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Nata

LumCAT: 3-1545-A3
Luminaire: TE 2133401-1+92.76.365.00

Report No: GC2017071207	Voltage(V): 35.2500
Test No: NT-0010	Current(A): 0.5000
LampCAT: CREE CXA1830	Power (W): 17.6250
Lamp flux(lm): 1976.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1811.59
Efficiency(%): 91.68%
Lumens(lm)/Power(W): 102.79
Central intensity(cd): 15919.140
Maximum intensity(cd): 15919.140
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.6
[C90/270]Total=13.6
Field angle(10%Imax): [C0/180]Total=25.9
[C90/270]Total=25.9
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.23 C90_270=0.23
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.68%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.746%

Equipment: GMS1980	Date: 2017/7/12	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.46

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15919.140	0.000	0	.000%	.000%
1.0	15753.577	15.155	15.155	.767%	.837%
2.0	15286.103	44.551	59.706	2.255%	3.296%
3.0	14172.863	70.456	130.162	3.566%	7.185%
4.0	13019.274	91.021	221.183	4.606%	12.209%
5.0	11385.065	104.986	326.169	5.313%	18.005%
6.0	9607.205	110.320	436.489	5.583%	24.094%
7.0	7585.452	106.715	543.204	5.401%	29.985%
8.0	5957.365	96.923	640.127	4.905%	35.335%
9.0	4469.658	84.505	724.632	4.277%	40.000%
10.0	3296.523	70.281	794.913	3.557%	43.879%
11.0	2574.513	58.664	853.577	2.969%	47.118%
12.0	2058.622	50.647	904.224	2.563%	49.913%
13.0	1556.645	42.904	947.128	2.171%	52.282%
14.0	1310.345	36.697	983.825	1.857%	54.307%
15.0	1144.468	33.701	1017.526	1.706%	56.168%
16.0	1035.725	31.946	1049.472	1.617%	57.931%
17.0	968.366	31.209	1080.681	1.579%	59.654%
18.0	921.493	31.160	1111.841	1.577%	61.374%
19.0	887.977	31.481	1143.322	1.593%	63.112%
20.0	866.871	32.119	1175.44	1.625%	64.885%
21.0	850.454	32.976	1208.416	1.669%	66.705%
22.0	835.052	33.871	1242.287	1.714%	68.575%
23.0	822.934	34.789	1277.076	1.761%	70.495%
24.0	808.910	35.678	1312.754	1.806%	72.464%
25.0	792.597	36.415	1349.169	1.843%	74.474%
26.0	776.806	37.046	1386.215	1.875%	76.519%
27.0	759.568	37.588	1423.803	1.902%	78.594%
28.0	736.646	37.881	1461.684	1.917%	80.685%
29.0	713.196	37.932	1499.616	1.920%	82.779%
30.0	690.442	37.898	1537.514	1.918%	84.871%
31.0	658.852	37.549	1575.063	1.900%	86.944%
32.0	617.225	36.558	1611.621	1.850%	88.962%
33.0	564.161	34.804	1646.425	1.761%	90.883%
34.0	480.364	31.610	1678.035	1.600%	92.628%
35.0	401.519	27.388	1705.423	1.386%	94.140%
36.0	321.033	23.006	1728.429	1.164%	95.410%
37.0	235.058	18.137	1746.566	.918%	96.411%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	161.960	13.252	1759.818	.671%	97.142%
39.0	83.658	8.384	1768.202	.424%	97.605%
40.0	40.584	4.333	1772.535	.219%	97.844%
41.0	20.702	2.182	1774.717	.110%	97.965%
42.0	13.704	1.250	1775.967	.063%	98.034%
43.0	11.249	0.924	1776.891	.047%	98.085%
44.0	10.024	0.803	1777.694	.041%	98.129%
45.0	9.384	0.746	1778.44	.038%	98.170%
46.0	8.981	0.718	1779.158	.036%	98.210%
47.0	8.675	0.702	1779.861	.036%	98.249%
48.0	8.480	0.693	1780.554	.035%	98.287%
49.0	8.306	0.689	1781.243	.035%	98.325%
50.0	8.167	0.687	1781.93	.035%	98.363%
51.0	8.069	0.687	1782.617	.035%	98.401%
52.0	7.965	0.688	1783.305	.035%	98.439%
53.0	7.875	0.689	1783.994	.035%	98.477%
54.0	7.791	0.690	1784.685	.035%	98.515%
55.0	7.722	0.692	1785.377	.035%	98.553%
56.0	7.659	0.695	1786.072	.035%	98.592%
57.0	7.617	0.698	1786.771	.035%	98.630%
58.0	7.555	0.702	1787.472	.036%	98.669%
59.0	7.478	0.703	1788.175	.036%	98.708%
60.0	7.436	0.705	1788.88	.036%	98.747%
61.0	7.416	0.709	1789.589	.036%	98.786%
62.0	7.395	0.714	1790.302	.036%	98.825%
63.0	7.360	0.718	1791.02	.036%	98.865%
64.0	7.353	0.722	1791.742	.037%	98.905%
65.0	7.325	0.726	1792.468	.037%	98.945%
66.0	7.311	0.730	1793.198	.037%	98.985%
67.0	7.283	0.734	1793.932	.037%	99.025%
68.0	7.263	0.737	1794.669	.037%	99.066%
69.0	7.235	0.740	1795.409	.037%	99.107%
70.0	7.235	0.743	1796.152	.038%	99.148%
71.0	7.242	0.748	1796.9	.038%	99.189%
72.0	7.228	0.752	1797.652	.038%	99.231%
73.0	7.200	0.754	1798.407	.038%	99.272%
74.0	7.221	0.758	1799.165	.038%	99.314%
75.0	7.207	0.762	1799.927	.039%	99.356%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.193	0.764	1800.692	.039%	99.399%
77.0	7.165	0.766	1801.457	.039%	99.441%
78.0	7.165	0.767	1802.224	.039%	99.483%
79.0	7.158	0.770	1802.994	.039%	99.526%
80.0	7.172	0.773	1803.766	.039%	99.568%
81.0	7.179	0.776	1804.543	.039%	99.611%
82.0	7.165	0.778	1805.32	.039%	99.654%
83.0	7.172	0.779	1806.1	.039%	99.697%
84.0	7.193	0.783	1806.882	.040%	99.740%
85.0	7.235	0.787	1807.67	.040%	99.784%
86.0	7.235	0.791	1808.461	.040%	99.827%
87.0	7.158	0.788	1809.248	.040%	99.871%
88.0	7.096	0.781	1810.029	.040%	99.914%
89.0	7.123	0.779	1810.809	.039%	99.957%
90.0	7.075	0.778	1811.587	.039%	100.000%

