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Nata

LumCAT: LN01D03524EE-N
Luminaire: 92.70.307.00
Report No: 210519-B005
Test No: 210519-C005
LampCAT: LUMINUS CXM-4 LES4.5
Lamp flux(lm): 764.7
Number of Lamps: 1
Length(mm): 74
Phm Type: C

Voltage(V): 221.4000
Current(A): 0.0750
Power (W): 8.3000
PF: 0.5030
Ballast type: DC
Width(mm): 74
Height(mm): 56

Photometric Results

Lumens(lm): 530.66
Efficiency(%): 69.39%
Lumens(lm)/Power(W): 63.94
Central intensity(cd): 1936.547
Maximum intensity(cd): 1936.547
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=48.4
[C90/270]Total=48.4
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 69.39%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.028%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1936.547	0.000	0	.000%	.000%
1.0	1927.477	1.849	1.849	.242%	.348%
2.0	1903.078	5.498	7.347	.719%	1.384%
3.0	1859.273	8.998	16.345	1.177%	3.080%
4.0	1803.094	12.259	28.604	1.603%	5.390%
5.0	1734.680	15.219	43.824	1.990%	8.258%
6.0	1646.648	17.770	61.593	2.324%	11.607%
7.0	1548.773	19.834	81.427	2.594%	15.344%
8.0	1451.531	21.473	102.9	2.808%	19.391%
9.0	1331.810	22.557	125.457	2.950%	23.642%
10.0	1208.855	22.992	148.449	3.007%	27.974%
11.0	1106.107	23.131	171.581	3.025%	32.333%
12.0	991.259	22.927	194.508	2.998%	36.654%
13.0	879.279	22.199	216.706	2.903%	40.837%
14.0	781.636	21.260	237.966	2.780%	44.843%
15.0	690.511	20.210	258.176	2.643%	48.652%
16.0	600.363	18.915	277.091	2.473%	52.216%
17.0	522.000	17.478	294.569	2.286%	55.510%
18.0	452.939	16.075	310.644	2.102%	58.539%
19.0	393.982	14.735	325.379	1.927%	61.315%
20.0	342.977	13.488	338.867	1.764%	63.857%
21.0	297.935	12.307	351.174	1.609%	66.176%
22.0	261.190	11.236	362.41	1.469%	68.294%
23.0	227.559	10.255	372.665	1.341%	70.226%
24.0	198.696	9.319	381.985	1.219%	71.982%
25.0	174.691	8.490	390.475	1.110%	73.582%
26.0	155.152	7.786	398.261	1.018%	75.050%
27.0	138.178	7.176	405.437	.938%	76.402%
28.0	121.852	6.583	412.02	.861%	77.642%
29.0	109.505	6.053	418.073	.792%	78.783%
30.0	99.134	5.633	423.706	.737%	79.845%
31.0	88.425	5.219	428.926	.683%	80.828%
32.0	80.100	4.828	433.754	.631%	81.738%
33.0	73.188	4.516	438.27	.591%	82.589%
34.0	66.143	4.217	442.487	.551%	83.384%
35.0	60.497	3.933	446.419	.514%	84.125%
36.0	55.554	3.695	450.115	.483%	84.821%
37.0	50.759	3.467	453.582	.453%	85.474%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	46.849	3.258	456.84	.426%	86.088%
39.0	43.073	3.069	459.909	.401%	86.667%
40.0	39.642	2.885	462.794	.377%	87.210%
41.0	36.928	2.727	465.521	.357%	87.724%
42.0	34.284	2.587	468.108	.338%	88.212%
43.0	31.591	2.440	470.548	.319%	88.672%
44.0	29.573	2.309	472.857	.302%	89.107%
45.0	27.717	2.202	475.058	.288%	89.522%
46.0	25.861	2.095	477.154	.274%	89.916%
47.0	24.293	1.995	479.149	.261%	90.292%
48.0	22.964	1.910	481.059	.250%	90.652%
49.0	21.670	1.833	482.892	.240%	90.998%
50.0	20.496	1.758	484.65	.230%	91.329%
51.0	19.427	1.689	486.339	.221%	91.647%
52.0	18.288	1.618	487.957	.212%	91.952%
53.0	17.367	1.551	489.508	.203%	92.245%
54.0	16.566	1.496	491.004	.196%	92.526%
55.0	15.792	1.444	492.448	.189%	92.799%
56.0	15.068	1.394	493.843	.182%	93.061%
57.0	14.386	1.347	495.19	.176%	93.315%
58.0	13.774	1.302	496.492	.170%	93.561%
59.0	13.191	1.261	497.752	.165%	93.798%
60.0	12.649	1.221	498.973	.160%	94.028%
61.0	12.129	1.182	500.156	.155%	94.251%
62.0	11.686	1.148	501.303	.150%	94.467%
63.0	11.278	1.117	502.42	.146%	94.678%
64.0	10.835	1.085	503.505	.142%	94.882%
65.0	10.491	1.055	504.561	.138%	95.081%
66.0	10.392	1.042	505.602	.136%	95.277%
67.0	10.617	1.056	506.659	.138%	95.476%
68.0	10.884	1.089	507.748	.142%	95.682%
69.0	11.517	1.143	508.891	.149%	95.897%
70.0	12.445	1.231	510.122	.161%	96.129%
71.0	13.352	1.333	511.455	.174%	96.380%
72.0	14.161	1.431	512.886	.187%	96.650%
73.0	14.850	1.517	514.403	.198%	96.936%
74.0	15.110	1.575	515.978	.206%	97.233%
75.0	14.941	1.588	517.566	.208%	97.532%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.541	1.565	519.131	.205%	97.827%
77.0	13.908	1.517	520.647	.198%	98.112%
78.0	13.191	1.451	522.098	.190%	98.386%
79.0	12.066	1.357	523.455	.177%	98.642%
80.0	11.067	1.247	524.702	.163%	98.877%
81.0	9.584	1.117	525.819	.146%	99.087%
82.0	8.037	0.956	526.774	.125%	99.267%
83.0	7.362	0.837	527.611	.109%	99.425%
84.0	6.096	0.733	528.345	.096%	99.563%
85.0	4.444	0.575	528.92	.075%	99.671%
86.0	3.628	0.441	529.361	.058%	99.755%
87.0	3.206	0.374	529.735	.049%	99.825%
88.0	2.897	0.334	530.069	.044%	99.888%
89.0	2.714	0.308	530.377	.040%	99.946%
90.0	2.517	0.287	530.664	.038%	100.000%

