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Nata

LumCAT: 2-1122-A4
Luminaire: TE 2213382-1+92.76.365.00

Report No: NT2017060102	Voltage(V): 218.2000
Test No: GC2017060102	Current(A): 0.1020
LampCAT: NFCLJ060B	Power (W): 20.3000
Lamp flux(lm): 2150.0	PF: 0.9070
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1970.91
Efficiency(%): 91.67%
Lumens(lm)/Power(W): 97.09
Central intensity(cd): 4529.490
Maximum intensity(cd): 4529.490
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=34.8
[C90/270]Total=34.8
Field angle(10%Imax): [C0/180]Total=70.6
[C90/270]Total=70.6
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.56 C90_270=0.56
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.67%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.745%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4529.490	0.000	0	.000%	.000%
1.0	4521.507	4.331	4.331	.201%	.220%
2.0	4492.189	12.937	17.268	.602%	.876%
3.0	4443.464	21.371	38.639	.994%	1.960%
4.0	4383.453	29.547	68.186	1.374%	3.460%
5.0	4303.759	37.372	105.558	1.738%	5.356%
6.0	4215.669	44.772	150.329	2.082%	7.627%
7.0	4116.292	51.716	202.046	2.405%	10.251%
8.0	4011.547	58.169	260.215	2.706%	13.203%
9.0	3888.358	64.024	324.24	2.978%	16.451%
10.0	3752.920	69.151	393.39	3.216%	19.960%
11.0	3610.186	73.573	466.963	3.422%	23.693%
12.0	3441.025	77.080	544.043	3.585%	27.604%
13.0	3261.266	79.539	623.582	3.700%	31.639%
14.0	3045.445	80.725	704.307	3.755%	35.735%
15.0	2832.927	80.701	785.008	3.754%	39.830%
16.0	2597.423	79.570	864.578	3.701%	43.867%
17.0	2360.406	77.207	941.785	3.591%	47.784%
18.0	2132.197	74.073	1015.858	3.445%	51.543%
19.0	1922.019	70.535	1086.393	3.281%	55.121%
20.0	1694.636	66.195	1152.588	3.079%	58.480%
21.0	1507.995	61.497	1214.085	2.860%	61.600%
22.0	1347.794	57.388	1271.473	2.669%	64.512%
23.0	1215.356	53.782	1325.255	2.501%	67.241%
24.0	1097.508	50.568	1375.823	2.352%	69.806%
25.0	1003.196	47.765	1423.588	2.222%	72.230%
26.0	916.634	45.318	1468.906	2.108%	74.529%
27.0	859.554	43.455	1512.361	2.021%	76.734%
28.0	809.219	42.250	1554.611	1.965%	78.878%
29.0	764.499	41.173	1595.784	1.915%	80.967%
30.0	730.172	40.356	1636.139	1.877%	83.014%
31.0	693.532	39.620	1675.759	1.843%	85.025%
32.0	644.435	38.331	1714.09	1.783%	86.970%
33.0	594.100	36.488	1750.578	1.697%	88.821%
34.0	537.598	34.249	1784.826	1.593%	90.559%
35.0	479.541	31.589	1816.415	1.469%	92.161%
36.0	397.590	27.928	1844.343	1.299%	93.578%
37.0	326.250	23.608	1867.951	1.098%	94.776%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	249.034	19.202	1887.153	.893%	95.750%
39.0	191.638	15.041	1902.194	.700%	96.514%
40.0	130.663	11.241	1913.435	.523%	97.084%
41.0	86.673	7.739	1921.174	.360%	97.477%
42.0	51.822	5.032	1926.206	.234%	97.732%
43.0	31.162	3.074	1929.28	.143%	97.888%
44.0	22.780	2.036	1931.316	.095%	97.991%
45.0	18.540	1.588	1932.904	.074%	98.072%
46.0	16.723	1.379	1934.283	.064%	98.142%
47.0	14.824	1.255	1935.537	.058%	98.205%
48.0	13.158	1.131	1936.669	.053%	98.263%
49.0	10.832	0.985	1937.654	.046%	98.313%
50.0	9.841	0.862	1938.516	.040%	98.356%
51.0	8.823	0.790	1939.305	.037%	98.396%
52.0	8.713	0.752	1940.058	.035%	98.435%
53.0	8.616	0.754	1940.812	.035%	98.473%
54.0	8.548	0.757	1941.568	.035%	98.511%
55.0	8.451	0.759	1942.327	.035%	98.550%
56.0	8.382	0.761	1943.088	.035%	98.588%
57.0	8.327	0.764	1943.852	.036%	98.627%
58.0	8.272	0.768	1944.619	.036%	98.666%
59.0	8.245	0.772	1945.391	.036%	98.705%
60.0	8.203	0.777	1946.168	.036%	98.745%
61.0	8.162	0.781	1946.949	.036%	98.784%
62.0	8.121	0.785	1947.734	.036%	98.824%
63.0	8.080	0.788	1948.522	.037%	98.864%
64.0	8.052	0.792	1949.314	.037%	98.904%
65.0	8.066	0.798	1950.111	.037%	98.945%
66.0	8.038	0.803	1950.915	.037%	98.986%
67.0	8.011	0.807	1951.722	.038%	99.026%
68.0	7.969	0.810	1952.531	.038%	99.068%
69.0	7.969	0.813	1953.344	.038%	99.109%
70.0	7.969	0.819	1954.163	.038%	99.150%
71.0	7.969	0.824	1954.987	.038%	99.192%
72.0	7.928	0.827	1955.813	.038%	99.234%
73.0	7.901	0.828	1956.641	.038%	99.276%
74.0	7.887	0.830	1957.471	.039%	99.318%
75.0	7.901	0.834	1958.305	.039%	99.360%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.859	0.837	1959.142	.039%	99.403%
77.0	7.873	0.839	1959.981	.039%	99.445%
78.0	7.832	0.841	1960.821	.039%	99.488%
79.0	7.818	0.841	1961.662	.039%	99.531%
80.0	7.777	0.841	1962.503	.039%	99.573%
81.0	7.790	0.842	1963.345	.039%	99.616%
82.0	7.749	0.843	1964.187	.039%	99.659%
83.0	7.749	0.843	1965.03	.039%	99.702%
84.0	7.708	0.842	1965.872	.039%	99.744%
85.0	7.708	0.841	1966.713	.039%	99.787%
86.0	7.694	0.842	1967.555	.039%	99.830%
87.0	7.667	0.841	1968.396	.039%	99.872%
88.0	7.639	0.838	1969.234	.039%	99.915%
89.0	7.639	0.837	1970.072	.039%	99.957%
90.0	7.639	0.838	1970.909	.039%	100.000%