Zonal flux distribution table

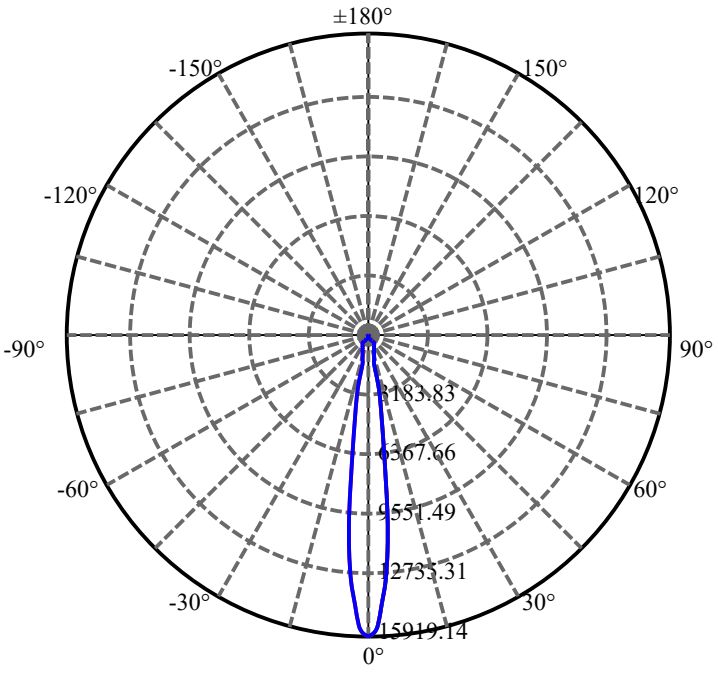
ZONAL LUMEN SUMMARY

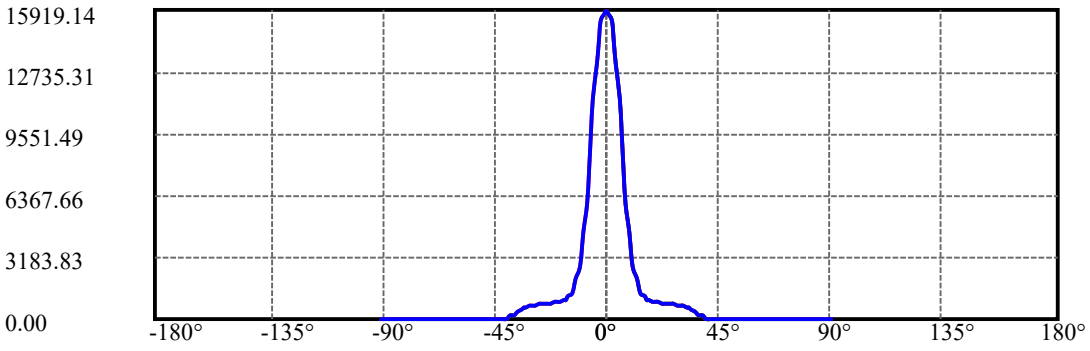
Zone	Lumens	%Lamp	%Fixt
0-30	1537.51	77.81%	84.87%
0-40	1772.53	89.70%	97.84%
0-60	1788.88	90.53%	98.75%
0-90	1810.81	91.64%	99.96%
0-120	1810.81	91.64%	99.96%
0-180	1811.59	91.68%	100.00%
60-90	22.63	1.15%	1.25%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.67	1449.27	73.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	794.91
10-20	380.53
20-30	362.07
30-40	235.02
40-50	9.40
50-60	6.95
60-70	7.27
70-80	7.61
80-90	7.04
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:12.9 Right:12.9
:C90/270Left:12.9 Right:12.9

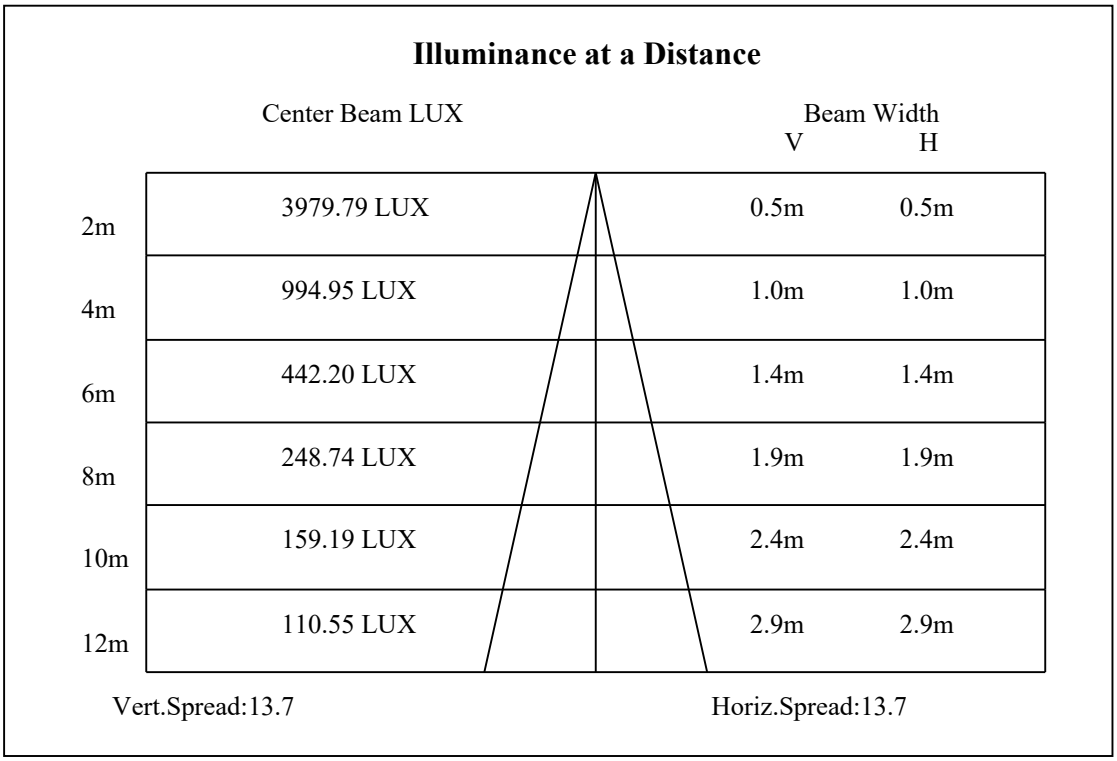
Beam Angle(50%Imax):C0/180Left:6.8 Right:6.8
:C90/270Left:6.8 Right:6.8