Zonal flux distribution table

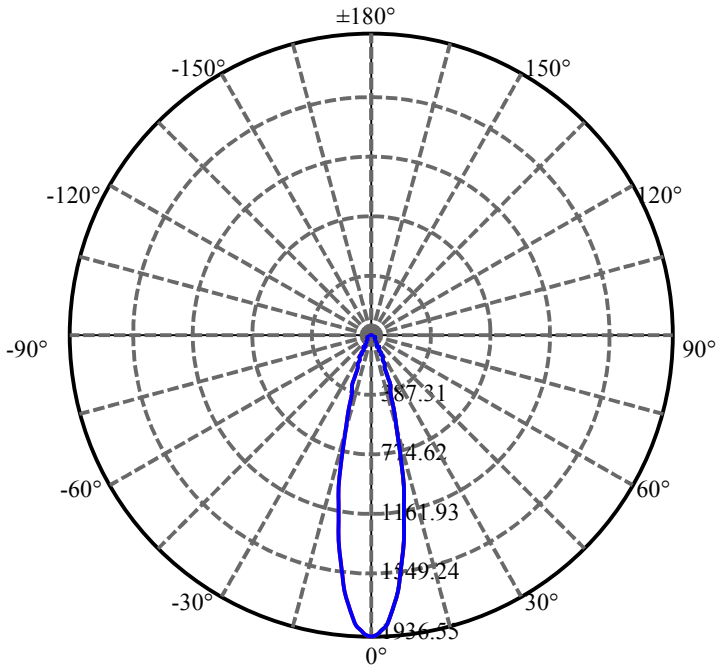
ZONAL LUMEN SUMMARY

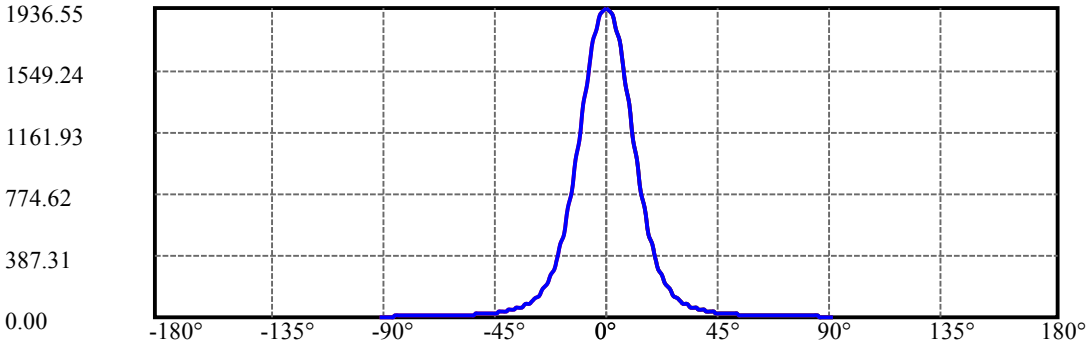
Zone	Lumens	%Lamp	%Fixt
0-30	423.71	55.41%	79.84%
0-40	462.79	60.52%	87.21%
0-60	498.97	65.25%	94.03%
0-90	530.38	69.35%	99.95%
0-120	530.38	69.35%	99.95%
0-180	530.66	69.39%	100.00%
60-90	32.62	4.27%	6.15%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.16	424.53	55.51%	80.00%

ZONAL LUMEN SUMMARY

0-10	148.45
10-20	190.42
20-30	84.84
30-40	39.09
40-50	21.86
50-60	14.32
60-70	11.15
70-80	14.58
80-90	5.67
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):

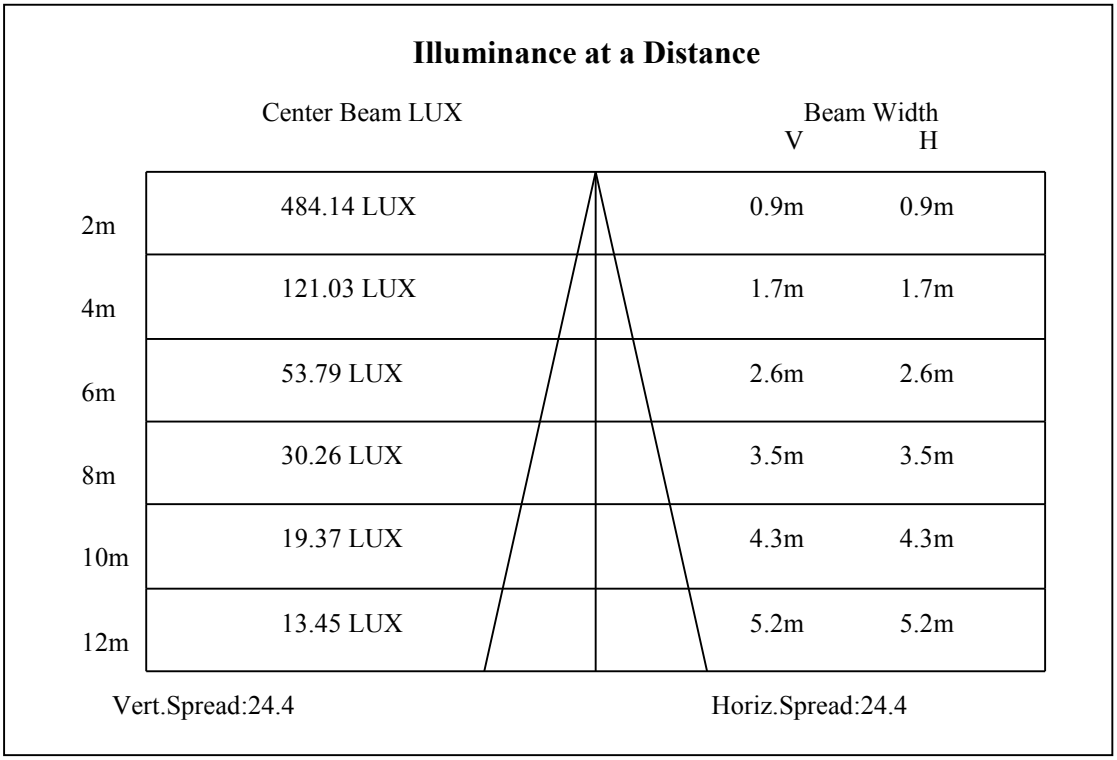
C0/C180:

