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: 3-2322-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2019123020
LampCAT: LUMINUS CXM-14-AC40
Lamp flux(lm): 2608.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.7100
Current(A): 0.6000
Power (W): 20.8600
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2303.94
Efficiency(%): 88.34%
Lumens(lm)/Power(W): 110.45
Central intensity(cd): 14148.280
Maximum intensity(cd): 14148.280
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=16.9
[C90/270]Total=16.9
Field angle(10%Imax): [C0/180]Total=36.3
[C90/270]Total=36.3
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.545%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	14148.281	0.000	0	.000%	.000%
1.0	14078.672	13.506	13.506	.518%	.586%
2.0	13783.359	39.990	53.496	1.533%	2.322%
3.0	13293.281	64.758	118.255	2.483%	5.133%
4.0	12533.695	86.451	204.706	3.315%	8.885%
5.0	11574.633	103.713	308.419	3.977%	13.387%
6.0	10279.336	114.848	423.267	4.404%	18.371%
7.0	8973.914	119.505	542.772	4.582%	23.558%
8.0	7632.844	118.851	661.623	4.557%	28.717%
9.0	6322.641	113.102	774.725	4.337%	33.626%
10.0	5203.828	104.310	879.035	4.000%	38.154%
11.0	4261.500	94.578	973.613	3.626%	42.259%
12.0	3584.531	85.768	1059.381	3.289%	45.981%
13.0	2947.992	77.525	1136.906	2.973%	49.346%
14.0	2498.344	69.713	1206.619	2.673%	52.372%
15.0	2147.133	63.775	1270.394	2.445%	55.140%
16.0	1837.688	58.389	1328.783	2.239%	57.674%
17.0	1608.398	53.665	1382.447	2.058%	60.004%
18.0	1431.352	50.119	1432.566	1.922%	62.179%
19.0	1300.500	47.529	1480.095	1.822%	64.242%
20.0	1194.926	45.673	1525.768	1.751%	66.224%
21.0	1099.786	44.063	1569.831	1.690%	68.137%
22.0	1035.499	42.909	1612.741	1.645%	69.999%
23.0	983.932	42.373	1655.114	1.625%	71.838%
24.0	942.616	42.121	1697.235	1.615%	73.667%
25.0	912.551	42.182	1739.418	1.617%	75.497%
26.0	887.829	42.498	1781.916	1.630%	77.342%
27.0	868.366	42.966	1824.881	1.647%	79.207%
28.0	851.273	43.538	1868.419	1.669%	81.097%
29.0	835.010	44.118	1912.537	1.692%	83.012%
30.0	813.720	44.515	1957.052	1.707%	84.944%
31.0	777.495	44.281	2001.334	1.698%	86.866%
32.0	724.486	43.030	2044.364	1.650%	88.733%
33.0	657.021	40.700	2085.063	1.561%	90.500%
34.0	576.689	37.336	2122.399	1.432%	92.120%
35.0	481.036	32.849	2155.248	1.260%	93.546%
36.0	396.113	27.929	2183.177	1.071%	94.758%
37.0	298.955	22.669	2205.846	.869%	95.742%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	212.027	17.056	2222.902	.654%	96.483%
39.0	141.996	12.084	2234.985	.463%	97.007%
40.0	81.464	7.793	2242.779	.299%	97.345%
41.0	44.902	4.500	2247.279	.173%	97.541%
42.0	25.523	2.559	2249.837	.098%	97.652%
43.0	20.334	1.699	2251.536	.065%	97.725%
44.0	17.543	1.430	2252.966	.055%	97.787%
45.0	15.687	1.277	2254.243	.049%	97.843%
46.0	14.491	1.180	2255.423	.045%	97.894%
47.0	13.634	1.119	2256.542	.043%	97.943%
48.0	13.317	1.089	2257.631	.042%	97.990%
49.0	13.043	1.082	2258.714	.042%	98.037%
50.0	12.769	1.076	2259.79	.041%	98.084%
51.0	12.537	1.071	2260.86	.041%	98.130%
52.0	12.319	1.067	2261.927	.041%	98.176%
53.0	12.136	1.064	2262.991	.041%	98.223%
54.0	11.925	1.061	2264.051	.041%	98.269%
55.0	11.798	1.059	2265.11	.041%	98.315%
56.0	11.644	1.059	2266.169	.041%	98.361%
57.0	11.503	1.058	2267.228	.041%	98.407%
58.0	11.412	1.060	2268.287	.041%	98.453%
59.0	11.313	1.062	2269.35	.041%	98.499%
60.0	11.243	1.066	2270.416	.041%	98.545%
61.0	11.152	1.069	2271.484	.041%	98.591%
62.0	11.081	1.071	2272.556	.041%	98.638%
63.0	11.032	1.075	2273.631	.041%	98.684%
64.0	10.962	1.079	2274.71	.041%	98.731%
65.0	10.905	1.082	2275.792	.041%	98.778%
66.0	10.863	1.086	2276.879	.042%	98.825%
67.0	10.828	1.091	2277.969	.042%	98.873%
68.0	10.779	1.095	2279.064	.042%	98.920%
69.0	10.737	1.098	2280.161	.042%	98.968%
70.0	10.716	1.102	2281.263	.042%	99.016%
71.0	10.688	1.106	2282.369	.042%	99.064%
72.0	10.659	1.110	2283.479	.043%	99.112%
73.0	10.645	1.114	2284.593	.043%	99.160%
74.0	10.631	1.119	2285.712	.043%	99.209%
75.0	10.596	1.122	2286.834	.043%	99.257%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.589	1.125	2287.958	.043%	99.306%
77.0	10.582	1.129	2289.087	.043%	99.355%
78.0	10.568	1.132	2290.219	.043%	99.404%
79.0	10.568	1.136	2291.355	.044%	99.454%
80.0	10.533	1.138	2292.492	.044%	99.503%
81.0	10.533	1.139	2293.632	.044%	99.553%
82.0	10.533	1.142	2294.774	.044%	99.602%
83.0	10.519	1.144	2295.918	.044%	99.652%
84.0	10.505	1.145	2297.064	.044%	99.702%
85.0	10.498	1.146	2298.21	.044%	99.751%
86.0	10.484	1.147	2299.357	.044%	99.801%
87.0	10.455	1.146	2300.503	.044%	99.851%
88.0	10.455	1.145	2301.648	.044%	99.900%
89.0	10.455	1.146	2302.794	.044%	99.950%
90.0	10.455	1.147	2303.941	.044%	100.000%