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/7/12
Humidity(%): 60.0%

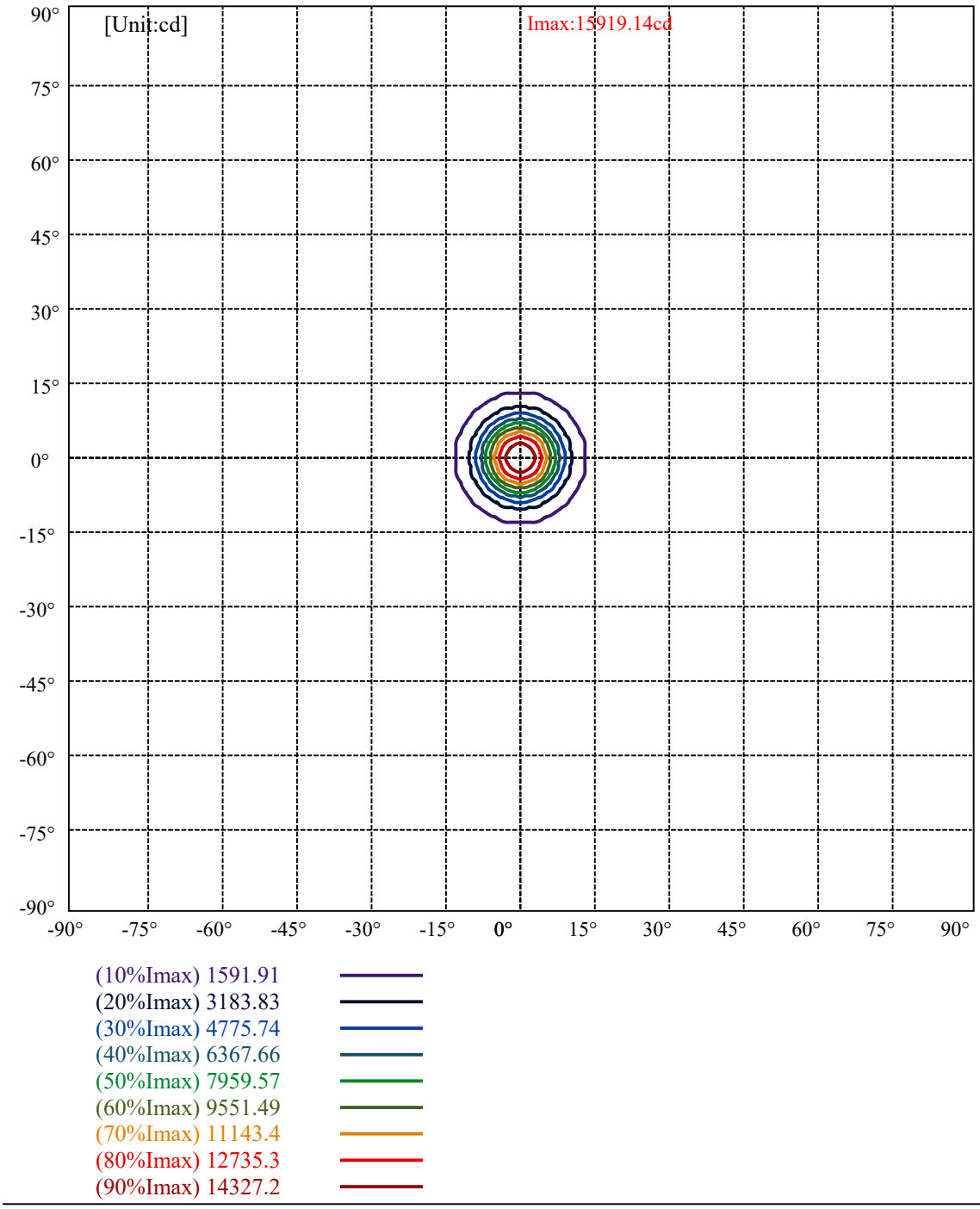
Operator: NT07
Distance(m): 7.46

Lux distance Curve



Equipment: GMS1980 Date: 2017/7/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.46

ISO-Intensity(V-H)

