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Nata

LumCAT: LN01D05015DA-N
Luminaire: 97.70.234.00

Report No: 210709-B012	Voltage(V): 35.9000
Test No: 210709-C012	Current(A): 0.5100
LampCAT: Fortimo LED SLM 1204 G7N	Power (W): 18.3090
Lamp flux(lm): 2429.4	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

Photometric Results

Lumens(lm): 2207.87
Efficiency(%): 90.88%
Lumens(lm)/Power(W): 120.59
Central intensity(cd): 12345.580
Maximum intensity(cd): 12345.580
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=20.1
[C90/270]Total=20.1
Field angle(10%Imax): [C0/180]Total=39.9
[C90/270]Total=39.9
Maximum s/h(1/2): C0_180=0.34 C90_270=0.34
Maximum s/h(1/4): C0_180=0.36 C90_270=0.36
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.88%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.643%

Equipment: GMS1980	Date: 2021/7/09	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12345.581	0.000	0	.000%	.000%
1.0	12264.019	11.775	11.775	.485%	.533%
2.0	11955.614	34.762	46.538	1.431%	2.108%
3.0	11452.500	55.985	102.522	2.304%	4.643%
4.0	10992.656	75.131	177.653	3.093%	8.046%
5.0	10340.986	91.776	269.429	3.778%	12.203%
6.0	9512.353	104.335	373.764	4.295%	16.929%
7.0	8690.611	112.985	486.749	4.651%	22.046%
8.0	7919.283	118.874	605.623	4.893%	27.430%
9.0	7055.213	121.360	726.983	4.995%	32.927%
10.0	6195.291	119.912	846.896	4.936%	38.358%
11.0	5476.486	116.625	963.521	4.801%	43.640%
12.0	4781.447	112.134	1075.655	4.616%	48.719%
13.0	4033.814	104.615	1180.27	4.306%	53.457%
14.0	3465.970	95.997	1276.266	3.951%	57.805%
15.0	2972.222	88.386	1364.652	3.638%	61.808%
16.0	2518.186	80.450	1445.102	3.311%	65.452%
17.0	2126.827	72.335	1517.438	2.977%	68.728%
18.0	1761.961	64.118	1581.555	2.639%	71.632%
19.0	1469.714	56.225	1637.78	2.314%	74.179%
20.0	1224.668	49.315	1687.095	2.030%	76.413%
21.0	1035.239	43.395	1730.489	1.786%	78.378%
22.0	875.953	38.406	1768.896	1.581%	80.118%
23.0	745.608	34.025	1802.92	1.401%	81.659%
24.0	628.791	30.049	1832.97	1.237%	83.020%
25.0	531.345	26.379	1859.348	1.086%	84.214%
26.0	457.066	23.332	1882.68	.960%	85.271%
27.0	395.923	20.869	1903.549	.859%	86.216%
28.0	336.066	18.532	1922.081	.763%	87.056%
29.0	297.506	16.576	1938.657	.682%	87.806%
30.0	261.555	15.095	1953.752	.621%	88.490%
31.0	228.115	13.627	1967.378	.561%	89.107%
32.0	200.510	12.280	1979.658	.505%	89.664%
33.0	181.350	11.250	1990.908	.463%	90.173%
34.0	163.624	10.440	2001.348	.430%	90.646%
35.0	147.558	9.664	2011.012	.398%	91.084%
36.0	134.902	8.994	2020.005	.370%	91.491%
37.0	123.434	8.425	2028.431	.347%	91.873%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	113.330	7.903	2036.334	.325%	92.230%
39.0	103.830	7.412	2043.746	.305%	92.566%
40.0	95.534	6.953	2050.699	.286%	92.881%
41.0	88.291	6.546	2057.245	.269%	93.178%
42.0	81.661	6.175	2063.42	.254%	93.457%
43.0	75.080	5.806	2069.226	.239%	93.720%
44.0	69.532	5.458	2074.684	.225%	93.967%
45.0	64.533	5.152	2079.836	.212%	94.201%
46.0	59.435	4.848	2084.684	.200%	94.420%
47.0	55.273	4.562	2089.246	.188%	94.627%
48.0	51.785	4.328	2093.574	.178%	94.823%
49.0	48.452	4.116	2097.691	.169%	95.009%
50.0	45.422	3.914	2101.605	.161%	95.187%
51.0	43.024	3.742	2105.347	.154%	95.356%
52.0	40.894	3.601	2108.948	.148%	95.519%
53.0	38.820	3.468	2112.415	.143%	95.676%
54.0	37.062	3.345	2115.76	.138%	95.828%
55.0	35.459	3.237	2118.997	.133%	95.974%
56.0	33.912	3.135	2122.131	.129%	96.116%
57.0	32.470	3.035	2125.167	.125%	96.254%
58.0	31.170	2.943	2128.109	.121%	96.387%
59.0	29.988	2.859	2130.969	.118%	96.517%
60.0	28.913	2.783	2133.751	.115%	96.643%
61.0	27.879	2.710	2136.462	.112%	96.766%
62.0	26.979	2.643	2139.105	.109%	96.885%
63.0	26.184	2.586	2141.691	.106%	97.002%
64.0	25.439	2.533	2144.224	.104%	97.117%
65.0	25.080	2.500	2146.724	.103%	97.230%
66.0	24.975	2.497	2149.221	.103%	97.343%
67.0	25.221	2.524	2151.745	.104%	97.458%
68.0	25.784	2.584	2154.329	.106%	97.575%
69.0	26.480	2.666	2156.995	.110%	97.696%
70.0	27.274	2.761	2159.756	.114%	97.821%
71.0	28.013	2.858	2162.613	.118%	97.950%
72.0	28.772	2.953	2165.566	.122%	98.084%
73.0	29.517	3.048	2168.614	.125%	98.222%
74.0	30.213	3.140	2171.754	.129%	98.364%
75.0	30.607	3.214	2174.968	.132%	98.510%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	30.994	3.270	2178.238	.135%	98.658%
77.0	31.261	3.319	2181.557	.137%	98.808%
78.0	31.071	3.337	2184.894	.137%	98.959%
79.0	29.820	3.272	2188.165	.135%	99.107%
80.0	27.457	3.088	2191.253	.127%	99.247%
81.0	24.539	2.812	2194.065	.116%	99.375%
82.0	21.038	2.472	2196.537	.102%	99.486%
83.0	17.501	2.095	2198.632	.086%	99.581%
84.0	14.829	1.761	2200.393	.072%	99.661%
85.0	12.776	1.507	2201.899	.062%	99.729%
86.0	11.707	1.338	2203.238	.055%	99.790%
87.0	10.842	1.234	2204.472	.051%	99.846%
88.0	10.413	1.164	2205.636	.048%	99.899%
89.0	10.160	1.128	2206.764	.046%	99.950%
90.0	10.104	1.111	2207.875	.046%	100.000%

