	0.95	0.93	0.91	0.93	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82	0.80
2	0.89	0.86	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.82	0.81	0.79	0.80	0.79	0.77	0.76
3	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.73
4	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
5	0.76	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
6	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	0.67	0.64	0.63
7	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.61
8	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.59	0.59
9	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.56
10	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.55	0.60	0.57	0.55	0.54

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2024/4/25	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.65



Luminaire Lumens:
FL=1066.9,FM=142.41,FH=19.47,FVH=6.41
BL=1074.68,BM=142.76,BH=19.12,BVH=6.38
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	8492.84	8416.76	8293.87	8048.66	7765.41	7311.86	6904.54	6467.97	6013.25
45.0	8506.89	8500.45	8452.46	8316.69	8145.22	7891.23	7562.34	7171.41	6637.10
90.0	8501.04	8427.88	8309.08	8125.91	7887.14	7470.46	7076.01	6645.87	6192.32
135.0	8478.21	8503.38	8465.92	8348.29	8111.28	7826.27	7458.75	7046.17	6497.81
180.0	8492.84	8510.99	8464.17	8352.39	8153.41	7787.65	7400.81	6961.31	6493.72
225.0	8506.89	8442.51	8300.30	8083.77	7661.24	7255.09	6803.88	6199.35	5718.88
270.0	8501.04	8502.79	8443.10	8265.78	8063.29	7760.73	7279.09	6824.95	6356.19
315.0	8478.21	8403.89	8234.17	8020.57	7717.42	7345.80	6799.20	6339.80	5875.72
360.0	8492.84	8416.76	8293.87	8048.66	7765.41	7311.86	6904.54	6467.97	6013.25

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5447.33	5014.85	4599.34	4204.90	3743.74	3416.02	3116.97	2785.73	2547.54
45.0	6190.57	5620.56	5179.30	4760.86	4251.13	3864.88	3518.43	3200.07	2850.10
90.0	5632.26	5183.98	4745.65	4237.67	3854.35	3430.65	3123.99	2844.84	2603.72
135.0	6047.19	5604.76	5166.42	4636.21	4239.43	3868.98	3444.69	3135.11	2861.22
180.0	5909.66	5440.31	4986.18	4457.72	4063.86	3707.46	3303.07	3019.23	2768.17
225.0	5248.36	4804.17	4292.10	3925.16	3581.05	3264.44	2931.45	2695.02	2472.05
270.0	5785.01	5313.90	4872.06	4347.70	3977.83	3614.99	3293.12	2949.59	2699.12
315.0	5413.39	4863.28	4450.69	4067.37	3710.39	3304.82	3018.65	2701.46	2470.88
360.0	5447.33	5014.85	4599.34	4204.90	3743.74	3416.02	3116.97	2785.73	2547.54

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2341.54	2108.04	1941.25	1789.68	1607.09	1473.07	1152.02	1152.02	1108.36
45.0	2606.65	2387.78	2157.20	1986.31	1831.23	1693.11	1524.57	1402.26	1282.29
90.0	2335.69	2144.91	1978.70	1824.79	1646.88	1513.45	1389.38	1150.20	1150.20
135.0	2559.25	2350.91	2113.31	1948.27	1798.45	1660.93	1495.89	1370.07	1254.78
180.0	2483.17	2268.39	2086.97	1927.20	1739.35	1596.55	1473.07	1341.39	1200.35
225.0	2225.08	2041.91	1872.78	1683.17	1539.20	1157.75	1157.75	1130.83	1044.45
270.0	2474.98	2267.22	2040.74	1879.80	1694.87	1554.42	1423.91	1273.51	1148.86
315.0	2264.88	2038.40	1878.05	1727.64	1587.19	1425.67	1158.98	1158.98	1070.67
360.0	2341.54	2108.04	1941.25	1789.68	1607.09	1473.07	1152.02	1152.02	1108.36

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1027.95	962.99	875.20	785.96	688.40	587.51	455.25	351.66	254.10
45.0	1152.37	1068.09	999.62	924.71	846.88	725.15	623.32	517.40	409.72
90.0	1069.79	1002.43	927.00	847.29	724.98	618.23	504.17	389.06	261.19
135.0	1149.44	1048.78	984.41	922.37	811.18	709.35	602.26	465.90	359.97
180.0	1107.89	1032.98	953.39	869.12	742.71	635.03	530.27	399.77	304.38
225.0	965.86	905.69	822.24	725.85	597.28	489.83	384.38	288.16	183.94
270.0	1061.07	990.84	905.40	818.20	714.03	606.35	468.82	361.73	313.15
315.0	999.39	939.58	864.14	770.27	643.45	535.60	427.21	301.27	212.50
360.0	1027.95	962.99	875.20	785.96	688.40	587.51	455.25	351.66	254.10