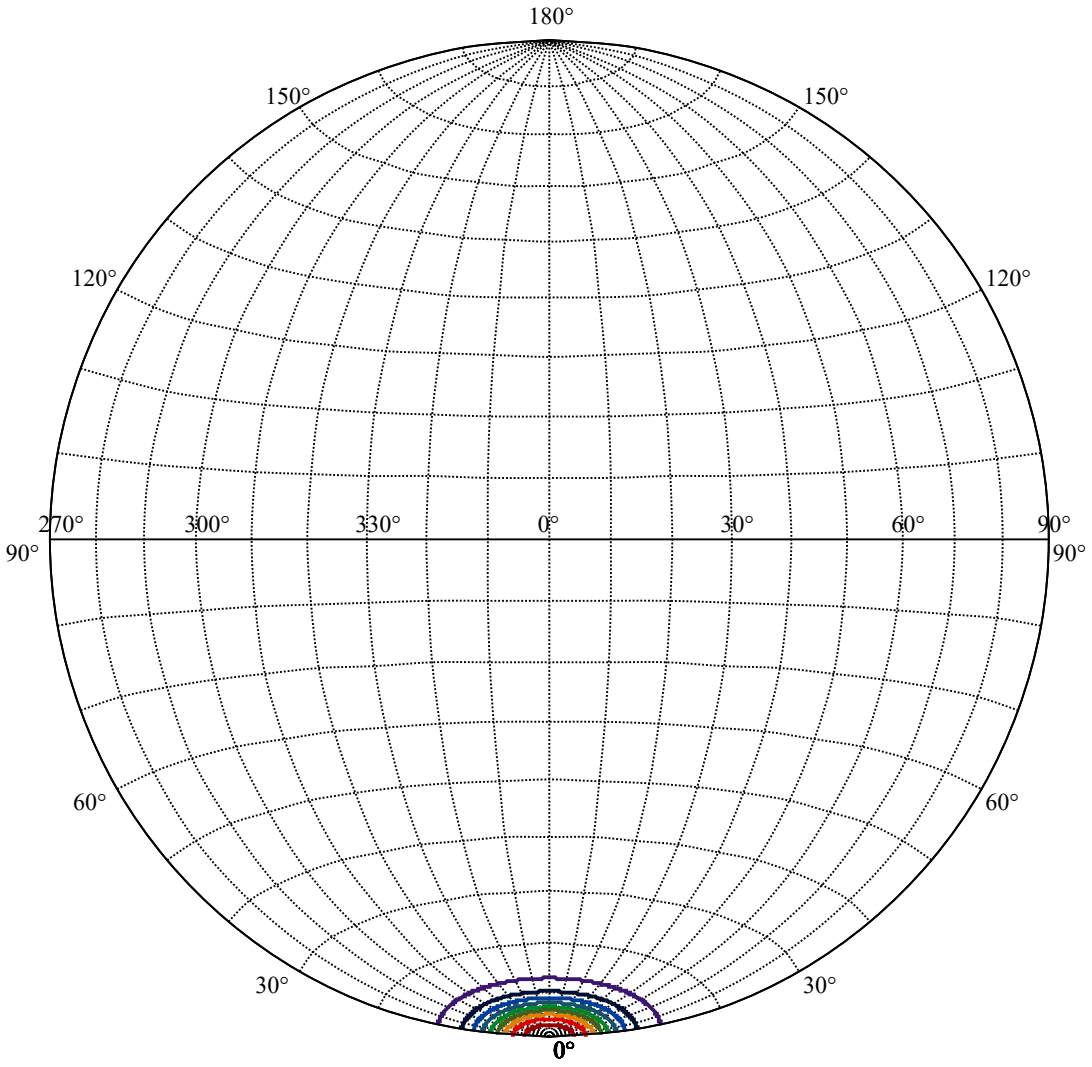


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/7/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:15919.14

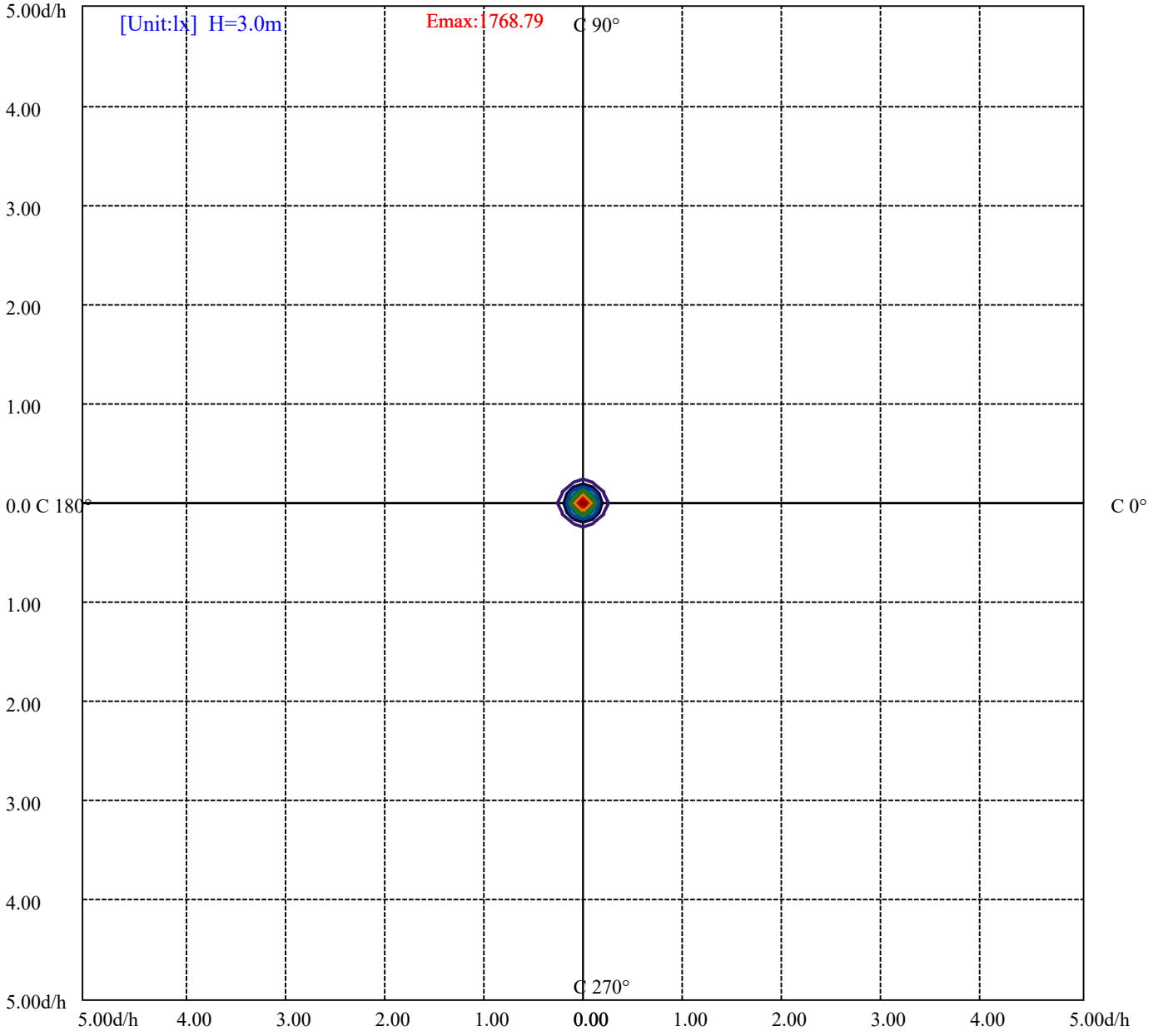
(10%Imax) 1591.91
(20%Imax) 3183.83
(30%Imax) 4775.74
(40%Imax) 6367.66
(50%Imax) 7959.57
(60%Imax) 9551.49
(70%Imax) 11143.4
(80%Imax) 12735.3
(90%Imax) 14327.2

