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: 2-1747-N
Luminaire: 92.70.127.00
Report No: 200407-B025
Test No: 200407-C025
LampCAT: CREE CXA1512
Lamp flux(lm): 932.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 220.4000
Current(A): 0.0420
Power (W): 8.3500
PF: 0.8970
Ballast type: AC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 768.23
Efficiency(%): 82.43%
Lumens(lm)/Power(W): 92.00
Central intensity(cd): 1588.085
Maximum intensity(cd): 1588.085
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=38.3
[C90/270]Total=38.3
Field angle(10%Imax): [C0/180]Total=67.6
[C90/270]Total=67.6
Maximum s/h(1/2): C0_180=0.62 C90_270=0.62
Maximum s/h(1/4): C0_180=0.62 C90_270=0.62
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.43%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.280%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1588.085	0.000	0	.000%	.000%
1.0	1585.475	1.518	1.518	.163%	.198%
2.0	1579.442	4.543	6.061	.487%	.789%
3.0	1569.117	7.530	13.591	.808%	1.769%
4.0	1554.848	10.457	24.048	1.122%	3.130%
5.0	1536.055	13.297	37.345	1.427%	4.861%
6.0	1509.605	16.006	53.351	1.717%	6.945%
7.0	1476.833	18.537	71.888	1.989%	9.358%
8.0	1445.221	20.913	92.8	2.244%	12.080%
9.0	1399.165	23.052	115.853	2.473%	15.081%
10.0	1353.632	24.912	140.764	2.673%	18.323%
11.0	1300.848	26.524	167.288	2.846%	21.776%
12.0	1244.700	27.826	195.115	2.986%	25.398%
13.0	1184.550	28.829	223.944	3.093%	29.151%
14.0	1115.206	29.437	253.38	3.158%	32.982%
15.0	1050.850	29.737	283.117	3.191%	36.853%
16.0	994.754	29.974	313.091	3.216%	40.755%
17.0	927.179	29.930	343.02	3.211%	44.651%
18.0	859.935	29.466	372.486	3.162%	48.486%
19.0	802.911	28.930	401.416	3.104%	52.252%
20.0	737.065	28.186	429.602	3.024%	55.921%
21.0	671.915	27.055	456.657	2.903%	59.443%
22.0	611.753	25.796	482.453	2.768%	62.801%
23.0	556.225	24.507	506.96	2.630%	65.991%
24.0	507.583	23.259	530.219	2.496%	69.019%
25.0	467.647	22.175	552.394	2.379%	71.905%
26.0	431.360	21.221	573.615	2.277%	74.667%
27.0	393.361	20.177	593.792	2.165%	77.294%
28.0	360.815	19.094	612.886	2.049%	79.779%
29.0	335.247	18.211	631.097	1.954%	82.150%
30.0	296.053	17.045	648.142	1.829%	84.369%
31.0	266.384	15.652	663.794	1.679%	86.406%
32.0	241.065	14.538	678.332	1.560%	88.298%
33.0	187.069	12.613	690.945	1.353%	89.940%
34.0	150.956	10.230	701.174	1.098%	91.272%
35.0	117.238	8.329	709.503	.894%	92.356%
36.0	80.504	6.296	715.799	.676%	93.175%
37.0	59.535	4.567	720.367	.490%	93.770%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	45.736	3.514	723.881	.377%	94.227%
39.0	37.343	2.836	726.716	.304%	94.597%
40.0	32.001	2.418	729.135	.259%	94.911%
41.0	28.428	2.152	731.287	.231%	95.191%
42.0	25.377	1.955	733.241	.210%	95.446%
43.0	23.086	1.795	735.037	.193%	95.680%
44.0	21.392	1.679	736.715	.180%	95.898%
45.0	19.617	1.576	738.291	.169%	96.103%
46.0	18.480	1.490	739.781	.160%	96.297%
47.0	17.268	1.422	741.203	.153%	96.482%
48.0	16.114	1.349	742.552	.145%	96.658%
49.0	15.220	1.287	743.839	.138%	96.825%
50.0	14.385	1.234	745.074	.132%	96.986%
51.0	13.631	1.185	746.259	.127%	97.140%
52.0	12.877	1.137	747.396	.122%	97.288%
53.0	12.245	1.093	748.489	.117%	97.431%
54.0	11.589	1.050	749.54	.113%	97.567%
55.0	10.969	1.007	750.547	.108%	97.699%
56.0	10.400	0.966	751.512	.104%	97.824%
57.0	9.884	0.927	752.44	.100%	97.945%
58.0	9.391	0.891	753.331	.096%	98.061%
59.0	8.938	0.857	754.188	.092%	98.173%
60.0	8.521	0.825	755.013	.089%	98.280%
61.0	8.121	0.794	755.807	.085%	98.383%
62.0	7.738	0.764	756.571	.082%	98.483%
63.0	7.367	0.735	757.306	.079%	98.578%
64.0	7.030	0.706	758.012	.076%	98.670%
65.0	6.740	0.681	758.694	.073%	98.759%
66.0	6.415	0.656	759.35	.070%	98.844%
67.0	6.137	0.631	759.981	.068%	98.927%
68.0	5.887	0.609	760.59	.065%	99.006%
69.0	5.568	0.584	761.175	.063%	99.082%
70.0	5.307	0.559	761.733	.060%	99.155%
71.0	5.064	0.536	762.269	.058%	99.224%
72.0	4.832	0.515	762.784	.055%	99.291%
73.0	4.565	0.491	763.275	.053%	99.355%
74.0	4.310	0.467	763.742	.050%	99.416%
75.0	4.095	0.444	764.186	.048%	99.474%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.822	0.420	764.606	.045%	99.529%
77.0	3.608	0.396	765.002	.043%	99.580%
78.0	3.364	0.373	765.375	.040%	99.629%
79.0	3.150	0.350	765.725	.038%	99.674%
80.0	2.923	0.327	766.053	.035%	99.717%
81.0	2.697	0.304	766.357	.033%	99.757%
82.0	2.506	0.282	766.639	.030%	99.793%
83.0	2.314	0.262	766.901	.028%	99.827%
84.0	2.117	0.241	767.142	.026%	99.859%
85.0	1.932	0.221	767.363	.024%	99.888%
86.0	1.763	0.202	767.565	.022%	99.914%
87.0	1.618	0.185	767.75	.020%	99.938%
88.0	1.508	0.171	767.922	.018%	99.960%
89.0	1.369	0.158	768.079	.017%	99.981%
90.0	1.328	0.148	768.227	.016%	100.000%

