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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NATA

Client:
LumCAT: 3-2031-M
Luminaire: 92.70.124.00

Report No: nt0100	Voltage(V): 33.5300
Test No: GC2019122320	Current(A): 0.2970
LampCAT: LUMINUS CXM-9-AC40	Power (W): 9.9500
Lamp flux(lm): 1036.0	PF: 1.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 956.38, Efficiency(%): 92.31% , Luminous Efficacy(lm/W): 96.12
Central intensity(cd): 10053.980, Maximum intensity(cd): 10053.980
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=11.6
[C90/270]Total=11.6
Field angle(10%Imax): [C0/180]Total=23.4
[C90/270]Total=23.4
Maximum s/h(1/2): C0_180=0.20 C90_270=0.20
Maximum s/h(1/4): C0_180=0.21 C90_270=0.21
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.31%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.523%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10053.984	0.000	0	.000%	.000%
1.0	9841.500	9.520	9.52	.919%	.995%
2.0	9229.641	27.373	36.892	2.642%	3.857%
3.0	8274.234	41.864	78.756	4.041%	8.235%
4.0	7178.133	51.724	130.48	4.993%	13.643%
5.0	6026.766	56.807	187.287	5.483%	19.583%
6.0	4846.359	57.141	244.428	5.516%	25.558%
7.0	3752.719	53.374	297.802	5.152%	31.138%
8.0	2906.367	47.658	345.46	4.600%	36.122%
9.0	2096.536	40.546	386.006	3.914%	40.361%
10.0	1528.980	32.810	418.815	3.167%	43.792%
11.0	1157.421	26.843	445.658	2.591%	46.598%
12.0	932.105	22.842	468.5	2.205%	48.987%
13.0	754.446	20.015	488.515	1.932%	51.080%
14.0	653.632	18.023	506.538	1.740%	52.964%
15.0	586.181	17.021	523.559	1.643%	54.744%
16.0	536.611	16.452	540.011	1.588%	56.464%
17.0	506.897	16.250	556.261	1.569%	58.163%
18.0	484.812	16.351	572.612	1.578%	59.873%
19.0	466.959	16.559	589.171	1.598%	61.604%
20.0	453.952	16.855	606.026	1.627%	63.367%
21.0	441.900	17.202	623.228	1.660%	65.165%
22.0	430.861	17.538	640.767	1.693%	66.999%
23.0	421.861	17.892	658.659	1.727%	68.870%
24.0	413.374	18.261	676.92	1.763%	70.779%
25.0	404.641	18.600	695.52	1.795%	72.724%
26.0	397.927	18.945	714.465	1.829%	74.705%
27.0	390.558	19.290	733.755	1.862%	76.722%
28.0	382.338	19.568	753.324	1.889%	78.768%
29.0	375.574	19.829	773.153	1.914%	80.842%
30.0	368.367	20.086	793.239	1.939%	82.942%
31.0	359.684	20.261	813.5	1.956%	85.060%
32.0	348.145	20.278	833.778	1.957%	87.181%
33.0	328.528	19.935	853.713	1.924%	89.265%
34.0	297.668	18.951	872.664	1.829%	91.246%
35.0	249.792	17.002	889.666	1.641%	93.024%
36.0	193.802	14.124	903.79	1.363%	94.501%
37.0	139.641	10.875	914.665	1.050%	95.638%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	85.064	7.500	922.165	.724%	96.422%
39.0	49.605	4.597	926.762	.444%	96.903%
40.0	25.882	2.633	929.395	.254%	97.178%
41.0	15.356	1.468	930.863	.142%	97.332%
42.0	11.813	0.987	931.85	.095%	97.435%
43.0	9.914	0.805	932.655	.078%	97.519%
44.0	9.000	0.714	933.369	.069%	97.594%
45.0	8.374	0.668	934.037	.064%	97.664%
46.0	7.973	0.639	934.676	.062%	97.731%
47.0	7.636	0.621	935.297	.060%	97.795%
48.0	7.327	0.605	935.902	.058%	97.859%
49.0	7.031	0.590	936.491	.057%	97.920%
50.0	6.757	0.575	937.066	.055%	97.980%
51.0	6.525	0.562	937.628	.054%	98.039%
52.0	6.314	0.551	938.179	.053%	98.097%
53.0	6.096	0.540	938.719	.052%	98.153%
54.0	5.906	0.529	939.248	.051%	98.209%
55.0	5.730	0.519	939.767	.050%	98.263%
56.0	5.569	0.511	940.278	.049%	98.316%
57.0	5.442	0.503	940.781	.049%	98.369%
58.0	5.323	0.498	941.279	.048%	98.421%
59.0	5.210	0.492	941.771	.048%	98.472%
60.0	5.112	0.488	942.259	.047%	98.523%
61.0	5.020	0.484	942.743	.047%	98.574%
62.0	4.943	0.480	943.223	.046%	98.624%
63.0	4.887	0.478	943.701	.046%	98.674%
64.0	4.809	0.476	944.177	.046%	98.724%
65.0	4.767	0.474	944.65	.046%	98.774%
66.0	4.704	0.473	945.123	.046%	98.823%
67.0	4.655	0.471	945.594	.045%	98.872%
68.0	4.627	0.470	946.064	.045%	98.921%
69.0	4.598	0.471	946.534	.045%	98.970%
70.0	4.549	0.470	947.004	.045%	99.020%
71.0	4.528	0.469	947.473	.045%	99.069%
72.0	4.493	0.469	947.942	.045%	99.118%
73.0	4.472	0.469	948.411	.045%	99.167%
74.0	4.437	0.468	948.88	.045%	99.216%
75.0	4.430	0.468	949.348	.045%	99.265%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.423	0.470	949.818	.045%	99.314%
77.0	4.380	0.469	950.287	.045%	99.363%
78.0	4.373	0.469	950.756	.045%	99.412%
79.0	4.373	0.470	951.226	.045%	99.461%
80.0	4.345	0.470	951.696	.045%	99.510%
81.0	4.331	0.469	952.165	.045%	99.559%
82.0	4.338	0.470	952.635	.045%	99.608%
83.0	4.324	0.471	953.106	.045%	99.658%
84.0	4.310	0.470	953.577	.045%	99.707%
85.0	4.289	0.469	954.046	.045%	99.756%
86.0	4.289	0.469	954.515	.045%	99.805%
87.0	4.268	0.468	954.983	.045%	99.854%
88.0	4.254	0.467	955.45	.045%	99.903%
89.0	4.233	0.465	955.915	.045%	99.951%
90.0	4.254	0.465	956.38	.045%	100.000%