Zonal flux distribution table

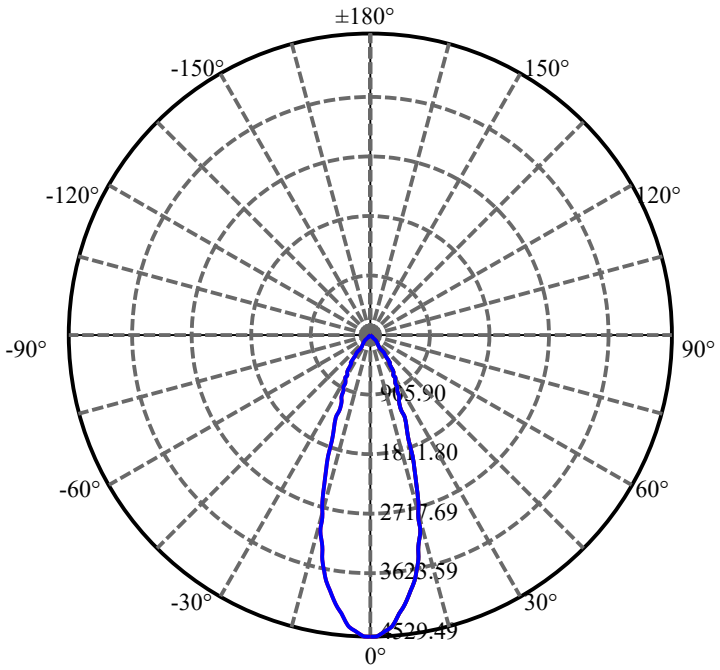
ZONAL LUMEN SUMMARY

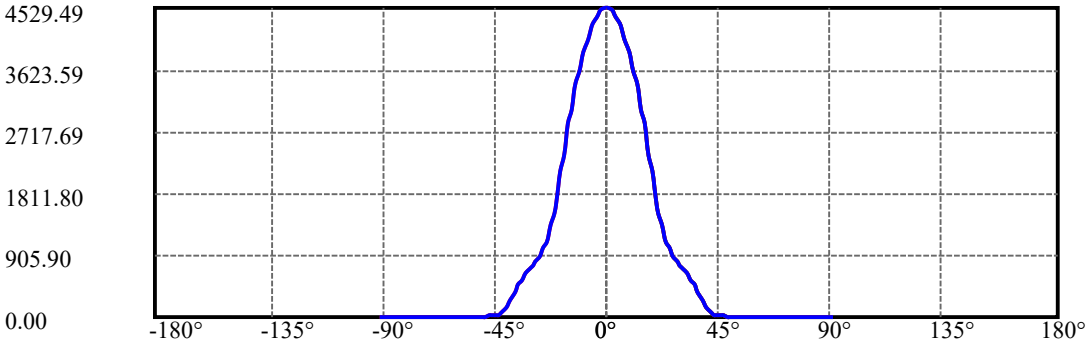
Zone	Lumens	%Lamp	%Fixt
0-30	1636.14	76.10%	83.01%
0-40	1913.43	89.00%	97.08%
0-60	1946.17	90.52%	98.74%
0-90	1970.07	91.63%	99.96%
0-120	1970.07	91.63%	99.96%
0-180	1970.91	91.67%	100.00%
60-90	24.68	1.15%	1.25%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.54	1576.73	73.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	393.39
10-20	759.20
20-30	483.55
30-40	277.30
40-50	25.08
50-60	7.65
60-70	7.99
70-80	8.34
80-90	7.57
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):