Zonal flux distribution table

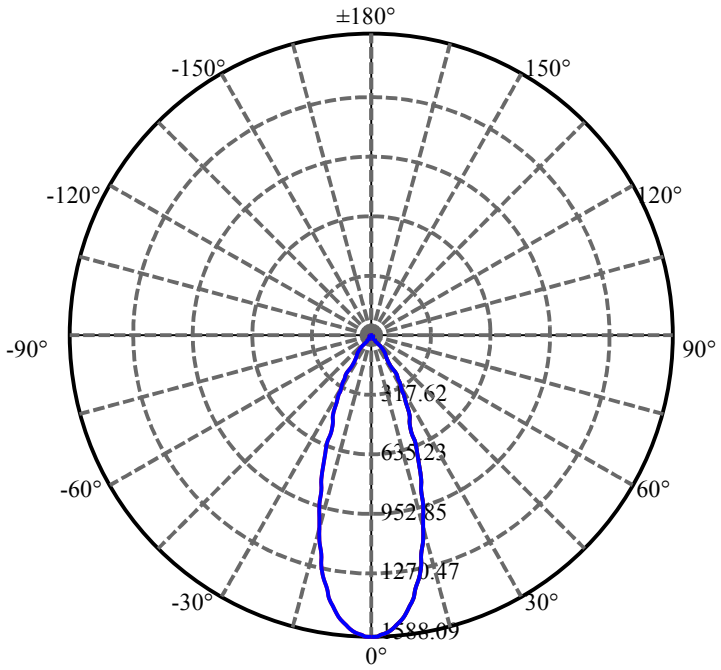
ZONAL LUMEN SUMMARY

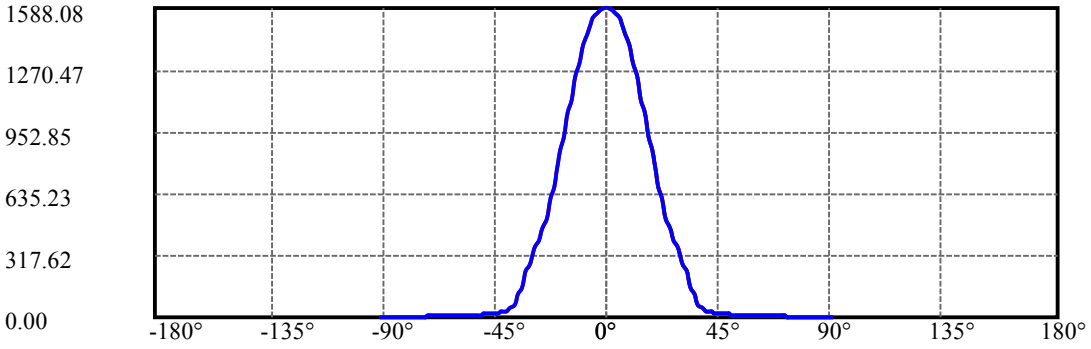
Zone	Lumens	%Lamp	%Fixt
0-30	648.14	69.54%	84.37%
0-40	729.13	78.23%	94.91%
0-60	755.01	81.01%	98.28%
0-90	768.08	82.41%	99.98%
0-120	768.08	82.41%	99.98%
0-180	768.23	82.43%	100.00%
60-90	13.89	1.49%	1.81%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.09	614.58	65.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	140.76
10-20	288.84
20-30	218.54
30-40	80.99
40-50	15.94
50-60	9.94
60-70	6.72
70-80	4.32
80-90	2.03
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):

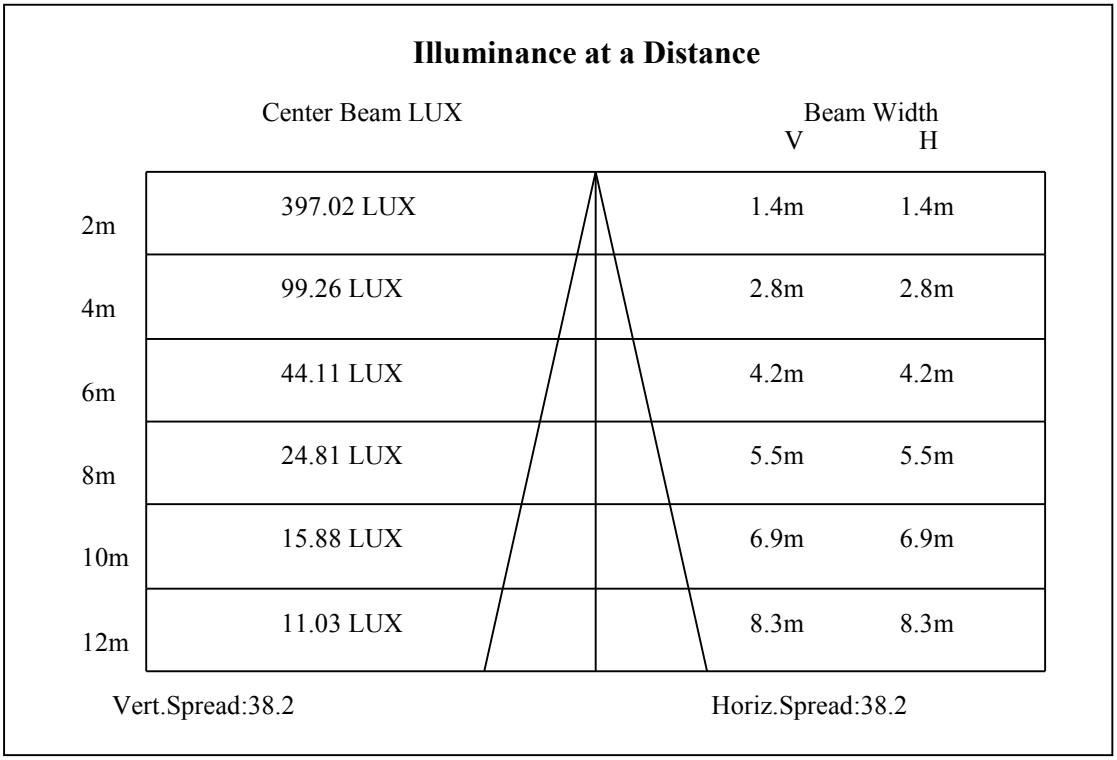
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:33.8 Right:33.8
:C90/270Left:33.8 Right:33.8