Zonal flux distribution table

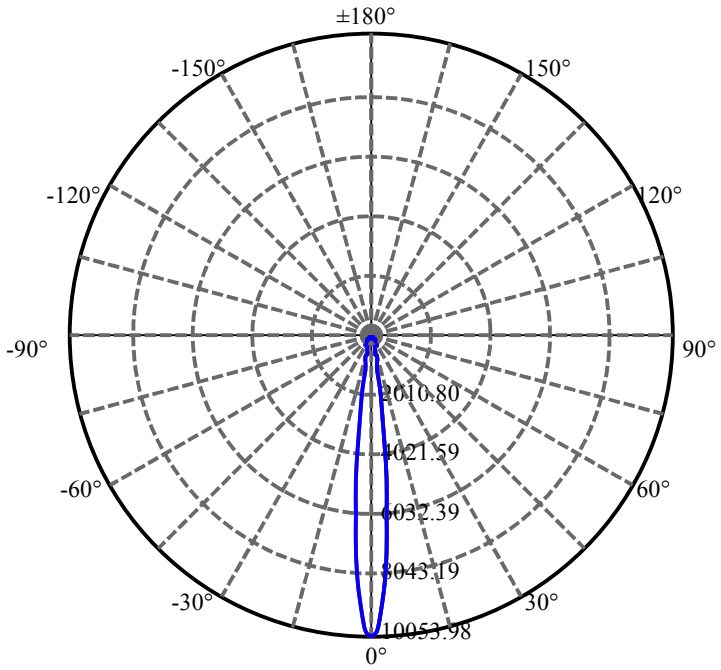
ZONAL LUMEN SUMMARY

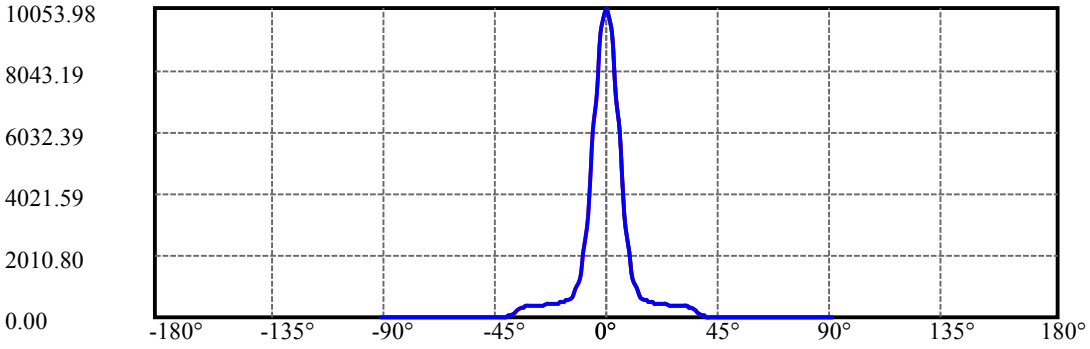
Zone	Lumens	%Lamp	%Fixt
0-30	793.24	76.57%	82.94%
0-40	929.39	89.71%	97.18%
0-60	942.26	90.95%	98.52%
0-90	955.92	92.27%	99.95%
0-120	955.92	92.27%	99.95%
0-180	956.38	92.31%	100.00%
60-90	14.14	1.37%	1.48%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.59	765.10	73.85%	80.00%

ZONAL LUMEN SUMMARY

0-10	418.82
10-20	187.21
20-30	187.21
30-40	136.16
40-50	7.67
50-60	5.19
60-70	4.75
70-80	4.69
80-90	4.22
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:11.7 Right:11.7
:C90/270Left:11.7 Right:11.7

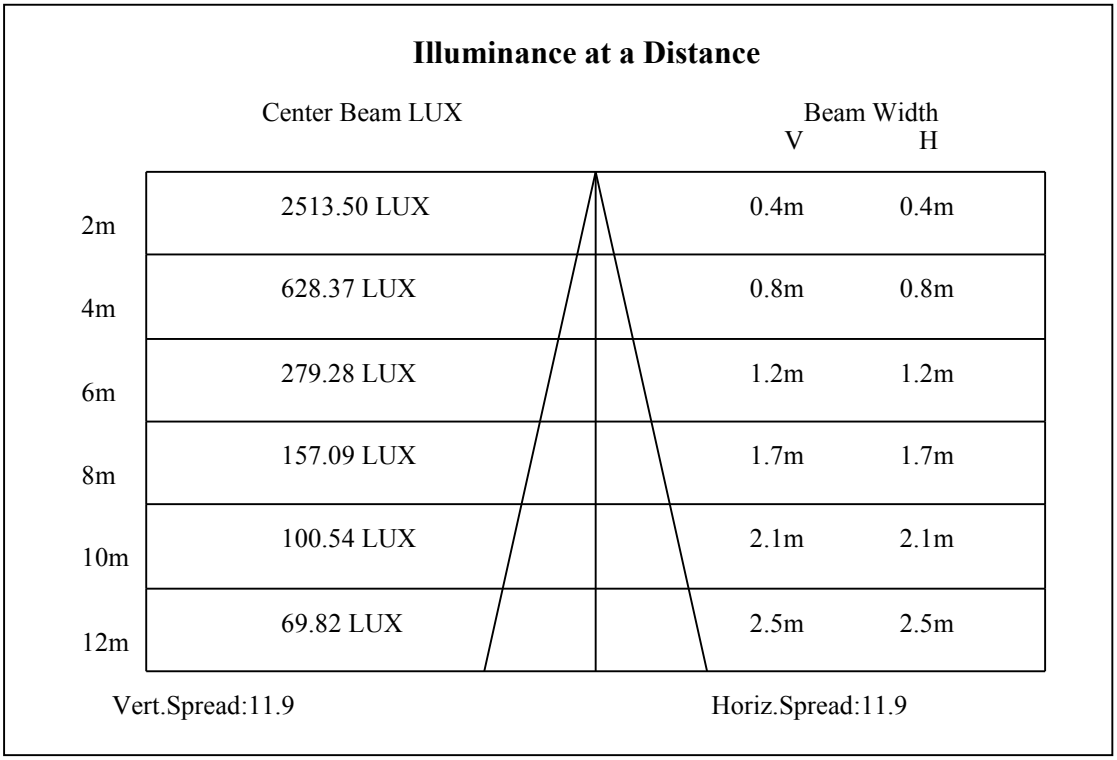
Beam Angle(50%Imax):C0/180Left:5.8 Right:5.8
:C90/270Left:5.8 Right:5.8

