NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: LN01D02824DA-N
Luminaire: 92.70.307.00
Report No: 211117-B007
Test No: 211117-C007
LampCAT: Bridgelux V4HD LES5.2
Lamp flux(lm): 719.0
Number of Lamps: 1
Length(mm): 111
Phm Type: C

Voltage(V): 35.8900
Current(A): 0.1800
Power (W): 6.4600
PF: 0.0000
Ballast type: DC
Width(mm): 111
Height(mm): 0

Photometric Results

Lumens(lm): 465.72
Efficiency(%): 64.77%
Lumens(lm)/Power(W): 72.09
Central intensity(cd): 1503.831
Maximum intensity(cd): 1503.831
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=26.5
[C90/270]Total=26.5
Field angle(10%Imax): [C0/180]Total=52.0
[C90/270]Total=52.0
Maximum s/h(1/2): C0_180=0.45 C90_270=0.45
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(%): 64.77%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.675%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1503.831	0.000	0	.000%	.000%
1.0	1499.200	1.437	1.437	.200%	.309%
2.0	1482.171	4.279	5.716	.595%	1.227%
3.0	1453.937	7.022	12.738	.977%	2.735%
4.0	1418.982	9.617	22.355	1.337%	4.800%
5.0	1368.192	11.990	34.345	1.668%	7.375%
6.0	1306.169	14.054	48.4	1.955%	10.392%
7.0	1248.089	15.854	64.254	2.205%	13.797%
8.0	1176.632	17.353	81.607	2.413%	17.523%
9.0	1096.772	18.425	100.032	2.562%	21.479%
10.0	1018.526	19.143	119.174	2.662%	25.589%
11.0	936.955	19.539	138.714	2.717%	29.785%
12.0	853.921	19.577	158.291	2.723%	33.988%
13.0	773.770	19.317	177.607	2.687%	38.136%
14.0	689.548	18.730	196.338	2.605%	42.158%
15.0	616.650	17.932	214.27	2.494%	46.008%
16.0	546.298	17.040	231.31	2.370%	49.667%
17.0	482.004	16.013	247.323	2.227%	53.106%
18.0	420.653	14.883	262.206	2.070%	56.301%
19.0	372.709	13.803	276.009	1.920%	59.265%
20.0	324.555	12.762	288.771	1.775%	62.005%
21.0	281.436	11.636	300.407	1.618%	64.504%
22.0	249.020	10.660	311.067	1.483%	66.793%
23.0	217.628	9.792	320.859	1.362%	68.895%
24.0	191.605	8.947	329.806	1.244%	70.816%
25.0	169.213	8.204	338.01	1.141%	72.578%
26.0	150.443	7.546	345.556	1.049%	74.198%
27.0	133.197	6.939	352.495	.965%	75.688%
28.0	119.319	6.393	358.888	.889%	77.061%
29.0	106.988	5.921	364.809	.823%	78.332%
30.0	96.202	5.486	370.295	.763%	79.510%
31.0	86.828	5.093	375.388	.708%	80.604%
32.0	78.396	4.733	380.122	.658%	81.620%
33.0	71.323	4.411	384.533	.613%	82.568%
34.0	65.123	4.129	388.662	.574%	83.454%
35.0	59.402	3.867	392.529	.538%	84.285%
36.0	54.353	3.622	396.151	.504%	85.062%
37.0	50.282	3.413	399.564	.475%	85.795%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	46.069	3.216	402.78	.447%	86.486%
39.0	42.507	3.023	405.803	.420%	87.135%
40.0	39.489	2.860	408.663	.398%	87.749%
41.0	36.651	2.711	411.374	.377%	88.331%
42.0	34.156	2.573	413.947	.358%	88.883%
43.0	31.945	2.449	416.395	.341%	89.409%
44.0	29.944	2.336	418.731	.325%	89.911%
45.0	28.069	2.229	420.961	.310%	90.389%
46.0	26.575	2.137	423.098	.297%	90.848%
47.0	24.977	2.050	425.148	.285%	91.289%
48.0	23.647	1.966	427.114	.273%	91.711%
49.0	22.385	1.890	429.004	.263%	92.116%
50.0	21.115	1.814	430.818	.252%	92.506%
51.0	20.025	1.741	432.558	.242%	92.880%
52.0	19.039	1.676	434.235	.233%	93.240%
53.0	18.045	1.613	435.848	.224%	93.586%
54.0	17.112	1.550	437.397	.216%	93.919%
55.0	16.342	1.493	438.891	.208%	94.239%
56.0	15.521	1.440	440.33	.200%	94.548%
57.0	14.781	1.385	441.716	.193%	94.846%
58.0	14.102	1.336	443.052	.186%	95.133%
59.0	13.437	1.287	444.339	.179%	95.409%
60.0	12.765	1.238	445.577	.172%	95.675%
61.0	12.167	1.190	446.767	.165%	95.930%
62.0	11.570	1.144	447.91	.159%	96.176%
63.0	11.002	1.098	449.008	.153%	96.412%
64.0	10.517	1.056	450.064	.147%	96.639%
65.0	9.971	1.014	451.078	.141%	96.856%
66.0	9.516	0.972	452.05	.135%	97.065%
67.0	9.060	0.934	452.984	.130%	97.266%
68.0	8.642	0.897	453.881	.125%	97.458%
69.0	8.209	0.860	454.741	.120%	97.643%
70.0	7.828	0.824	455.564	.115%	97.820%
71.0	7.439	0.789	456.353	.110%	97.989%
72.0	7.043	0.753	457.106	.105%	98.151%
73.0	6.692	0.718	457.825	.100%	98.305%
74.0	6.341	0.685	458.51	.095%	98.452%
75.0	6.005	0.652	459.162	.091%	98.592%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.677	0.620	459.782	.086%	98.725%
77.0	5.393	0.590	460.373	.082%	98.852%
78.0	5.116	0.563	460.935	.078%	98.973%
79.0	5.019	0.545	461.48	.076%	99.090%
80.0	5.019	0.541	462.021	.075%	99.206%
81.0	5.072	0.546	462.567	.076%	99.323%
82.0	5.101	0.552	463.118	.077%	99.442%
83.0	4.780	0.537	463.655	.075%	99.557%
84.0	3.697	0.462	464.117	.064%	99.656%
85.0	3.115	0.372	464.489	.052%	99.736%
86.0	2.495	0.307	464.796	.043%	99.802%
87.0	2.226	0.258	465.054	.036%	99.857%
88.0	2.069	0.235	465.289	.033%	99.908%
89.0	1.920	0.219	465.508	.030%	99.955%
90.0	1.935	0.211	465.719	.029%	100.000%