Zonal flux distribution table

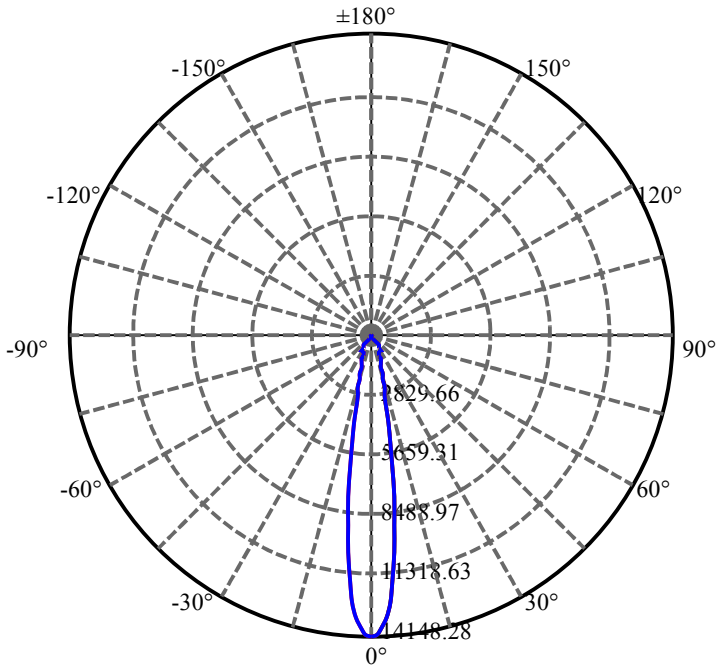
ZONAL LUMEN SUMMARY

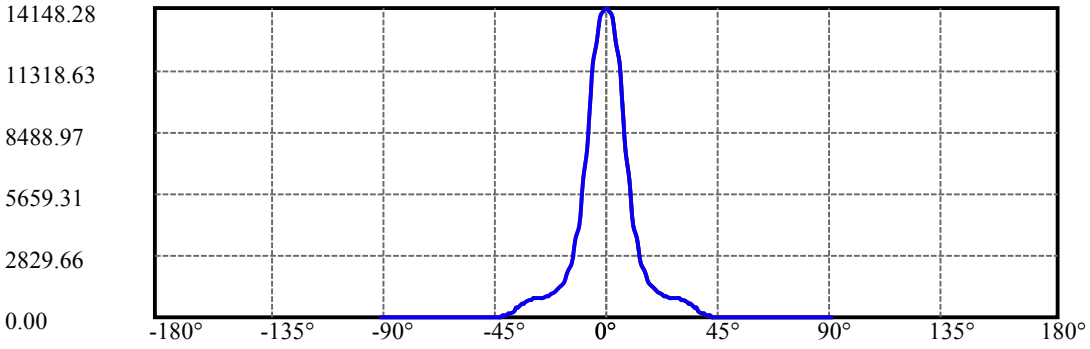
Zone	Lumens	%Lamp	%Fixt
0-30	1957.05	75.04%	84.94%
0-40	2242.78	86.00%	97.35%
0-60	2270.42	87.06%	98.54%
0-90	2302.79	88.30%	99.95%
0-120	2302.79	88.30%	99.95%
0-180	2303.94	88.34%	100.00%
60-90	33.44	1.28%	1.45%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.42	1843.15	70.67%	80.00%

ZONAL LUMEN SUMMARY

0-10	879.03
10-20	646.73
20-30	431.28
30-40	285.73
40-50	17.01
50-60	10.63
60-70	10.85
70-80	11.23
80-90	10.30
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):

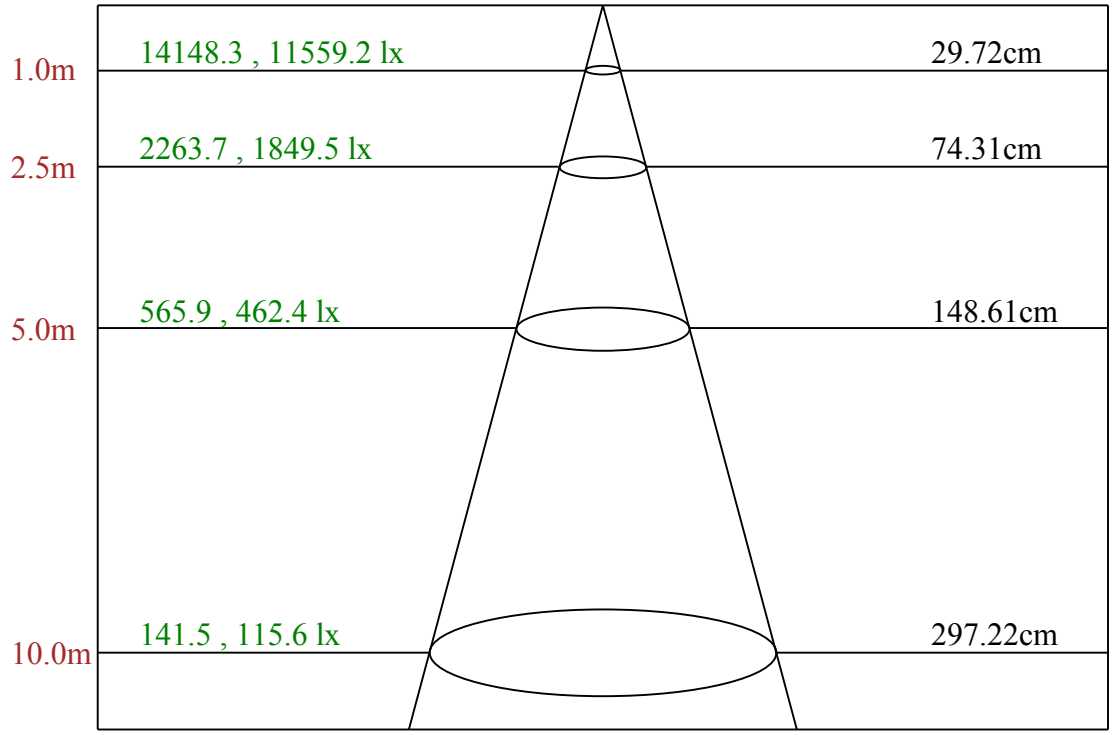
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:18.1 Right:18.1
:C90/270Left:18.1 Right:18.1