Beam Angle(50%Imax):C0/180Left:19.1 Right:19.1
:C90/270Left:19.1 Right:19.1

Lux distance Curve

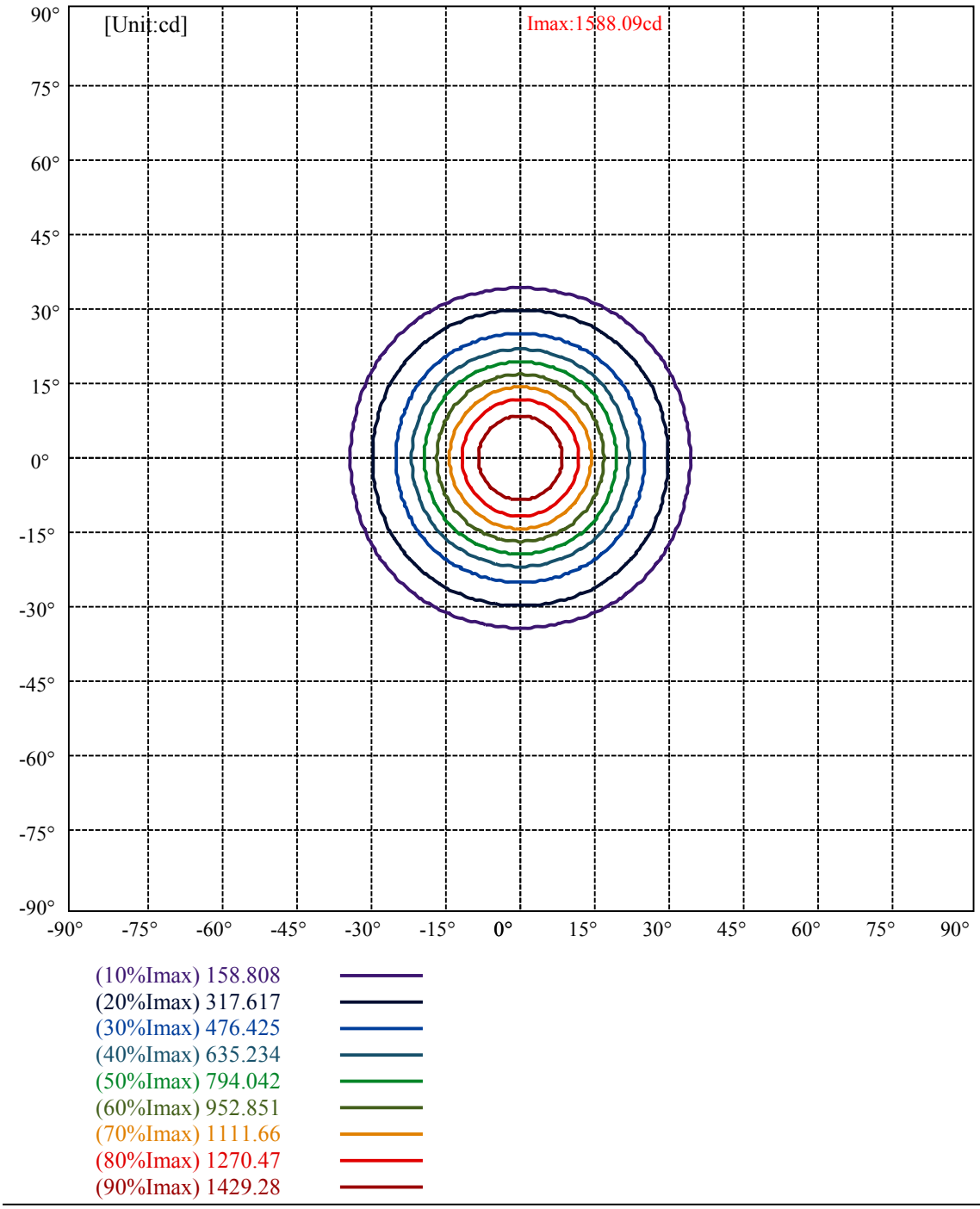


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

ISO-Intensity(V-H)