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	157.66	112.30	93.40	84.45	77.83	71.46	64.49	59.81	55.54
45.0	307.30	307.30	124.13	98.55	88.95	79.65	73.15	67.13	60.92
90.0	177.44	119.85	95.86	84.51	77.72	71.51	64.37	59.63	55.36
135.0	310.23	310.23	110.61	94.69	85.33	76.84	70.46	64.90	60.04
180.0	304.38	201.55	101.30	90.83	82.63	76.08	68.47	62.97	58.35
225.0	127.23	103.53	91.00	83.63	75.26	69.35	63.85	57.88	53.72
270.0	313.15	116.11	97.15	86.44	79.94	72.57	67.18	62.21	57.88
315.0	129.80	100.07	90.59	81.52	75.49	69.64	64.55	58.93	54.89
360.0	157.66	112.30	93.40	84.45	77.83	71.46	64.49	59.81	55.54

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	51.73	47.52	44.59	42.14	39.39	37.63	36.23	34.76	33.88
45.0	56.47	51.68	48.05	45.12	41.73	39.44	37.34	35.93	34.29
90.0	50.68	47.17	44.30	41.08	38.92	36.93	35.11	33.94	33.07
135.0	54.66	50.91	47.40	43.66	41.14	38.92	36.58	35.35	34.18
180.0	53.08	49.45	46.23	42.66	40.44	38.33	36.17	34.76	33.47
225.0	50.10	46.94	44.07	41.14	38.98	37.10	35.64	34.06	33.07
270.0	53.96	49.74	46.76	44.01	41.32	39.27	37.57	36.17	34.70
315.0	51.38	48.11	44.71	42.31	40.26	38.04	36.69	35.11	34.24
360.0	51.73	47.52	44.59	42.14	39.39	37.63	36.23	34.76	33.88

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	33.12	32.48	31.78	31.19	30.43	29.09	28.09	26.69	25.34
45.0	33.42	32.54	31.95	31.25	30.67	30.14	28.73	27.74	26.16
90.0	32.25	31.72	31.19	30.55	30.08	28.73	27.80	26.10	25.16
135.0	33.07	32.30	31.84	31.31	30.55	29.90	28.79	27.80	26.28
180.0	32.60	31.54	31.08	30.55	29.96	29.09	28.03	27.10	25.52
225.0	32.19	31.72	31.08	30.43	29.55	28.44	27.04	25.81	24.70
270.0	33.65	32.89	32.48	31.78	31.19	30.14	29.09	27.97	26.28
315.0	33.42	32.95	32.19	31.66	30.84	29.67	28.38	26.98	25.87
360.0	33.12	32.48	31.78	31.19	30.43	29.09	28.09	26.69	25.34

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	24.05	22.94	21.54	20.37	19.55	18.43	17.79	17.21	16.56
45.0	25.11	23.88	22.65	21.30	20.13	19.31	18.43	17.56	17.03
90.0	23.82	22.41	21.36	20.13	19.25	18.20	17.50	16.97	16.50
135.0	25.16	23.82	22.47	21.42	20.07	19.25	18.38	17.50	16.97
180.0	24.35	22.82	21.77	20.78	19.66	18.55	17.79	17.15	16.62
225.0	23.29	22.06	20.89	19.84	18.96	17.97	17.32	16.80	16.21
270.0	25.16	23.76	22.77	21.30	20.31	19.43	18.55	17.79	17.21
315.0	24.17	23.06	21.89	20.48	19.66	18.73	17.91	17.38	16.97
360.0	24.05	22.94	21.54	20.37	19.55	18.43	17.79	17.21	16.56

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	16.09	15.74	15.33	14.86	14.46	14.10	13.75	13.28	12.99
45.0	16.44	16.04	15.51	15.16	14.75	14.34	13.99	13.64	13.34
90.0	15.98	15.57	15.22	14.81	14.46	14.05	13.81	13.75	13.69
135.0	16.44	16.04	15.51	15.16	14.81	14.51	14.22	14.10	14.10
180.0	16.04	15.63	15.27	14.86	14.46	14.16	13.81	13.40	13.05
225.0	15.80	15.33	14.98	14.63	14.28	13.87	13.58	13.23	12.87
270.0	16.85	16.74	16.97	17.50	17.62	17.67	17.62	16.85	15.92
315.0	16.80	17.32	17.73	18.20	18.79	18.55	17.73	16.62	14.63
360.0	16.09	15.74	15.33	14.86	14.46	14.10	13.75	13.28	12.99

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.64	12.35	12.00	11.76	11.47	11.18	10.89	10.65	10.42
45.0	12.99	12.70	12.29	12.00	11.76	11.41	11.12	10.83	10.65
90.0	12.82	12.41	12.11	11.88	11.47	11.18	10.89	10.65	10.42
135.0	13.58	12.64	12.17	11.94	11.65	11.35	11.12	10.77	10.77
180.0	12.70	12.41	12.06	11.76	11.53	11.18	10.94	10.65	10.53
225.0	12.58	12.17	11.94	11.70	11.29	11.00	10.71	10.53	10.42
270.0	14.40	12.76	12.29	12.00	11.82	11.35	10.94	10.65	10.42
315.0	13.23	12.41	12.00	11.76	11.53	11.18	10.83	10.71	10.42
360.0	12.64	12.35	12.00	11.76	11.47	11.18	10.89	10.65	10.42

Intensity data(cd)

C/γ(°)	90.0
0.0	10.48
45.0	10.42
90.0	10.48
135.0	10.42
180.0	10.42
225.0	10.48
270.0	10.48
315.0	10.53
360.0	10.48