Zonal flux distribution table

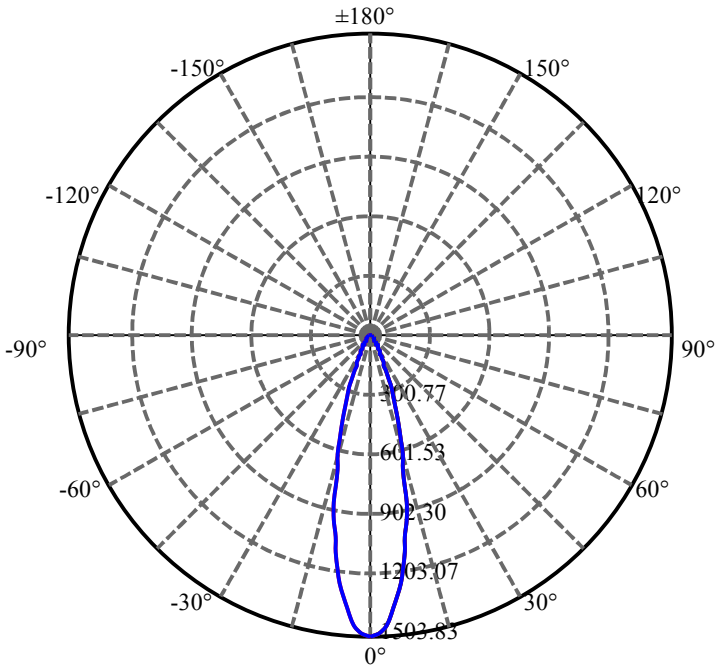
ZONAL LUMEN SUMMARY

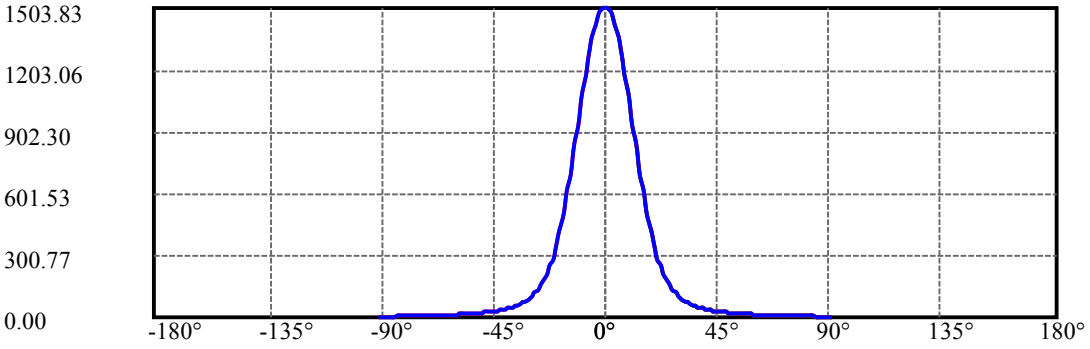
Zone	Lumens	%Lamp	%Fixt
0-30	370.29	51.50%	79.51%
0-40	408.66	56.84%	87.75%
0-60	445.58	61.97%	95.68%
0-90	465.51	64.74%	99.95%
0-120	465.51	64.74%	99.95%
0-180	465.72	64.77%	100.00%
60-90	21.17	2.94%	4.55%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.45	372.58	51.82%	80.00%

ZONAL LUMEN SUMMARY

0-10	119.17
10-20	169.60
20-30	81.52
30-40	38.37
40-50	22.15
50-60	14.76
60-70	9.99
70-80	6.46
80-90	3.49
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):

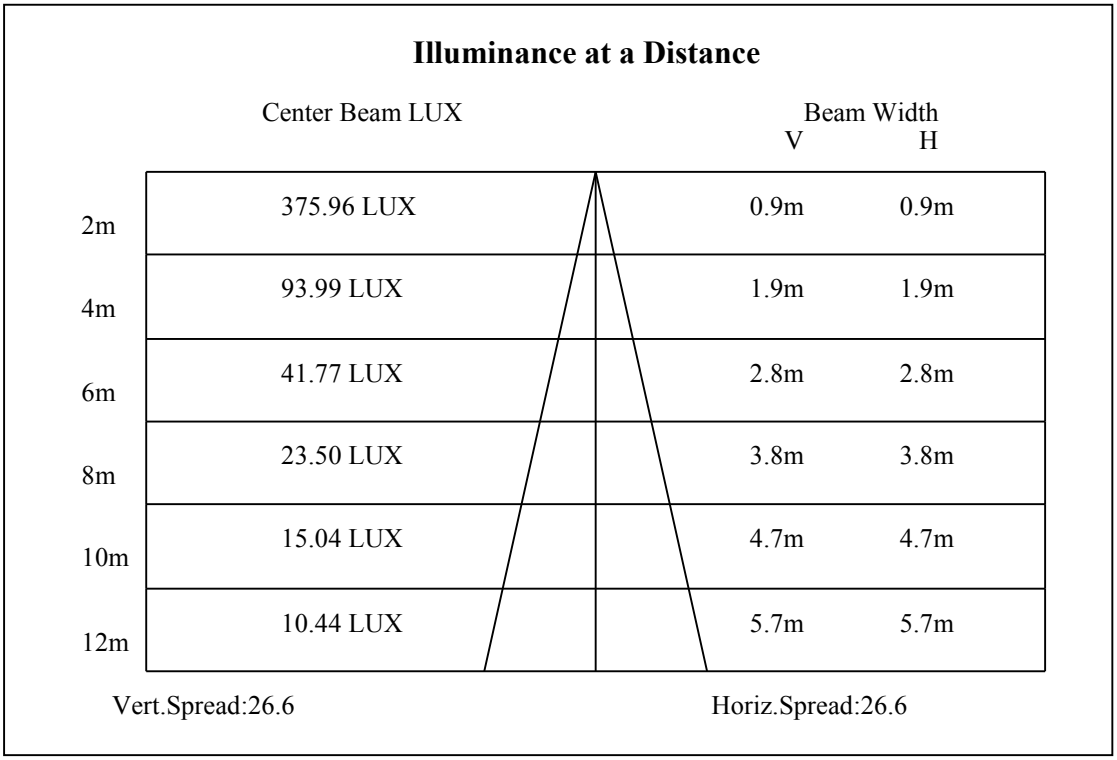
C0/C180:

C90/C270:

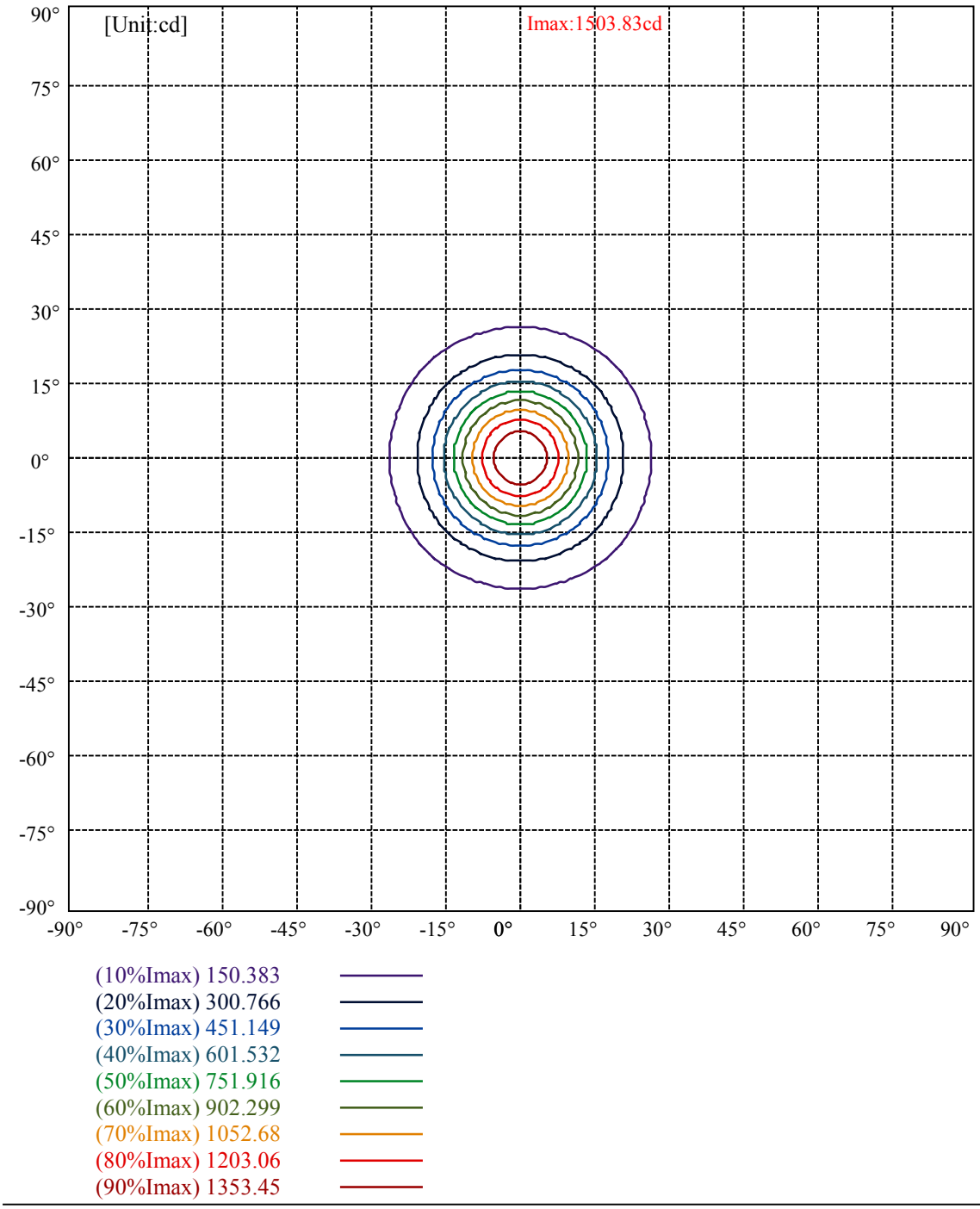
Field angle(10%Imax):C0/180Left:26.0 Right:26.0
:C90/270Left:26.0 Right:26.0

Beam Angle(50%Imax):C0/180Left:13.3 Right:13.3
:C90/270Left:13.3 Right:13.3

Lux distance Curve



ISO-Intensity(V-H)