Zonal flux distribution table

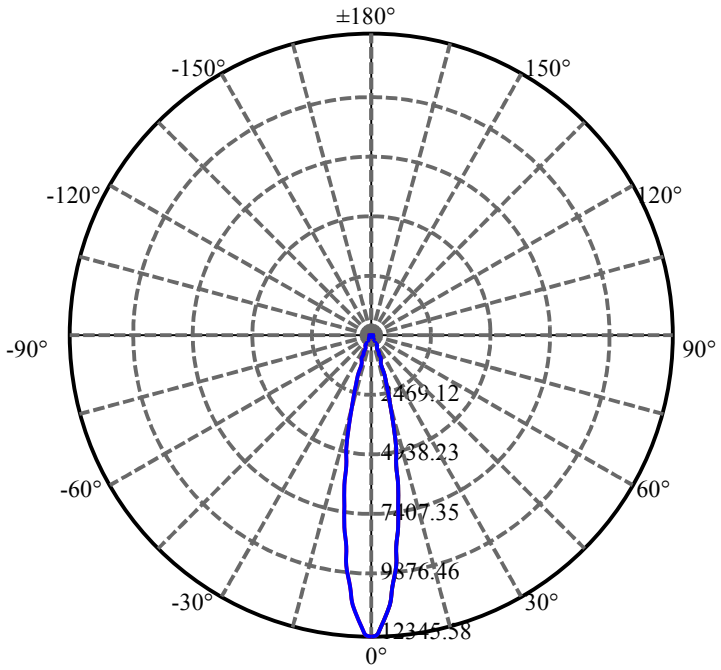
ZONAL LUMEN SUMMARY

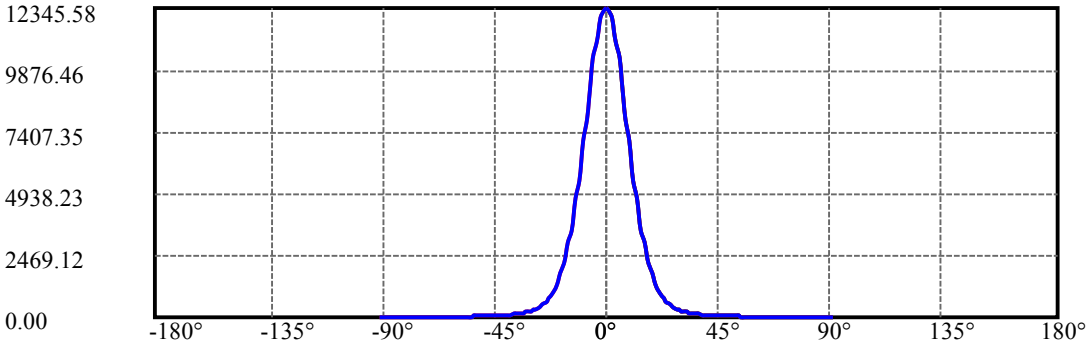
Zone	Lumens	%Lamp	%Fixt
0-30	1953.75	80.42%	88.49%
0-40	2050.70	84.41%	92.88%
0-60	2133.75	87.83%	96.64%
0-90	2206.76	90.84%	99.95%
0-120	2206.76	90.84%	99.95%
0-180	2207.87	90.88%	100.00%
60-90	75.80	3.12%	3.43%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-21.93	1766.30	72.70%	80.00%

ZONAL LUMEN SUMMARY

0-10	846.90
10-20	840.20
20-30	266.66
30-40	96.95
40-50	50.91
50-60	32.15
60-70	26.00
70-80	31.50
80-90	15.51
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):

