NATA LIGHTING CO.,LTD.
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Address:380 JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:
LumCAT: 1681-s
Luminaire: 92.70.127.00

Report No: nata0100	Voltage(V): 36.1000
Test No: GC20180425	Current(A): 0.3400
LampCAT: CREE CXA1512	Power (W): 12.2740
Lamp flux(lm): 1501.2	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1337.48, Efficiency(%): 89.10% , Luminous Efficacy(lm/W): 108.97
Central intensity(cd): 1735.240, Maximum intensity(cd): 1735.240
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=57.0
[C90/270]Total=57.0
Field angle(10%Imax): [C0/180]Total=75.6
[C90/270]Total=75.6
Maximum s/h(1/2): C0_180=0.89 C90_270=0.89
Maximum s/h(1/4): C0_180=0.85 C90_270=0.85
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.10%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.629%

Equipment: GMS1980	Date: 2018/4/25	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1735.240	0.000	0	.000%	.000%
2.0	1733.726	6.639	6.639	.442%	.496%
4.0	1727.532	19.864	26.503	1.323%	1.982%
6.0	1710.809	32.861	59.364	2.189%	4.439%
8.0	1681.904	45.340	104.703	3.020%	7.828%
10.0	1638.891	56.965	161.669	3.795%	12.088%
12.0	1585.418	67.464	229.132	4.494%	17.132%
14.0	1515.634	76.495	305.627	5.096%	22.851%
16.0	1440.757	83.906	389.533	5.589%	29.125%
18.0	1367.119	90.022	479.555	5.997%	35.855%
20.0	1298.230	95.155	574.71	6.339%	42.970%
22.0	1224.454	99.135	673.845	6.604%	50.382%
24.0	1137.149	101.186	775.031	6.741%	57.947%
26.0	1029.699	100.418	875.449	6.689%	65.455%
28.0	906.559	96.393	971.842	6.421%	72.662%
30.0	763.329	88.776	1060.618	5.914%	79.300%
32.0	610.452	77.588	1138.205	5.169%	85.101%
34.0	453.637	63.551	1201.756	4.233%	89.853%
36.0	289.225	46.723	1248.48	3.112%	93.346%
38.0	164.123	29.918	1278.398	1.993%	95.583%
40.0	73.597	16.405	1294.802	1.093%	96.809%
42.0	37.707	8.007	1302.81	.533%	97.408%
44.0	22.587	4.509	1307.319	.300%	97.745%
46.0	14.211	2.853	1310.172	.190%	97.959%
48.0	9.890	1.933	1312.105	.129%	98.103%
50.0	7.570	1.445	1313.55	.096%	98.211%
52.0	6.504	1.199	1314.749	.080%	98.301%
54.0	6.111	1.105	1315.854	.074%	98.383%
56.0	5.960	1.084	1316.938	.072%	98.464%
58.0	5.898	1.091	1318.029	.073%	98.546%
60.0	5.864	1.106	1319.134	.074%	98.629%
62.0	5.829	1.121	1320.256	.075%	98.713%
64.0	5.822	1.138	1321.394	.076%	98.798%
66.0	5.815	1.157	1322.551	.077%	98.884%
68.0	5.829	1.175	1323.726	.078%	98.972%
70.0	5.836	1.194	1324.92	.080%	99.061%
72.0	5.836	1.210	1326.13	.081%	99.152%
74.0	5.836	1.224	1327.354	.082%	99.243%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.850	1.238	1328.592	.082%	99.336%
78.0	6.070	1.274	1329.866	.085%	99.431%
80.0	5.788	1.276	1331.142	.085%	99.526%
82.0	5.829	1.258	1332.4	.084%	99.621%
84.0	6.118	1.300	1333.701	.087%	99.718%
86.0	6.132	1.338	1335.039	.089%	99.818%
88.0	5.368	1.259	1336.298	.084%	99.912%
90.0	5.368	1.177	1337.475	.078%	100.000%