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/23
Humidity(%): 65.0%

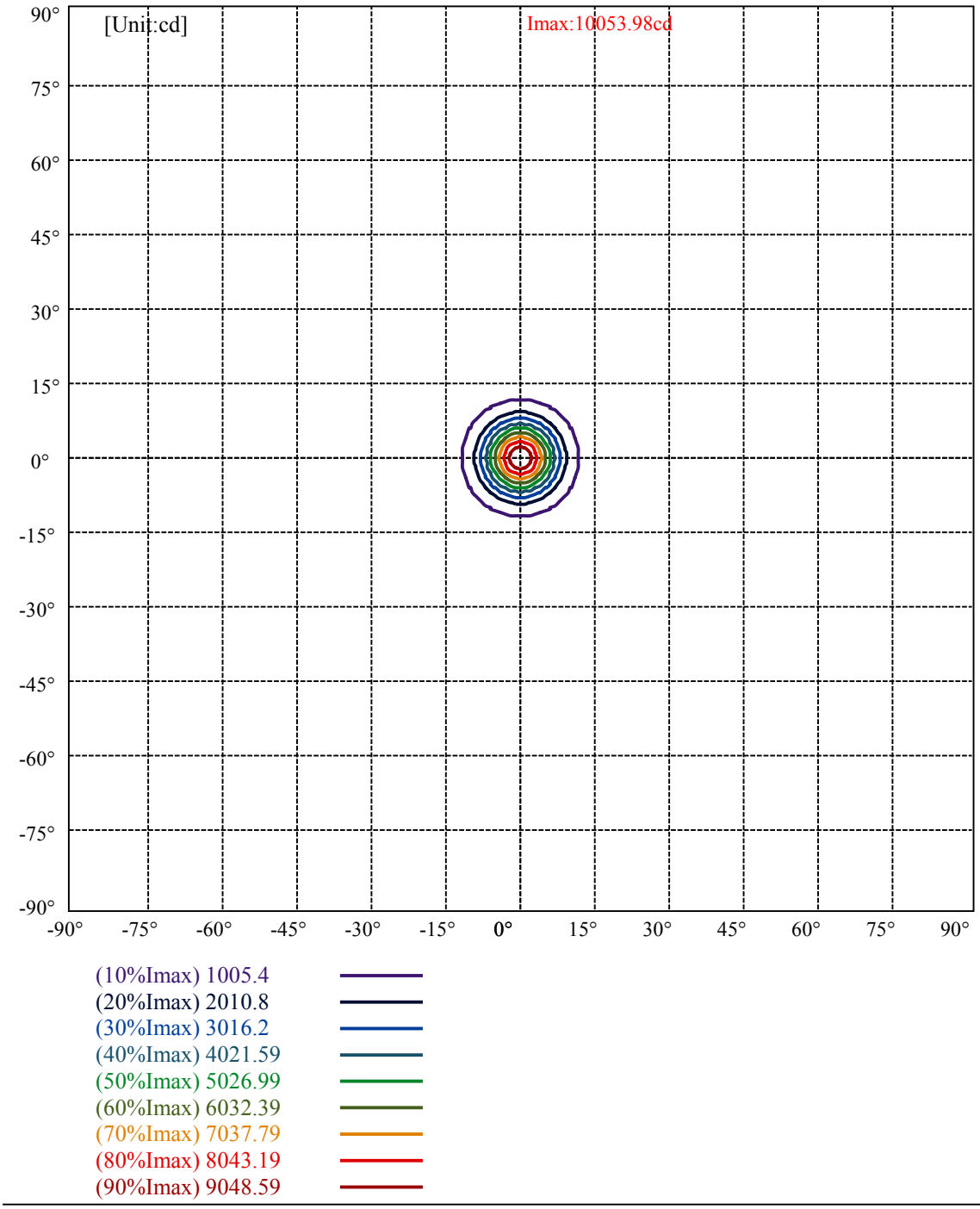
Operator: NT07
Distance(m): 7.50

Lux distance Curve



Equipment: GMS1980 Date: 2019/12/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)