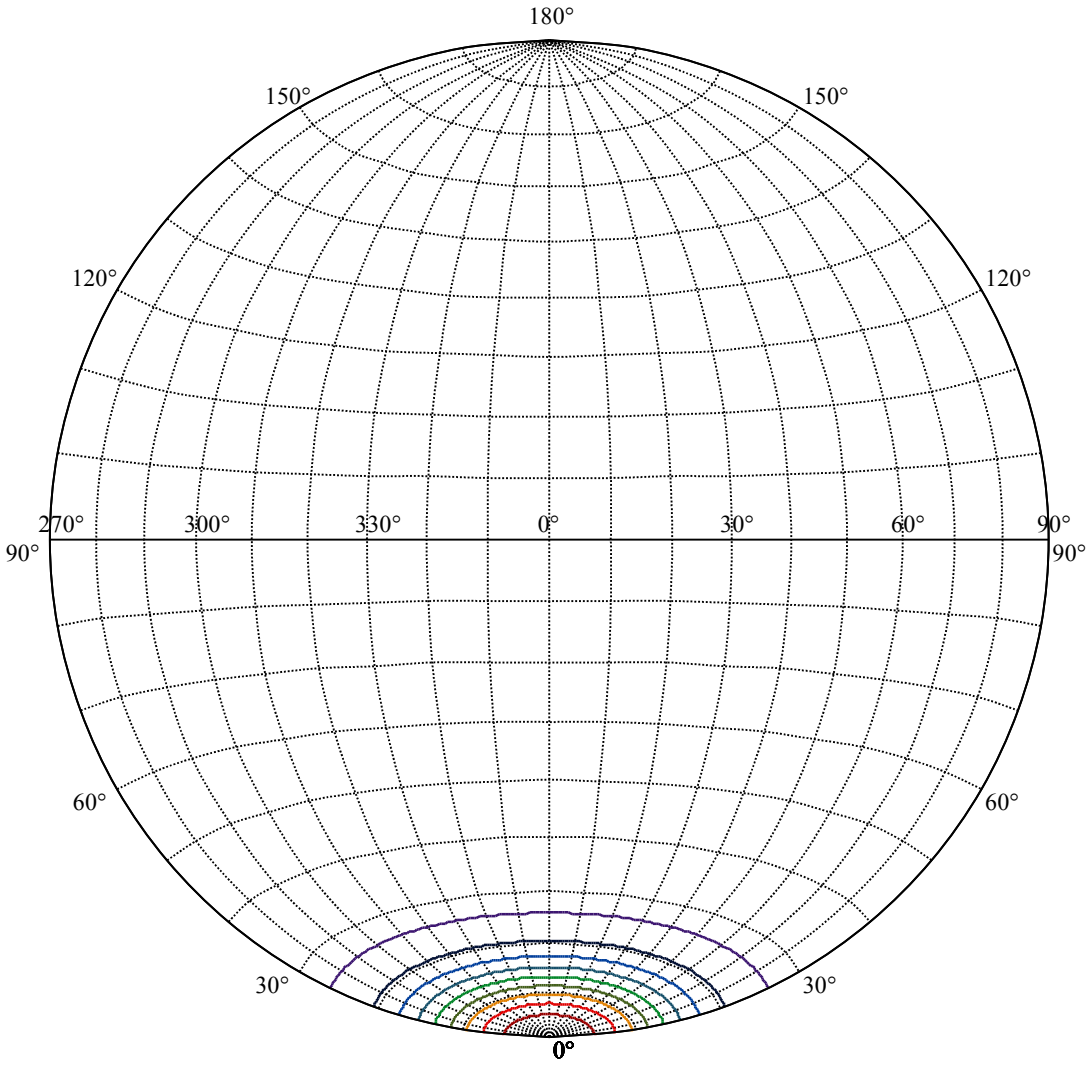


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1503.83

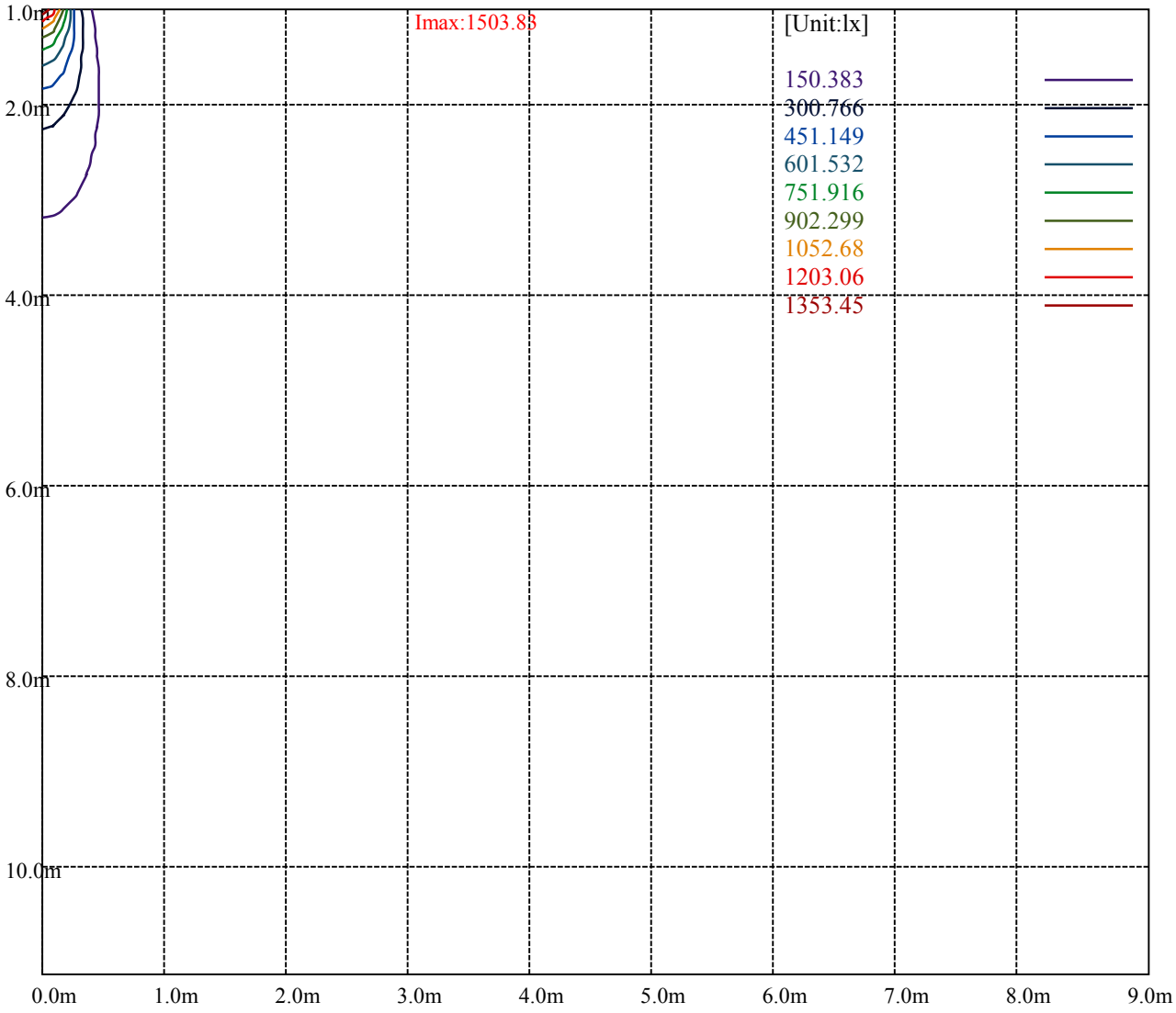
(10%Imax) 150.383
(20%Imax) 300.766
(30%Imax) 451.149
(40%Imax) 601.532
(50%Imax) 751.916
(60%Imax) 902.299
(70%Imax) 1052.68
(80%Imax) 1203.06
(90%Imax) 1353.45