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/7/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

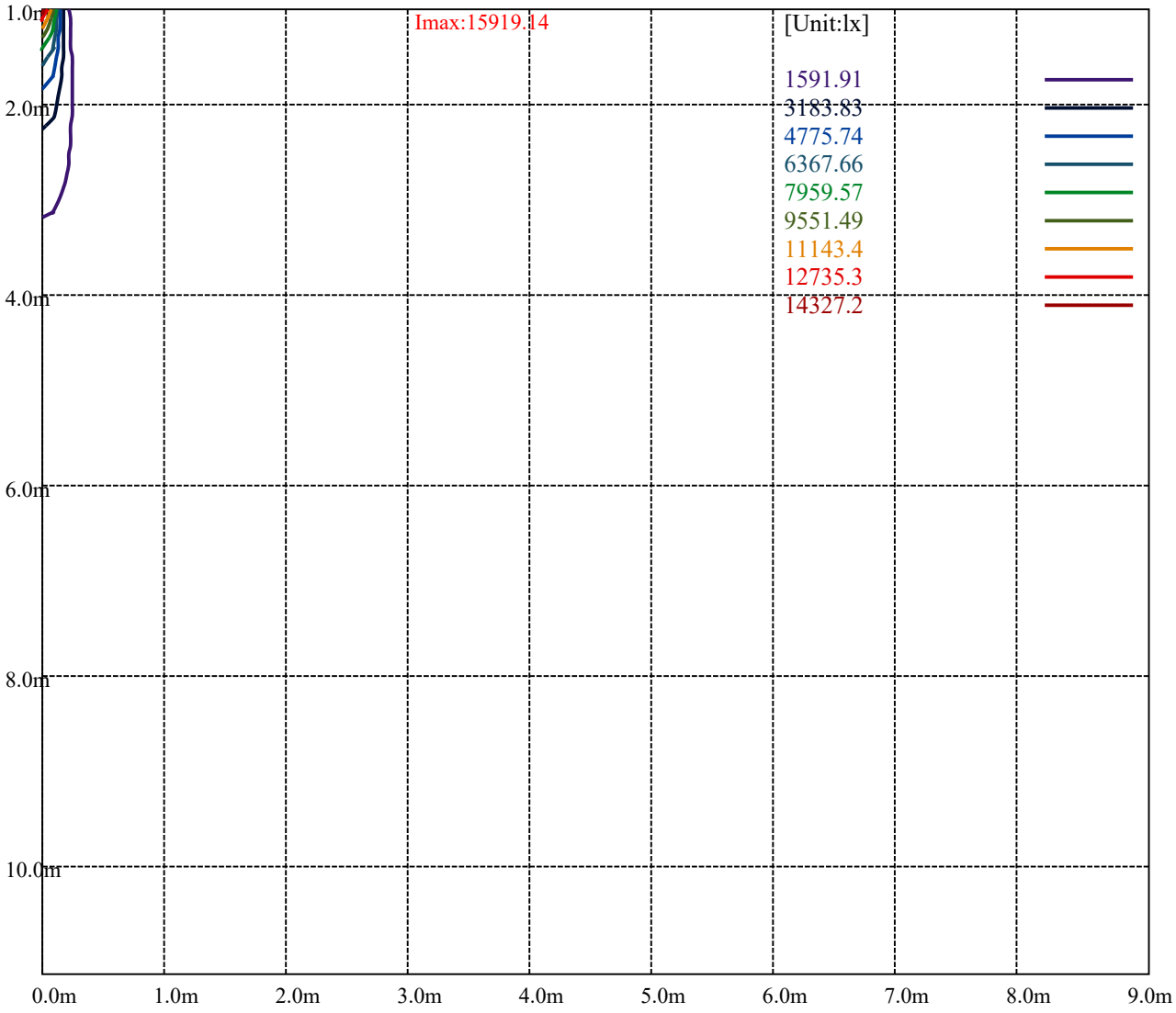
ISO illuminance diagram



(10%Emax) 176.8789
(20%Emax) 353.7578
(30%Emax) 530.6367
(40%Emax) 707.5167
(50%Emax) 884.3956
(60%Emax) 1061.274
(70%Emax) 1238.156
(80%Emax) 1415.033
(90%Emax) 1591.911

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2017/7/12
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.46

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/7/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

Luminance Limitting Curve(no luminous side)

Luminance Table

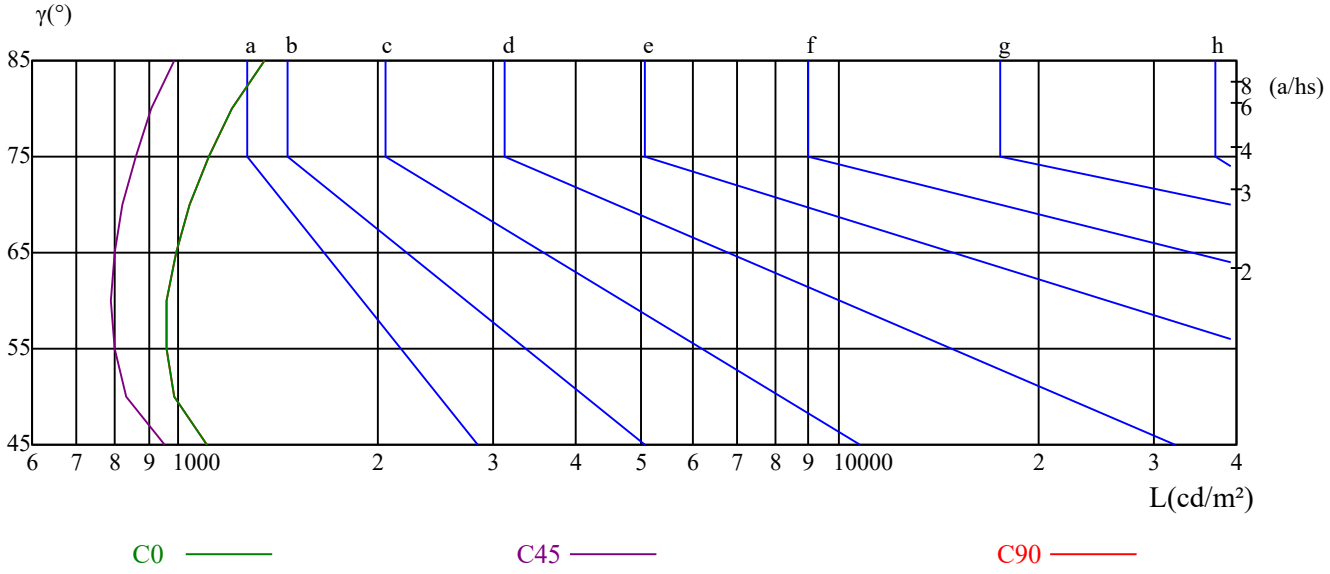
γ	45	50	55	60	65	70	75	80	85
C0	1107	985	960	961	994	1042	1114	1207	1347
C45	951	833	799	788	800	822	861	910	986
C90	1107	985	960	961	994	1042	1114	1207	1347