Beam Angle(50%Imax):C0/180Left:8.4 Right:8.4
:C90/270Left:8.4 Right:8.4

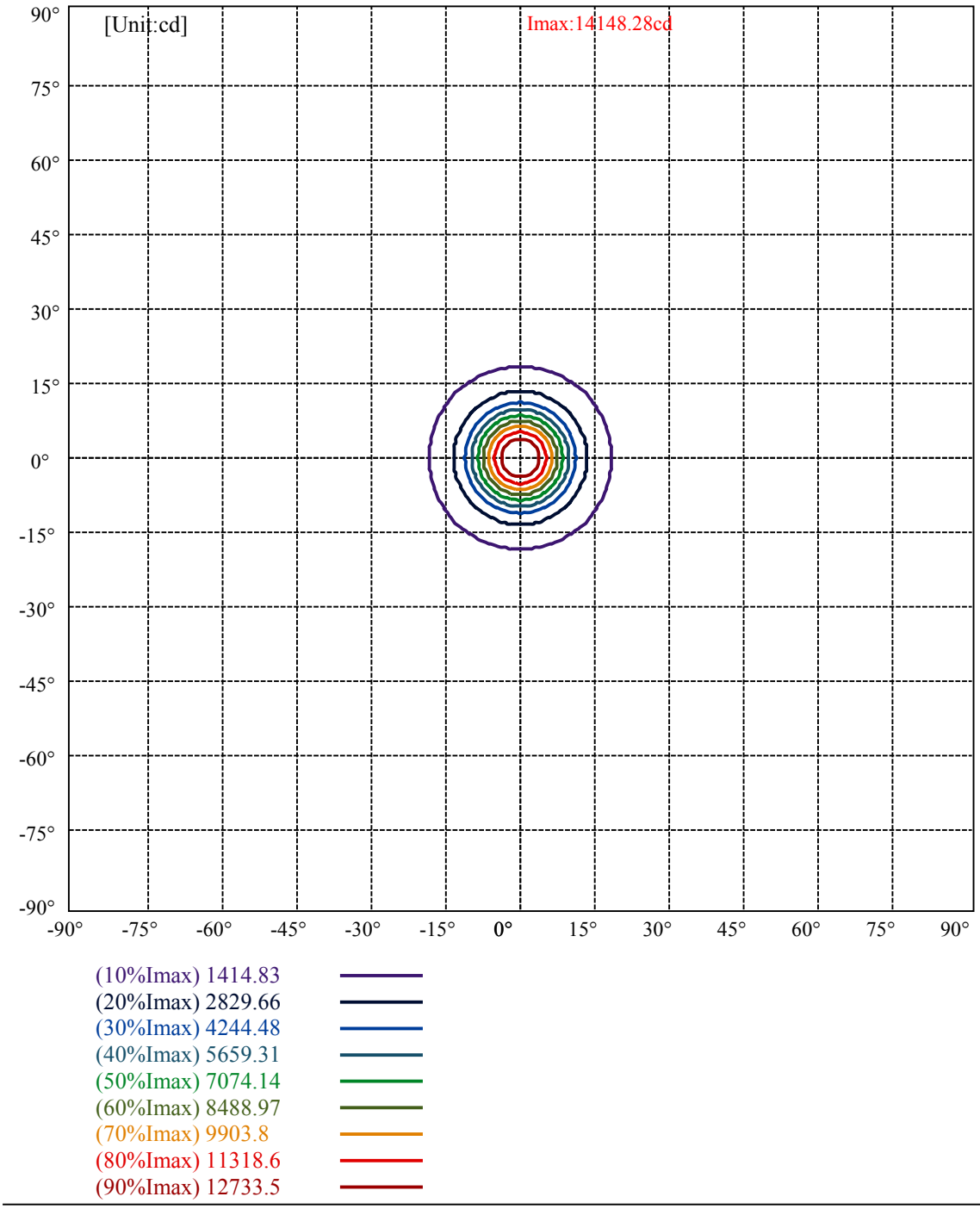
Lux distance Curve



Max , Ave

Beam angle of C0 plane 16.91

ISO-Intensity(V-H)