Zonal flux distribution table

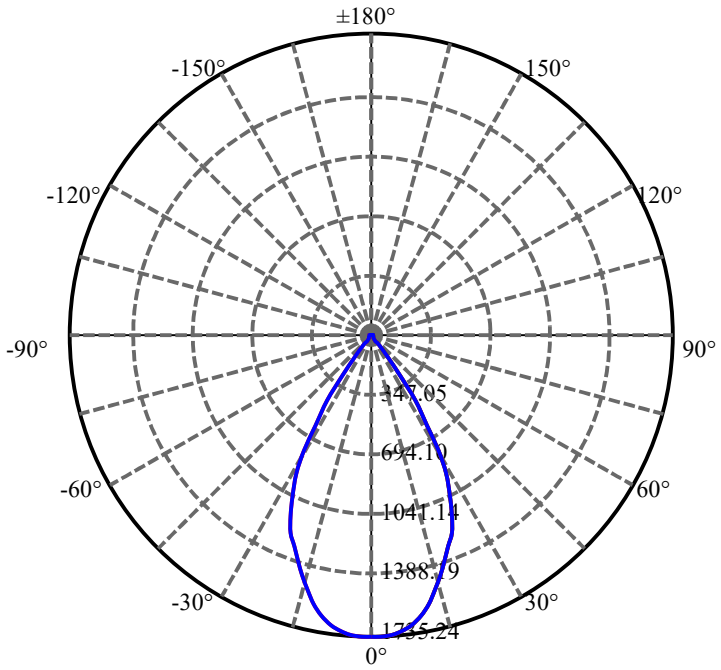
ZONAL LUMEN SUMMARY

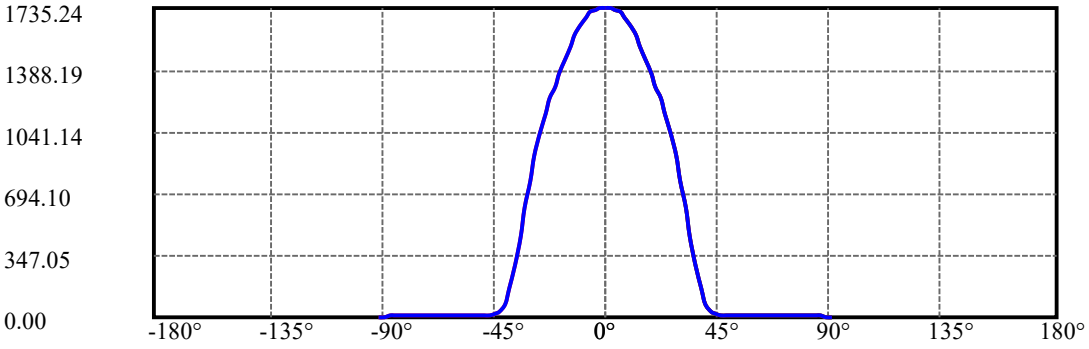
Zone	Lumens	%Lamp	%Fixt
0-30	1060.62	70.65%	79.30%
0-40	1294.80	86.25%	96.81%
0-60	1319.13	87.87%	98.63%
0-90	1336.30	89.02%	99.91%
0-120	1336.30	89.02%	99.91%
0-180	1337.48	89.10%	100.00%
60-90	18.27	1.22%	1.37%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.24	1069.98	71.28%	80.00%

ZONAL LUMEN SUMMARY

0-10	161.67
10-20	413.04
20-30	485.91
30-40	234.18
40-50	18.75
50-60	5.58
60-70	5.79
70-80	6.22
80-90	5.16
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:37.8 Right:37.8
:C90/270Left:37.8 Right:37.8

Beam Angle(50%Imax):C0/180Left:28.5 Right:28.5
:C90/270Left:28.5 Right:28.5

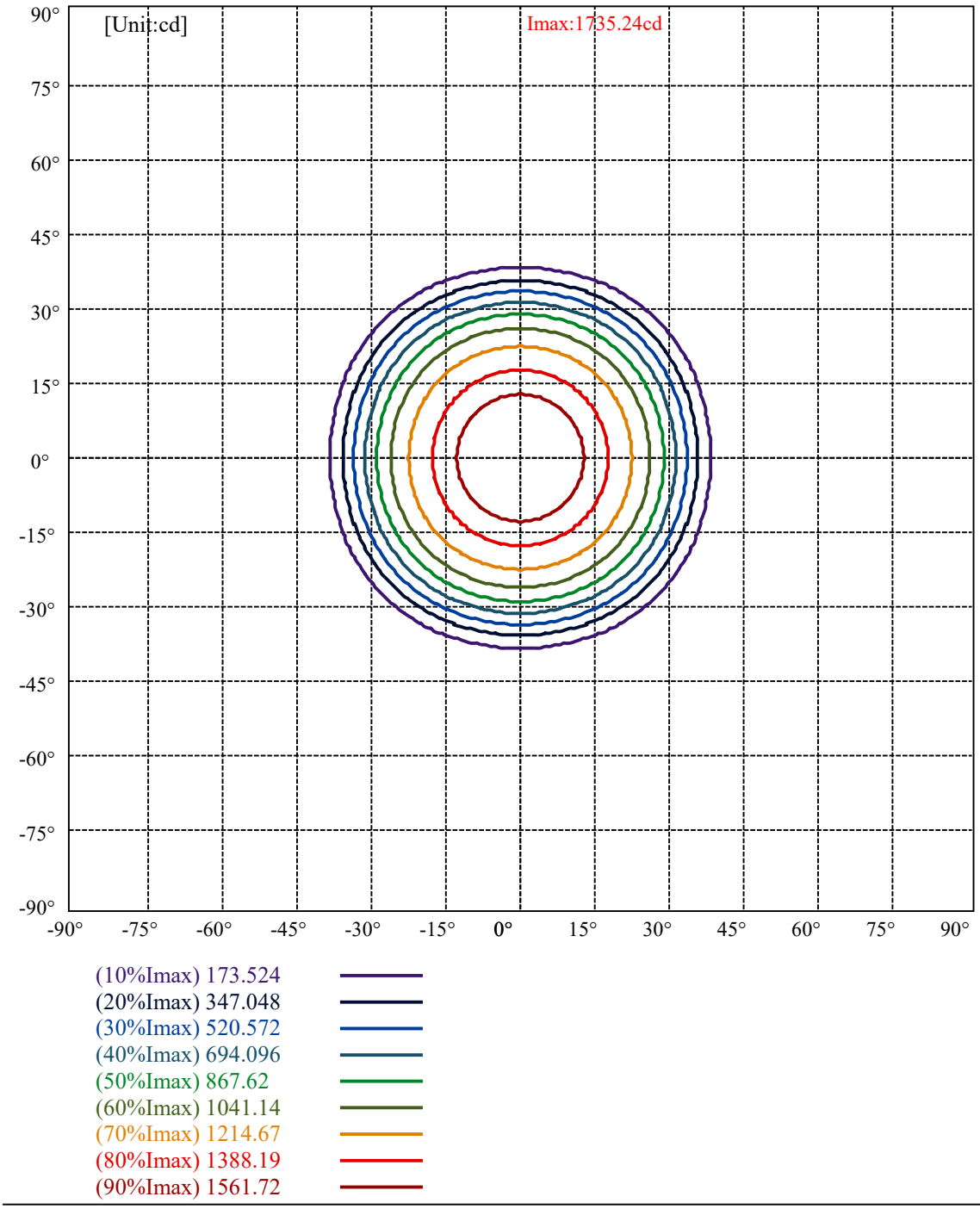
Lux distance Curve

Illuminance at a Distance

	Center Beam LUX	Beam Width V	Beam Width H
2m	433.81 LUX	2.2m	2.2m
4m	108.45 LUX	4.3m	4.3m
6m	48.20 LUX	6.5m	6.5m
8m	27.11 LUX	8.7m	8.7m
10m	17.35 LUX	10.9m	10.9m
12m	12.05 LUX	13.0m	13.0m