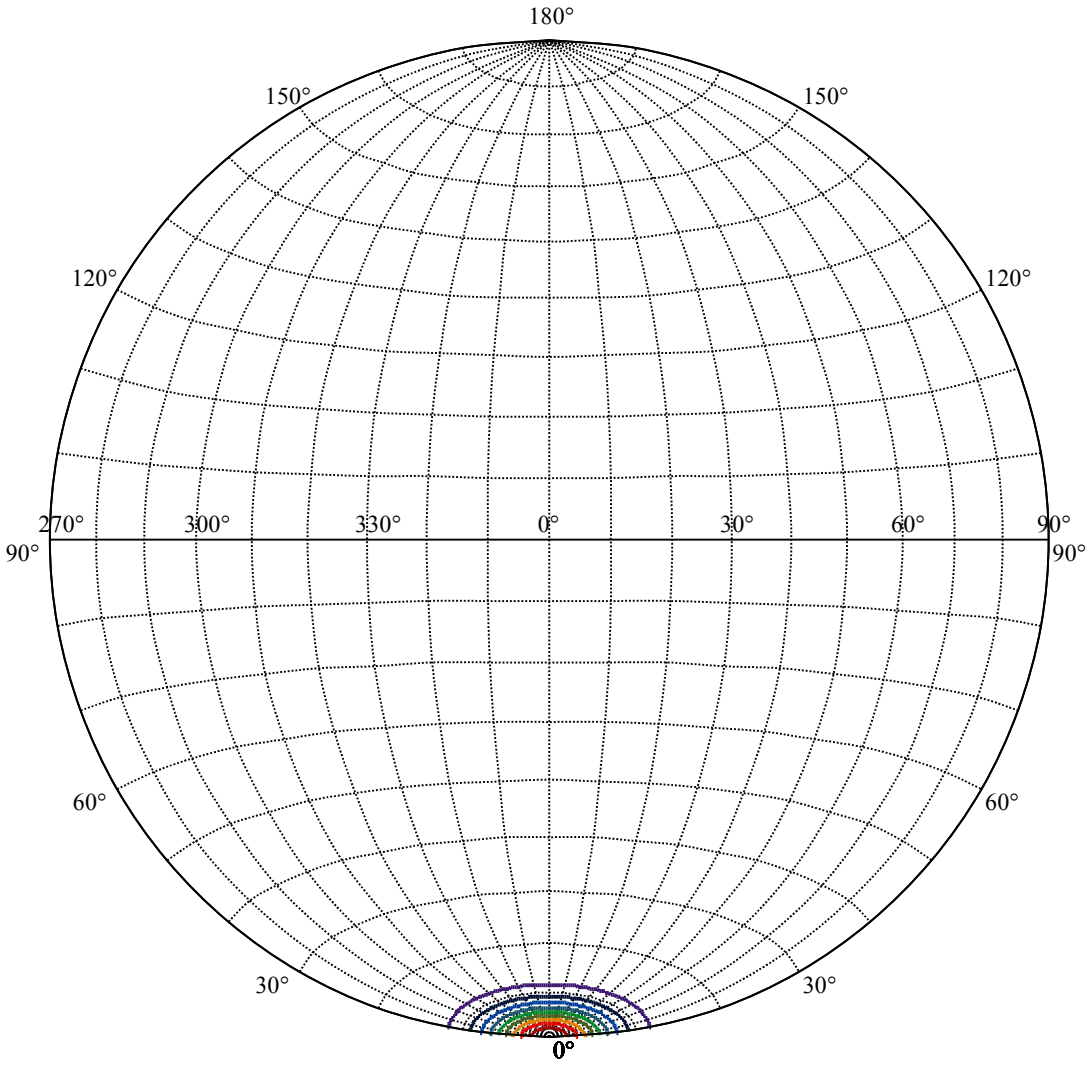


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web

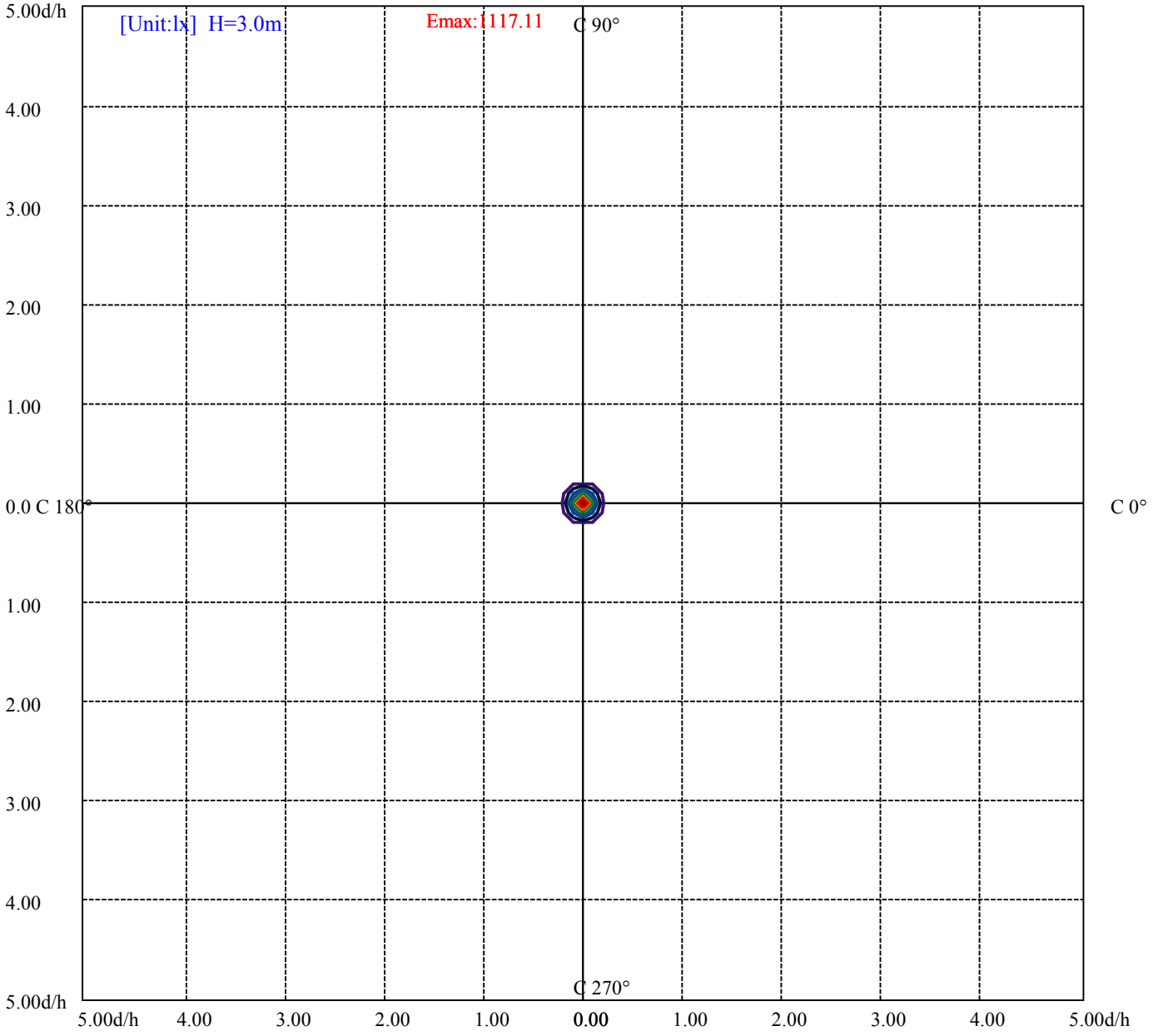


House [Unit:cd] Road

Imax:10053.98

(10%Imax) 1005.4
(20%Imax) 2010.8
(30%Imax) 3016.2
(40%Imax) 4021.59
(50%Imax) 5026.99
(60%Imax) 6032.39
(70%Imax) 7037.79
(80%Imax) 8043.19
(90%Imax) 9048.59