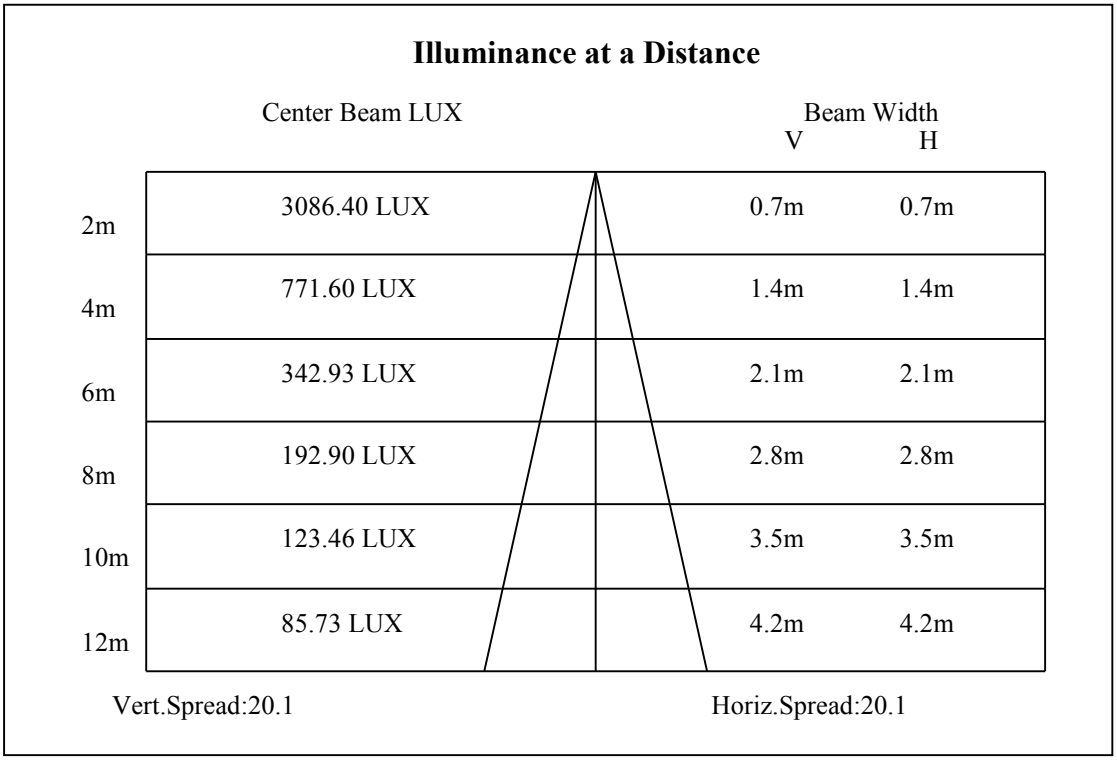
C0/C180:

C90/C270:

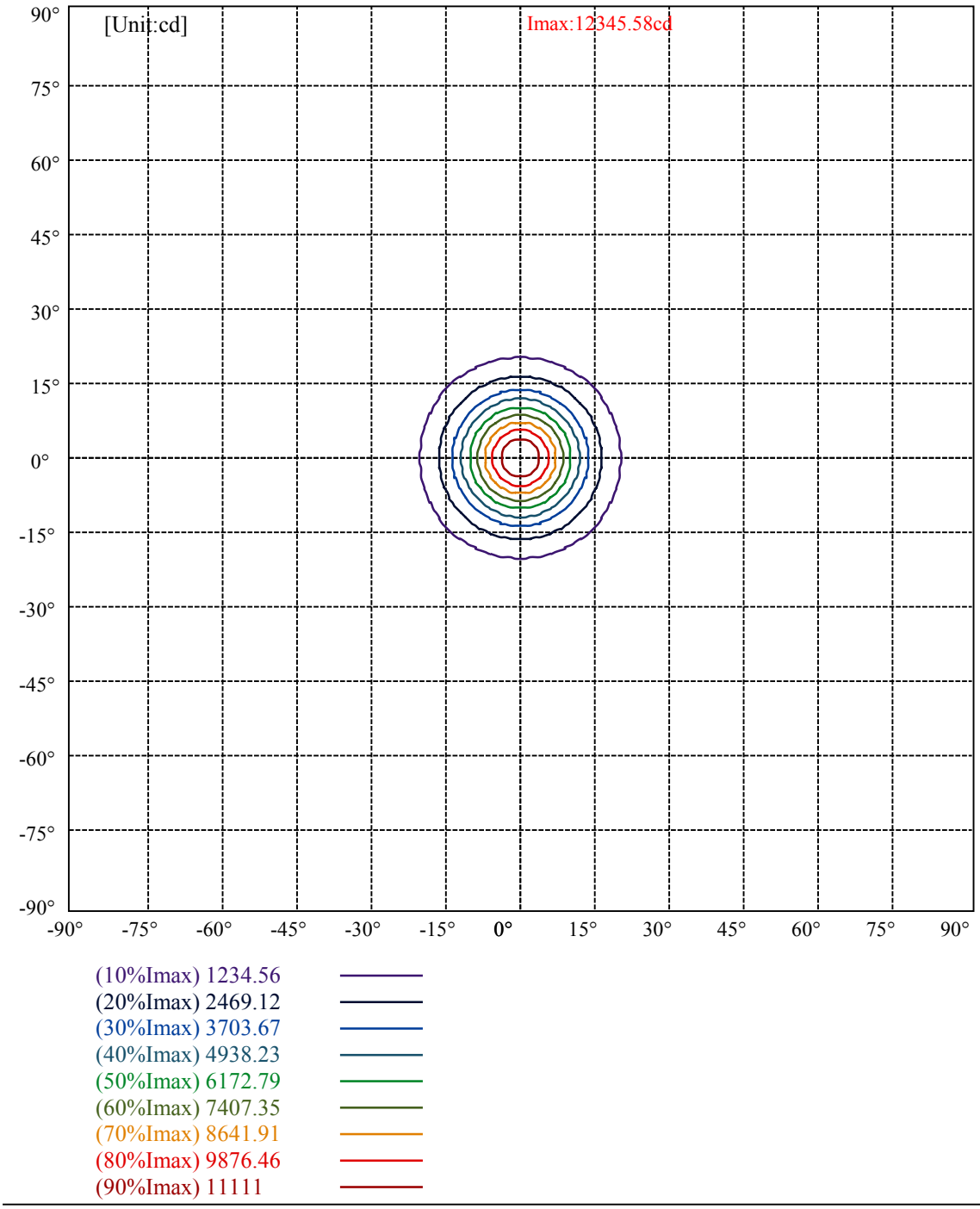
Field angle(10%Imax):C0/180Left:20.0 Right:20.0
:C90/270Left:20.0 Right:20.0

Beam Angle(50%Imax):C0/180Left:10.0 Right:10.0
:C90/270Left:10.0 Right:10.0

Lux distance Curve



ISO-Intensity(V-H)