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2399	2399	2399	3854	3854	3854	11489	11489	11489

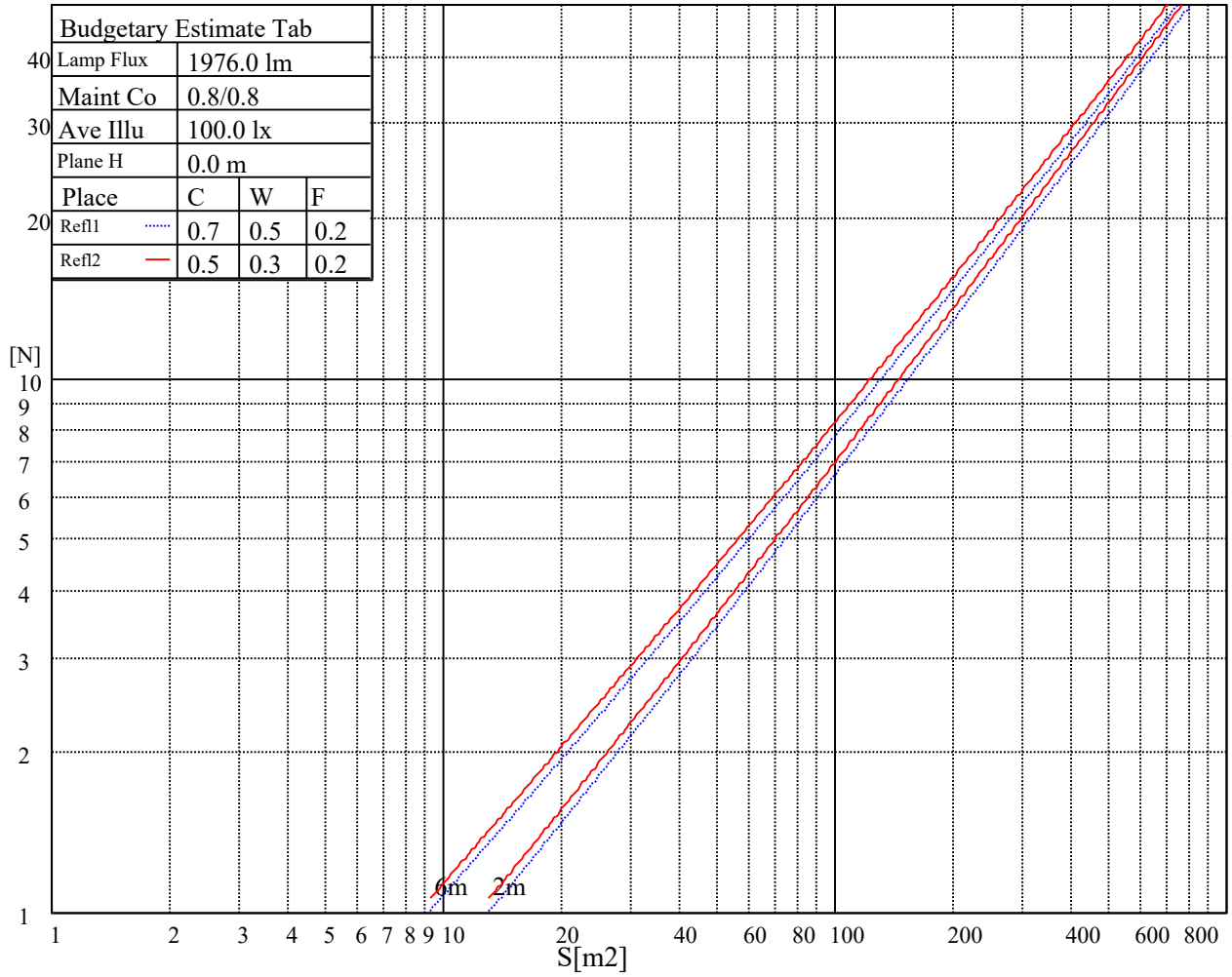
Glare Table

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

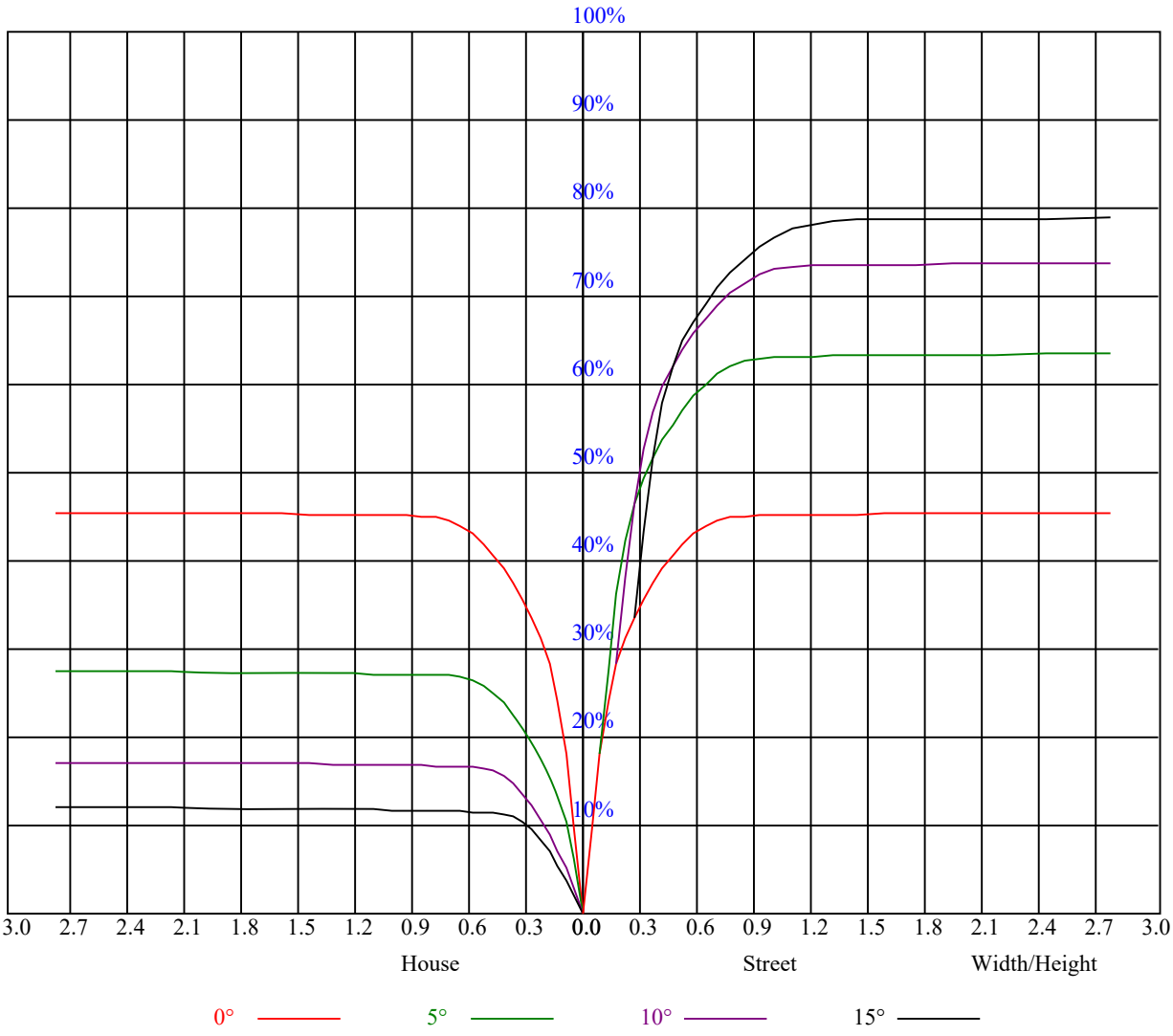


Equipment: GMS1980 Date: 2017/7/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.46

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	1.03	1.01	0.99	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.98	0.95	0.92	0.96	0.94	0.91	0.93	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.86	0.84
3	0.93	0.90	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.88	0.85	0.84	0.86	0.84	0.82	0.81
4	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
5	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
6	0.83	0.78	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
7	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.71
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.69
9	0.75	0.71	0.68	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
10	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2017/7/12	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.46

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	15743.84	16061.05	16072.18	15788.36	15070.45	13823.86	12276.74	10262.16	8364.44
45.0	16038.79	15960.88	15537.93	14647.50	13434.30	11620.05	9549.81	7646.53	5887.94
90.0	15888.53	15398.80	14614.11	13233.95	10967.82	9580.98	7698.84	5537.89	4151.05
135.0	16005.40	15510.10	14619.68	13434.30	11664.58	9655.55	8041.66	5871.24	4474.39
180.0	15743.84	15148.37	14218.98	11034.04	10816.44	8969.92	7144.00	5132.19	3893.94
225.0	16038.79	15805.05	15337.58	14408.20	12994.65	10884.34	9513.08	7266.99	5623.59