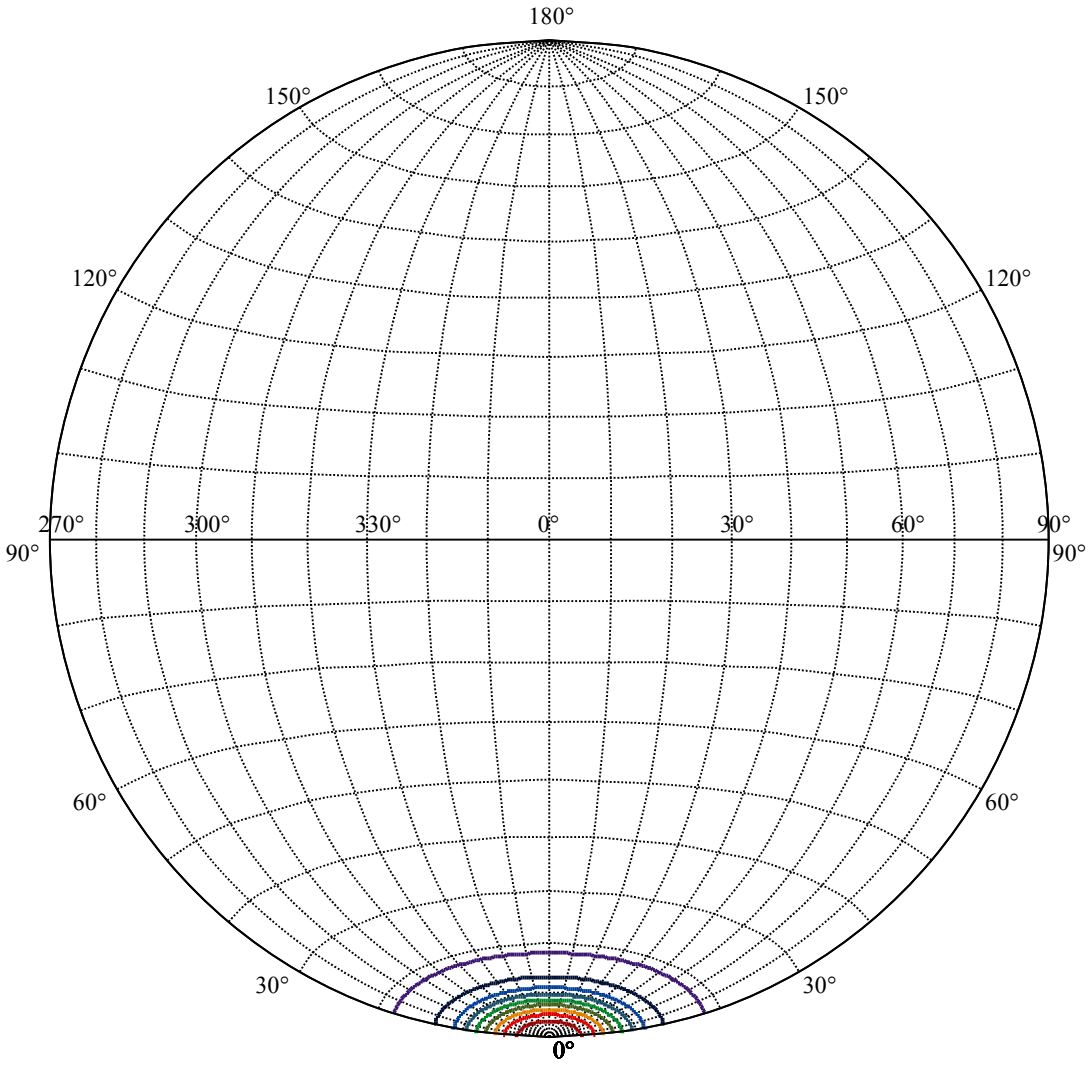


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:14148.28

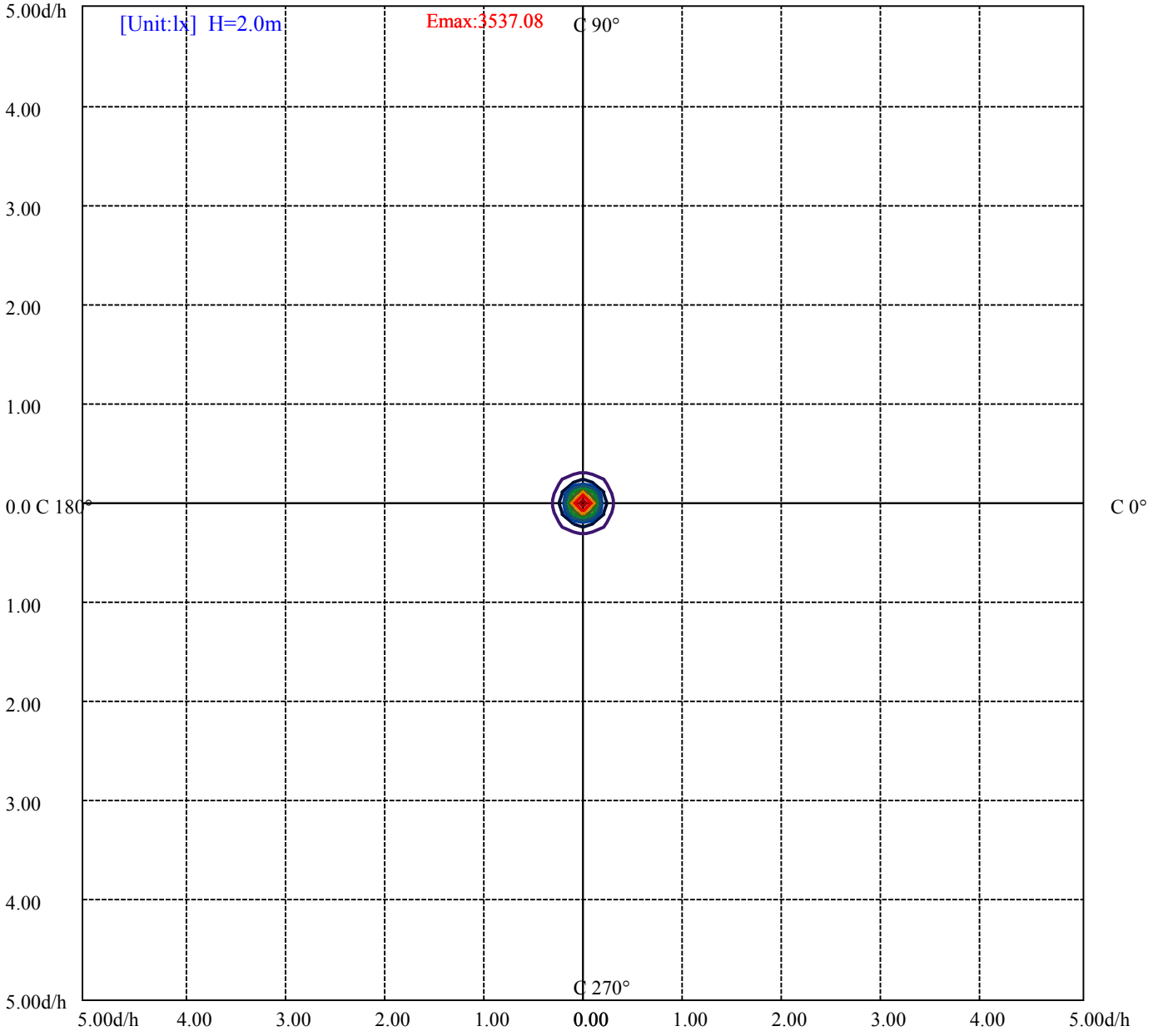
(10%Imax) 1414.83
(20%Imax) 2829.66
(30%Imax) 4244.48
(40%Imax) 5659.31
(50%Imax) 7074.14
(60%Imax) 8488.97
(70%Imax) 9903.8
(80%Imax) 11318.6
(90%Imax) 12733.5