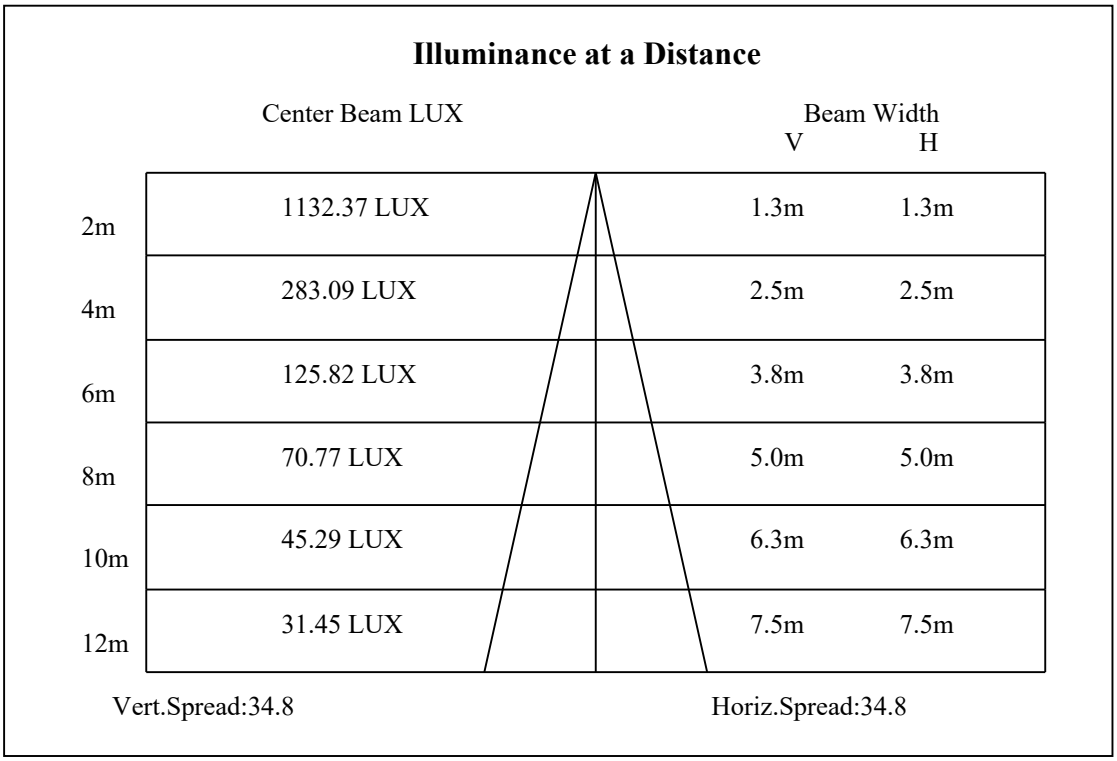
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:35.3 Right:35.3
:C90/270Left:35.3 Right:35.3

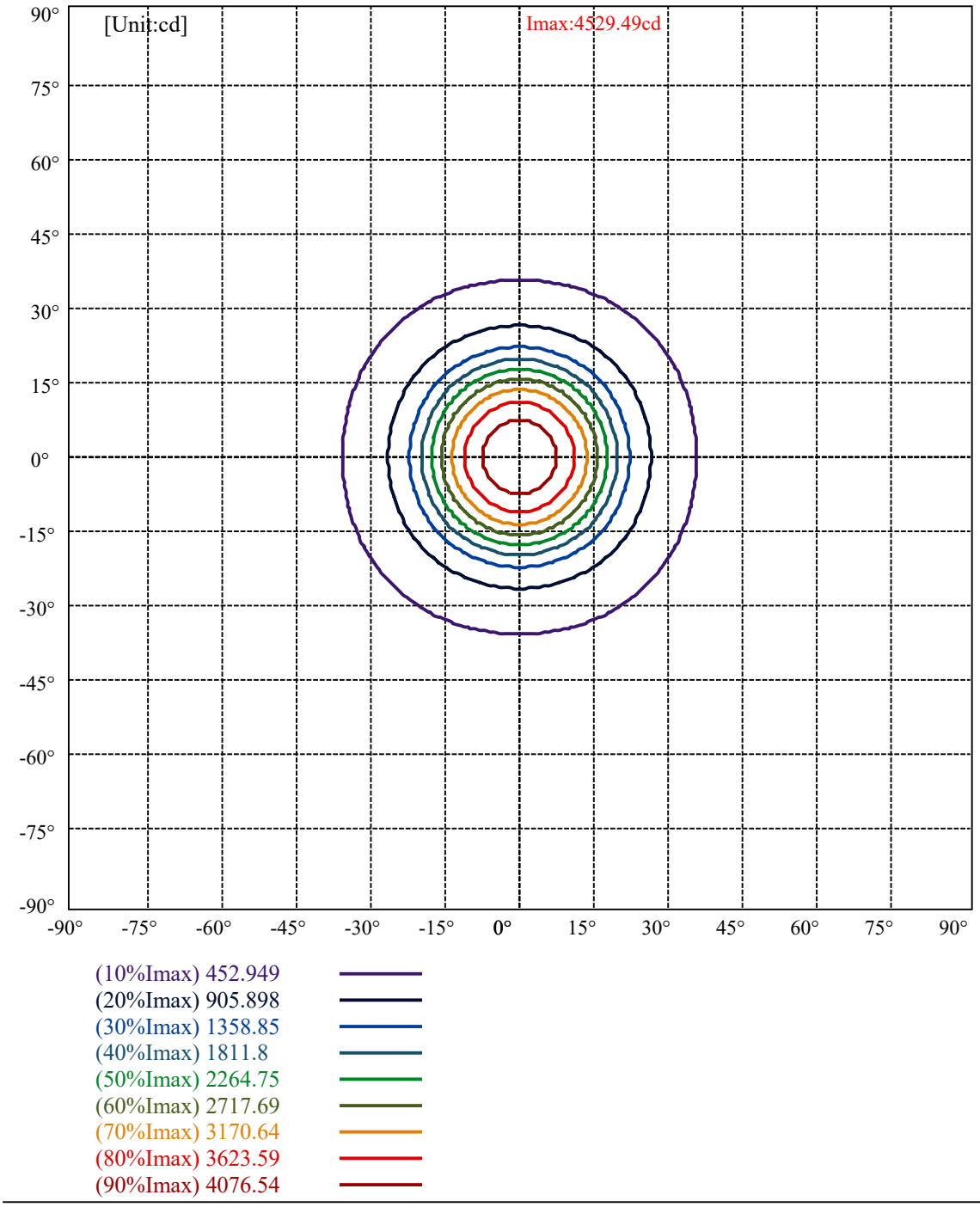
Beam Angle(50%Imax):C0/180Left:17.4 Right:17.4
:C90/270Left:17.4 Right:17.4