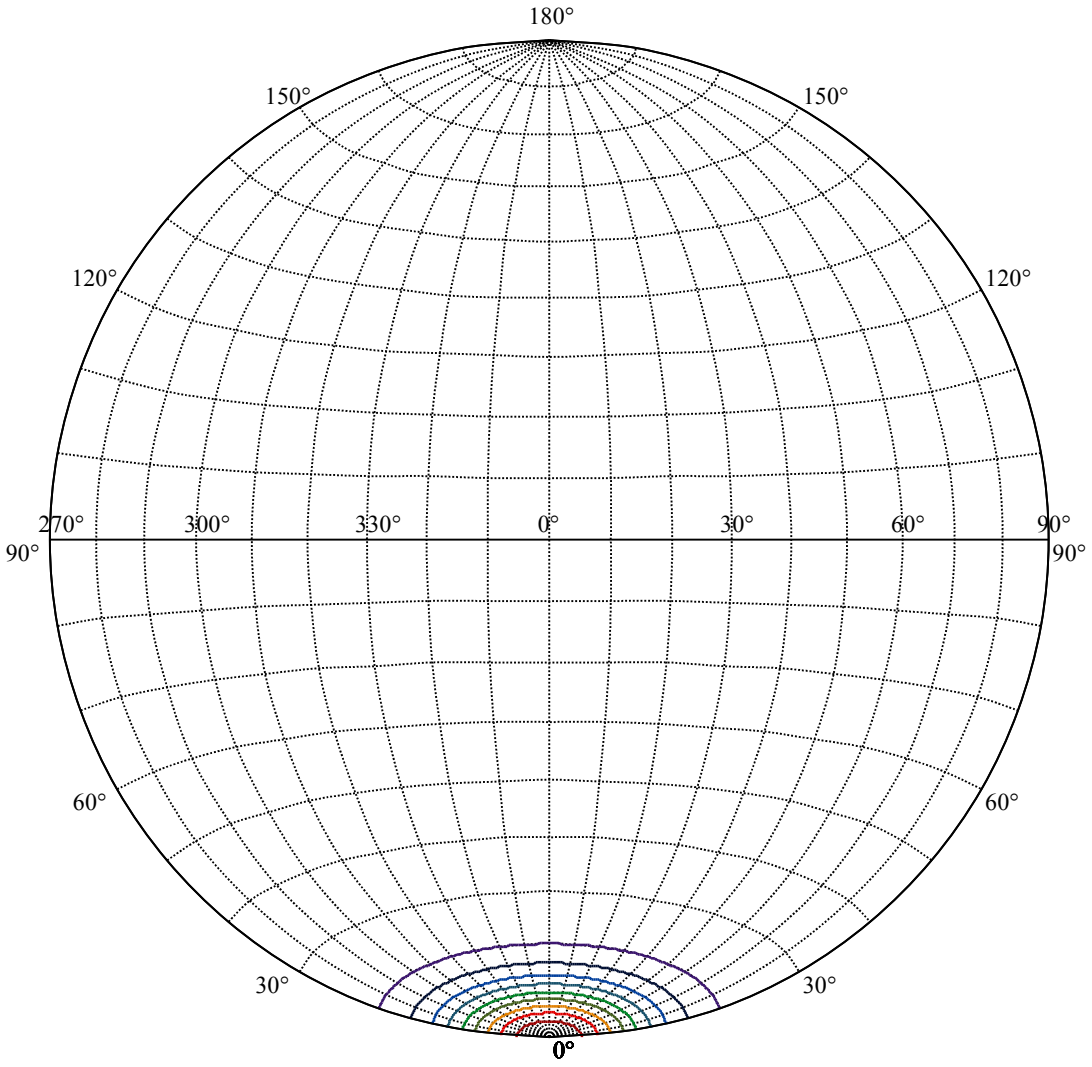
(10%Imax) 1234.56
(20%Imax) 2469.12
(30%Imax) 3703.67
(40%Imax) 4938.23
(50%Imax) 6172.79
(60%Imax) 7407.35
(70%Imax) 8641.91
(80%Imax) 9876.46
(90%Imax) 11111