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

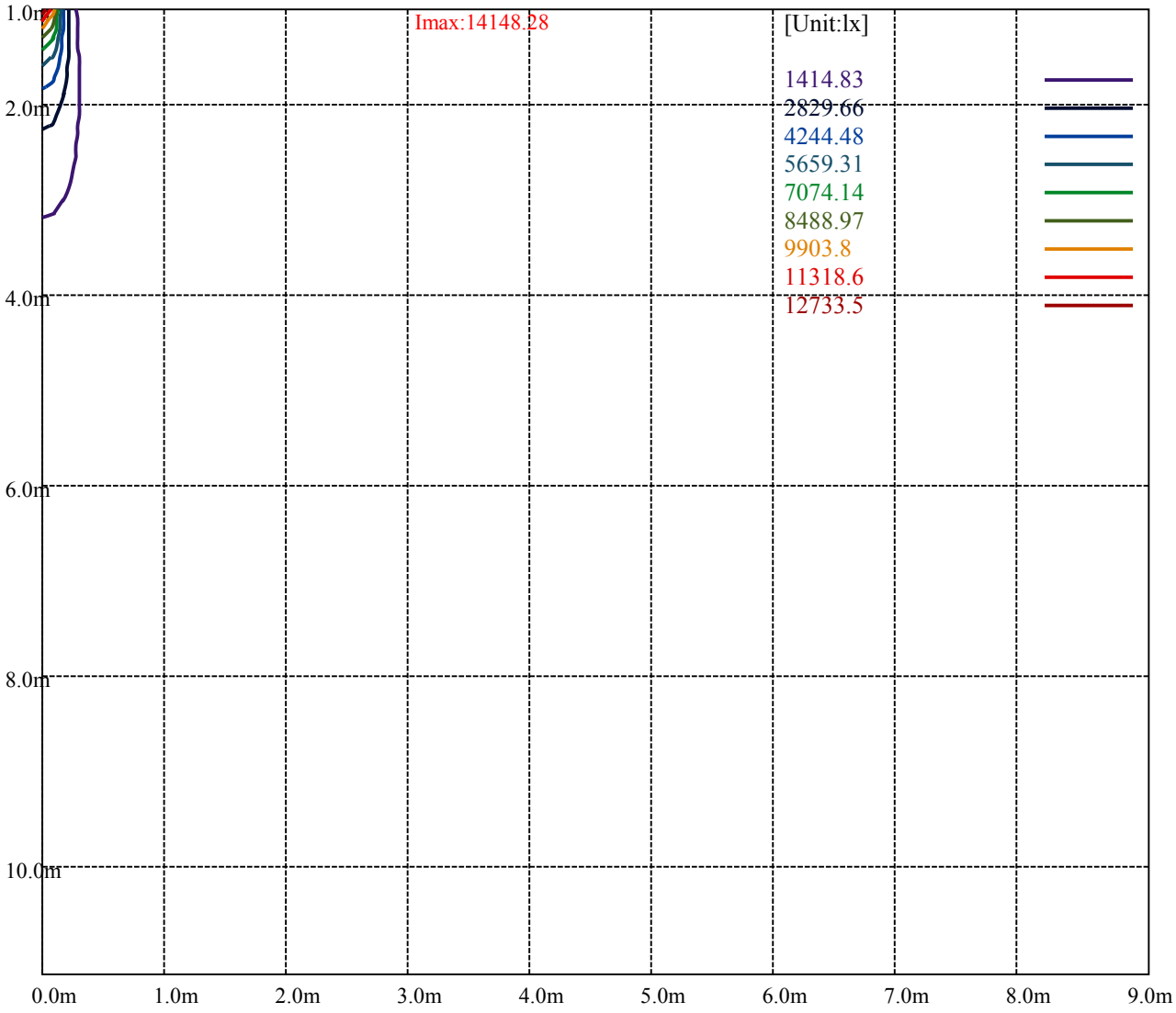
ISO illuminance diagram



(10%Emax) 353.7075
(20%Emax) 707.4125
(30%Emax) 1061.12
(40%Emax) 1414.828
(50%Emax) 1768.535
(60%Emax) 2122.24
(70%Emax) 2475.948
(80%Emax) 2829.65
(90%Emax) 3183.35

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2019/12/30
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

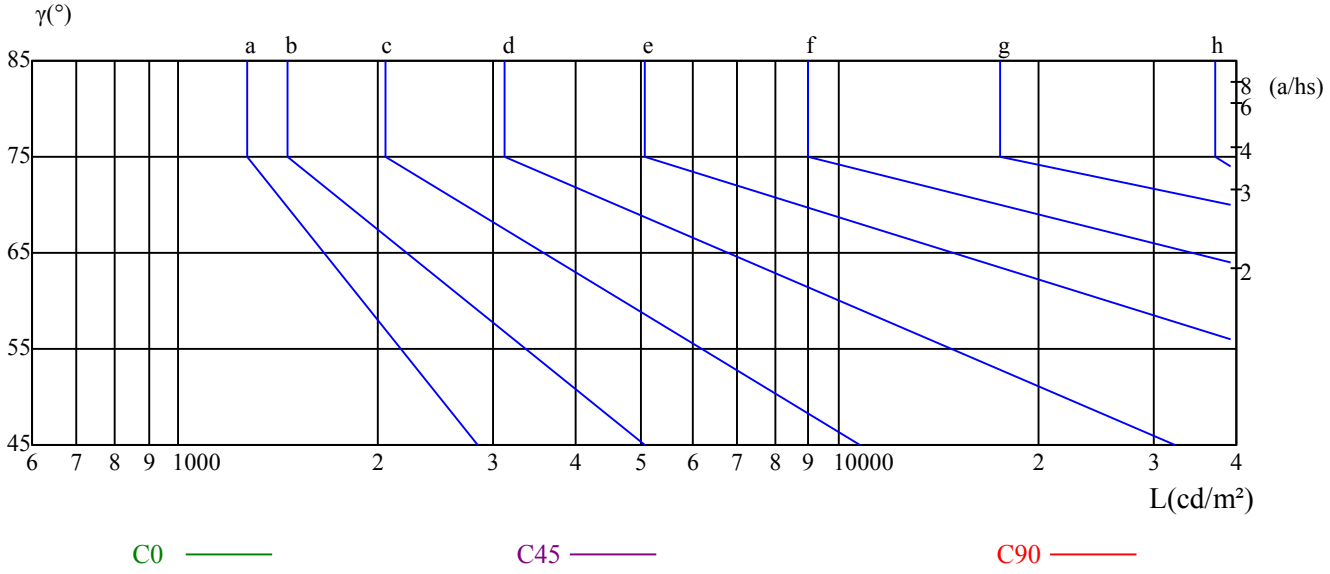
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