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata LN01D02824DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

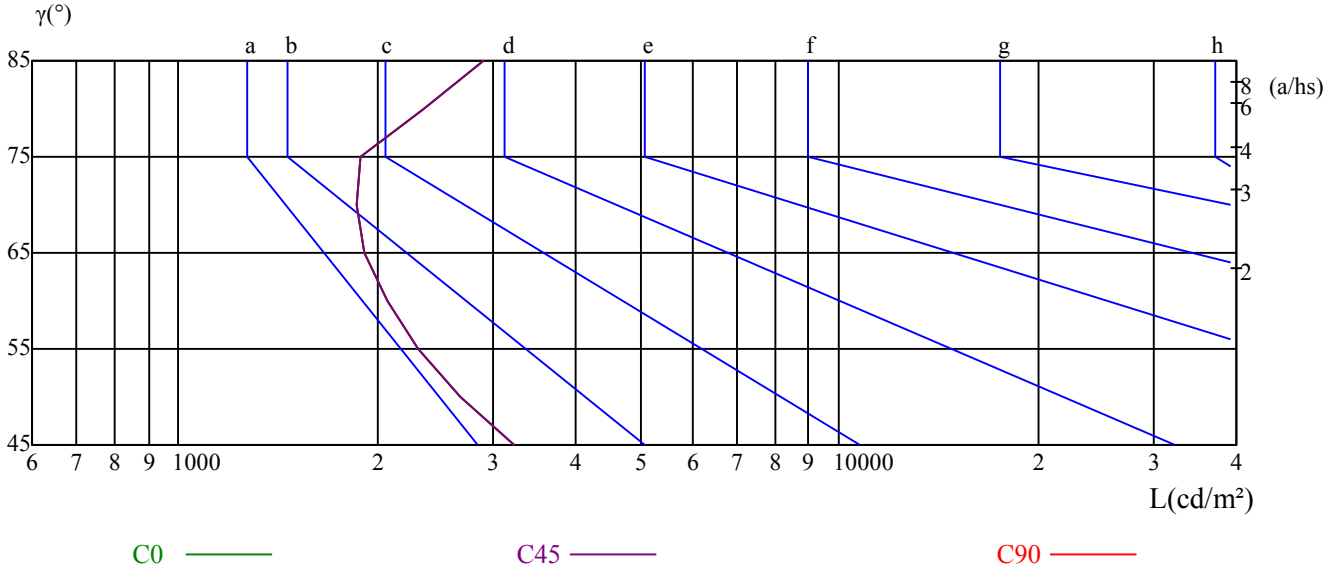
γ	45	50	55	60	65	70	75	80	85
C0	3222	2666	2312	2072	1915	1858	1883	2346	2900
C45	3222	2666	2312	2072	1915	1858	1883	2346	2900
C90	3222	2666	2312	2072	1915	1858	1883	2346	2900

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1915	1915	1915	1883	1883	1883	2900	2900	2900