Vert.Spread:57.0 Horiz.Spread:57.0

ISO-Intensity(V-H)



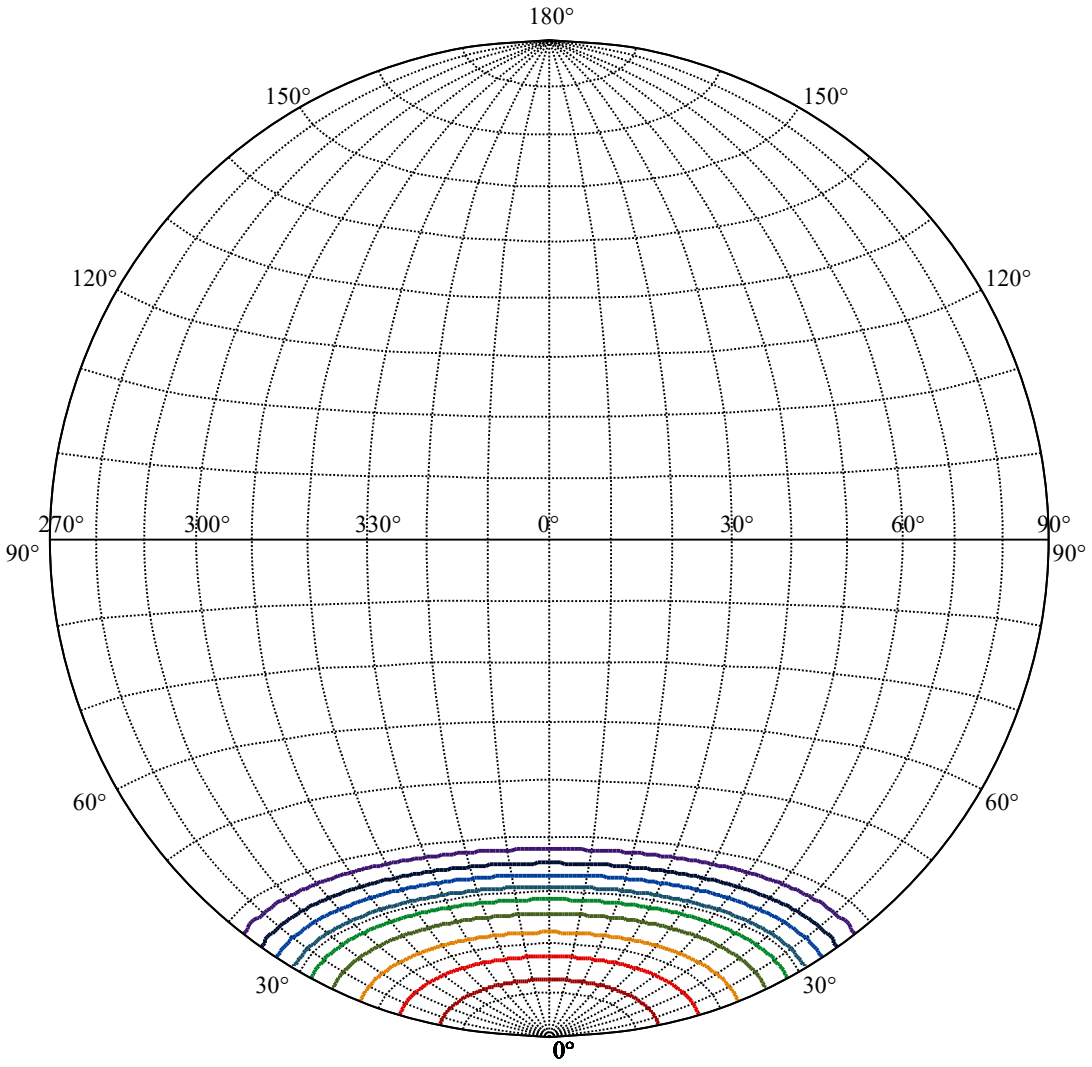
(10%Imax) 173.524
(20%Imax) 347.048
(30%Imax) 520.572
(40%Imax) 694.096
(50%Imax) 867.62
(60%Imax) 1041.14
(70%Imax) 1214.67
(80%Imax) 1388.19
(90%Imax) 1561.72

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1735.24

(10%Imax) 173.524
(20%Imax) 347.048
(30%Imax) 520.572
(40%Imax) 694.096
(50%Imax) 867.62
(60%Imax) 1041.14
(70%Imax) 1214.67
(80%Imax) 1388.19
(90%Imax) 1561.72