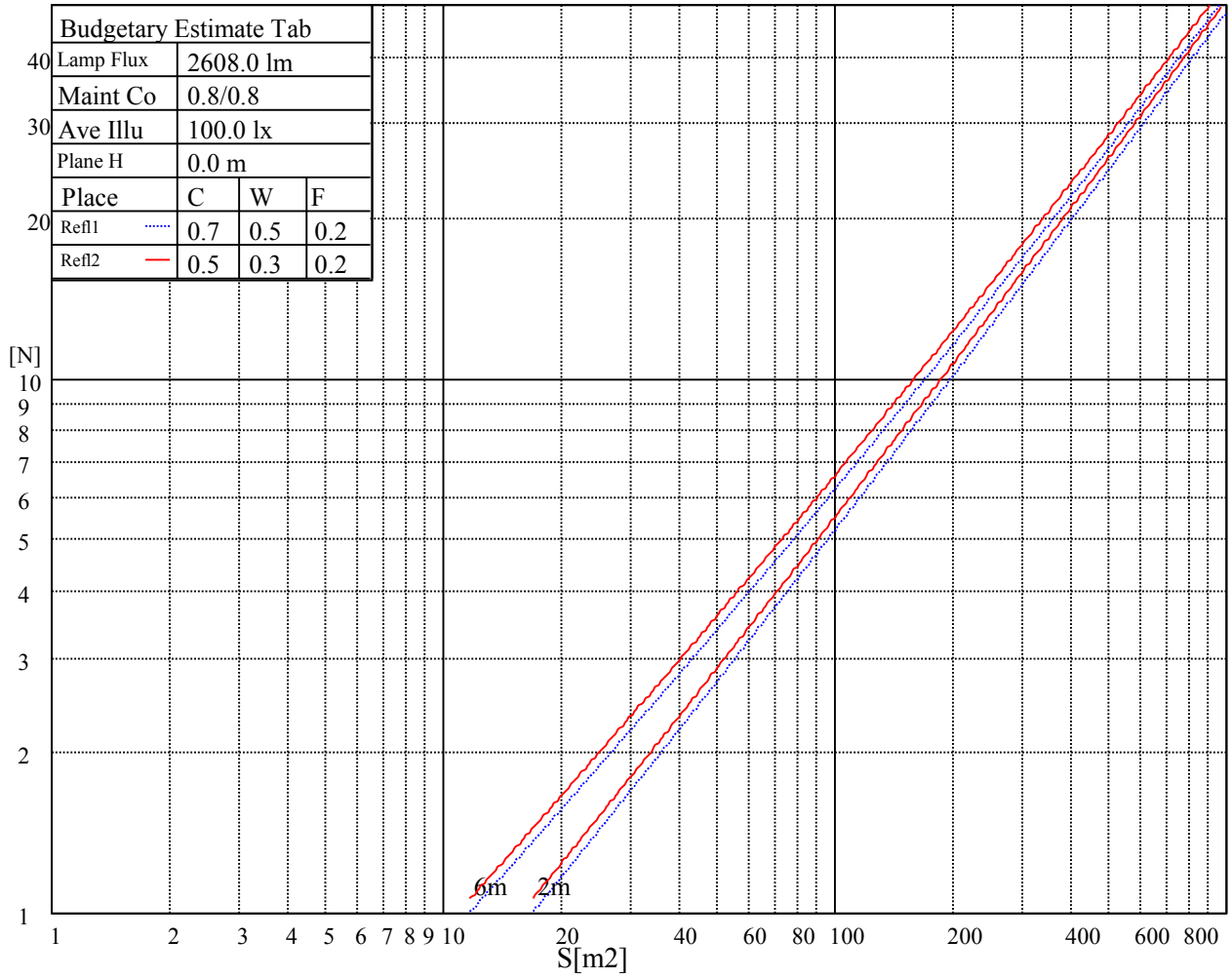
Glare Table

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

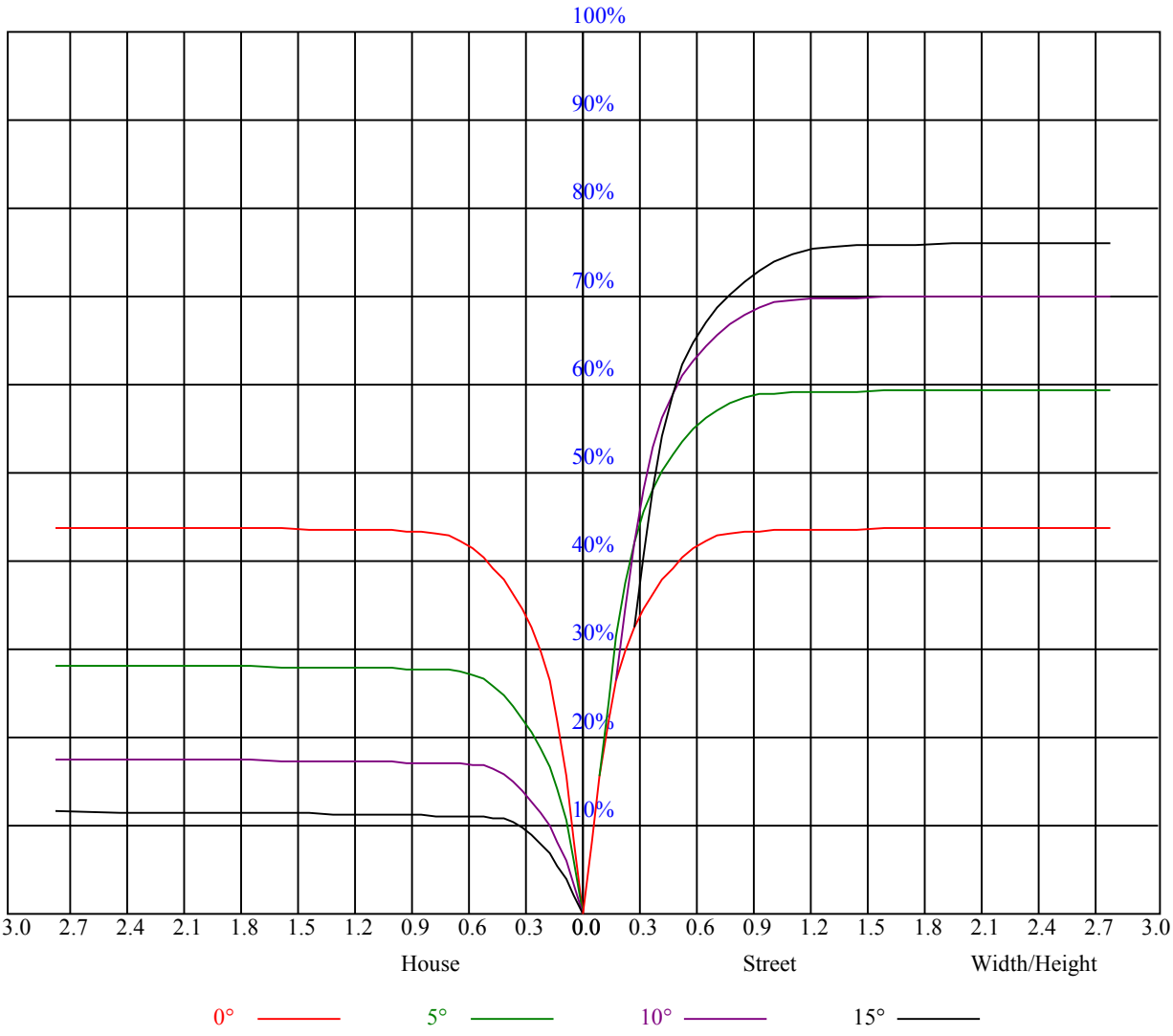


Equipment: GMS1980 Date: 2019/12/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.99	0.97	0.95	0.97	0.95	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.84
2	0.94	0.91	0.88	0.92	0.90	0.87	0.90	0.87	0.86	0.87	0.85	0.84	0.85	0.83	0.82	0.81
3	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.85	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.76	0.74
5	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.76	0.74	0.78	0.76	0.73	0.77	0.75	0.73	0.72
6	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.73	0.70	0.68	0.67
8	0.73	0.69	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/12/30	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	14163.75	13843.13	13263.75	12363.75	11255.63	10057.50	8049.38	6716.25	5709.38
45.0	14236.88	13966.88	13376.25	12639.38	11621.25	10001.25	8533.13	7093.13	5720.63
90.0	14124.38	13966.88	13539.38	12976.88	11919.38	10978.88	9470.81	8036.44	6550.31
135.0	14068.13	14203.13	14175.00	13950.00	13578.75	12858.75	12026.25	10929.38	9630.00
180.0	14163.75	14360.63	14366.25	14214.38	13871.25	13387.50	12560.63	11221.88	10058.06
225.0	14236.88	14360.63	14343.75	14135.63	13786.88	13128.75	12020.63	11018.25	9466.31
270.0	14124.38	14141.25	13950.00	13618.13	13089.38	12195.00	10985.63	9686.25	8145.00
315.0	14068.13	13786.88	13252.50	12448.13	11147.06	9989.44	8588.25	7089.75	5783.06