ISO illuminance diagram

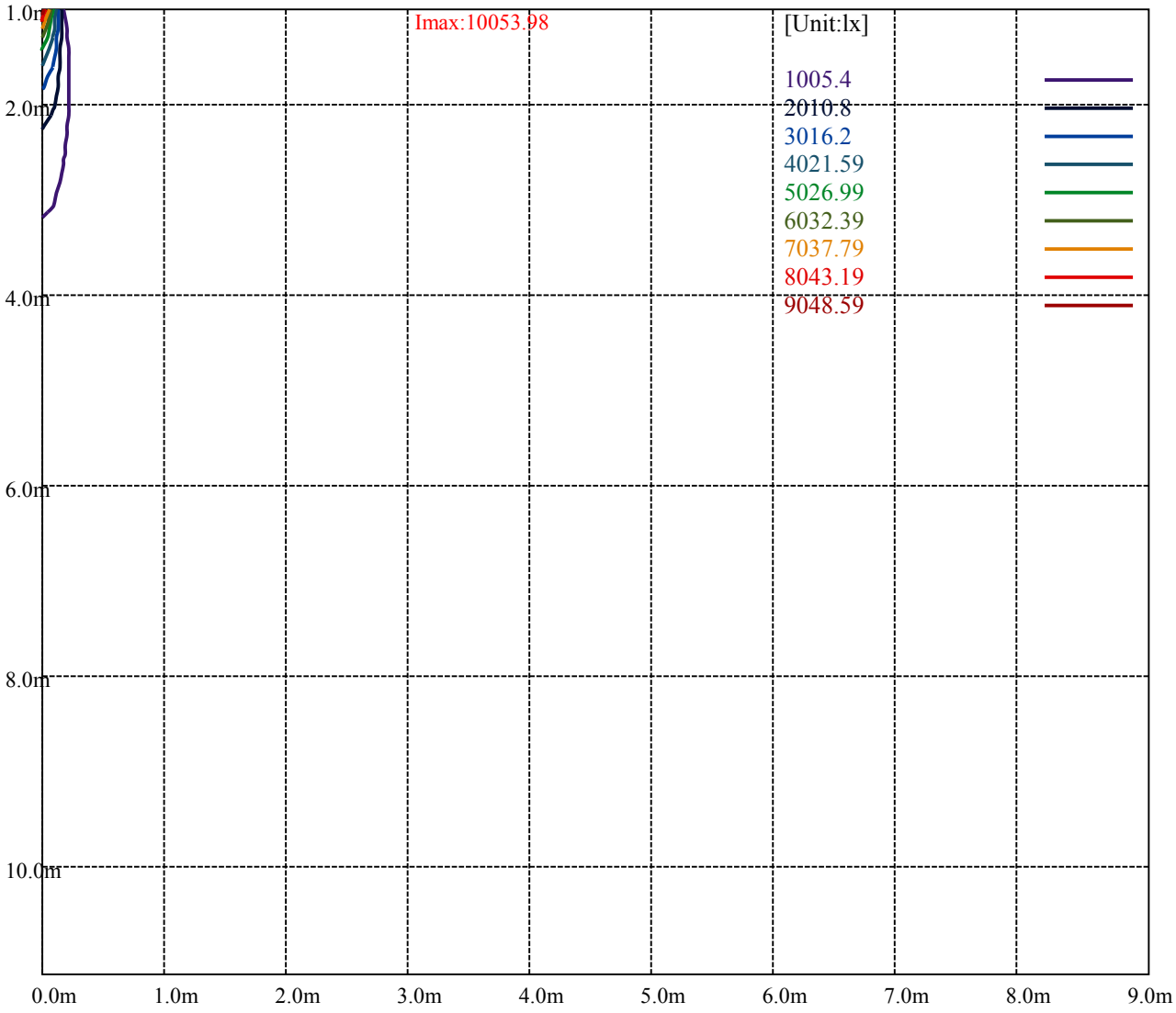


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

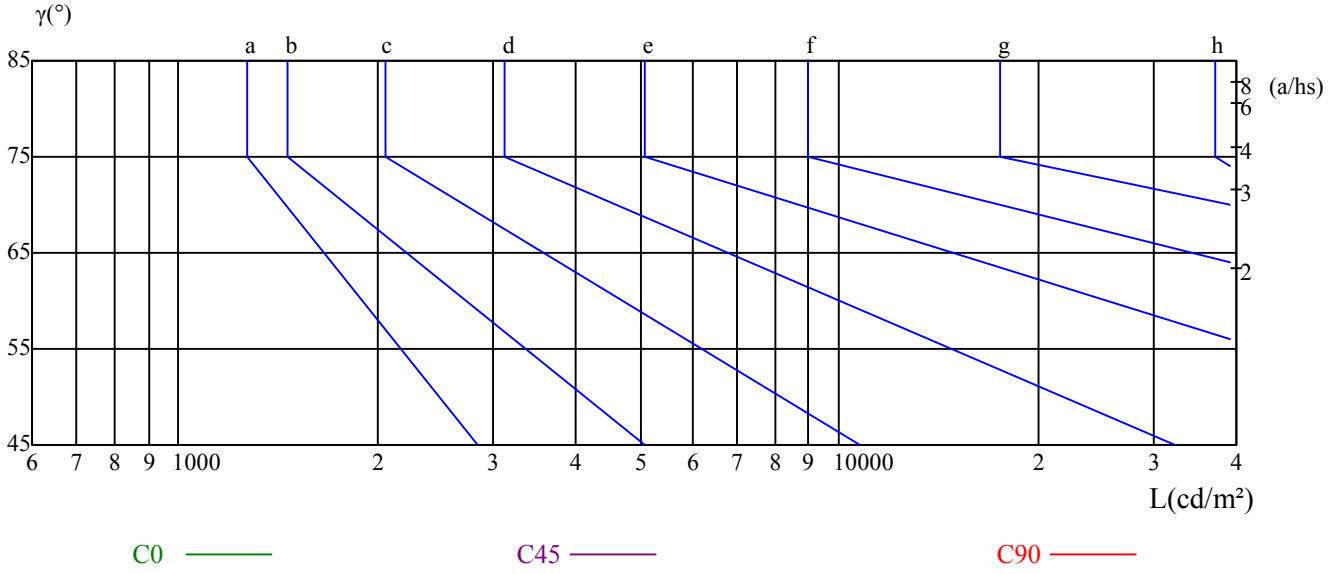
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