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

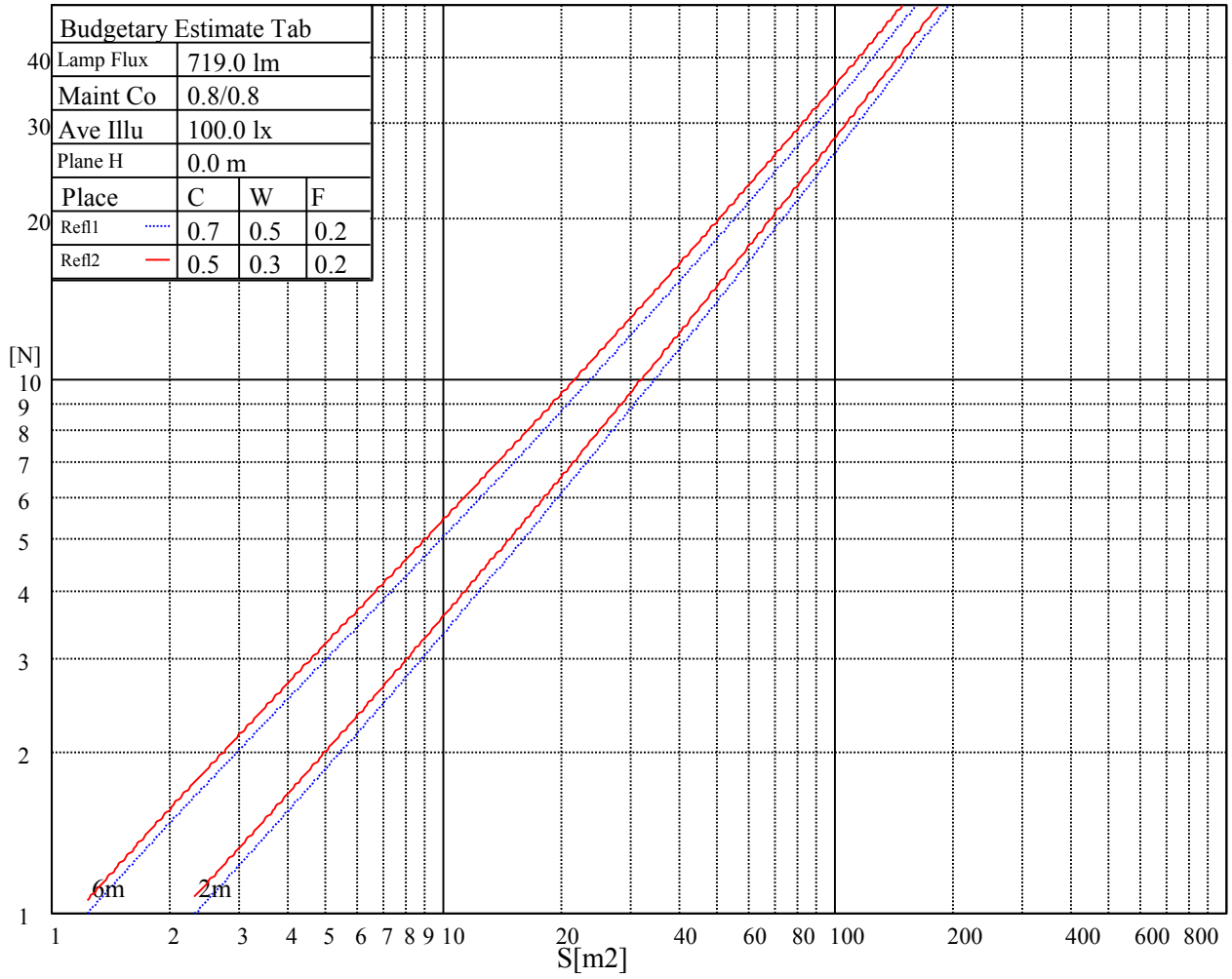


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Budgetary Estimate Table

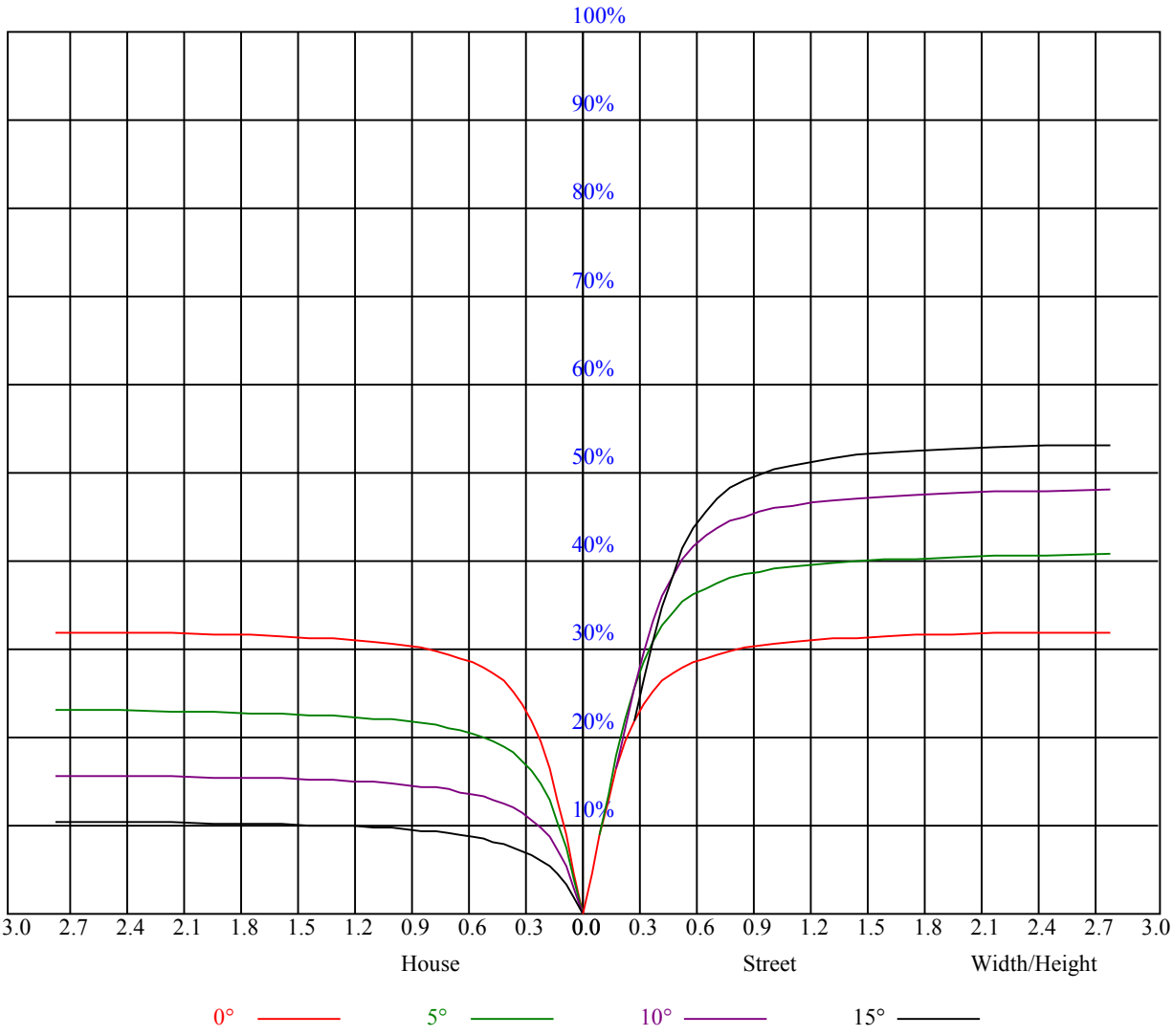


Equipment: GMS1980 Date: 2021/11/17 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.77	0.77	0.77	0.75	0.75	0.75	0.72	0.72	0.72	0.69	0.69	0.69	0.66	0.66	0.66	0.65
1	0.72	0.70	0.69	0.70	0.69	0.68	0.68	0.67	0.65	0.65	0.64	0.64	0.63	0.62	0.62	0.61
2	0.67	0.65	0.62	0.66	0.64	0.62	0.64	0.62	0.60	0.62	0.60	0.59	0.60	0.59	0.58	0.57
3	0.63	0.60	0.58	0.62	0.60	0.57	0.61	0.58	0.56	0.59	0.57	0.56	0.58	0.56	0.55	0.54
4	0.60	0.57	0.54	0.59	0.56	0.54	0.58	0.55	0.53	0.56	0.54	0.52	0.55	0.53	0.52	0.51
5	0.57	0.53	0.51	0.56	0.53	0.51	0.55	0.52	0.50	0.54	0.52	0.50	0.53	0.51	0.49	0.48
6	0.54	0.51	0.48	0.54	0.50	0.48	0.53	0.50	0.48	0.52	0.49	0.47	0.51	0.49	0.47	0.46
7	0.52	0.48	0.46	0.51	0.48	0.46	0.51	0.48	0.46	0.50	0.47	0.45	0.49	0.47	0.45	0.44
8	0.50	0.46	0.44	0.49	0.46	0.44	0.49	0.46	0.44	0.48	0.45	0.44	0.48	0.45	0.43	0.43
9	0.48	0.45	0.42	0.48	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.46	0.44	0.42	0.41
10	0.46	0.43	0.41	0.46	0.43	0.41	0.45	0.42	0.41	0.45	0.42	0.40	0.44	0.42	0.40	0.40

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/11/17	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	1492.03	1507.57	1510.55	1503.38	1483.07	1450.80	1411.96	1358.78	1303.81
45.0	1513.54	1509.96	1490.83	1464.54	1429.29	1372.52	1316.36	1252.42	1174.74
90.0	1504.58	1486.65	1454.98	1411.96	1364.76	1301.42	1188.96	1152.75	1067.13
135.0	1505.18	1485.46	1453.19	1414.95	1368.94	1300.82	1236.89	1166.97	1084.52
180.0	1492.03	1469.32	1437.06	1385.07	1334.88	1277.52	1191.35	1120.25	1045.80
225.0	1513.54	1508.16	1490.24	1461.56	1426.90	1377.90	1325.92	1261.98	1186.81
270.0	1504.58	1513.54	1509.96	1496.21	1473.51	1431.68	1388.06	1337.87	1274.53
315.0	1505.18	1512.94	1510.55	1493.82	1470.52	1432.87	1389.85	1333.68	1275.72
360.0	1492.03	1507.57	1510.55	1503.38	1483.07	1450.80	1411.96	1358.78	1303.81