270.0	15888.53	16022.10	15894.10	15454.45	14575.15	13178.30	11564.40	9527.55	7702.18
315.0	16005.40	16122.27	15994.27	15382.10	14630.81	13367.51	11069.10	9439.07	7561.38
360.0	15743.84	16061.05	16072.18	15788.36	15070.45	13823.86	12276.74	10262.16	8364.44

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6322.02	4602.39	3422.57	2854.93	1871.56	1521.51	1287.22	1101.90	1007.85
45.0	4112.65	3066.40	2854.93	1832.61	1428.58	1226.56	1089.66	983.36	929.38
90.0	3124.28	2264.46	1811.46	1499.25	1257.73	1100.68	1008.35	942.57	900.11
135.0	3411.44	2810.41	1997.34	1645.06	1341.76	1184.82	1076.86	985.03	937.17
180.0	2896.11	2230.52	1823.70	1533.76	1301.69	1105.57	1050.09	975.07	928.49
225.0	4284.62	3075.86	2408.60	1943.35	1576.61	1332.86	1108.64	1060.89	989.04
270.0	5793.33	4262.91	3238.92	2843.80	1893.27	1567.71	1337.86	1141.97	1046.25
315.0	5812.81	4059.23	3038.58	2316.22	1781.96	1443.05	1197.07	1095.00	1008.63
360.0	6322.02	4602.39	3422.57	2854.93	1871.56	1521.51	1287.22	1101.90	1007.85

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	949.97	904.90	880.41	863.16	848.13	838.11	826.43	813.07	801.38
45.0	894.32	870.39	852.58	838.11	824.76	813.07	798.04	784.13	767.99
90.0	869.78	847.35	836.39	821.86	806.11	795.76	780.57	761.20	745.34
135.0	903.23	876.51	858.15	845.35	829.77	815.85	801.38	785.80	766.32
180.0	892.21	867.16	851.30	834.94	822.09	807.00	792.37	774.34	756.08
225.0	936.28	898.22	873.51	855.87	839.28	828.32	812.79	797.04	780.40
270.0	981.14	929.38	898.77	879.30	862.60	849.24	837.56	821.42	806.39
315.0	945.02	909.90	883.86	865.05	847.69	836.11	822.14	803.78	790.53
360.0	949.97	904.90	880.41	863.16	848.13	838.11	826.43	813.07	801.38