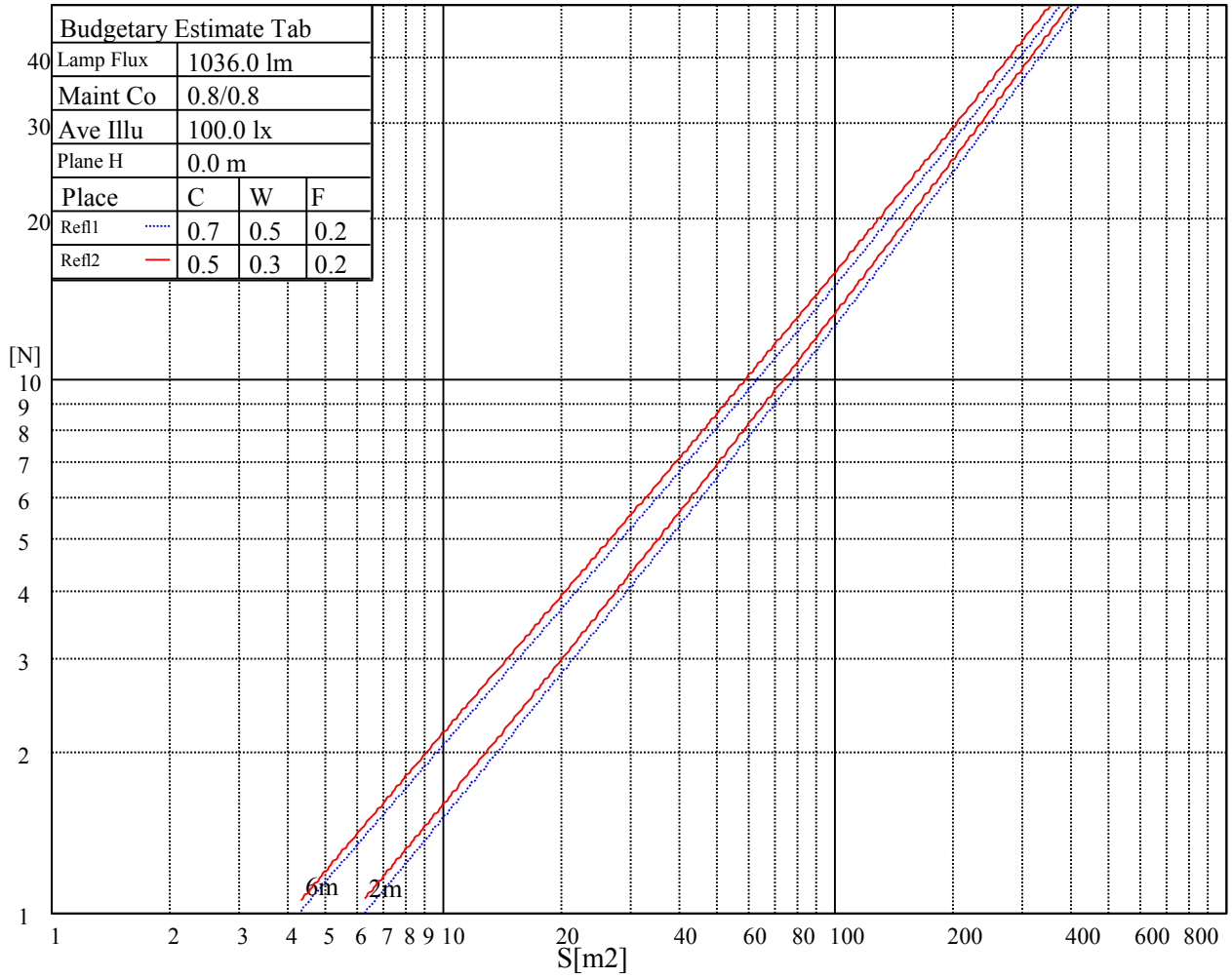
Glare Table

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

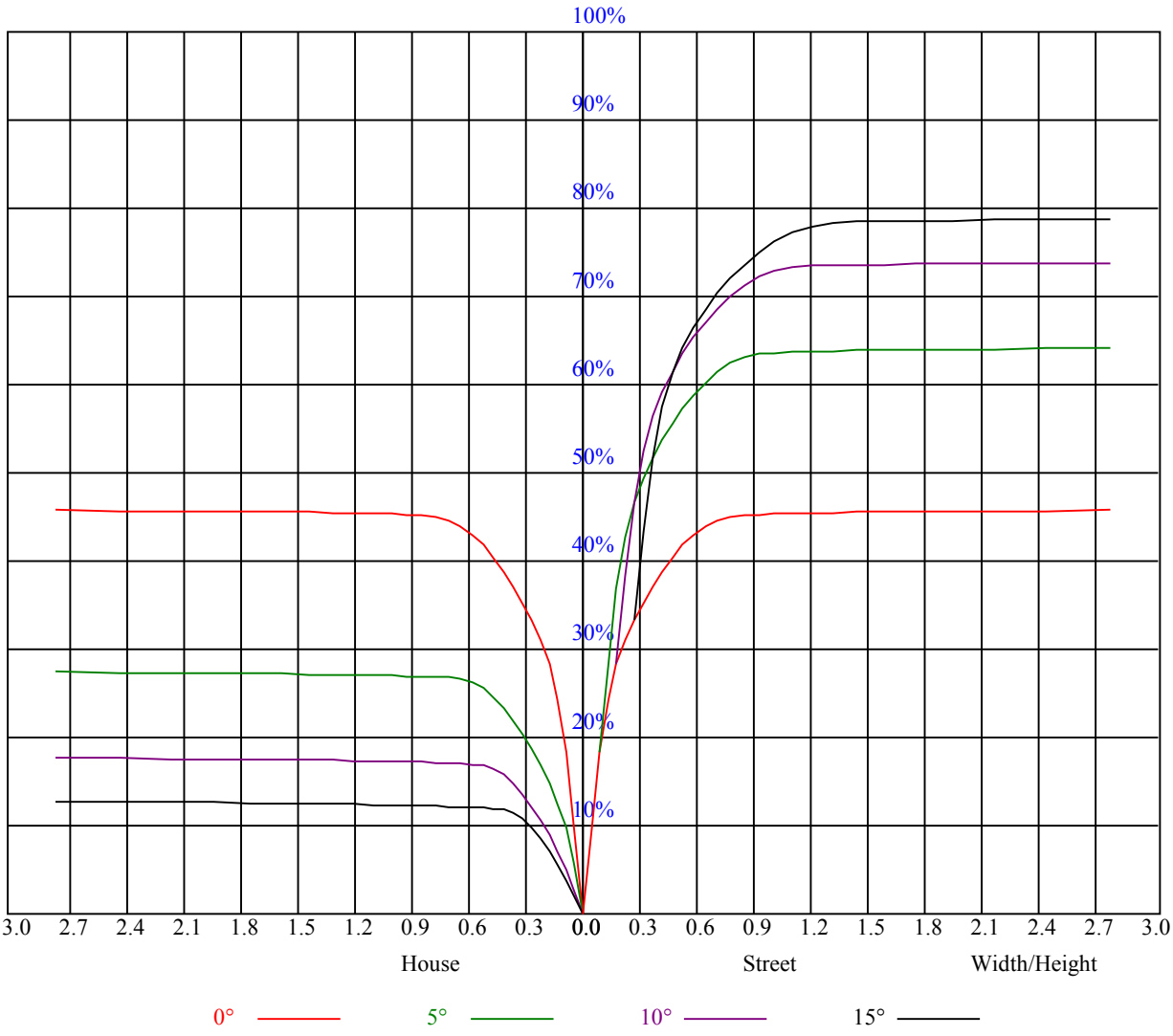


Equipment: GMS1980 Date: 2019/12/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.10	1.10	1.10	1.07	1.07	1.07	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.04	1.02	1.00	1.02	1.00	0.98	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.88
2	0.98	0.95	0.93	0.97	0.94	0.92	0.94	0.91	0.90	0.91	0.89	0.88	0.89	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	0.86	0.84	0.86	0.84	0.82	0.81
4	0.89	0.85	0.82	0.88	0.85	0.82	0.87	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	0.75	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.73
7	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	0.75	0.71	0.68	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.65