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1234.49	1157.41	1083.92	1006.84	906.45	825.79	746.91	651.31	580.80
45.0	1089.89	1009.23	926.17	832.96	743.33	656.68	586.18	512.08	445.76
90.0	988.07	897.73	807.98	730.90	656.86	570.04	506.23	448.15	395.68
135.0	997.87	917.80	826.98	739.14	664.45	587.37	522.84	457.11	397.95
180.0	949.59	871.91	795.07	702.63	640.79	565.56	489.08	440.44	389.77
225.0	1118.81	1037.97	954.31	879.14	803.62	711.78	642.52	576.26	506.05
270.0	1204.62	1135.90	1055.24	980.55	894.50	807.26	731.97	650.11	574.23
315.0	1190.82	1120.25	1045.97	959.21	880.16	791.91	707.47	634.93	565.80
360.0	1234.49	1157.41	1083.92	1006.84	906.45	825.79	746.91	651.31	580.80

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	515.07	456.51	391.38	344.77	303.54	257.59	227.96	198.86	176.63
45.0	391.98	342.38	304.14	257.18	226.16	200.05	174.24	155.48	139.04
90.0	337.42	297.45	262.67	225.81	200.65	179.02	157.99	140.06	126.14
135.0	350.75	311.31	261.72	231.24	204.47	177.11	158.46	142.15	126.26
180.0	328.04	294.34	260.28	220.73	199.22	177.82	156.91	139.04	125.18
225.0	443.31	393.53	343.58	299.48	265.00	231.42	205.49	180.33	158.94
270.0	510.89	454.12	390.78	345.97	305.34	264.05	230.65	204.65	179.32
315.0	487.76	432.01	381.88	326.31	287.77	253.95	221.15	193.12	172.03
360.0	515.07	456.51	391.38	344.77	303.54	257.59	227.96	198.86	176.63

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	155.06	136.77	122.85	110.90	98.11	89.21	81.26	73.44	66.62
45.0	121.90	110.24	101.16	89.45	80.73	73.79	66.80	61.19	56.05
90.0	112.63	100.86	91.54	82.34	75.17	68.06	61.90	57.06	52.70
135.0	112.63	102.06	91.48	83.12	75.05	67.94	62.44	57.18	52.16
180.0	111.74	99.97	90.70	81.50	74.45	67.58	61.55	56.83	52.64
225.0	142.51	128.05	112.63	102.00	92.68	82.40	75.23	68.78	61.72
270.0	157.57	140.96	125.06	112.93	101.16	90.82	82.82	74.81	67.76
315.0	151.53	135.64	120.46	107.38	97.28	87.36	78.58	71.70	65.55
360.0	155.06	136.77	122.85	110.90	98.11	89.21	81.26	73.44	66.62