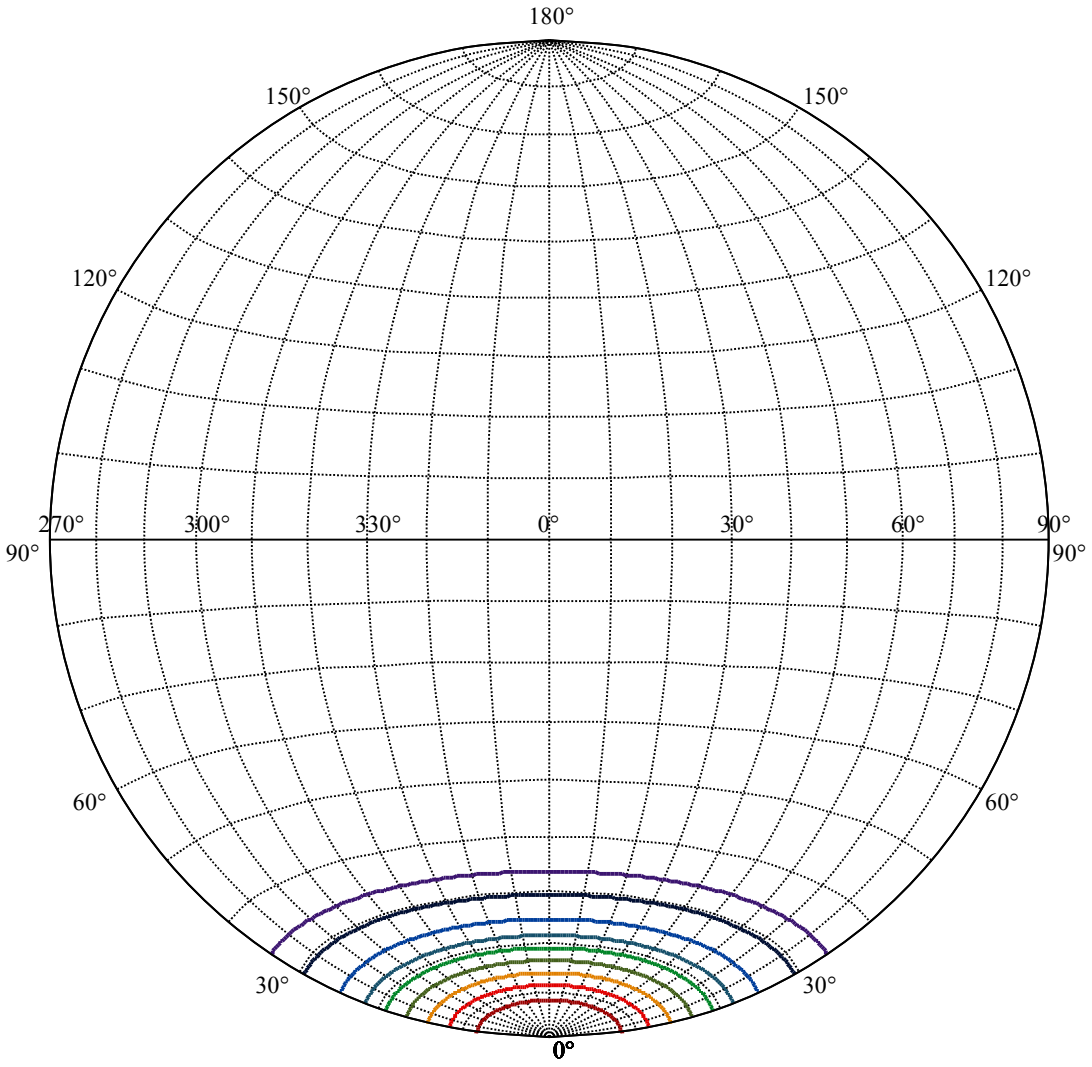


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1588.09

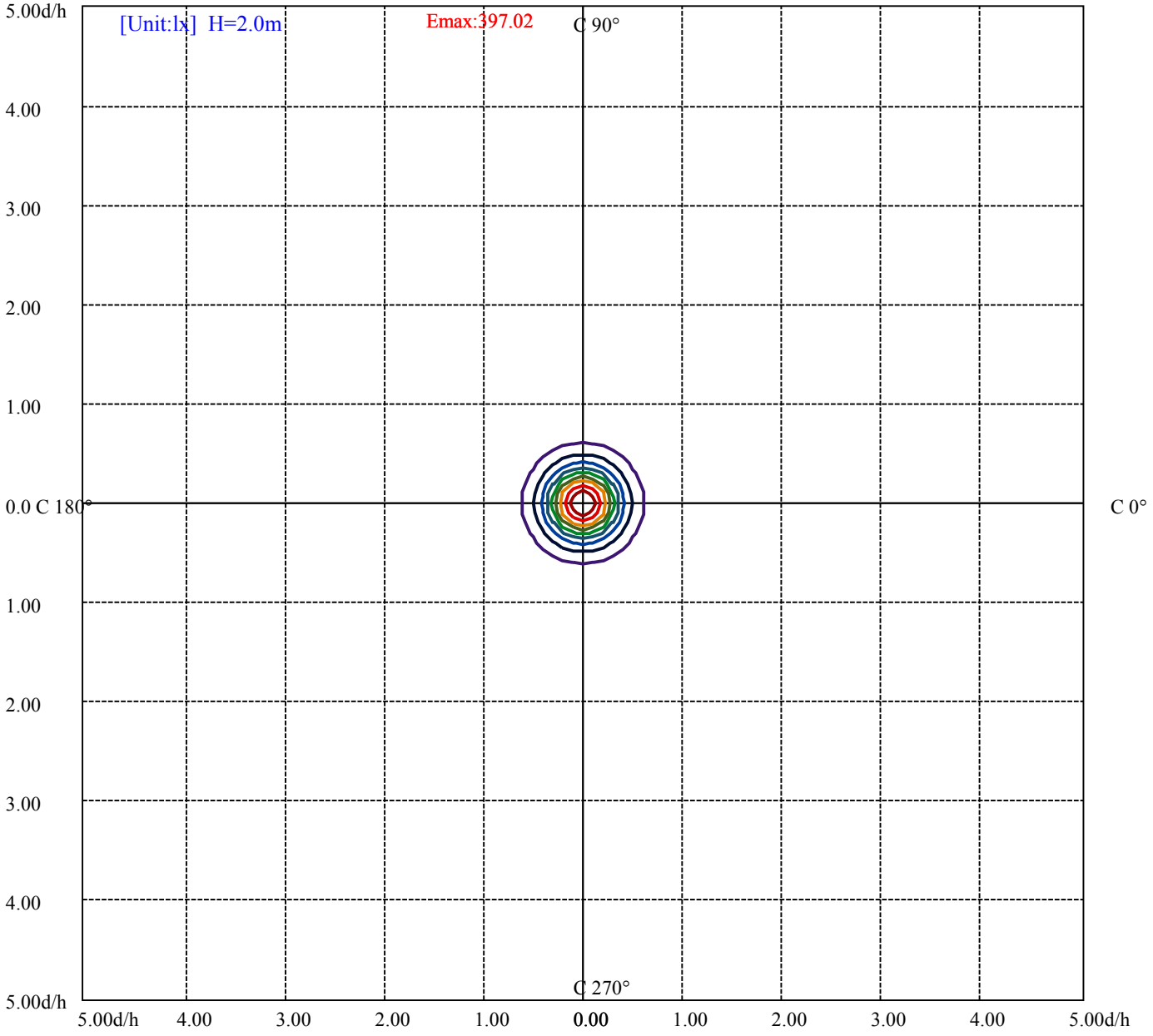
(10%Imax) 158.808
(20%Imax) 317.617
(30%Imax) 476.425
(40%Imax) 635.234
(50%Imax) 794.042
(60%Imax) 952.851
(70%Imax) 1111.66
(80%Imax) 1270.47
(90%Imax) 1429.28