C90/C270:

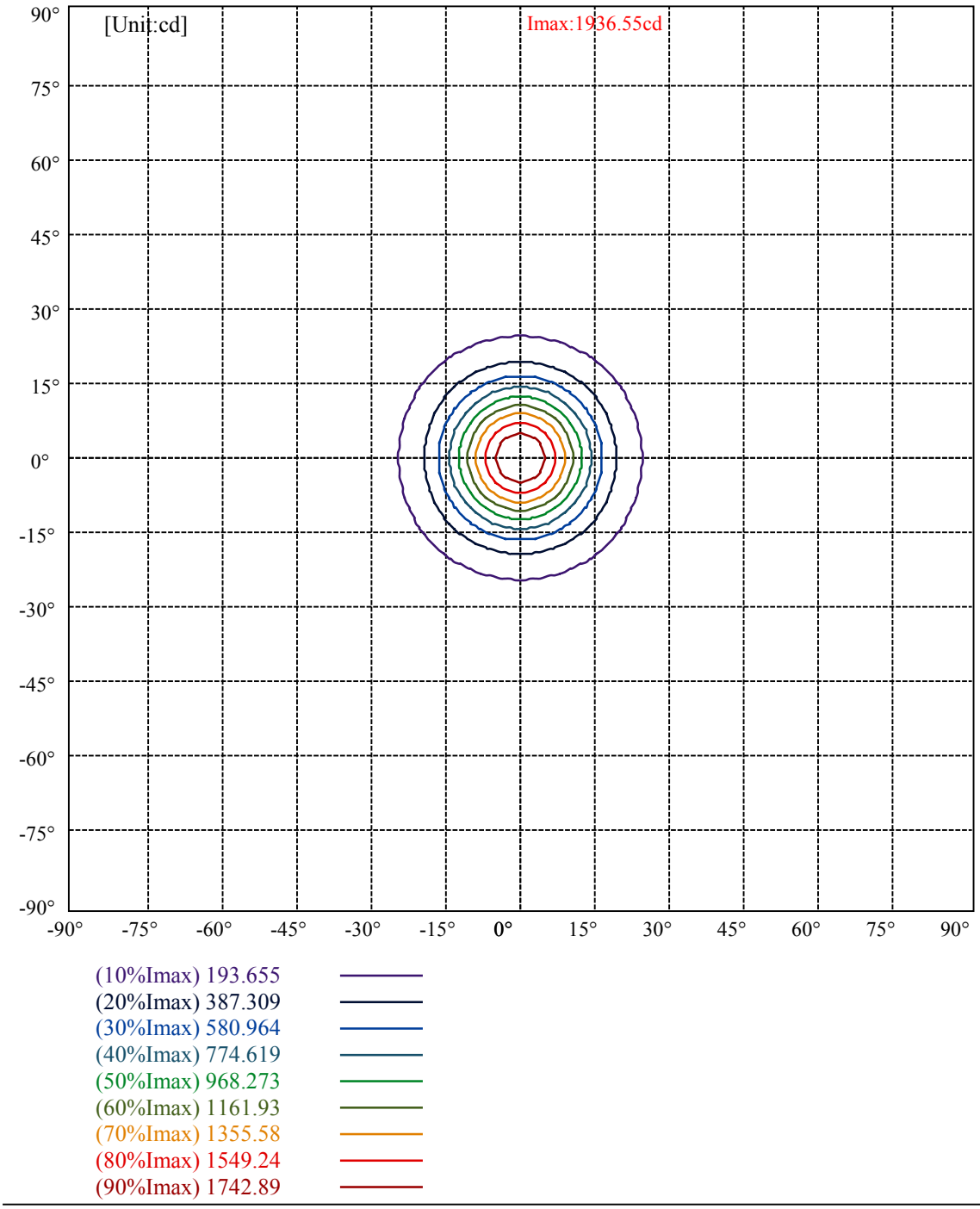
Field angle(10%Imax):C0/180Left:24.2 Right:24.2
:C90/270Left:24.2 Right:24.2

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

Lux distance Curve



ISO-Intensity(V-H)