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	61.25	56.53	51.15	47.44	44.10	40.93	38.12	35.85	33.70
45.0	51.33	47.62	43.98	40.09	37.35	34.84	31.97	29.94	28.08
90.0	47.92	44.46	41.29	37.76	35.19	32.86	30.47	28.38	26.65
135.0	48.34	44.87	40.93	38.06	35.49	32.63	30.59	28.68	26.77
180.0	48.04	44.75	41.77	38.78	36.15	34.06	32.45	30.71	29.52
225.0	56.83	52.46	47.56	44.16	41.05	37.64	35.43	32.86	30.29
270.0	62.20	57.24	51.75	47.80	44.34	40.87	37.82	35.37	32.86
315.0	58.92	54.32	50.13	45.95	42.25	39.38	36.39	33.76	31.67
360.0	61.25	56.53	51.15	47.44	44.10	40.93	38.12	35.85	33.70

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	31.97	30.71	29.46	28.38	27.19	25.93	24.80	23.78	22.77
45.0	25.99	24.50	23.06	21.69	20.38	19.24	18.11	17.15	16.13
90.0	24.86	23.42	21.93	20.55	19.42	18.22	17.15	16.25	15.36
135.0	25.04	23.60	22.17	20.97	19.78	18.58	17.69	16.79	15.72
180.0	28.14	27.01	25.69	24.50	23.48	22.47	21.57	20.67	19.96
225.0	28.68	27.01	24.86	23.66	22.35	20.73	19.78	18.76	17.75
270.0	30.47	28.68	26.77	25.22	23.60	22.23	20.85	19.72	18.46
315.0	29.40	27.67	25.87	24.20	22.89	21.51	20.26	19.18	18.22
360.0	31.97	30.71	29.46	28.38	27.19	25.93	24.80	23.78	22.77

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	21.93	21.21	20.26	19.54	18.94	18.11	17.39	16.85	16.07
45.0	15.24	14.46	13.68	12.91	12.25	11.65	10.99	10.46	9.92
90.0	14.34	13.62	12.91	12.13	11.47	10.88	10.28	9.68	9.20
135.0	14.94	14.22	13.38	12.73	12.07	11.47	10.82	10.34	9.86
180.0	19.24	18.58	18.05	17.57	16.97	16.55	16.01	15.36	14.76
225.0	16.67	15.83	15.00	14.22	13.38	12.61	12.01	11.29	10.64
270.0	17.45	16.55	15.48	14.64	13.92	13.15	12.31	11.65	10.99
315.0	17.09	16.25	15.42	14.52	13.80	13.09	12.31	11.71	11.11
360.0	21.93	21.21	20.26	19.54	18.94	18.11	17.39	16.85	16.07

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	15.48	14.94	14.22	13.62	13.09	12.43	11.95	11.47	10.82
45.0	9.38	8.90	8.48	8.01	7.59	7.23	6.87	6.51	6.21
90.0	8.66	8.25	7.77	7.41	6.99	6.69	6.27	5.92	5.68
135.0	9.32	8.90	8.43	8.07	7.71	7.29	6.99	6.69	6.33
180.0	14.16	13.62	13.03	12.55	11.95	11.47	10.93	10.40	9.92
225.0	10.16	9.68	9.08	8.66	8.25	7.83	7.41	7.05	6.69
270.0	10.34	9.80	9.26	8.78	8.25	7.89	7.47	7.05	6.69
315.0	10.52	10.04	9.50	9.02	8.66	8.31	7.77	7.53	7.17
360.0	15.48	14.94	14.22	13.62	13.09	12.43	11.95	11.47	10.82

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.40	9.86	9.38	9.02	8.66	8.13	7.59	7.23	7.05
45.0	5.86	5.56	5.26	4.96	4.66	4.36	4.12	3.88	3.70
90.0	5.26	4.96	4.66	4.42	4.12	3.88	3.59	3.35	3.11
135.0	6.04	5.80	5.50	5.20	4.90	4.72	4.42	4.24	4.00
180.0	9.38	8.90	8.37	7.89	7.47	7.23	7.29	8.31	9.86
225.0	6.33	6.04	5.74	5.44	5.14	4.84	4.60	4.36	4.12
270.0	6.27	5.98	5.68	5.26	4.96	4.72	4.36	4.12	3.88
315.0	6.81	6.45	6.15	5.86	5.50	5.26	4.96	4.66	4.42
360.0	10.40	9.86	9.38	9.02	8.66	8.13	7.59	7.23	7.05

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.23	8.07	8.13	7.53	6.09	3.88	3.05	2.75	2.09
45.0	3.41	3.23	2.99	2.87	2.33	2.15	1.91	1.91	1.85
90.0	2.93	2.69	2.51	2.27	2.03	1.85	1.91	1.85	1.85
135.0	3.82	3.70	3.59	3.53	2.51	2.21	2.03	1.91	1.91
180.0	11.59	12.19	10.88	3.64	2.81	2.33	2.03	1.97	1.91
225.0	3.82	3.64	3.35	3.23	3.05	2.51	2.21	1.97	1.91
270.0	3.59	3.35	3.05	2.87	2.69	2.39	2.15	2.03	1.91
315.0	4.18	3.94	3.76	3.64	3.41	2.63	2.51	2.15	1.91
360.0	7.23	8.07	8.13	7.53	6.09	3.88	3.05	2.75	2.09

Intensity data(cd)

C/γ(°)	90.0
0.0	1.97
45.0	1.85
90.0	1.85
135.0	1.91
180.0	2.21
225.0	1.91
270.0	1.91
315.0	1.85
360.0	1.97