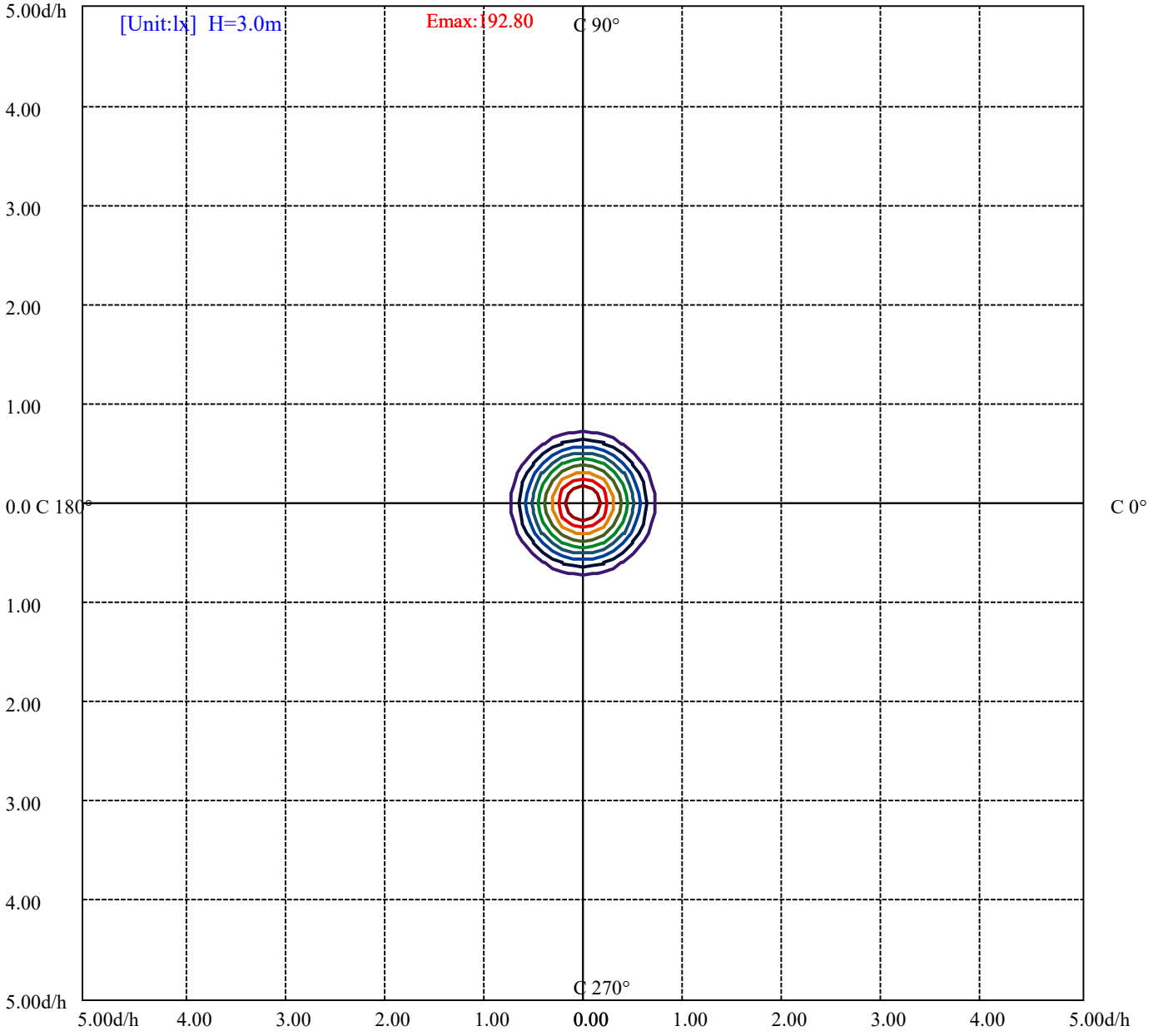
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Nata 1681-s