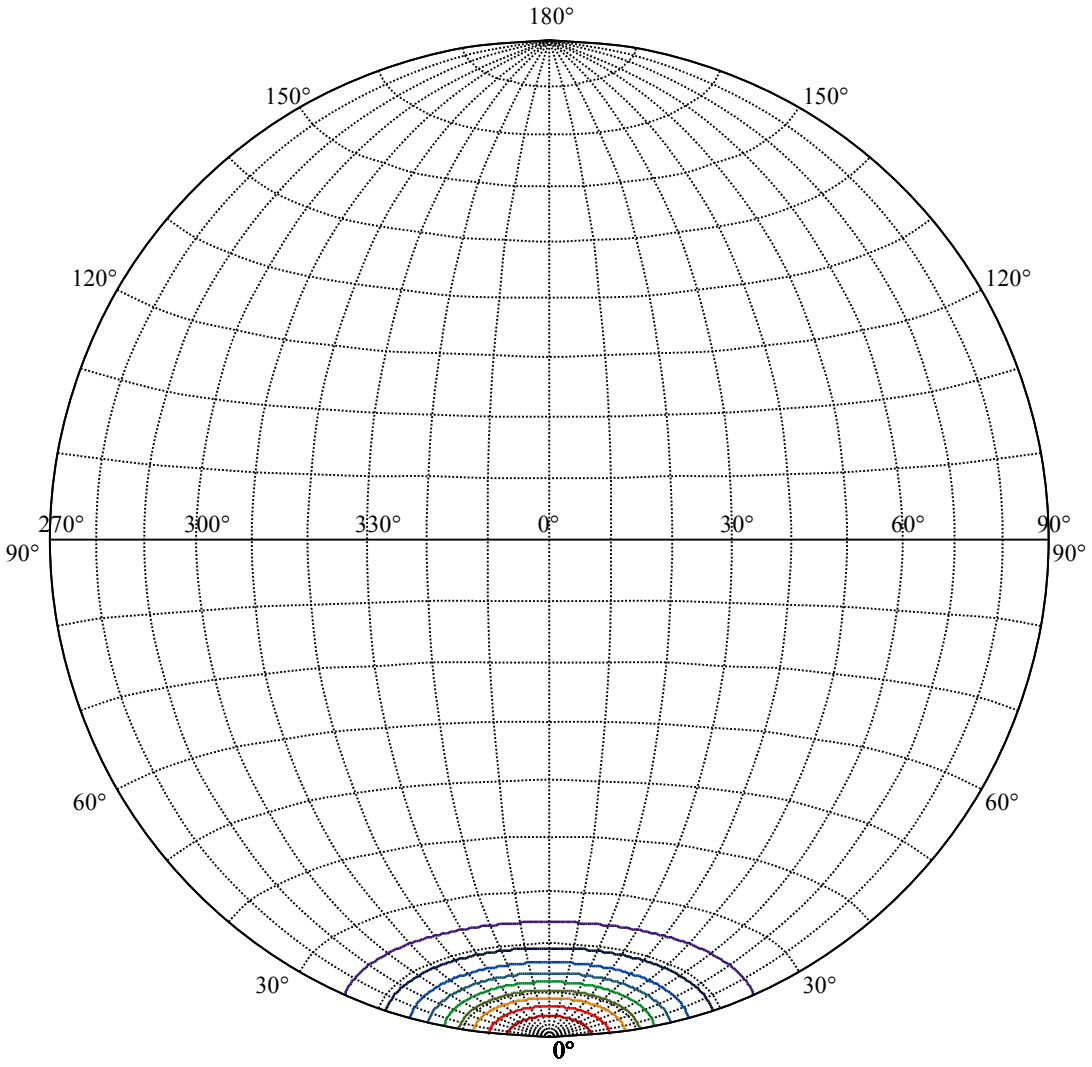


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1936.55

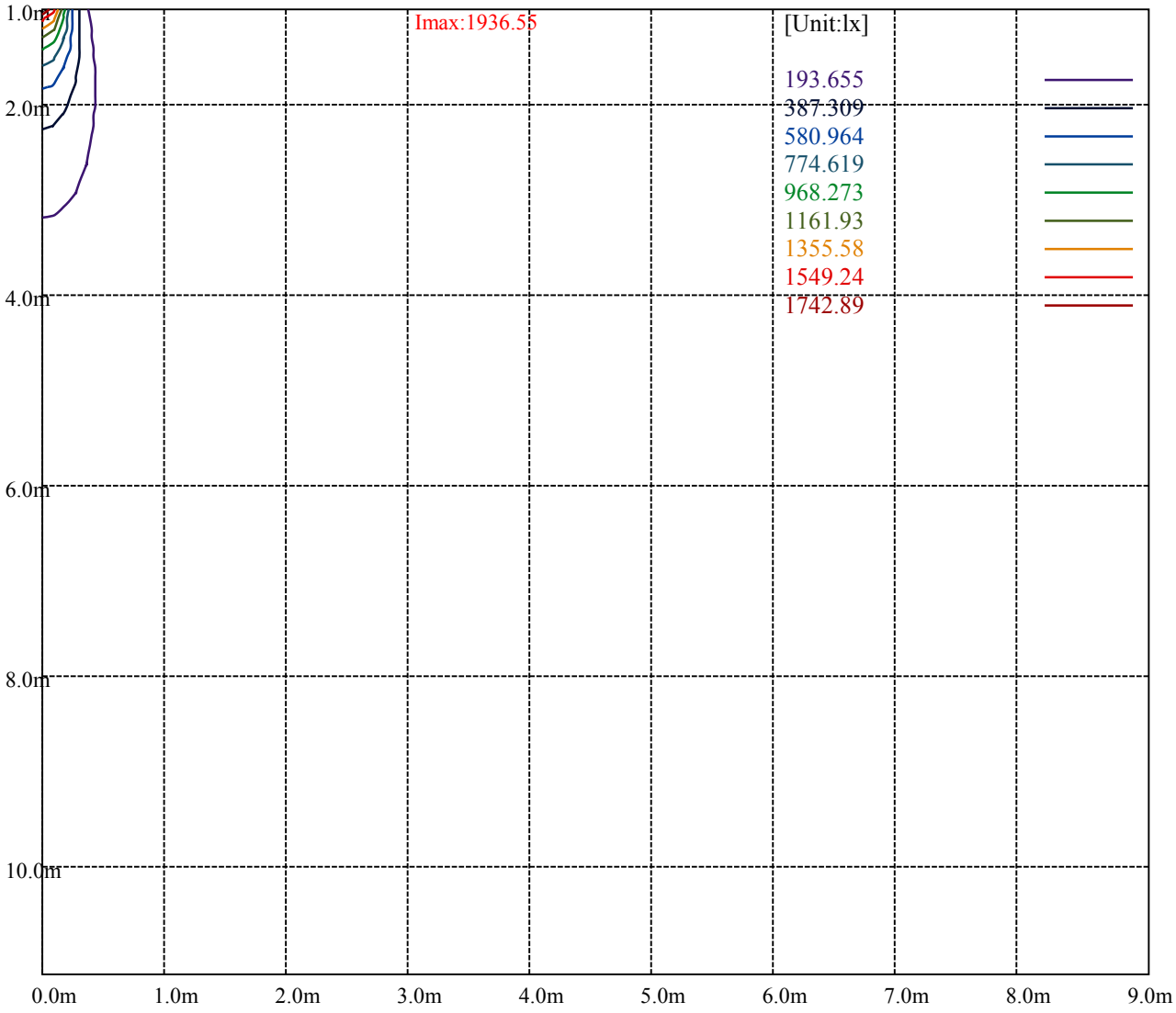
(10%Imax) 193.655
(20%Imax) 387.309
(30%Imax) 580.964
(40%Imax) 774.619
(50%Imax) 968.273
(60%Imax) 1161.93
(70%Imax) 1355.58
(80%Imax) 1549.24
(90%Imax) 1742.89