Coefficient Utilization Curve

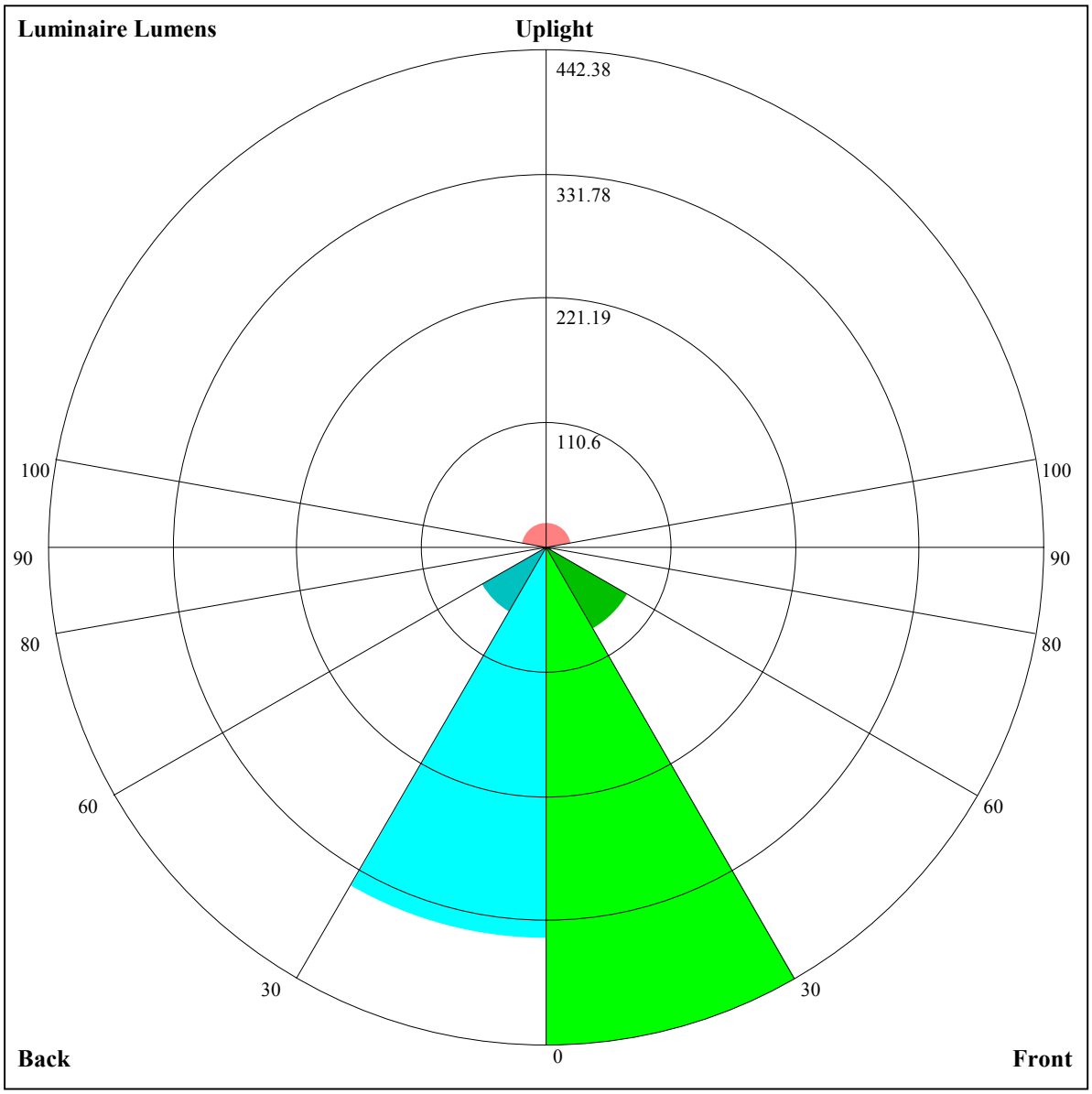


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

LCS Graph



Luminaire Lumens:

FL=442.38,FM=84.26,FH=4.77,FVH=2.35

BL=347.22,BM=66.07,BH=4.67,BVH=2.34

UL=4.64,UH=22.09

BUG Rating:B1-U2-G0

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	9918.56	10610.44	10867.50	10505.81	9747.00	8683.31	7166.81	5945.63	4806.56
45.0	9891.56	10470.38	10424.81	9932.06	8976.38	7765.31	6582.38	5256.00	4192.88
90.0	10106.44	9799.31	9126.00	7929.56	6823.13	5691.38	4336.88	3358.13	2512.69
135.0	10299.38	9641.25	8602.88	7504.31	6224.06	4987.69	3966.19	2935.69	2187.00
180.0	9918.56	8800.88	7490.25	6296.63	5020.31	3997.13	2969.44	2116.69	1559.81
225.0	9891.56	9018.56	7923.38	6459.75	5313.38	4237.31	3169.13	2280.38	1679.06
270.0	10106.44	9950.06	9276.19	8354.81	7119.56	5812.88	4725.56	3636.00	2795.63
315.0	10299.38	10441.13	10126.13	9210.94	8201.25	7039.13	5854.50	4493.25	3517.31
360.0	9918.56	10610.44	10867.50	10505.81	9747.00	8683.31	7166.81	5945.63	4806.56

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3526.31	2638.13	1917.56	1350.56	1010.81	831.38	698.63	619.88	562.50
45.0	3138.75	2227.50	1615.50	1221.19	923.63	772.88	671.63	588.38	546.75
90.0	1699.88	1099.07	1012.33	819.23	705.71	618.13	559.13	524.48	500.40
135.0	1557.00	1149.75	921.94	785.81	644.63	578.25	538.31	497.25	478.13
180.0	1092.99	911.64	766.18	667.13	585.00	541.18	510.81	484.09	467.83
225.0	1098.17	961.26	798.92	666.45	603.56	548.10	511.76	488.93	471.88
270.0	2007.56	1446.75	1126.13	907.31	730.69	640.13	578.25	528.75	502.88
315.0	2651.63	1797.75	1100.81	1039.16	831.54	699.02	620.94	561.15	524.81
360.0	3526.31	2638.13	1917.56	1350.56	1010.81	831.38	698.63	619.88	562.50

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	528.19	501.19	482.06	466.31	453.94	443.25	430.88	421.88	414.00
45.0	515.81	490.50	474.19	460.69	446.06	434.25	424.69	414.56	407.25
90.0	478.86	464.96	452.87	440.94	430.26	421.59	413.72	404.83	398.14
135.0	465.75	449.44	438.19	429.75	419.06	410.06	404.44	396.00	389.81
180.0	454.44	440.10	431.10	420.41	409.78	403.31	395.49	386.94	381.15
225.0	454.05	444.43	434.70	422.89	416.08	409.11	401.96	395.10	389.19
270.0	484.88	469.13	457.31	447.19	437.06	428.63	420.19	412.31	405.56
315.0	496.52	475.93	461.19	447.02	434.64	424.69	415.63	405.51	398.31
360.0	528.19	501.19	482.06	466.31	453.94	443.25	430.88	421.88	414.00