Lux distance Curve



Equipment: gms1980 Date: 2017/5/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

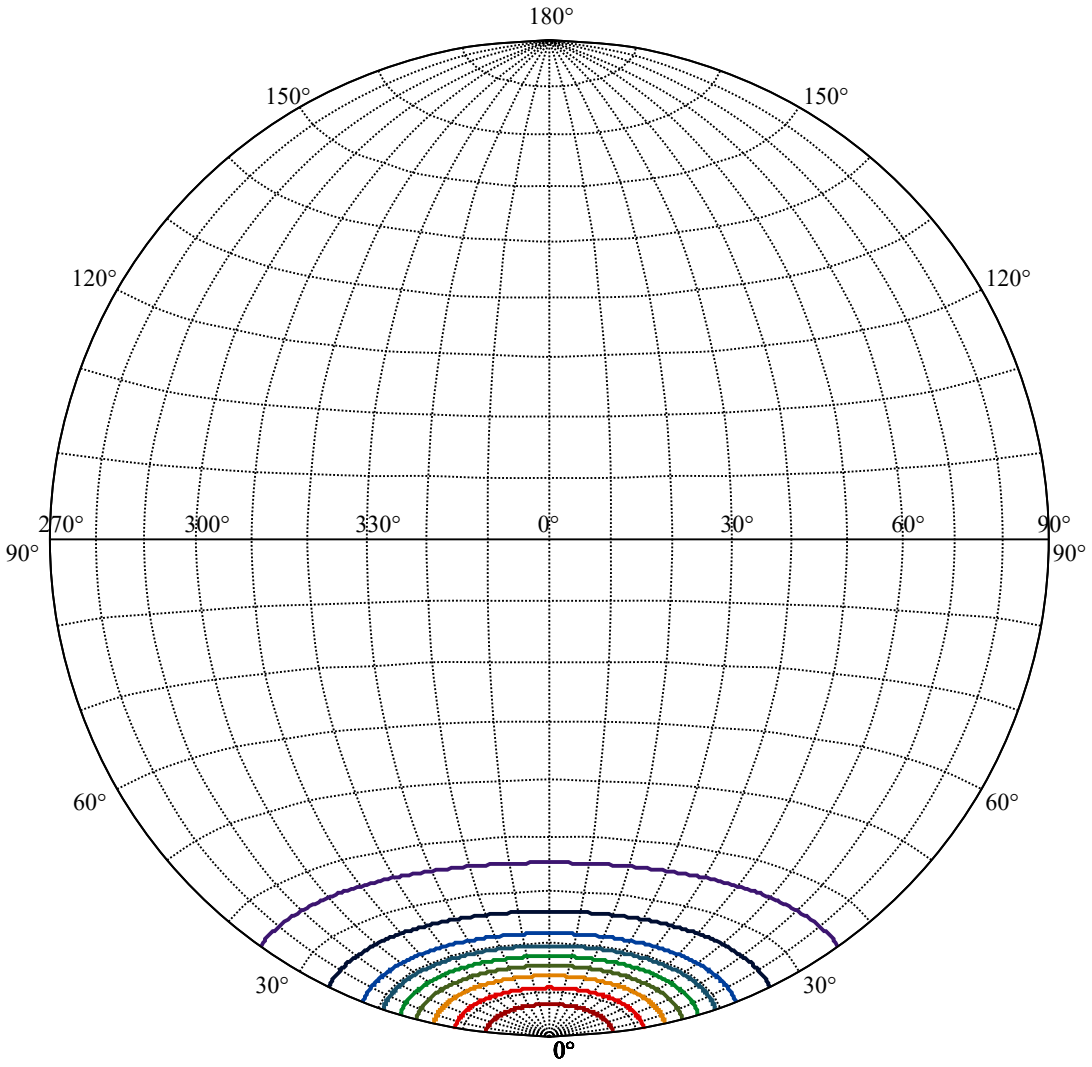


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



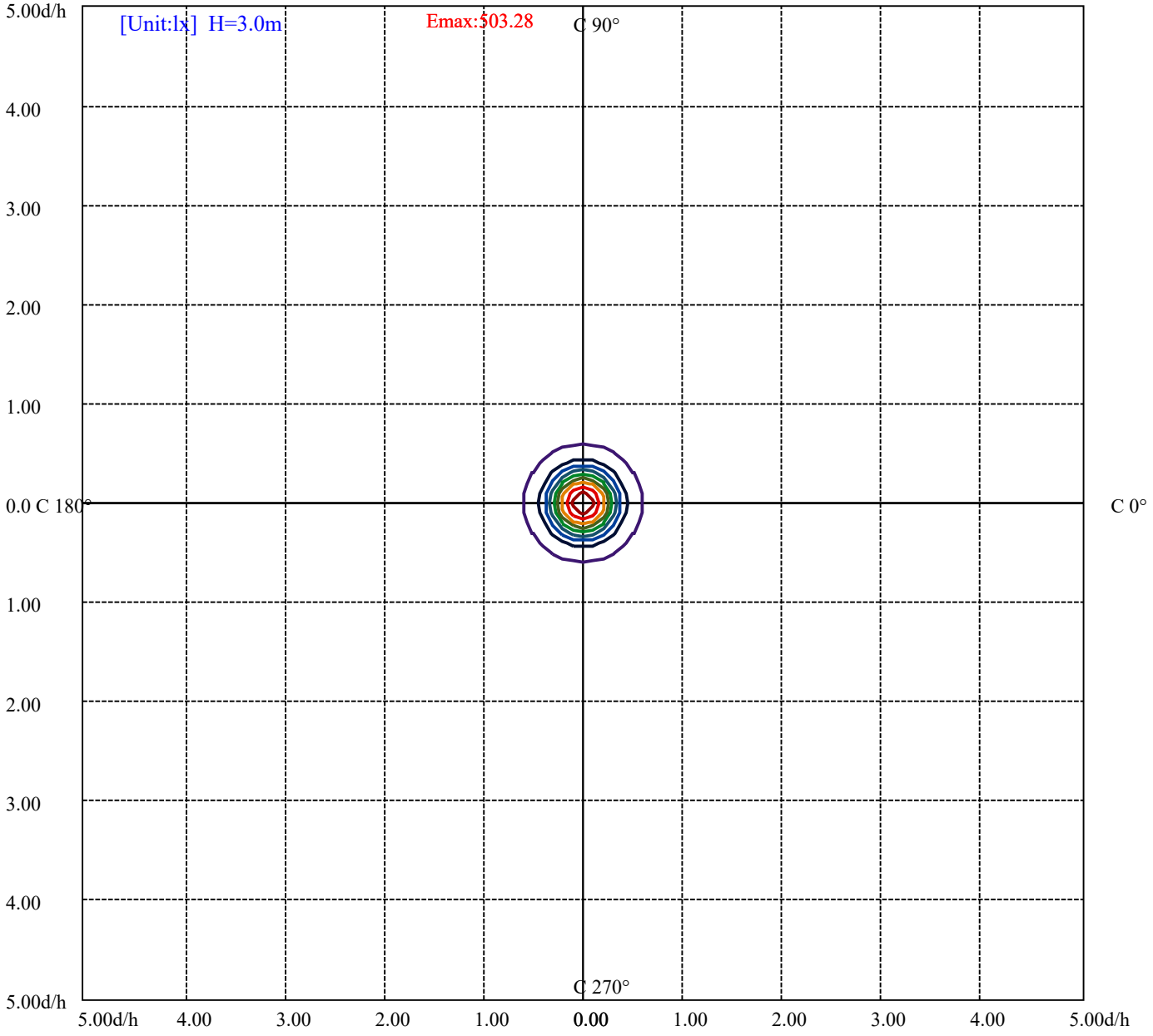
House [Unit:cd] Road

Imax:4529.49

(10%Imax) 452.949
(20%Imax) 905.898
(30%Imax) 1358.85
(40%Imax) 1811.8
(50%Imax) 2264.75
(60%Imax) 2717.69
(70%Imax) 3170.64
(80%Imax) 3623.59
(90%Imax) 4076.54

Equipment: gms1980 Date: 2017/5/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