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	786.36	764.65	746.29	723.47	692.86	668.38	638.88	568.20	499.75
45.0	751.85	727.92	705.11	683.96	650.57	614.95	559.30	458.57	380.66
90.0	727.98	701.60	678.34	656.58	620.90	552.40	476.88	385.61	303.58
135.0	744.62	719.58	696.20	672.83	638.32	586.57	511.99	412.93	328.34
180.0	736.44	711.84	685.18	662.81	623.46	556.46	483.39	391.40	309.70
225.0	763.54	746.12	716.24	696.15	674.66	638.49	583.90	513.50	420.56
270.0	790.25	767.99	746.84	722.91	693.98	668.93	641.11	574.32	498.64
315.0	775.51	753.47	731.37	704.83	676.06	651.62	617.84	538.37	470.92
360.0	786.36	764.65	746.29	723.47	692.86	668.38	638.88	568.20	499.75

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	418.50	326.12	284.94	153.71	88.21	36.79	18.14	14.69	11.69
45.0	311.09	281.04	127.94	69.51	26.77	16.14	12.58	10.52	9.68
90.0	214.82	132.95	72.40	28.55	15.75	12.58	10.69	9.57	9.07
135.0	283.82	163.73	81.20	35.28	16.70	12.97	10.80	9.68	9.13
180.0	219.32	137.01	75.30	28.55	15.08	11.63	9.96	9.29	8.85
225.0	326.56	245.09	158.38	82.81	36.90	17.36	13.02	10.63	9.68
270.0	416.27	320.00	288.83	146.25	72.85	32.22	17.31	13.02	11.07
315.0	377.87	274.53	206.69	124.60	52.42	25.93	17.14	12.58	11.02
360.0	418.50	326.12	284.94	153.71	88.21	36.79	18.14	14.69	11.69

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	10.46	9.91	9.18	8.85	8.63	8.40	8.24	8.13	8.07
45.0	9.07	8.63	8.46	8.29	8.13	8.01	7.96	7.85	7.79
90.0	8.63	8.46	8.35	8.24	8.13	7.96	7.90	7.79	7.74
135.0	8.79	8.63	8.46	8.35	8.18	8.13	8.01	7.96	7.85
180.0	8.63	8.46	8.35	8.24	8.07	8.01	7.90	7.85	7.79
225.0	9.18	8.90	8.57	8.46	8.24	8.13	8.01	7.96	7.79
270.0	10.07	9.35	8.96	8.68	8.51	8.35	8.24	8.07	7.96
315.0	10.24	9.52	9.07	8.74	8.57	8.35	8.29	8.13	8.01
360.0	10.46	9.91	9.18	8.85	8.63	8.40	8.24	8.13	8.07

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.96	7.85	7.79	7.74	7.68	7.57	7.51	7.46	7.46
45.0	7.74	7.68	7.57	7.57	7.46	7.40	7.40	7.40	7.35
90.0	7.68	7.62	7.57	7.51	7.46	7.40	7.35	7.35	7.40
135.0	7.74	7.68	7.68	7.62	7.62	7.51	7.46	7.46	7.40
180.0	7.74	7.68	7.62	7.57	7.46	7.46	7.40	7.46	7.40
225.0	7.68	7.62	7.57	7.51	7.51	7.40	7.40	7.35	7.35
270.0	7.85	7.79	7.74	7.68	7.62	7.57	7.46	7.40	7.40
315.0	7.96	7.85	7.74	7.74	7.62	7.51	7.51	7.46	7.40
360.0	7.96	7.85	7.79	7.74	7.68	7.57	7.51	7.46	7.46

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.40	7.40	7.40	7.40	7.35	7.29	7.23	7.23	7.29
45.0	7.35	7.29	7.29	7.29	7.23	7.23	7.18	7.23	7.23
90.0	7.35	7.29	7.23	7.23	7.23	7.18	7.23	7.18	7.18
135.0	7.35	7.40	7.40	7.35	7.35	7.29	7.23	7.29	7.29
180.0	7.40	7.35	7.35	7.35	7.29	7.29	7.29	7.29	7.29
225.0	7.29	7.29	7.23	7.23	7.23	7.23	7.23	7.23	7.18
270.0	7.35	7.40	7.35	7.35	7.29	7.29	7.23	7.23	7.23
315.0	7.40	7.40	7.35	7.29	7.29	7.29	7.23	7.18	7.23
360.0	7.40	7.40	7.40	7.40	7.35	7.29	7.23	7.23	7.29

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.23	7.23	7.23	7.23	7.23	7.18	7.18	7.18	7.18
45.0	7.23	7.18	7.18	7.12	7.12	7.12	7.18	7.18	7.12
90.0	7.18	7.18	7.18	7.18	7.12	7.12	7.12	7.12	7.18
135.0	7.23	7.18	7.23	7.23	7.23	7.18	7.18	7.18	7.18
180.0	7.29	7.23	7.29	7.23	7.23	7.18	7.18	7.18	7.23
225.0	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.12	7.18
270.0	7.23	7.18	7.23	7.23	7.23	7.18	7.12	7.12	7.12
315.0	7.23	7.23	7.23	7.23	7.18	7.18	7.18	7.18	7.18
360.0	7.23	7.23	7.23	7.23	7.23	7.18	7.18	7.18	7.18

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.18	7.23	7.12	7.18	7.18	7.18	7.12	7.12	7.18
45.0	7.12	7.12	7.12	7.07	7.07	7.07	7.07	7.12	7.07
90.0	7.18	7.12	7.18	7.12	7.18	7.18	7.07	7.07	7.07
135.0	7.23	7.18	7.18	7.23	7.23	7.23	7.12	7.07	7.18
180.0	7.23	7.18	7.35	7.40	7.29	7.23	7.18	7.12	7.18
225.0	7.12	7.18	7.18	7.23	7.46	7.35	7.29	7.12	7.07
270.0	7.18	7.18	7.12	7.18	7.29	7.46	7.23	7.07	7.12
315.0	7.18	7.12	7.12	7.12	7.18	7.18	7.18	7.07	7.12
360.0	7.18	7.23	7.12	7.18	7.18	7.18	7.12	7.12	7.18

Intensity data(cd)

C/γ(°)	90.0
0.0	7.12
45.0	7.07
90.0	7.12
135.0	7.07
180.0	7.07
225.0	7.01
270.0	7.07
315.0	7.07
360.0	7.12