ISO illuminance diagram

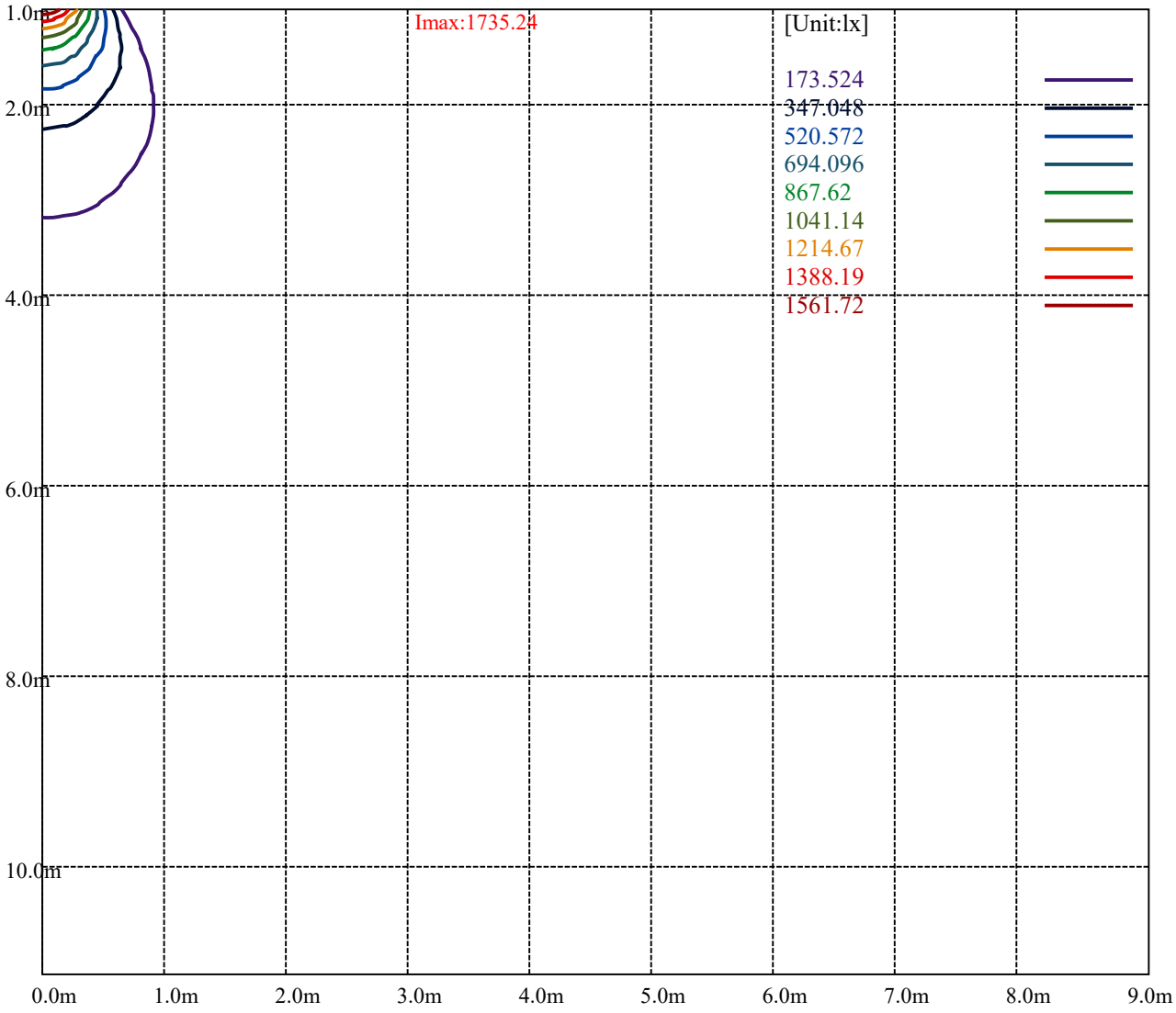


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/4/25
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

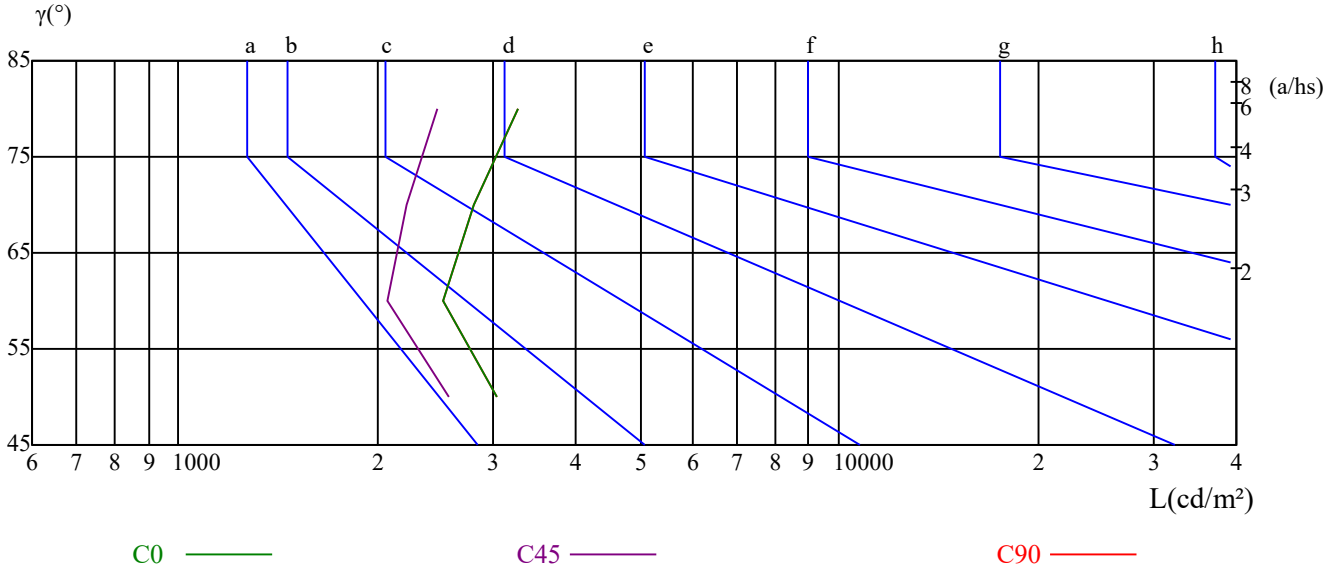
γ	45	50	55	60	65	70	75	80	85
C0	0	3028	0	2521	0	2805	0	3266	0
C45	0	2568	0	2071	0	2220	0	2466	0
C90	0	3028	0	2521	0	2805	0	3266	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5838	5897	5868	9630	9533	9533	28740	28311	28311