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

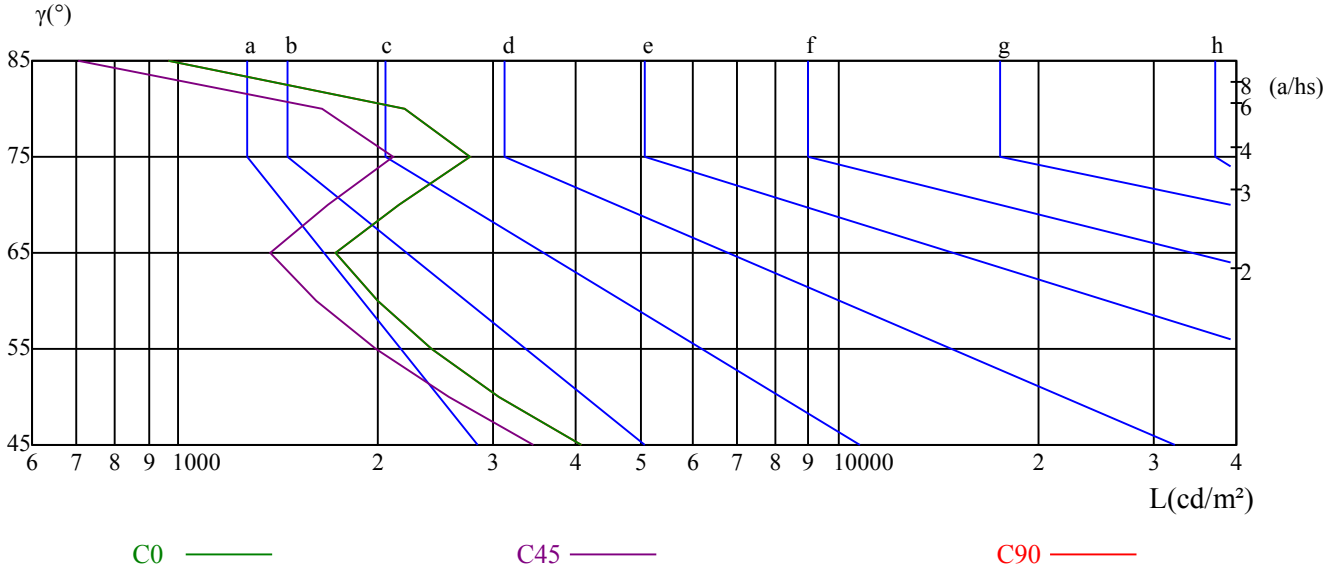
γ	45	50	55	60	65	70	75	80	85
C0	4075	3062	2416	1999	1728	2158	2757	2199	965
C45	3458	2559	1989	1619	1376	1686	2111	1646	704
C90	4075	3062	2416	1999	1728	2158	2757	2199	965

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4533	4533	4533	10542	10542	10542	9311	9311	9311