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

ISO illuminance diagram



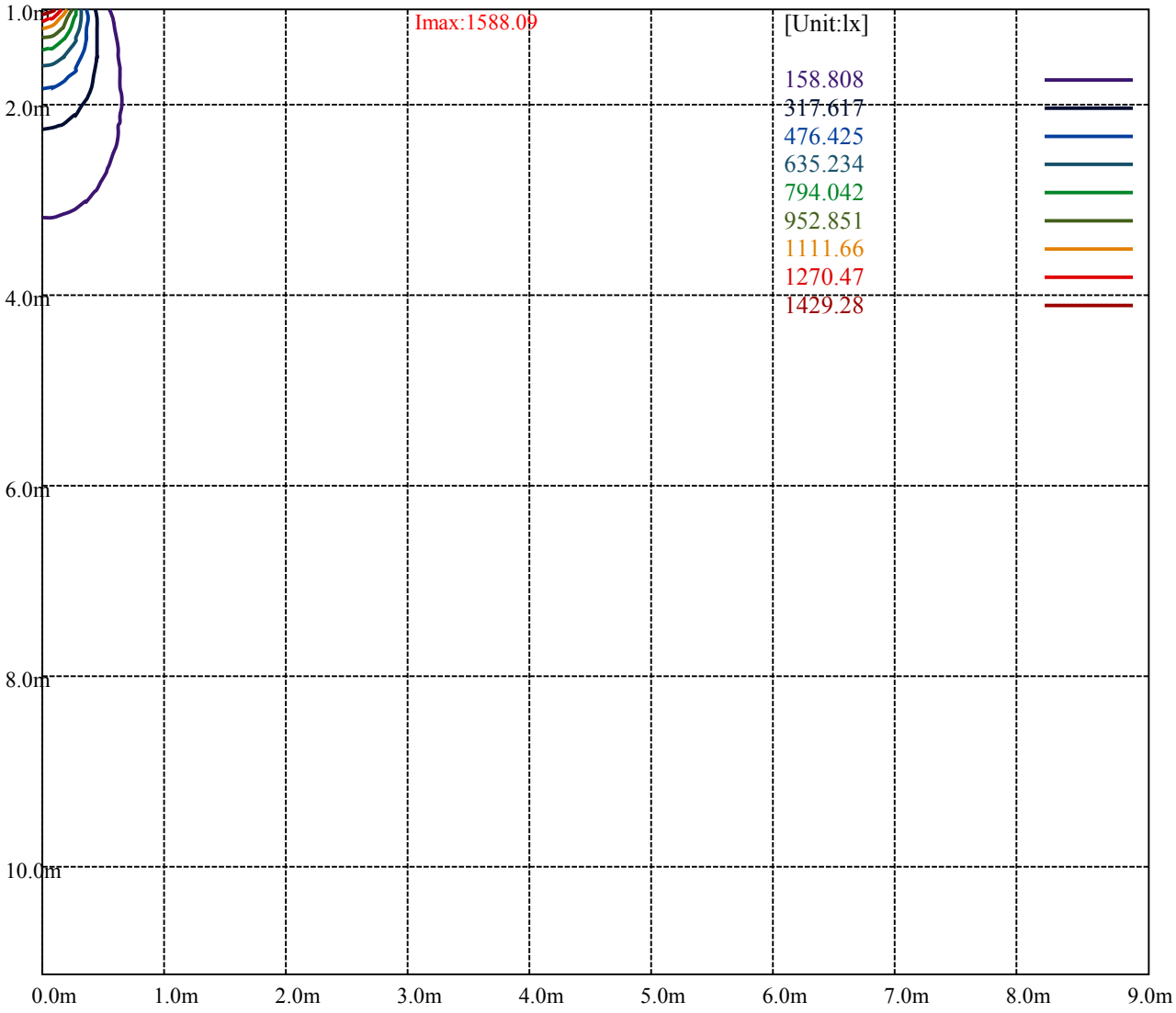
(10%Emax) 39.702
(20%Emax) 79.40425
(30%Emax) 119.1062
(40%Emax) 158.8085
(50%Emax) 198.5105
(60%Emax) 238.2128
(70%Emax) 277.915
(80%Emax) 317.6175
(90%Emax) 357.32

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

Space ISO Lux diagram



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

Luminance Limitting Curve(no luminous side)

Luminance Table

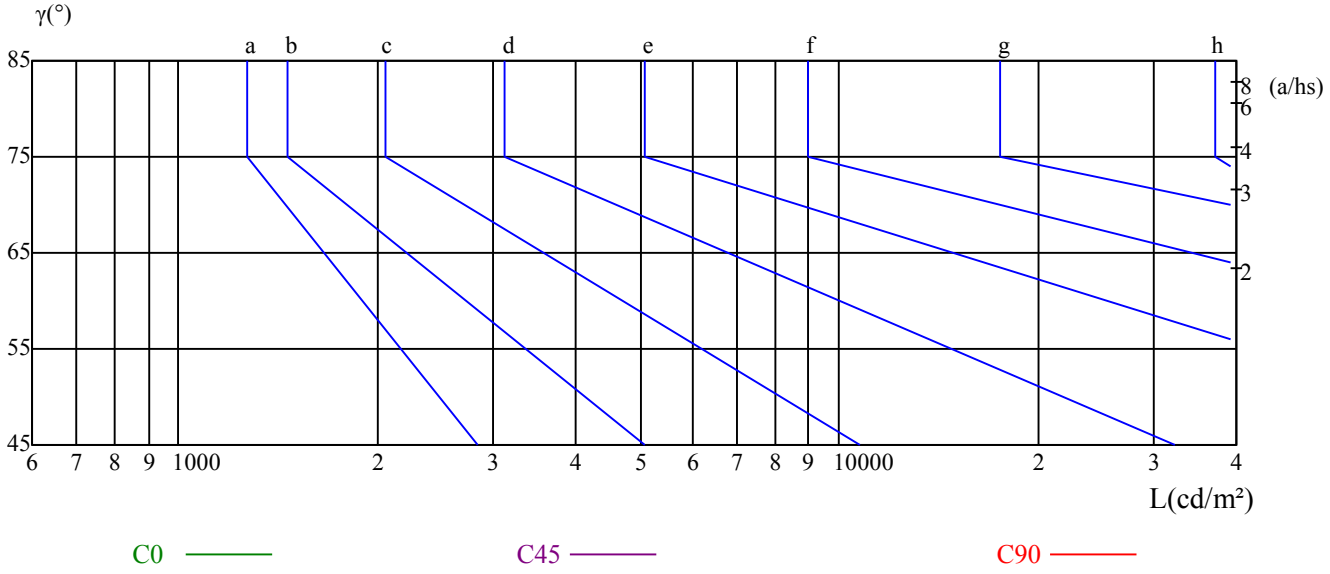
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