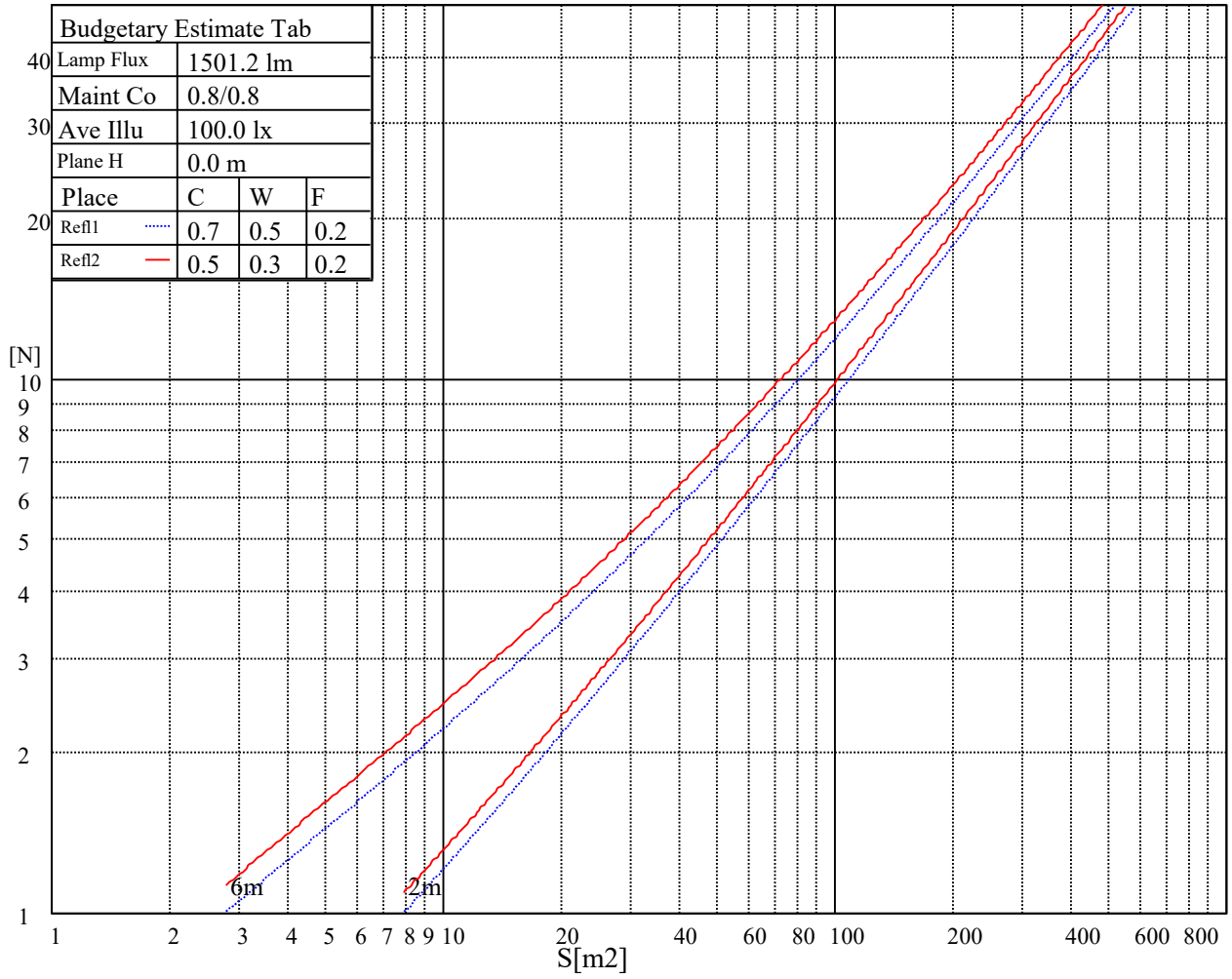
Glare Table

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

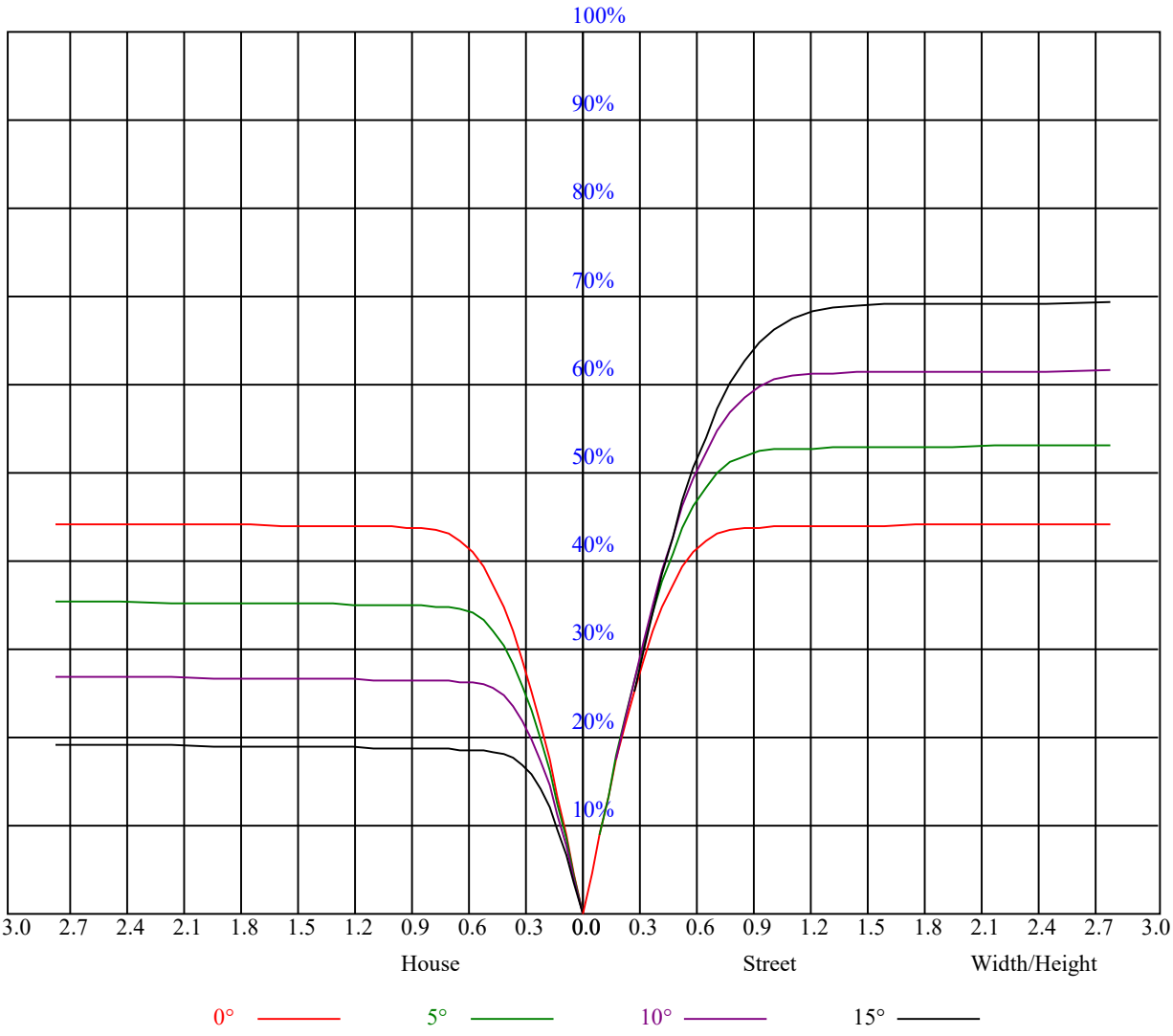