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



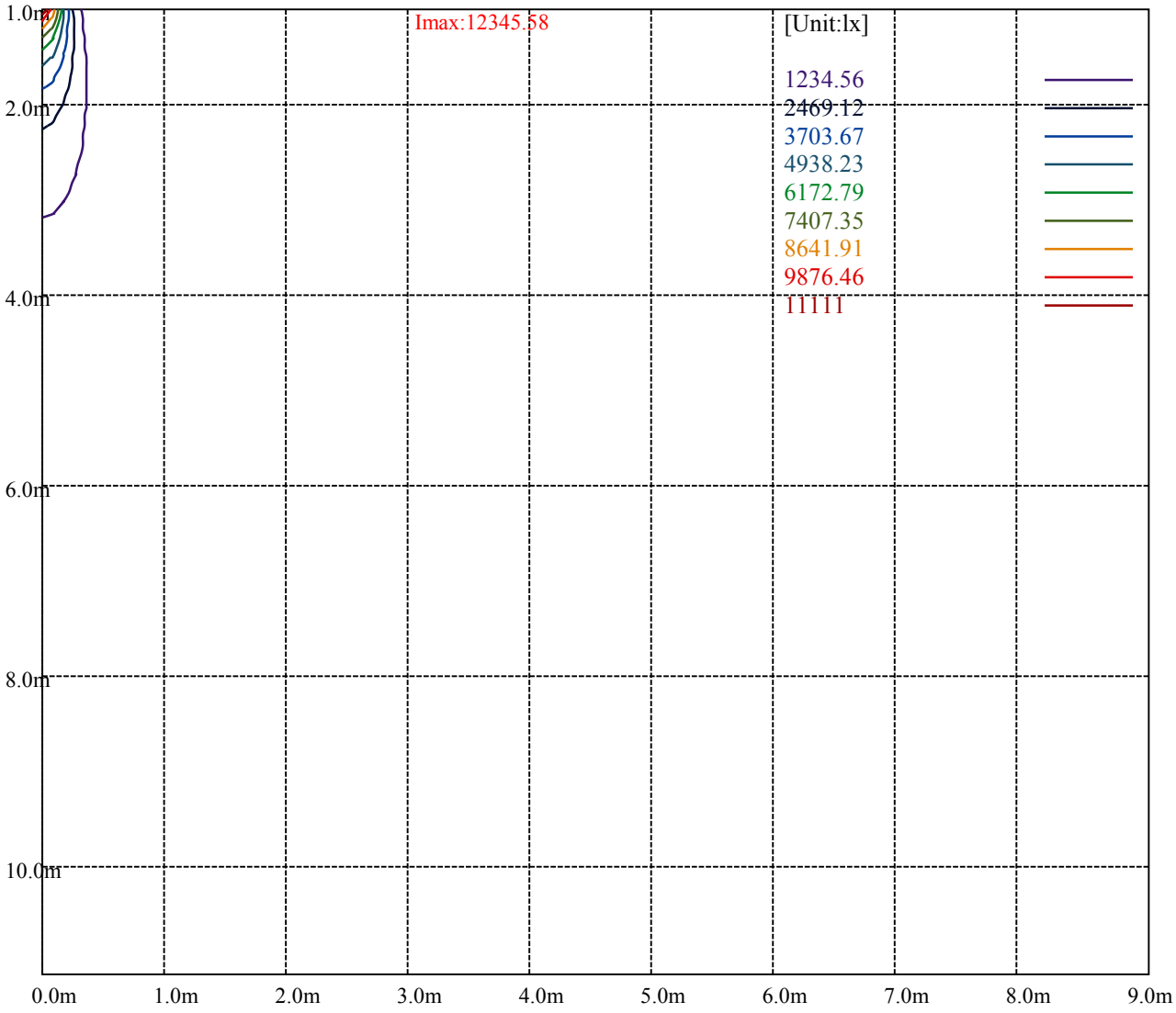
House [Unit:cd] Road

Imax:12345.58

(10%Imax) 1234.56
(20%Imax) 2469.12
(30%Imax) 3703.67
(40%Imax) 4938.23
(50%Imax) 6172.79
(60%Imax) 7407.35
(70%Imax) 8641.91
(80%Imax) 9876.46
(90%Imax) 11111

Equipment: GMS1980 Date: 2021/7/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

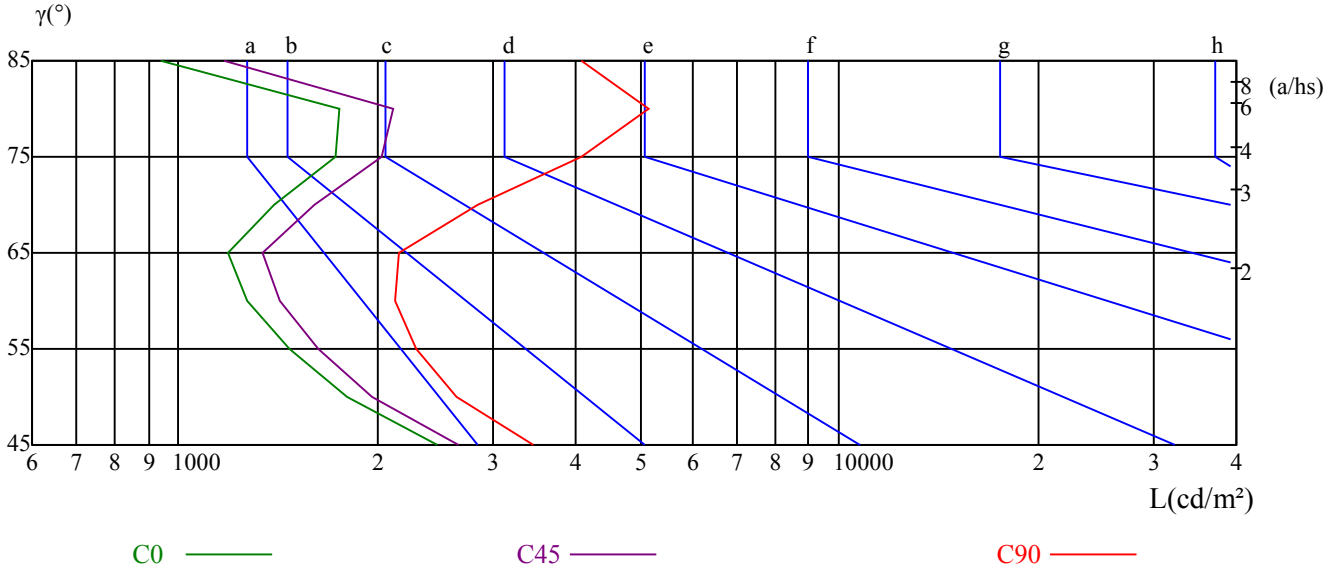
γ	45	50	55	60	65	70	75	80	85
C0	2463	1801	1474	1274	1185	1400	1734	1751	940
C45	2657	1962	1624	1420	1340	1610	2035	2109	1172
C90	3437	2644	2295	2125	2152	2836	4077	5141	4079

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2314	2314	2314	4610	4610	4610	5715	5715	5715