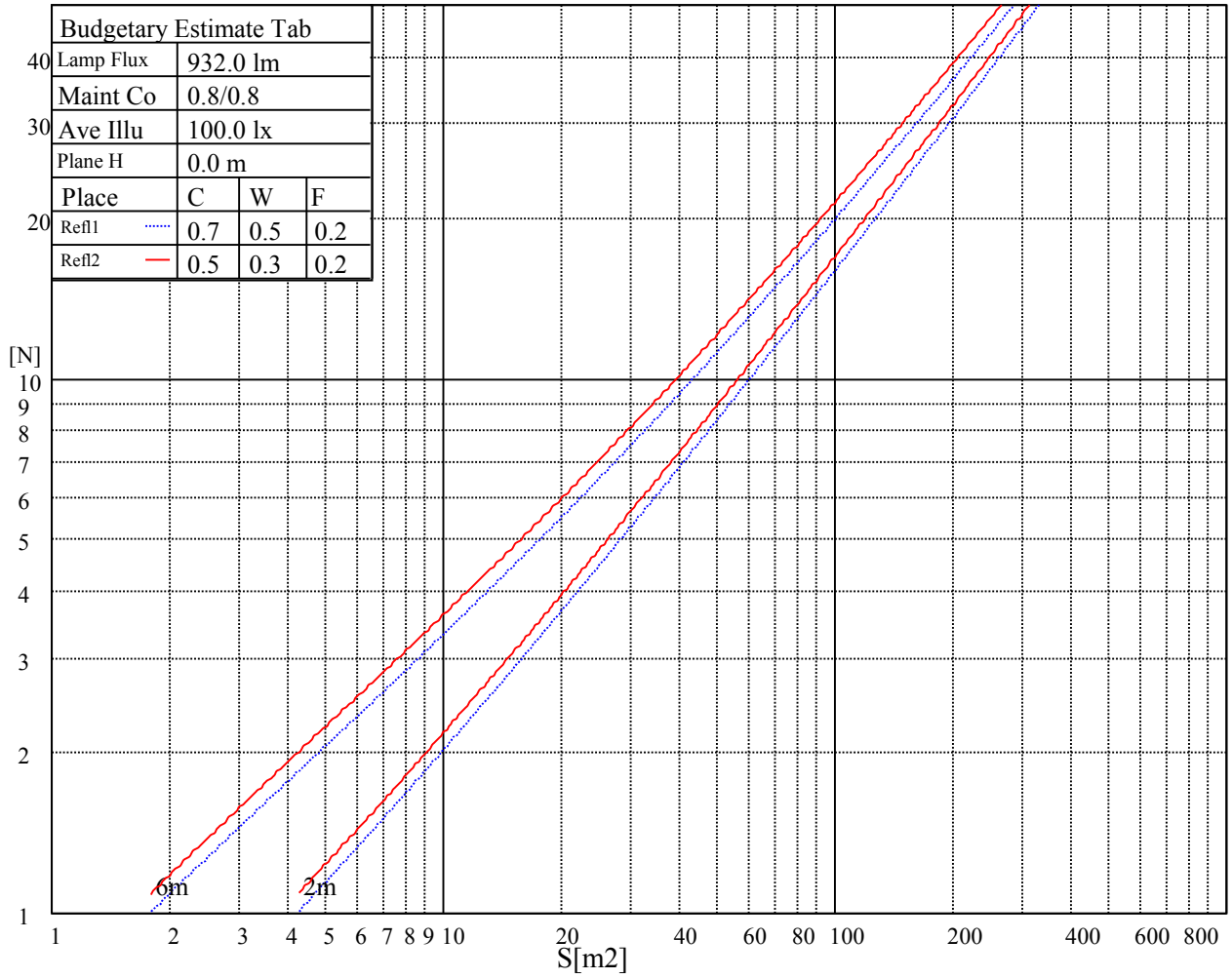
Glare Table

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

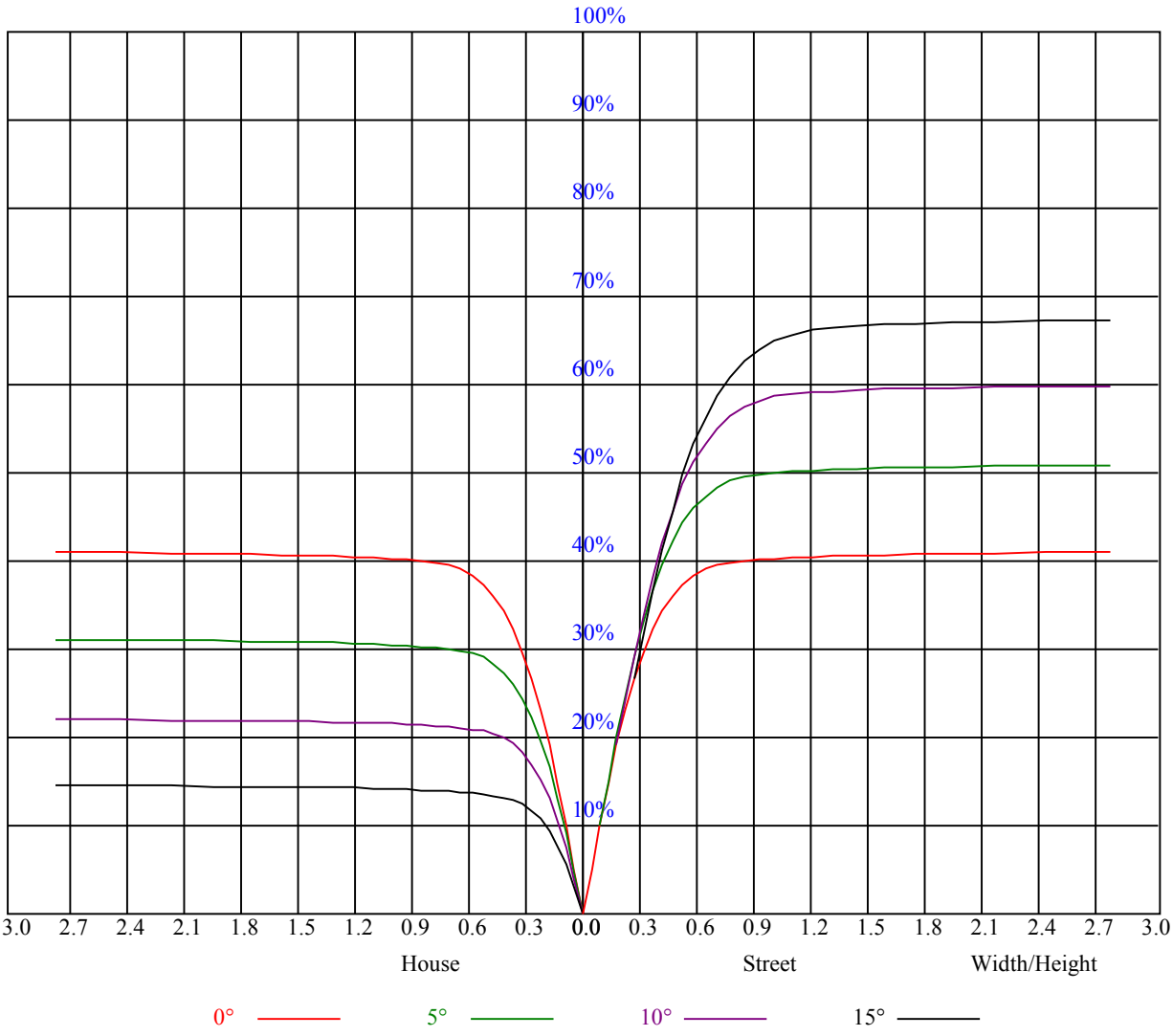


Equipment: GMS 1800	Date: 2020/4/7	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 6.81

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	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.92	0.90	0.88	0.90	0.88	0.87	0.87	0.85	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.78
2	0.86	0.83	0.81	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.77	0.76	0.75	0.73
3	0.81	0.77	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.69
4	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.71	0.69	0.67	0.66
5	0.73	0.69	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.63	0.62
6	0.69	0.65	0.62	0.69	0.65	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.65	0.63	0.60	0.59
7	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.56
8	0.63	0.59	0.56	0.63	0.58	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.60	0.57	0.55	0.54
9	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.58	0.55	0.53	0.52
10	0.58	0.54	0.51	0.57	0.53	0.51	0.57	0.53	0.51	0.56	0.53	0.50	0.56	0.53	0.50	0.49

Coefficient Utilization Curve



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

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	1590.29	1591.22	1589.82	1581.47	1567.09	1553.63	1533.21	1505.37	1471.50
45.0	1584.26	1587.97	1580.08	1567.09	1553.63	1539.71	1504.91	1469.64	1453.40
90.0	1583.33	1570.80	1553.17	1535.07	1512.33	1484.49	1452.01	1412.10	1365.70
135.0	1594.47	1581.94	1568.02	1554.09	1539.71	1514.65	1483.56	1447.37	1404.68
180.0	1590.29	1580.54	1574.51	1555.49	1540.64	1516.97	1489.13	1458.04	1436.23