Equipment: GMS1980 Date: 2018/4/25 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

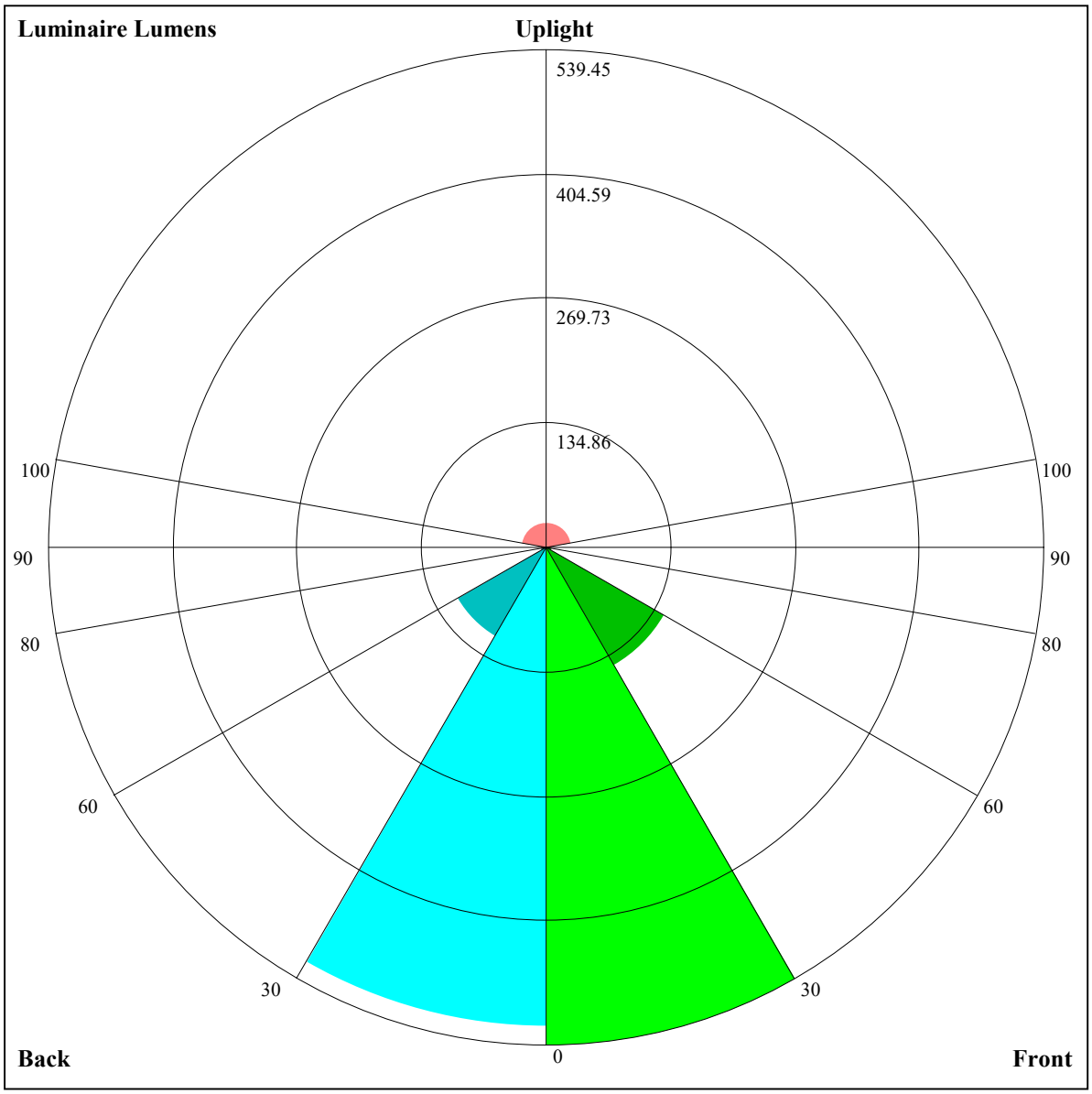
Utilization factor table for indoor luminaire