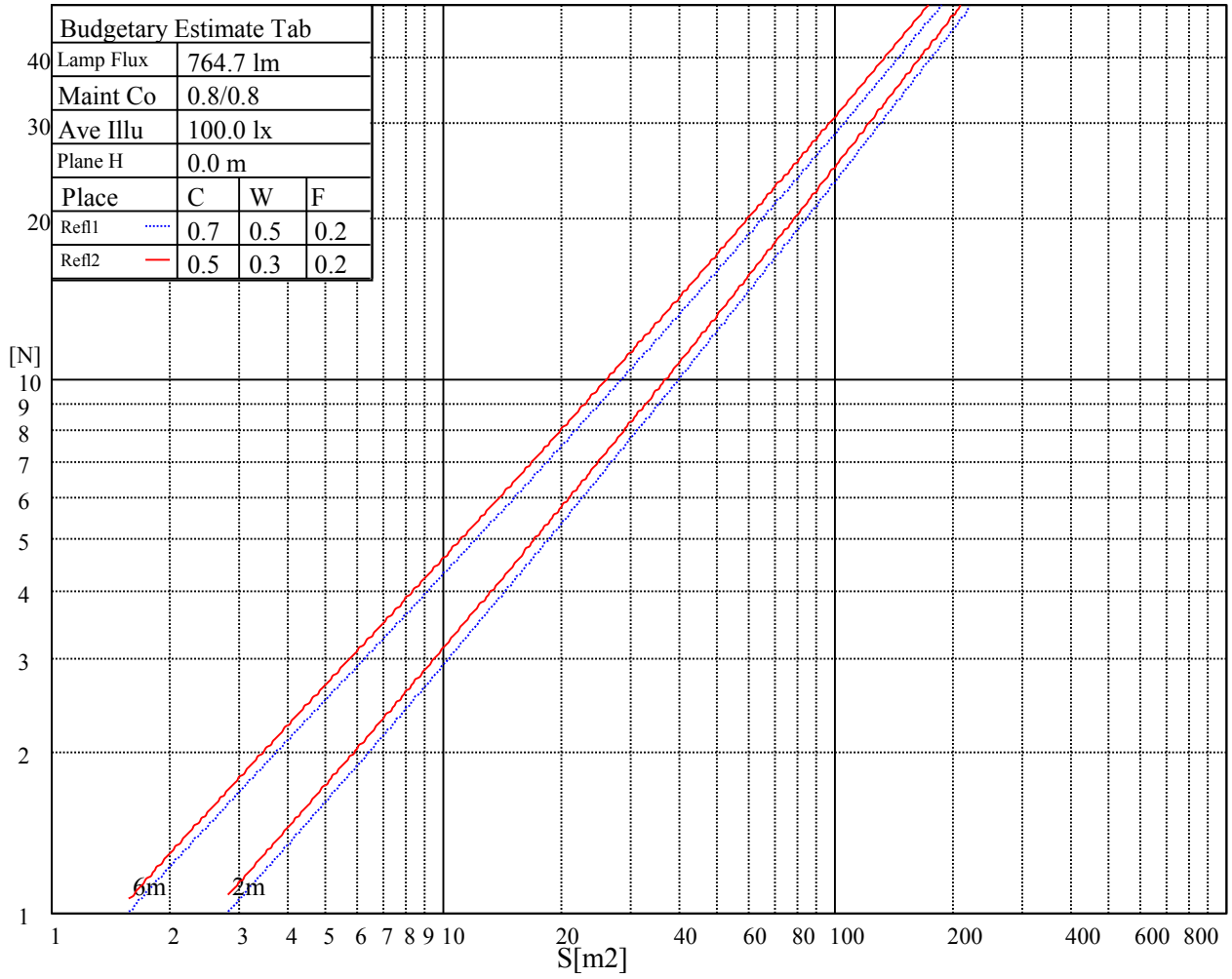
Glare Table

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

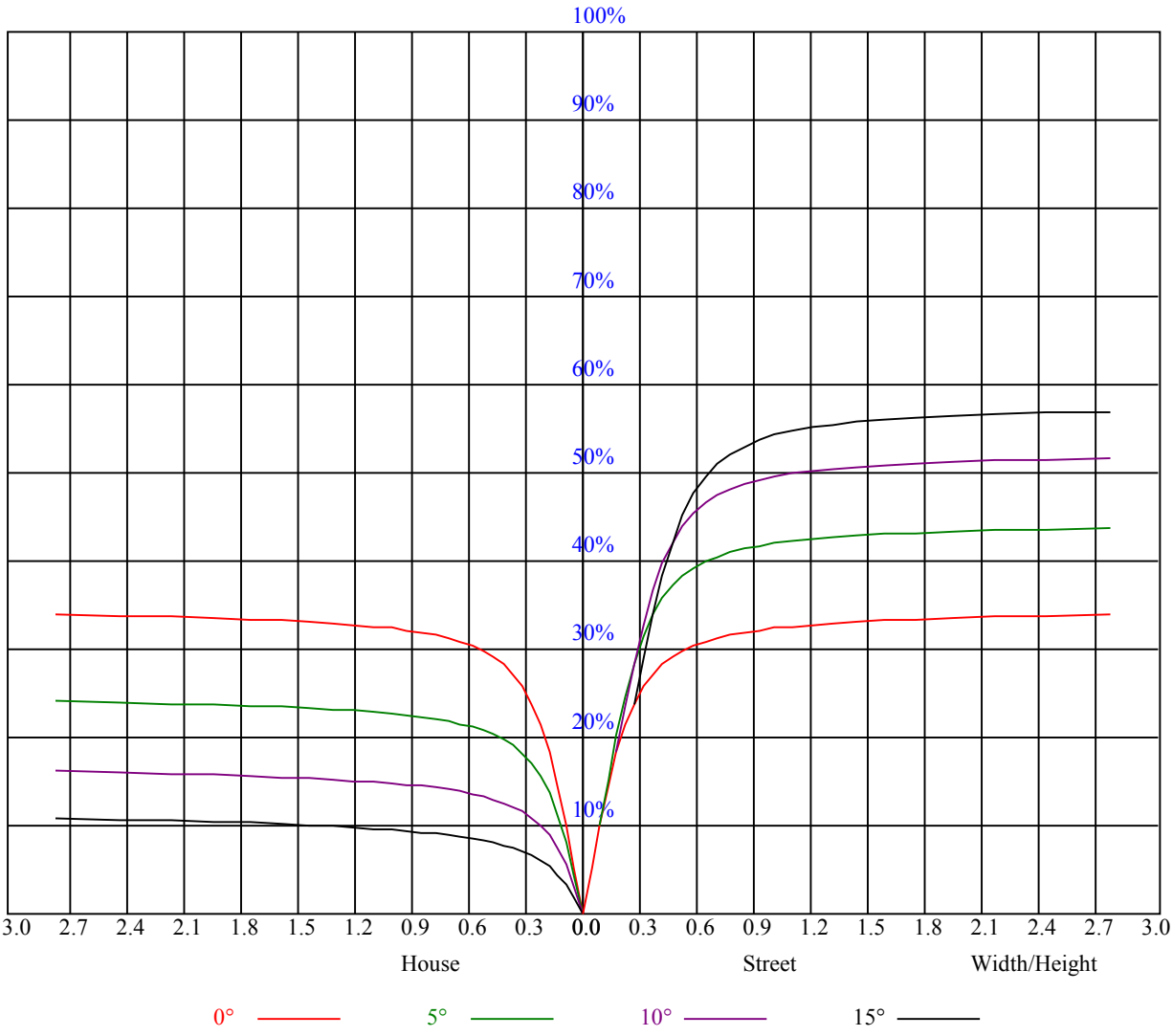


Equipment: GMS1980 Date: 2021/05/19 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.83	0.83	0.83	0.81	0.81	0.81	0.77	0.77	0.77	0.74	0.74	0.74	0.71	0.71	0.71	0.69
1	0.77	0.75	0.73	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.69	0.68	0.67	0.66	0.66	0.64
2	0.72	0.69	0.67	0.70	0.68	0.66	0.68	0.66	0.64	0.66	0.64	0.63	0.64	0.63	0.62	0.61
3	0.67	0.64	0.62	0.67	0.64	0.61	0.65	0.62	0.60	0.63	0.61	0.59	0.62	0.60	0.58	0.57
4	0.64	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.60	0.58	0.56	0.59	0.57	0.55	0.54
5	0.61	0.57	0.55	0.60	0.57	0.54	0.59	0.56	0.54	0.58	0.55	0.53	0.57	0.55	0.53	0.52
6	0.58	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.51	0.56	0.53	0.51	0.55	0.53	0.51	0.50
7	0.56	0.52	0.50	0.55	0.52	0.50	0.55	0.51	0.49	0.54	0.51	0.49	0.53	0.51	0.49	0.48
8	0.54	0.50	0.48	0.53	0.50	0.48	0.53	0.50	0.47	0.52	0.49	0.47	0.51	0.49	0.47	0.46
9	0.52	0.48	0.46	0.51	0.48	0.46	0.51	0.48	0.46	0.50	0.47	0.46	0.50	0.47	0.45	0.45
10	0.50	0.47	0.44	0.50	0.46	0.44	0.49	0.46	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.43

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/05/19	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	1951.88	1946.25	1920.94	1878.19	1824.75	1756.69	1660.50	1569.38	1470.38
45.0	1932.19	1893.38	1840.50	1777.50	1697.06	1612.13	1505.25	1391.63	1286.44
90.0	1920.94	1885.50	1838.25	1761.75	1686.94	1603.13	1495.13	1380.38	1272.38
135.0	1941.19	1928.25	1896.19	1846.69	1790.44	1712.81	1618.88	1524.38	1424.25
180.0	1951.88	1938.94	1913.63	1868.06	1802.25	1730.81	1639.13	1530.00	1425.94
225.0	1932.19	1947.94	1951.88	1931.63	1902.94	1855.69	1781.44	1707.19	1622.81
270.0	1920.94	1941.19	1944.00	1931.06	1896.19	1846.69	1787.06	1708.31	1626.19
315.0	1941.19	1938.38	1919.25	1879.31	1824.19	1759.50	1685.81	1578.94	1483.88
360.0	1951.88	1946.25	1920.94	1878.19	1824.75	1756.69	1660.50	1569.38	1470.38