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

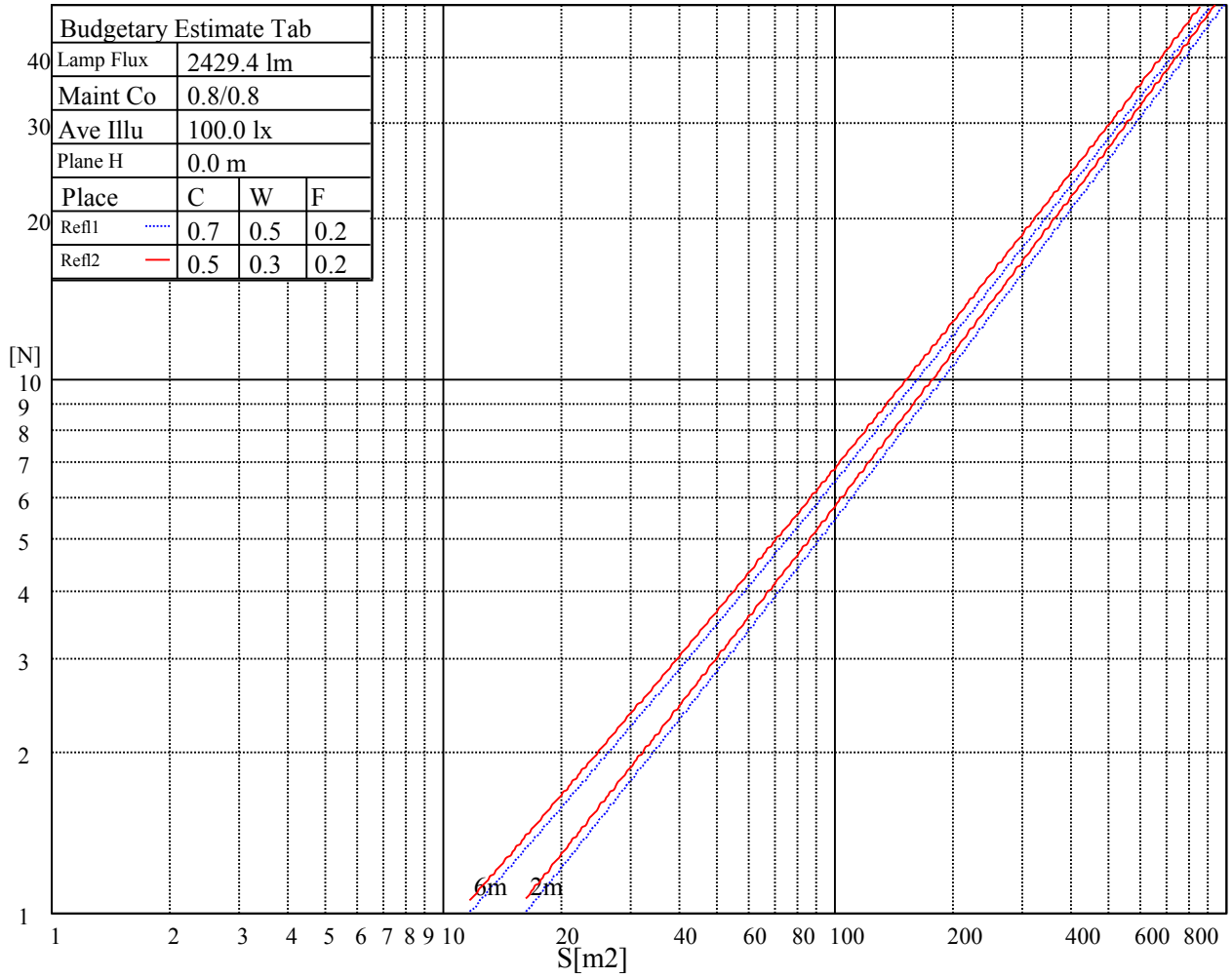


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

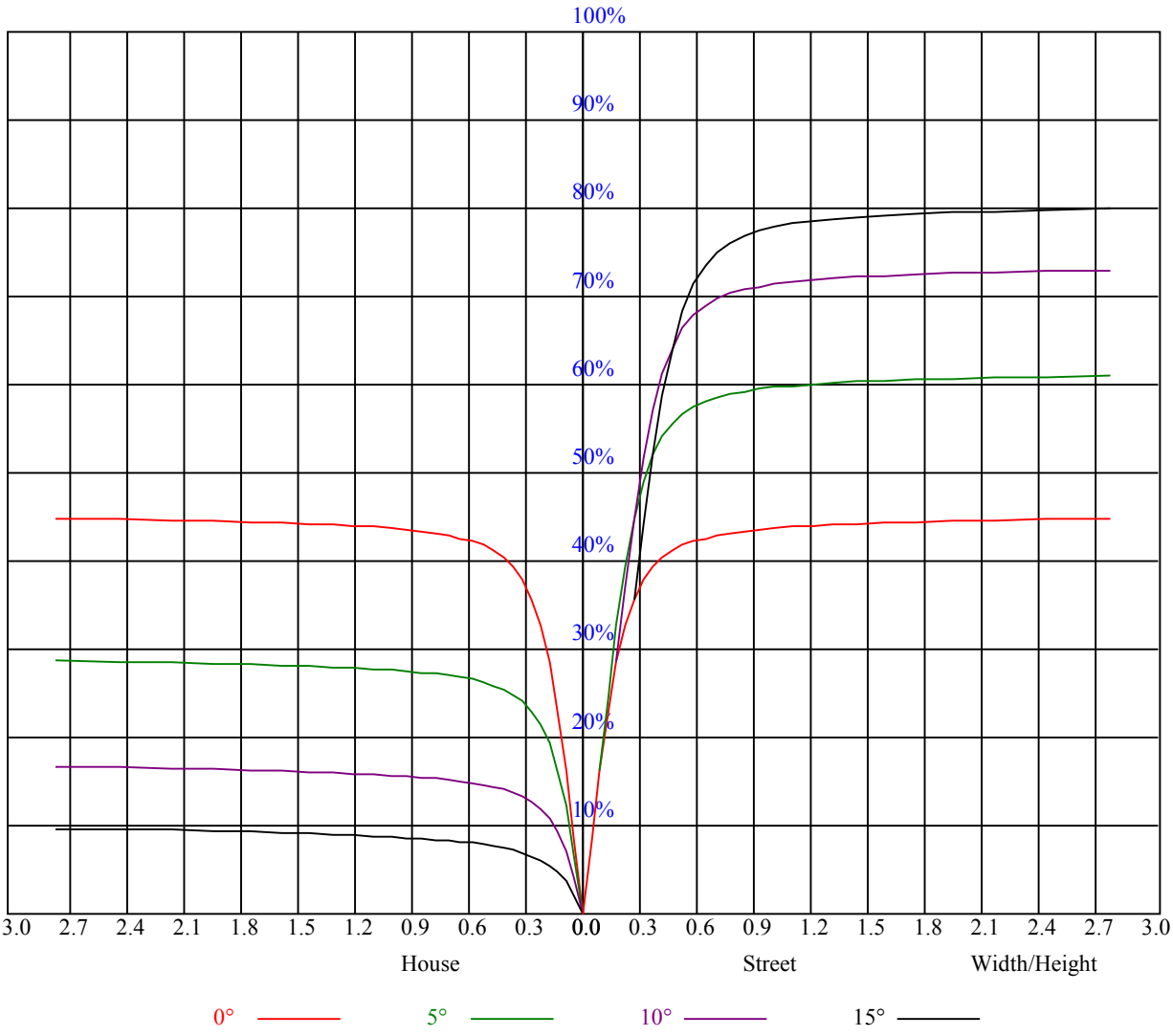


Equipment: GMS1980 Date: 2021/7/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	1.00	0.98	1.00	0.98	0.96	0.96	0.95	0.93	0.93	0.92	0.91	0.90	0.89	0.88	0.86
2	0.96	0.93	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.86	0.87	0.85	0.84	0.83
3	0.92	0.88	0.85	0.91	0.87	0.85	0.88	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.69	0.68
9	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.65

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/09	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	12459.49	12363.86	12065.74	11649.49	11047.61	10378.24	9545.74	8685.11	7903.24
45.0	12290.74	11986.99	11480.74	10912.61	10170.11	9450.11	8561.36	7661.36	6901.99
90.0	12234.49	11947.61	11207.25	10837.13	10171.13	9441.00	8469.56	7675.88	6892.88
135.0	12397.61	12296.36	12015.11	11565.11	10974.49	10254.49	9523.24	8651.36	7875.11
180.0	12459.49	12363.86	12071.36	11217.38	11069.44	10430.44	9492.19	8690.63	7891.31
225.0	12290.74	12453.86	12420.11	12144.49	11778.86	11213.44	10577.25	9783.00	9027.56
270.0	12234.49	12391.99	12335.74	12110.74	11694.49	11176.99	10468.24	9669.49	8926.99
315.0	12397.61	12307.61	12048.86	11183.06	11035.13	10383.19	9461.25	8708.06	7935.19
360.0	12459.49	12363.86	12065.74	11649.49	11047.61	10378.24	9545.74	8685.11	7903.24

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7014.49	6159.49	5439.49	4764.49	3976.99	3403.24	2891.36	2651.06	1998.56
45.0	6052.61	5259.49	4595.74	3988.24	3313.24	2846.36	2620.69	2070.00	1744.31
90.0	6148.69	5255.44	4596.75	3996.00	3327.19	2863.69	2459.25	2068.88	1737.00
135.0	6986.36	6131.36	5422.61	4741.99	3976.99	3425.74	2936.36	2427.75	2072.25