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.97	0.95	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.83
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.73
4	0.81	0.77	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.73	0.71	0.75	0.72	0.70	0.69
5	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.66	0.65
6	0.72	0.67	0.64	0.72	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
7	0.68	0.63	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.57
8	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.54
9	0.61	0.56	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.59	0.55	0.52	0.51
10	0.58	0.53	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.56	0.52	0.50	0.48

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/4/25	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42



Luminaire Lumens:
FL=539.45,FM=148.18,FH=5.77,FVH=3.06
BL=519.43,BM=112.46,BH=6.2,BVH=3.25
UL=5.86,UH=27.87

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	1728.22	1730.42	1728.77	1721.61	1704.00	1673.71	1628.02	1566.91	1494.23
45.0	1743.09	1739.78	1730.42	1709.50	1681.97	1636.28	1582.87	1512.40	1424.86
90.0	1735.38	1727.12	1709.50	1686.38	1643.98	1587.28	1529.47	1445.23	1370.35
135.0	1734.28	1726.57	1716.66	1688.58	1652.79	1601.04	1535.52	1457.34	1379.71
180.0	1728.22	1723.27	1713.91	1689.13	1648.39	1599.94	1537.73	1460.10	1394.58
225.0	1743.09	1744.74	1741.98	1727.67	1696.29	1654.44	1603.24	1532.22	1456.79
270.0	1735.38	1740.33	1742.54	1735.38	1718.31	1683.62	1640.68	1583.97	1507.44
315.0	1734.28	1737.58	1736.48	1728.22	1709.50	1674.82	1625.82	1566.91	1498.08
360.0	1728.22	1730.42	1728.77	1721.61	1704.00	1673.71	1628.02	1566.91	1494.23

C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1409.99	1333.47	1269.60	1196.38	1115.44	1004.78	879.25	736.10	594.61
45.0	1347.23	1286.12	1223.35	1143.52	1048.82	925.50	789.51	652.42	494.96
90.0	1307.04	1244.27	1165.54	1074.21	948.13	826.89	671.14	505.25	352.80
135.0	1321.35	1252.53	1173.25	1066.99	947.52	806.58	648.01	494.96	317.12
180.0	1322.45	1249.23	1167.20	1058.90	927.37	794.08	632.65	460.66	306.17
225.0	1393.48	1323.01	1239.87	1153.98	1029.66	893.01	751.57	586.85	420.08
270.0	1427.06	1362.10	1291.62	1210.69	1124.25	1000.93	870.99	727.30	564.33
315.0	1408.34	1335.12	1265.20	1192.52	1096.39	1000.71	863.50	720.08	579.03
360.0	1409.99	1333.47	1269.60	1196.38	1115.44	1004.78	879.25	736.10	594.61

C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	438.25	283.54	126.91	56.76	34.19	19.16	12.33	8.75	6.83
45.0	325.93	174.91	74.05	42.06	23.95	14.92	10.96	7.93	6.50
90.0	182.40	81.92	44.71	25.77	16.19	11.62	8.59	6.88	6.17
135.0	156.80	65.57	38.70	21.86	14.98	10.68	8.15	6.94	6.28
180.0	148.87	65.13	36.17	21.20	14.31	10.41	7.87	6.77	6.39
225.0	247.31	113.69	51.81	31.71	18.22	12.39	8.97	7.21	6.55
270.0	400.81	279.14	100.81	48.34	28.57	17.12	11.12	8.15	6.72
315.0	413.42	249.08	115.62	53.96	30.28	17.40	11.12	7.93	6.61
360.0	438.25	283.54	126.91	56.76	34.19	19.16	12.33	8.75	6.83

C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	5.95	5.73	5.67	5.62	5.51	5.51	5.45	5.45	5.45
45.0	6.00	5.73	5.67	5.62	5.56	5.51	5.51	5.51	5.51
90.0	5.89	5.78	5.73	5.73	5.67	5.67	5.67	5.67	5.73
135.0	6.11	6.06	6.06	6.00	6.00	6.00	6.00	6.06	6.06
180.0	6.33	6.28	6.22	6.22	6.22	6.28	6.33	6.33	6.33
225.0	6.33	6.22	6.17	6.17	6.17	6.17	6.17	6.22	6.22
270.0	6.22	6.06	5.95	5.89	5.89	5.84	5.84	5.84	5.84
315.0	6.06	5.84	5.73	5.67	5.62	5.62	5.56	5.56	5.56
360.0	5.95	5.73	5.67	5.62	5.51	5.51	5.45	5.45	5.45

C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	5.45	5.45	5.45	5.51	5.45	5.45	5.51	5.51	5.34
45.0	5.51	5.51	5.56	5.51	5.56	5.56	5.67	5.89	5.34
90.0	5.73	5.67	5.73	5.73	5.78	5.89	6.22	5.40	5.40
135.0	6.06	6.06	6.06	6.83	5.51	5.45	6.17	6.06	5.34
180.0	6.33	6.33	6.33	7.27	6.33	6.50	6.88	6.77	5.34
225.0	6.22	6.28	6.28	6.28	6.28	6.39	6.88	7.32	5.40
270.0	5.84	5.84	5.84	5.84	5.84	5.84	6.00	6.39	5.40
315.0	5.56	5.56	5.56	5.62	5.56	5.56	5.62	5.73	5.40
360.0	5.45	5.45	5.45	5.51	5.45	5.45	5.51	5.51	5.34

Intensity data(cd)

C/γ(°)	90.0
0.0	5.34
45.0	5.34
90.0	5.34
135.0	5.34
180.0	5.40
225.0	5.40
270.0	5.40
315.0	5.40
360.0	5.34