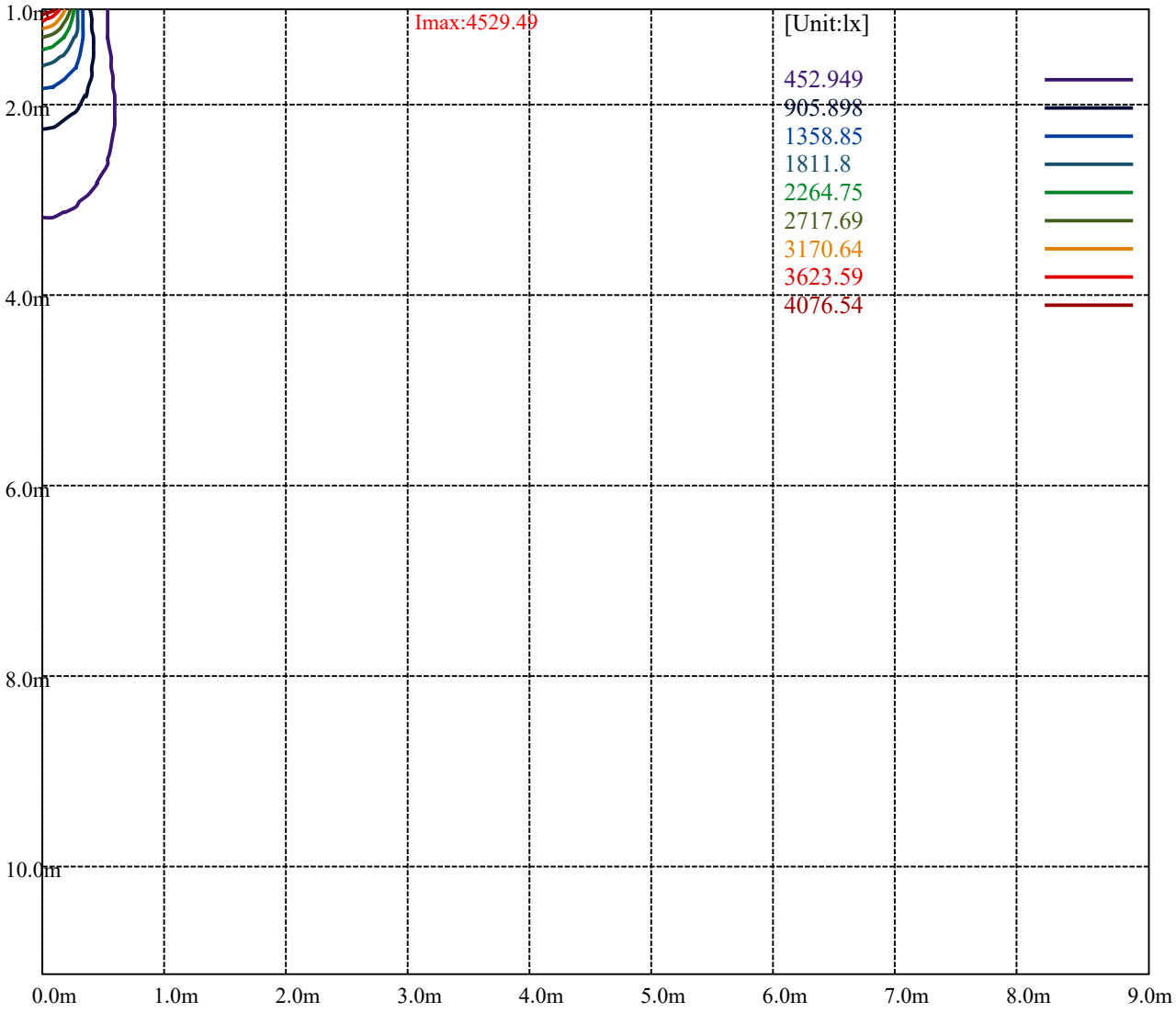
ISO illuminance diagram



(10%Emax) 50.32767
(20%Emax) 100.6553
(30%Emax) 150.9833
(40%Emax) 201.3111
(50%Emax) 251.6378
(60%Emax) 301.9655
(70%Emax) 352.2933
(80%Emax) 402.6211
(90%Emax) 452.9489

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/11
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

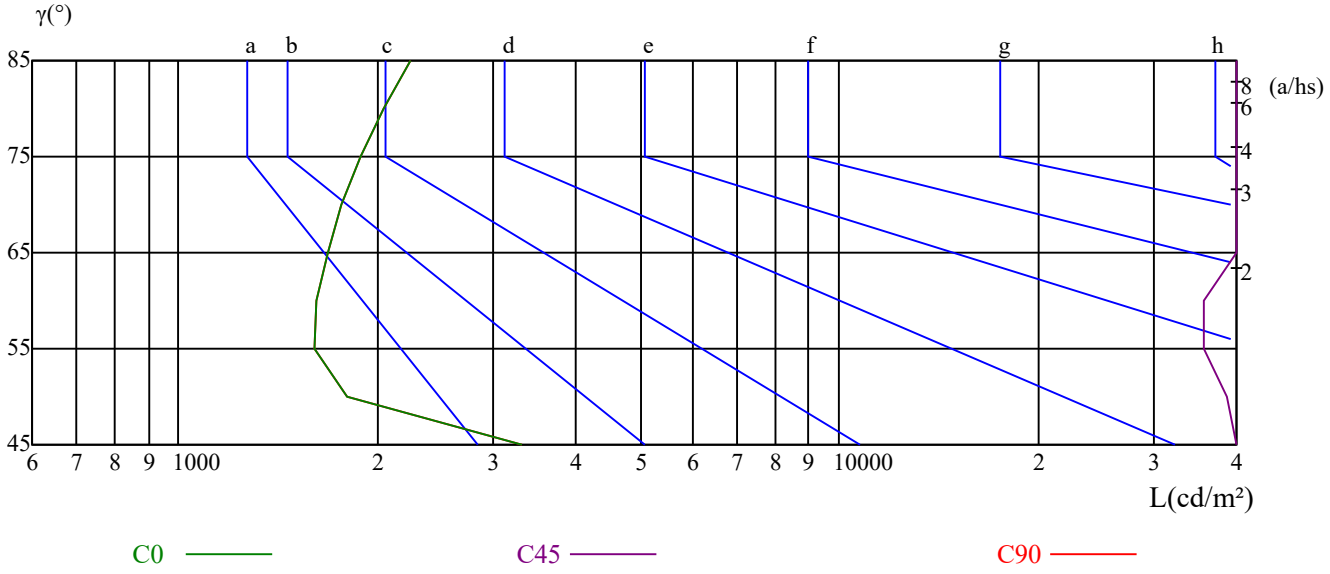
γ	45	50	55	60	65	70	75	80	85
C0	3315	1804	1602	1622	1681	1769	1892	2038	2250
C45	52716	38708	35756	35720	44017	81244	109134	112018	47758
C90	3315	1804	1602	1622	1681	1769	1892	2038	2250