360.0	14163.75	13843.13	13263.75	12363.75	11255.63	10057.50	8049.38	6716.25	5709.38

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4415.63	3678.75	3150.00	2840.63	2175.75	1897.88	1654.88	1483.88	1332.00
45.0	4629.38	3836.25	3121.88	2863.13	2223.56	1966.50	1680.75	1486.69	1365.19
90.0	5299.88	4388.06	3576.94	3015.56	2570.63	2139.19	1873.13	1662.75	1454.63
135.0	7931.25	6648.75	5518.13	4365.00	3633.75	3054.38	2863.13	2156.06	1882.69
180.0	8630.44	7080.75	5738.63	4755.38	3954.38	3169.13	2685.38	2304.56	1937.81
225.0	8017.88	6515.44	5252.06	4338.56	3598.31	2892.94	2466.56	2127.38	1831.50
270.0	6851.25	5574.38	4528.13	3780.00	3099.38	2908.13	2222.44	1933.88	1681.88
315.0	4805.44	3908.25	3206.25	2718.00	2328.19	1958.63	1730.81	1546.31	1381.50
360.0	4415.63	3678.75	3150.00	2840.63	2175.75	1897.88	1654.88	1483.88	1332.00

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1213.31	1131.75	1056.94	997.88	957.38	924.75	894.38	875.81	859.50
45.0	1220.63	1136.25	1065.94	995.63	951.19	918.56	888.19	869.63	855.00
90.0	1321.31	1214.44	1115.44	1040.06	988.37	938.98	908.94	886.50	866.53
135.0	1636.88	1469.81	1323.56	1199.81	1118.81	1045.69	988.88	950.06	918.56
180.0	1708.88	1526.06	1365.19	1239.19	1118.64	1067.51	1005.75	963.73	925.71
225.0	1608.19	1451.81	1310.63	1177.31	1114.59	1035.34	992.87	948.71	916.20
270.0	1488.38	1353.94	1244.81	1136.25	1067.63	1012.50	960.19	927.00	902.25
315.0	1253.25	1119.94	1076.91	1012.16	967.39	928.13	901.74	878.96	858.88
360.0	1213.31	1131.75	1056.94	997.88	957.38	924.75	894.38	875.81	859.50