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1342.13	1235.81	1129.50	1009.13	892.69	794.81	693.00	609.19	525.94
45.0	1164.94	1045.13	941.06	840.94	725.63	641.81	567.00	489.94	422.44
90.0	1119.54	1026.17	926.27	827.61	725.06	631.97	556.76	481.73	422.44
135.0	1291.50	1180.13	1073.81	951.75	837.56	744.75	648.00	561.38	491.63
180.0	1315.69	1120.11	1066.22	959.79	831.09	737.94	651.49	572.06	483.30
225.0	1504.13	1403.44	1297.13	1114.09	1047.15	941.57	841.73	735.41	638.72
270.0	1533.38	1409.63	1303.88	1195.88	1060.31	955.69	852.75	733.50	646.88
315.0	1383.19	1250.44	1110.99	1030.89	914.74	804.54	713.36	619.71	544.67
360.0	1342.13	1235.81	1129.50	1009.13	892.69	794.81	693.00	609.19	525.94

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	452.81	397.13	342.56	295.88	286.88	229.67	198.84	177.75	157.44
45.0	370.69	320.06	286.31	241.37	210.32	186.53	163.13	144.06	129.71
90.0	363.54	314.38	276.47	240.69	210.21	187.14	167.06	145.29	130.50
135.0	422.44	369.56	318.38	288.00	238.84	207.96	183.43	161.38	144.84
180.0	421.09	367.71	315.45	272.87	240.81	211.05	187.03	169.82	145.91
225.0	553.22	485.27	424.97	365.96	315.56	277.03	239.40	208.41	185.01
270.0	569.81	492.19	424.69	372.38	321.75	287.44	244.01	212.57	188.61
315.0	469.91	405.56	354.99	306.34	265.16	233.66	206.66	178.26	159.19
360.0	452.81	397.13	342.56	295.88	286.88	229.67	198.84	177.75	157.44

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	138.43	122.57	110.76	99.45	89.61	81.90	74.14	68.23	62.27
45.0	117.06	103.33	93.09	84.83	75.21	68.79	63.23	57.49	52.48
90.0	117.56	104.96	93.71	84.99	76.39	68.96	63.11	57.21	52.71
135.0	128.48	114.47	102.99	93.99	82.41	75.09	69.36	61.59	56.81
180.0	130.67	115.99	103.56	93.99	85.73	76.56	70.20	64.58	58.50
225.0	164.87	143.16	128.48	116.04	103.61	92.70	84.26	75.94	68.57
270.0	165.66	145.63	130.95	117.96	104.12	94.50	86.12	76.89	70.43
315.0	142.71	124.71	112.50	101.81	90.34	82.29	75.09	67.22	62.21
360.0	138.43	122.57	110.76	99.45	89.61	81.90	74.14	68.23	62.27