180.0	6995.25	6137.44	5409.56	4647.38	3949.31	3384.56	2827.13	2397.94	1980.00
225.0	8235.00	7244.44	6468.75	5727.38	4858.88	4215.38	3639.94	3069.00	2563.88
270.0	8049.49	7177.61	6412.61	5692.61	4820.74	4179.49	3600.11	3020.74	2840.74
315.0	6959.81	6197.06	5466.38	4693.50	4047.19	3409.31	2802.94	2440.13	2077.88
360.0	7014.49	6159.49	5439.49	4764.49	3976.99	3403.24	2891.36	2651.06	1998.56

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1689.19	1457.44	1154.81	974.81	822.94	680.06	564.75	488.81	400.50
45.0	1494.56	1252.13	1055.81	906.75	765.56	661.50	565.31	485.44	421.88
90.0	1483.88	1106.78	1065.66	900.68	761.12	658.63	560.36	477.62	414.73
135.0	1759.50	1492.88	1217.25	1033.88	879.75	723.94	623.81	529.88	455.06
180.0	1626.75	1364.63	1116.84	917.27	771.81	650.87	527.57	448.20	382.39
225.0	2185.31	1827.56	1557.56	1225.13	1060.82	921.99	773.38	636.19	557.61
270.0	2156.06	1805.06	1510.88	1288.69	1078.88	923.63	777.38	655.31	564.75
315.0	1700.44	1451.25	1118.53	1034.72	866.76	744.24	637.76	529.31	459.62
360.0	1689.19	1457.44	1154.81	974.81	822.94	680.06	564.75	488.81	400.50

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	344.81	298.69	284.06	222.75	197.10	176.85	161.61	148.84	135.17
45.0	370.69	318.38	284.63	246.88	214.26	192.66	174.43	156.94	142.71
90.0	362.19	305.55	268.14	236.70	208.41	185.29	168.36	151.54	137.14
135.0	390.38	342.56	294.75	285.19	228.77	200.03	180.73	163.07	145.29
180.0	329.68	275.57	241.09	212.74	187.26	167.63	153.28	139.95	128.53
225.0	481.44	394.93	351.17	308.08	268.93	235.52	210.43	187.48	168.02
270.0	487.69	408.38	357.19	315.00	287.44	239.85	215.61	194.29	171.68
315.0	400.50	344.48	299.03	265.11	232.76	206.27	186.36	166.89	151.93
360.0	344.81	298.69	284.06	222.75	197.10	176.85	161.61	148.84	135.17