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	405.56	396.56	389.81	382.50	372.94	366.19	359.44	351.56	332.44
45.0	398.81	391.50	384.75	378.00	368.44	362.25	356.06	346.50	321.75
90.0	391.39	383.12	375.53	368.04	360.56	352.91	344.03	306.68	259.54
135.0	383.63	374.63	368.44	361.69	353.25	342.56	308.81	286.31	187.09
180.0	373.22	362.76	356.63	349.31	337.84	302.96	258.69	197.16	131.12
225.0	382.78	375.81	369.00	362.42	356.06	343.63	301.33	249.58	193.56
270.0	397.69	390.38	383.63	375.75	366.75	360.00	352.13	316.69	288.56
315.0	391.39	383.96	376.82	369.23	361.63	354.66	347.74	326.87	284.29
360.0	405.56	396.56	389.81	382.50	372.94	366.19	359.44	351.56	332.44

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	292.50	253.29	166.84	107.83	51.41	24.81	17.27	12.21	10.29
45.0	288.56	227.81	152.04	98.55	57.21	22.05	15.69	12.15	10.13
90.0	199.13	138.04	85.78	43.26	18.51	14.12	10.80	9.56	8.66
135.0	130.22	73.86	31.56	17.61	13.05	10.24	9.28	8.72	8.38
180.0	79.65	36.06	18.06	13.67	10.41	9.51	8.61	8.10	7.76
225.0	123.58	72.00	32.40	16.76	12.66	10.18	9.00	8.38	7.99
270.0	212.40	155.81	88.43	45.56	20.53	15.19	11.03	9.68	8.94
315.0	224.38	160.26	105.41	53.61	23.29	16.76	12.83	10.52	9.84
360.0	292.50	253.29	166.84	107.83	51.41	24.81	17.27	12.21	10.29

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	9.45	8.89	8.49	8.10	7.71	7.37	7.09	6.81	6.58
45.0	8.94	8.55	8.10	7.76	7.48	7.14	6.92	6.69	6.41
90.0	8.33	7.93	7.59	7.26	6.98	6.69	6.47	6.30	6.13
135.0	7.93	7.59	7.31	7.03	6.75	6.53	6.36	6.13	5.91
180.0	7.48	7.09	6.86	6.64	6.41	6.19	6.02	5.79	5.63
225.0	7.65	7.31	7.03	6.75	6.53	6.30	6.02	5.91	5.68
270.0	8.44	8.10	7.76	7.43	7.14	6.86	6.64	6.41	6.19
315.0	8.78	8.33	7.93	7.65	7.26	6.98	6.69	6.47	6.24
360.0	9.45	8.89	8.49	8.10	7.71	7.37	7.09	6.81	6.58

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.36	6.13	5.96	5.79	5.63	5.46	5.34	5.23	5.18
45.0	6.24	6.02	5.79	5.68	5.57	5.40	5.23	5.23	5.12
90.0	5.91	5.68	5.57	5.46	5.34	5.23	5.18	5.01	4.95
135.0	5.74	5.63	5.46	5.34	5.23	5.18	5.06	4.95	4.89
180.0	5.46	5.34	5.23	5.12	5.06	4.95	4.89	4.84	4.73
225.0	5.51	5.40	5.23	5.12	5.01	4.95	4.89	4.84	4.78
270.0	6.02	5.79	5.63	5.46	5.34	5.23	5.12	5.01	4.89
315.0	6.02	5.85	5.68	5.57	5.40	5.29	5.18	5.06	5.01
360.0	6.36	6.13	5.96	5.79	5.63	5.46	5.34	5.23	5.18

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.06	5.01	4.95	4.89	4.84	4.78	4.73	4.67	4.61
45.0	5.06	4.95	4.95	4.84	4.73	4.73	4.73	4.67	4.61
90.0	4.89	4.84	4.78	4.73	4.67	4.67	4.61	4.56	4.56
135.0	4.84	4.78	4.73	4.67	4.61	4.56	4.56	4.50	4.50
180.0	4.67	4.61	4.61	4.56	4.56	4.50	4.50	4.50	4.44
225.0	4.73	4.67	4.61	4.56	4.56	4.50	4.44	4.44	4.44
270.0	4.89	4.78	4.73	4.67	4.61	4.61	4.56	4.50	4.50
315.0	4.95	4.84	4.78	4.73	4.67	4.67	4.67	4.56	4.56
360.0	5.06	5.01	4.95	4.89	4.84	4.78	4.73	4.67	4.61

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.61	4.56	4.50	4.50	4.50	4.44	4.44	4.39	4.39
45.0	4.56	4.56	4.50	4.50	4.44	4.44	4.44	4.39	4.39
90.0	4.50	4.50	4.44	4.44	4.44	4.39	4.39	4.39	4.33
135.0	4.44	4.44	4.39	4.39	4.39	4.33	4.33	4.39	4.33
180.0	4.44	4.39	4.39	4.39	4.33	4.33	4.33	4.33	4.28
225.0	4.39	4.39	4.39	4.33	4.39	4.33	4.33	4.33	4.28
270.0	4.50	4.44	4.44	4.44	4.44	4.39	4.33	4.39	4.39
315.0	4.50	4.50	4.44	4.44	4.44	4.39	4.39	4.39	4.39
360.0	4.61	4.56	4.50	4.50	4.50	4.44	4.44	4.39	4.39

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.39	4.39	4.33	4.33	4.33	4.33	4.28	4.28	4.28
45.0	4.33	4.33	4.33	4.33	4.28	4.28	4.28	4.28	4.22
90.0	4.33	4.39	4.33	4.39	4.33	4.33	4.28	4.22	4.22
135.0	4.33	4.33	4.33	4.28	4.28	4.28	4.28	4.28	4.22
180.0	4.28	4.33	4.28	4.28	4.28	4.28	4.22	4.22	4.22
225.0	4.28	4.28	4.33	4.28	4.22	4.28	4.28	4.28	4.22
270.0	4.39	4.33	4.33	4.33	4.33	4.28	4.28	4.22	4.28
315.0	4.33	4.33	4.33	4.28	4.28	4.28	4.28	4.28	4.22
360.0	4.39	4.39	4.33	4.33	4.33	4.33	4.28	4.28	4.28

Intensity data(cd)

C/γ(°)	90.0
0.0	4.28
45.0	4.28
90.0	4.22
135.0	4.22
180.0	4.22
225.0	4.28
270.0	4.28
315.0	4.28
360.0	4.28