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	843.75	825.75	810.56	771.19	701.44	622.69	525.94	437.63	338.06
45.0	837.56	824.06	808.88	779.06	711.56	637.31	543.38	443.25	353.81
90.0	851.79	836.61	820.63	806.63	771.36	692.66	615.83	530.27	409.22
135.0	891.00	872.44	857.81	840.94	824.63	808.88	760.50	683.44	602.44
180.0	900.68	878.63	860.46	845.61	829.58	810.39	776.76	716.96	620.66
225.0	894.77	877.39	859.78	845.89	830.42	810.51	763.88	696.60	616.33
270.0	880.88	863.44	851.06	834.19	819.56	786.38	718.88	644.63	549.00
315.0	846.51	831.88	810.90	786.26	731.42	627.08	551.03	460.74	358.76
360.0	843.75	825.75	810.56	771.19	701.44	622.69	525.94	437.63	338.06

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	293.63	154.13	84.71	33.02	24.47	21.04	17.16	15.64	14.12
45.0	289.69	174.99	97.88	42.64	26.21	22.84	18.34	16.03	14.01
90.0	332.61	247.56	159.30	84.43	38.08	24.69	21.43	17.49	15.19
135.0	504.00	415.69	315.00	304.31	137.42	73.74	29.25	24.30	21.15
180.0	534.88	447.92	337.05	249.08	167.46	81.68	42.30	26.89	21.94
225.0	507.43	417.54	317.48	219.38	142.93	72.51	33.69	25.20	21.32
270.0	447.75	357.19	288.56	159.30	91.29	41.91	23.96	20.87	17.94
315.0	258.92	176.63	96.24	43.82	23.85	20.81	18.06	16.26	14.68
360.0	293.63	154.13	84.71	33.02	24.47	21.04	17.16	15.64	14.12

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	13.67	13.28	12.99	12.71	12.43	12.26	12.04	11.87	11.70
45.0	13.56	13.28	13.05	12.77	12.54	12.32	12.15	11.98	11.81
90.0	13.95	13.61	13.28	13.05	12.83	12.54	12.38	12.15	11.98
135.0	17.38	15.81	14.46	14.01	13.67	13.39	13.16	12.83	12.60
180.0	18.84	16.20	14.01	13.73	13.44	13.11	12.83	12.60	12.43
225.0	17.61	15.64	13.95	13.61	13.28	12.99	12.71	12.49	12.32
270.0	16.20	14.23	13.84	13.44	13.22	12.88	12.60	12.38	12.21
315.0	14.29	13.89	13.50	13.22	12.94	12.66	12.43	12.26	12.04
360.0	13.67	13.28	12.99	12.71	12.43	12.26	12.04	11.87	11.70

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.59	11.42	11.36	11.19	11.19	11.08	11.03	10.97	10.86
45.0	11.64	11.59	11.42	11.31	11.25	11.19	11.14	11.08	11.03
90.0	11.81	11.70	11.53	11.42	11.36	11.25	11.19	11.14	11.08
135.0	12.38	12.21	11.98	11.81	11.70	11.53	11.48	11.36	11.25
180.0	12.15	11.98	11.81	11.64	11.48	11.36	11.31	11.19	11.14
225.0	12.04	11.93	11.76	11.59	11.48	11.36	11.31	11.19	11.14
270.0	11.98	11.87	11.70	11.59	11.48	11.42	11.31	11.19	11.14
315.0	11.81	11.70	11.59	11.48	11.36	11.31	11.19	11.08	11.03
360.0	11.59	11.42	11.36	11.19	11.19	11.08	11.03	10.97	10.86

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.86	10.80	10.74	10.69	10.69	10.63	10.58	10.58	10.58
45.0	10.97	10.91	10.86	10.86	10.74	10.74	10.69	10.69	10.69
90.0	11.03	10.91	10.91	10.86	10.86	10.80	10.74	10.74	10.69
135.0	11.19	11.08	11.03	10.97	10.91	10.91	10.80	10.80	10.74
180.0	11.08	10.97	10.91	10.86	10.80	10.74	10.74	10.69	10.63
225.0	11.03	11.03	10.97	10.91	10.91	10.86	10.80	10.74	10.74
270.0	11.08	11.03	10.97	10.91	10.91	10.80	10.80	10.80	10.74
315.0	11.03	10.97	10.86	10.86	10.80	10.74	10.74	10.69	10.69
360.0	10.86	10.80	10.74	10.69	10.69	10.63	10.58	10.58	10.58

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.41
45.0	10.69	10.63	10.63	10.63	10.58	10.58	10.58	10.58	10.58
90.0	10.69	10.69	10.63	10.63	10.63	10.63	10.63	10.63	10.58
135.0	10.69	10.69	10.69	10.63	10.58	10.58	10.58	10.58	10.52
180.0	10.63	10.58	10.58	10.52	10.52	10.52	10.46	10.46	10.46
225.0	10.69	10.69	10.69	10.63	10.69	10.63	10.58	10.63	10.58
270.0	10.74	10.74	10.74	10.69	10.69	10.69	10.69	10.63	10.63
315.0	10.63	10.63	10.58	10.58	10.58	10.58	10.58	10.58	10.52
360.0	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.41

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.46	10.41	10.35	10.41	10.41	10.41	10.35	10.35	10.35
45.0	10.52	10.58	10.58	10.52	10.52	10.52	10.46	10.46	10.46
90.0	10.63	10.63	10.63	10.58	10.52	10.52	10.52	10.52	10.52
135.0	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.46
180.0	10.41	10.46	10.41	10.41	10.41	10.41	10.41	10.35	10.41
225.0	10.58	10.58	10.58	10.58	10.58	10.52	10.52	10.52	10.52
270.0	10.63	10.63	10.63	10.63	10.63	10.58	10.52	10.52	10.52
315.0	10.52	10.46	10.46	10.46	10.46	10.46	10.41	10.46	10.41
360.0	10.46	10.41	10.35	10.41	10.41	10.41	10.35	10.35	10.35

Intensity data(cd)

C/γ(°)	90.0
0.0	10.35
45.0	10.46
90.0	10.52
135.0	10.46
180.0	10.41
225.0	10.52
270.0	10.52
315.0	10.41
360.0	10.35