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	125.44	116.61	107.61	99.51	93.09	86.40	80.16	74.98	69.36
45.0	129.71	117.73	108.79	99.06	90.28	83.36	76.73	70.20	65.14
90.0	126.11	114.75	105.69	96.36	87.53	80.49	74.36	67.22	62.21
135.0	133.20	122.34	110.81	102.60	94.78	86.91	79.99	74.25	68.51
180.0	118.63	110.93	103.73	96.47	89.44	83.93	78.69	72.56	67.78
225.0	152.66	138.04	126.62	115.31	105.58	97.71	90.56	82.58	76.73
270.0	156.09	142.31	128.42	116.61	107.55	98.55	90.23	83.48	76.50
315.0	137.36	124.76	114.98	104.74	96.02	88.99	82.58	75.38	70.03
360.0	125.44	116.61	107.61	99.51	93.09	86.40	80.16	74.98	69.36

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	64.86	60.24	55.97	52.48	49.50	46.13	43.65	41.57	39.26
45.0	60.36	55.13	51.69	48.54	45.90	43.14	41.12	39.21	37.13
90.0	57.49	52.59	49.05	46.07	42.69	40.50	38.48	36.28	34.71
135.0	63.23	59.12	54.84	51.58	48.21	45.45	43.20	41.18	38.98
180.0	63.56	58.73	55.18	51.81	48.54	45.73	43.26	40.95	39.09
225.0	70.99	64.74	60.08	56.03	52.59	48.54	45.90	43.59	41.29
270.0	70.71	64.80	59.68	55.52	51.30	47.70	45.00	43.09	40.61
315.0	65.08	60.13	55.69	52.26	48.88	46.18	43.59	41.29	39.49
360.0	64.86	60.24	55.97	52.48	49.50	46.13	43.65	41.57	39.26

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	37.52	35.94	34.31	32.79	31.61	30.26	29.08	28.01	27.06
45.0	35.61	34.26	32.91	31.50	30.26	29.19	28.07	27.00	26.16
90.0	33.30	31.73	30.71	29.53	28.41	27.68	27.11	26.55	26.27
135.0	37.35	35.89	34.14	32.85	31.61	30.26	29.08	28.07	27.00
180.0	37.18	35.44	33.98	32.57	31.16	30.09	29.03	27.84	27.00
225.0	39.15	37.41	35.66	34.03	32.51	31.33	30.21	29.08	27.96
270.0	38.76	37.18	35.21	33.47	32.34	30.88	29.59	28.69	27.56
315.0	37.63	35.83	34.37	33.02	31.44	30.21	29.14	27.79	26.83
360.0	37.52	35.94	34.31	32.79	31.61	30.26	29.08	28.01	27.06

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	26.21	25.26	24.53	23.79	23.12	22.39	21.71	21.04	20.36
45.0	25.26	24.30	23.63	22.95	22.28	21.60	21.04	20.53	19.91
90.0	25.99	26.33	28.63	32.29	37.91	43.48	48.32	54.06	58.39
135.0	26.10	25.20	24.36	23.68	22.95	22.22	21.60	20.98	20.25
180.0	26.10	25.14	24.53	23.74	23.01	22.39	21.71	20.93	20.36
225.0	27.00	26.16	25.09	24.41	23.79	22.89	22.22	21.60	21.04
270.0	26.89	26.10	25.59	25.31	25.82	29.08	33.64	38.19	43.59
315.0	25.93	25.03	24.30	23.63	22.89	22.22	21.60	20.87	20.19
360.0	26.21	25.26	24.53	23.79	23.12	22.39	21.71	21.04	20.36

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	19.69	19.13	18.56	18.00	17.49	16.88	16.43	15.92	15.36
45.0	19.58	19.46	19.24	17.10	16.48	16.03	15.75	15.92	15.69
90.0	63.68	68.51	72.39	76.22	78.69	80.16	78.75	70.20	58.44
135.0	19.58	19.01	18.34	17.78	17.27	16.71	16.20	15.81	15.24
180.0	19.74	18.96	18.34	17.72	17.21	16.76	16.26	15.69	15.19
225.0	20.31	19.80	19.18	18.73	18.45	18.17	17.94	17.49	16.76
270.0	48.15	52.54	57.43	61.59	65.25	68.74	71.04	71.83	67.84
315.0	19.46	18.73	18.23	17.72	17.10	16.65	16.20	15.69	15.13
360.0	19.69	19.13	18.56	18.00	17.49	16.88	16.43	15.92	15.36

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	14.91	14.46	13.95	13.50	13.22	12.94	11.70	11.03	10.91
45.0	14.68	14.06	13.33	12.54	11.64	10.86	10.29	10.01	9.96
90.0	46.35	32.57	21.32	14.18	11.64	10.74	10.18	9.96	9.84
135.0	14.57	14.06	13.56	13.16	11.93	11.03	10.52	10.13	9.84
180.0	14.74	14.23	13.84	13.56	12.77	11.70	11.03	10.80	10.58
225.0	15.98	15.24	14.40	13.78	13.22	12.32	11.31	10.69	10.18
270.0	60.41	49.67	36.17	24.86	15.47	12.83	11.25	10.69	10.24
315.0	14.68	14.01	13.44	13.05	12.32	11.25	10.46	10.01	9.73
360.0	14.91	14.46	13.95	13.50	13.22	12.94	11.70	11.03	10.91

Intensity data(cd)

C/γ(°)	90.0
0.0	10.97
45.0	9.96
90.0	9.90
135.0	9.73
180.0	10.80
225.0	10.01
270.0	9.90
315.0	9.56
360.0	10.97