225.0	1584.26	1580.54	1570.80	1558.27	1538.78	1514.19	1485.42	1440.87	1392.61
270.0	1583.33	1589.82	1592.15	1593.54	1589.36	1584.26	1569.41	1549.45	1523.93
315.0	1594.47	1600.96	1606.99	1607.92	1597.25	1580.54	1559.20	1531.82	1513.72
360.0	1590.29	1591.22	1589.82	1581.47	1567.09	1553.63	1533.21	1505.37	1471.50

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1431.13	1389.36	1336.93	1281.71	1221.38	1181.94	1116.97	1010.25	906.54
45.0	1416.28	1370.80	1321.61	1264.54	1204.68	1140.64	1076.14	1010.71	942.50
90.0	1316.05	1253.86	1192.61	1125.79	1056.65	896.79	896.79	883.75	815.91
135.0	1354.56	1294.24	1236.70	1199.57	1133.22	1068.72	999.11	931.83	865.93
180.0	1392.15	1343.89	1288.67	1227.88	1164.31	1102.13	1036.70	967.56	905.84
225.0	1337.39	1284.03	1219.06	1165.23	1085.42	1035.77	905.61	905.61	869.74
270.0	1481.24	1452.01	1408.39	1360.13	1307.69	1252.47	1190.76	1131.36	1063.15
315.0	1464.54	1440.87	1402.82	1332.75	1303.05	1243.19	1184.72	1116.97	1047.83
360.0	1431.13	1389.36	1336.93	1281.71	1221.38	1181.94	1116.97	1010.25	906.54

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	906.54	837.44	769.37	701.43	640.04	581.99	533.55	492.76	453.78
45.0	877.07	813.96	751.78	686.82	627.88	571.74	523.01	479.86	458.51
90.0	749.41	686.91	624.82	566.68	515.96	472.66	436.52	397.82	364.50
135.0	801.43	736.93	674.29	612.11	558.28	508.16	463.62	423.71	385.19
180.0	839.02	776.37	713.73	653.87	594.47	542.50	496.10	455.73	415.82
225.0	810.43	738.28	661.43	586.96	519.86	459.30	410.16	379.58	357.82
270.0	996.33	934.15	868.72	804.22	737.86	674.29	613.96	557.81	527.65
315.0	899.25	899.25	832.38	763.24	699.67	639.16	583.75	553.92	487.61
360.0	906.54	837.44	769.37	701.43	640.04	581.99	533.55	492.76	453.78