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3895	3895	126021	6230	6230	462963	18049	18049	521975

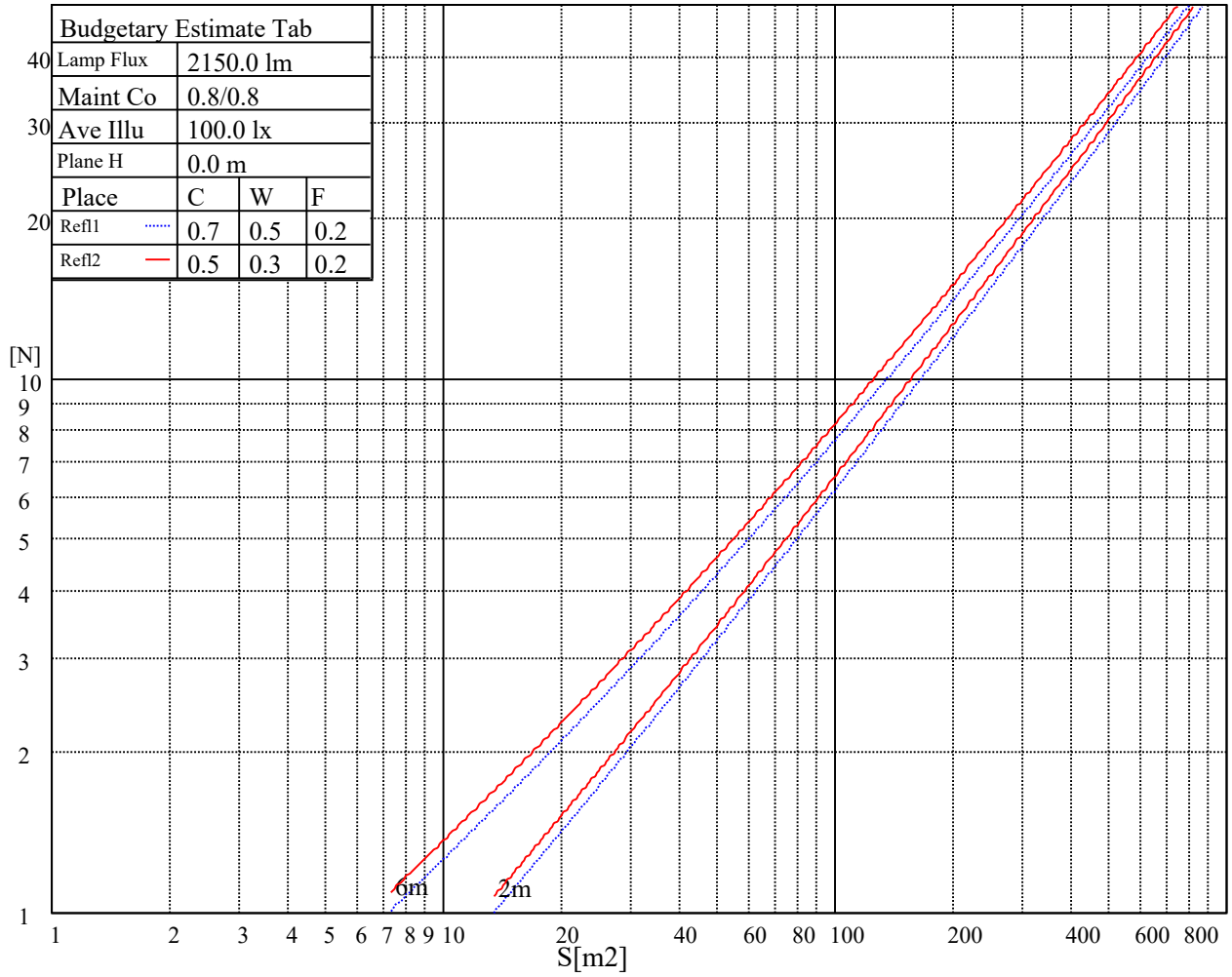
Glare Table

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: 2017/5/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	1.00	0.98	1.00	0.98	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.70
6	0.78	0.73	0.70	0.77	0.73	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
9	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.58
10	0.65	0.61	0.58	0.65	0.60	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56