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	56.81	52.48	48.71	44.27	41.23	38.48	35.33	32.91	30.77
45.0	48.66	44.66	41.51	38.31	35.27	32.96	30.60	28.46	26.89
90.0	48.09	43.99	40.78	37.58	34.59	32.23	30.09	27.79	26.10
135.0	52.99	48.09	44.21	41.46	37.86	35.10	32.74	30.09	28.24
180.0	53.94	50.01	46.01	42.36	39.38	36.51	34.03	31.39	29.03
225.0	62.78	57.04	52.76	48.21	44.16	41.06	38.19	34.82	32.46
270.0	64.63	58.61	52.99	48.54	44.49	41.23	38.14	35.33	33.02
315.0	56.53	51.19	47.81	43.88	40.16	37.86	35.16	31.95	30.09
360.0	56.81	52.48	48.71	44.27	41.23	38.48	35.33	32.91	30.77

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	28.63	26.72	25.14	23.57	22.33	21.09	20.19	19.18	18.17
45.0	25.43	23.96	22.50	21.32	20.31	19.01	18.06	17.21	16.20
90.0	24.58	22.95	21.54	20.42	19.24	18.23	17.38	16.54	15.92
135.0	26.55	24.81	23.34	22.11	20.64	19.69	18.68	17.61	16.65
180.0	27.23	25.37	23.79	22.56	21.38	20.14	19.24	18.34	17.55
225.0	30.32	27.90	26.21	24.75	23.34	22.11	20.76	19.63	18.62
270.0	30.83	28.86	27.17	25.71	24.24	23.18	21.60	19.35	18.28
315.0	28.18	26.33	24.64	23.29	21.88	20.53	19.52	18.45	17.55
360.0	28.63	26.72	25.14	23.57	22.33	21.09	20.19	19.18	18.17

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	17.33	16.65	15.98	15.19	14.68	14.06	13.44	12.77	12.21
45.0	15.53	14.79	14.12	13.56	13.05	12.54	11.98	11.59	11.14
90.0	15.30	14.51	13.84	13.28	12.66	12.21	11.81	11.36	11.03
135.0	15.86	15.08	14.34	13.73	13.11	12.60	12.04	11.53	11.14
180.0	16.93	16.37	15.64	14.91	14.34	13.61	13.05	12.54	12.04
225.0	17.61	16.71	15.98	15.19	14.46	13.78	13.22	12.66	12.21
270.0	17.38	16.48	15.64	14.91	14.23	13.67	13.11	12.60	12.21
315.0	16.59	15.75	15.02	14.34	13.67	13.05	12.54	11.98	11.53
360.0	17.33	16.65	15.98	15.19	14.68	14.06	13.44	12.77	12.21

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.70	11.08	10.69	10.35	9.96	9.62	9.28	8.94	8.66
45.0	10.74	10.35	9.96	9.62	9.34	9.00	8.83	8.44	7.99
90.0	10.74	10.41	10.24	11.70	15.92	19.91	24.30	28.52	32.34
135.0	10.74	10.24	9.96	9.62	9.28	9.00	8.83	8.44	8.10
180.0	11.59	11.14	10.69	10.35	10.01	9.79	9.56	9.51	9.39
225.0	11.70	11.31	10.91	10.58	10.24	9.90	9.51	9.17	8.94
270.0	11.87	11.48	11.19	10.91	10.58	10.52	12.83	17.89	23.01
315.0	11.14	10.69	10.29	10.01	9.62	9.34	9.00	8.66	8.38
360.0	11.70	11.08	10.69	10.35	9.96	9.62	9.28	8.94	8.66

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.44	8.21	7.93	7.54	7.14	6.75	6.47	6.02	5.74
45.0	7.65	7.31	6.92	6.53	6.30	5.85	5.57	5.34	4.95
90.0	36.11	38.42	38.19	35.04	31.11	28.01	25.09	21.71	19.01
135.0	7.82	7.48	7.20	6.86	6.53	6.24	5.85	5.51	5.23
180.0	9.34	9.23	9.00	8.66	8.21	7.65	7.09	6.47	5.85
225.0	8.61	8.27	8.04	7.71	7.37	7.03	6.69	6.30	5.96
270.0	27.23	32.06	36.11	39.99	42.81	43.20	42.58	39.32	36.34
315.0	8.10	7.82	7.48	7.20	6.86	6.53	6.19	5.85	5.46
360.0	8.44	8.21	7.93	7.54	7.14	6.75	6.47	6.02	5.74

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.46	5.06	4.73	4.39	4.05	3.71	3.32	2.98	2.81
45.0	4.67	4.39	4.11	3.77	3.26	2.98	2.76	2.48	2.53
90.0	12.21	5.06	4.44	3.60	3.15	2.87	2.53	2.31	2.25
135.0	4.89	4.56	4.28	4.05	3.54	3.32	3.04	2.81	2.53
180.0	5.46	5.06	4.67	4.33	3.77	3.43	3.21	2.93	2.70
225.0	5.68	5.34	5.06	4.73	4.50	4.22	3.66	3.38	3.15
270.0	33.13	29.93	27.06	19.63	9.28	4.84	3.88	3.26	2.98
315.0	5.18	4.89	4.56	4.28	3.99	3.66	3.26	3.04	2.76
360.0	5.46	5.06	4.73	4.39	4.05	3.71	3.32	2.98	2.81

Intensity data(cd)

C/γ(°)	90.0
0.0	2.53
45.0	2.31
90.0	2.25
135.0	2.25
180.0	2.59
225.0	3.04
270.0	2.64
315.0	2.53
360.0	2.53