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	417.35	381.20	361.30	321.11	288.16	264.96	221.72	178.79	137.68
45.0	421.85	372.67	354.57	326.26	297.49	259.91	242.74	195.73	122.92
90.0	335.31	305.47	266.08	221.02	173.78	137.86	97.82	67.10	49.23
135.0	353.18	324.41	291.00	250.62	250.62	232.99	124.08	86.22	59.58
180.0	376.84	344.82	323.01	288.68	246.91	246.91	153.55	110.81	75.41
225.0	332.53	309.79	296.75	253.78	213.55	189.23	132.95	111.65	80.88
270.0	465.94	427.89	407.00	357.35	339.25	309.56	276.15	252.48	252.48
315.0	443.89	420.28	382.27	349.60	321.30	287.10	247.56	204.87	159.72
360.0	417.35	381.20	361.30	321.11	288.16	264.96	221.72	178.79	137.68

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	99.49	69.61	52.39	43.94	37.31	32.34	28.86	25.99	23.67
45.0	86.59	59.81	45.89	38.75	32.95	30.44	26.26	23.94	22.78
90.0	40.65	34.25	29.74	26.73	24.22	22.09	20.32	18.89	17.63
135.0	45.43	38.14	32.48	28.63	25.85	23.43	21.58	19.95	18.56
180.0	52.39	41.67	35.68	30.67	27.33	24.83	22.69	20.97	20.00
225.0	57.12	44.36	37.91	32.62	28.72	25.99	23.62	21.76	20.09
270.0	145.06	106.12	74.06	52.34	41.30	35.41	30.63	27.10	24.69
315.0	117.31	82.32	57.73	45.06	38.33	32.90	29.05	26.08	23.71
360.0	99.49	69.61	52.39	43.94	37.31	32.34	28.86	25.99	23.67

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	21.67	20.05	18.56	17.26	16.19	15.27	14.34	13.50	13.09
45.0	20.32	19.40	18.10	16.98	16.01	15.08	14.25	13.50	12.81
90.0	16.47	15.50	14.66	13.83	13.13	12.44	12.06	11.18	10.53
135.0	17.31	16.29	15.36	14.80	13.69	13.22	12.53	11.93	11.37
180.0	18.14	17.40	16.38	15.08	14.62	13.78	13.09	12.44	11.79
225.0	18.70	17.40	16.29	15.36	14.43	13.64	12.99	12.39	11.88
270.0	22.55	21.07	19.54	18.19	16.98	15.96	14.99	14.11	13.41
315.0	21.76	20.74	19.26	17.40	16.71	15.68	14.80	13.97	13.09
360.0	21.67	20.05	18.56	17.26	16.19	15.27	14.34	13.50	13.09

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.11	11.65	11.00	10.39	9.84	9.37	8.91	8.45	8.03
45.0	12.11	11.42	10.77	10.21	9.70	9.19	8.72	8.40	8.12
90.0	10.26	9.56	9.23	8.82	8.35	7.98	7.61	7.29	6.91
135.0	10.72	10.12	9.61	9.19	8.77	8.35	7.93	7.61	7.19
180.0	11.18	10.58	10.07	9.47	9.05	8.68	8.31	7.89	7.47
225.0	11.23	10.67	10.07	9.65	9.19	8.68	8.35	7.93	7.56
270.0	12.67	11.97	11.32	10.81	10.21	9.70	9.23	8.82	8.40
315.0	12.44	11.79	11.14	10.53	10.02	9.56	9.10	8.58	8.21
360.0	12.11	11.65	11.00	10.39	9.84	9.37	8.91	8.45	8.03

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.75	7.33	6.96	6.68	6.36	6.03	5.75	5.48	5.24
45.0	7.56	7.24	7.01	6.68	6.40	6.13	5.85	5.52	5.29
90.0	6.54	6.31	6.03	5.71	5.48	5.20	4.97	4.69	4.45
135.0	6.87	6.54	6.31	5.99	5.66	5.43	5.24	5.01	4.69
180.0	7.19	6.87	6.64	6.22	5.99	5.80	5.38	5.20	5.01
225.0	7.19	6.91	6.59	6.26	5.99	5.80	5.48	5.15	4.92
270.0	7.93	7.56	7.29	6.96	6.73	6.45	6.03	5.80	5.52
315.0	7.89	7.47	7.10	6.82	6.50	6.26	5.85	5.61	5.38
360.0	7.75	7.33	6.96	6.68	6.36	6.03	5.75	5.48	5.24

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.92	4.69	4.45	4.22	3.94	3.71	3.48	3.29	3.06
45.0	5.06	4.78	4.50	4.22	3.99	3.81	3.53	3.20	3.02
90.0	4.22	3.99	3.71	3.62	3.29	3.11	2.97	2.74	2.51
135.0	4.50	4.27	4.04	3.76	3.53	3.25	3.06	2.88	2.64
180.0	4.73	4.45	4.22	3.99	3.76	3.53	3.20	3.02	2.78
225.0	4.73	4.41	4.13	4.04	3.67	3.53	3.29	3.06	2.78
270.0	5.34	5.01	4.78	4.55	4.27	4.04	3.76	3.57	3.34
315.0	5.15	4.92	4.64	4.36	4.13	3.90	3.62	3.43	3.25
360.0	4.92	4.69	4.45	4.22	3.94	3.71	3.48	3.29	3.06

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.83	2.64	2.41	2.27	2.04	1.90	1.72	1.58	1.44
45.0	2.83	2.64	2.41	2.13	2.00	1.81	1.62	1.48	1.35
90.0	2.27	2.09	1.90	1.76	1.67	1.48	1.39	1.35	1.21
135.0	2.41	2.27	2.13	1.90	1.72	1.53	1.44	1.39	1.25
180.0	2.55	2.37	2.13	2.00	1.81	1.62	1.48	1.35	1.30
225.0	2.60	2.32	2.18	2.00	1.81	1.67	1.48	1.39	1.30
270.0	3.11	2.88	2.69	2.46	2.23	2.00	1.90	1.76	1.53
315.0	2.97	2.83	2.64	2.41	2.18	2.09	1.90	1.76	1.58
360.0	2.83	2.64	2.41	2.27	2.04	1.90	1.72	1.58	1.44

Intensity data(cd)

C/γ(°)	90.0
0.0	1.39
45.0	1.35
90.0	1.25
135.0	1.25
180.0	1.16
225.0	1.21
270.0	1.48
315.0	1.53
360.0	1.39