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	4520.68	4478.84	4423.78	4343.95	4258.06	4154.01	4037.84	3920.57	3784.58
90.0	4538.30	4560.87	4562.52	4542.70	4504.16	4435.34	4362.12	4279.53	4181.53
180.0	4520.68	4548.76	4553.71	4539.95	4506.37	4460.67	4391.30	4303.76	4237.14
270.0	4538.30	4497.56	4428.74	4347.25	4265.22	4165.02	4071.42	3961.31	3842.94
360.0	4520.68	4478.84	4423.78	4343.95	4258.06	4154.01	4037.84	3920.57	3784.58

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3592.98	3421.76	3229.61	2958.18	2720.34	2471.48	2181.89	1898.34	1679.22
90.0	4078.03	3979.48	3852.30	3721.81	3553.89	3367.80	3185.56	2959.83	2712.63
180.0	4157.31	4035.08	3951.40	3847.89	3724.01	3549.49	3393.13	3200.43	2986.81
270.0	3725.12	3575.36	3407.44	3236.22	3046.82	2793.01	2571.13	2331.09	2062.96
360.0	3592.98	3421.76	3229.61	2958.18	2720.34	2471.48	2181.89	1898.34	1679.22

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1473.86	1323.01	1185.36	1075.80	997.62	922.75	857.23	804.37	759.23
90.0	2469.28	2212.17	1898.34	1677.57	1487.07	1327.41	1168.85	1070.85	980.00
180.0	2780.90	2557.92	2297.50	2035.44	1809.70	1577.92	1402.29	1241.52	1090.78
270.0	1804.75	1594.98	1397.33	1243.17	1096.78	1033.35	961.67	896.04	836.53
360.0	1473.86	1323.01	1185.36	1075.80	997.62	922.75	857.23	804.37	759.23

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	714.08	687.65	668.38	649.11	609.47	547.26	459.17	358.97	289.05
90.0	907.33	852.27	795.56	752.62	712.98	683.25	665.08	637.55	578.64
180.0	1028.18	949.83	887.45	837.02	790.55	739.85	706.43	680.99	657.48
270.0	788.63	747.12	706.59	681.93	661.12	607.38	545.72	472.88	392.99
360.0	714.08	687.65	668.38	649.11	609.47	547.26	459.17	358.97	289.05

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	166.71	97.06	46.85	31.66	28.79	26.48	23.78	20.81	16.85
90.0	511.47	434.39	334.19	286.29	177.23	107.86	47.68	31.60	29.12
180.0	619.00	557.72	471.23	372.24	280.95	184.38	111.21	51.26	27.69
270.0	293.18	215.82	143.86	76.36	35.68	27.97	24.61	20.98	17.45
360.0	166.71	97.06	46.85	31.66	28.79	26.48	23.78	20.81	16.85

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	9.36	9.03	8.92	8.75	8.70	8.59	8.53	8.42	8.31
90.0	26.15	23.73	20.92	16.52	9.41	9.08	8.86	8.81	8.70
180.0	24.00	22.41	20.15	18.22	16.24	12.88	9.19	9.03	8.86
270.0	14.65	11.73	9.30	9.14	8.97	8.81	8.70	8.59	8.59
360.0	9.36	9.03	8.92	8.75	8.70	8.59	8.53	8.42	8.31

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.26	8.20	8.20	8.15	8.09	8.09	8.04	7.98	7.98
90.0	8.64	8.59	8.48	8.42	8.37	8.31	8.31	8.31	8.26
180.0	8.81	8.59	8.48	8.42	8.31	8.31	8.26	8.20	8.09
270.0	8.48	8.42	8.37	8.31	8.31	8.26	8.20	8.15	8.15
360.0	8.26	8.20	8.20	8.15	8.09	8.09	8.04	7.98	7.98

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.93	7.93	7.93	7.87	7.82	7.76	7.82	7.82	7.82
90.0	8.20	8.15	8.20	8.20	8.15	8.09	8.09	8.09	8.09
180.0	8.04	8.04	8.04	8.04	8.04	7.98	7.93	7.93	7.98
270.0	8.15	8.09	8.09	8.04	8.04	8.04	8.04	8.04	7.98
360.0	7.93	7.93	7.93	7.87	7.82	7.76	7.82	7.82	7.82

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.76	7.71	7.71	7.71	7.71	7.71	7.65	7.65	7.60
90.0	8.04	8.04	8.04	8.04	8.04	7.98	7.93	7.93	7.87
180.0	7.98	7.93	7.87	7.87	7.82	7.87	7.87	7.82	7.76
270.0	7.93	7.93	7.93	7.98	7.87	7.93	7.87	7.87	7.87
360.0	7.76	7.71	7.71	7.71	7.71	7.71	7.65	7.65	7.60

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.60	7.60	7.60	7.54	7.54	7.54	7.54	7.54	7.54
90.0	7.93	7.87	7.87	7.82	7.82	7.82	7.76	7.76	7.71
180.0	7.76	7.71	7.71	7.71	7.71	7.65	7.60	7.54	7.60
270.0	7.87	7.82	7.82	7.76	7.76	7.76	7.76	7.71	7.71
360.0	7.60	7.60	7.60	7.54	7.54	7.54	7.54	7.54	7.54

C/γ(°)	90.0
0.0	7.54
90.0	7.71
180.0	7.54
270.0	7.76
360.0	7.54