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

NATA

Client:
LumCAT: 2-1680-M
Luminaire: 92.70.123.00

Report No: GC2019091909	Voltage(V): 34.6400
Test No: GC2020011601	Current(A): 0.1970
LampCAT: LUMINUS CXM-6 AC40	Power (W): 6.8200
Lamp flux(lm): 844.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 759.74, Efficiency(%): 90.02% , Luminous Efficacy(lm/W): 111.40
Central intensity(cd): 3110.906, Maximum intensity(cd): 3110.906
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.0
[C90/270]Total=23.0
Field angle(10%Imax): [C0/180]Total=47.4
[C90/270]Total=47.4
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.02%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.621%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3110.906	0.000	0	.000%	.000%
1.0	3098.109	2.971	2.971	.352%	.391%
2.0	3060.000	8.839	11.81	1.047%	1.554%
3.0	3004.383	14.504	26.314	1.718%	3.463%
4.0	2937.164	19.888	46.202	2.356%	6.081%
5.0	2850.680	24.899	71.101	2.950%	9.359%
6.0	2739.867	29.380	100.481	3.481%	13.226%
7.0	2595.656	33.118	133.598	3.924%	17.585%
8.0	2426.414	35.942	169.54	4.259%	22.315%
9.0	2204.859	37.534	207.074	4.447%	27.256%
10.0	1950.961	37.609	244.683	4.456%	32.206%
11.0	1697.766	36.458	281.141	4.320%	37.005%
12.0	1396.737	33.827	314.968	4.008%	41.457%
13.0	1149.968	30.223	345.191	3.581%	45.435%
14.0	960.300	27.011	372.203	3.200%	48.990%
15.0	784.948	23.960	396.162	2.839%	52.144%
16.0	641.454	20.901	417.063	2.476%	54.895%
17.0	533.686	18.300	435.363	2.168%	57.304%
18.0	453.030	16.269	451.632	1.928%	59.445%
19.0	404.740	14.923	466.555	1.768%	61.409%
20.0	370.765	14.194	480.749	1.682%	63.278%
21.0	346.366	13.770	494.52	1.632%	65.090%
22.0	331.179	13.616	508.135	1.613%	66.882%
23.0	317.834	13.618	521.753	1.614%	68.675%
24.0	308.285	13.689	535.442	1.622%	70.477%
25.0	300.284	13.838	549.28	1.640%	72.298%
26.0	294.026	14.029	563.309	1.662%	74.144%
27.0	287.965	14.239	577.547	1.687%	76.019%
28.0	283.078	14.458	592.005	1.713%	77.922%
29.0	276.855	14.649	606.654	1.736%	79.850%
30.0	270.626	14.782	621.436	1.751%	81.795%
31.0	266.280	14.941	636.377	1.770%	83.762%
32.0	262.062	15.136	651.514	1.793%	85.754%
33.0	257.660	15.311	666.825	1.814%	87.770%
34.0	252.141	15.428	682.253	1.828%	89.800%
35.0	241.404	15.328	697.581	1.816%	91.818%
36.0	209.538	14.358	711.939	1.701%	93.708%
37.0	163.034	12.151	724.09	1.440%	95.307%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	106.432	8.994	733.084	1.066%	96.491%
39.0	54.077	5.479	738.563	.649%	97.212%
40.0	22.809	2.682	741.245	.318%	97.565%
41.0	10.716	1.194	742.438	.141%	97.722%
42.0	7.889	0.676	743.114	.080%	97.811%
43.0	6.117	0.519	743.633	.061%	97.879%
44.0	4.978	0.419	744.052	.050%	97.934%
45.0	4.430	0.362	744.413	.043%	97.982%
46.0	4.163	0.336	744.749	.040%	98.026%
47.0	3.987	0.324	745.074	.038%	98.069%
48.0	3.930	0.320	745.394	.038%	98.111%
49.0	3.860	0.320	745.714	.038%	98.153%
50.0	3.804	0.320	746.033	.038%	98.195%
51.0	3.762	0.320	746.353	.038%	98.237%
52.0	3.713	0.321	746.674	.038%	98.280%
53.0	3.677	0.321	746.995	.038%	98.322%
54.0	3.621	0.322	747.317	.038%	98.364%
55.0	3.600	0.322	747.639	.038%	98.407%
56.0	3.579	0.324	747.964	.038%	98.449%
57.0	3.537	0.325	748.289	.039%	98.492%
58.0	3.516	0.326	748.615	.039%	98.535%
59.0	3.480	0.327	748.942	.039%	98.578%
60.0	3.466	0.328	749.271	.039%	98.621%
61.0	3.459	0.331	749.601	.039%	98.665%
62.0	3.445	0.333	749.934	.039%	98.709%
63.0	3.424	0.334	750.268	.040%	98.753%
64.0	3.417	0.336	750.604	.040%	98.797%
65.0	3.382	0.336	750.94	.040%	98.841%
66.0	3.389	0.338	751.278	.040%	98.886%
67.0	3.368	0.340	751.618	.040%	98.930%
68.0	3.361	0.341	751.959	.040%	98.975%
69.0	3.354	0.343	752.301	.041%	99.020%
70.0	3.347	0.344	752.645	.041%	99.066%
71.0	3.333	0.345	752.99	.041%	99.111%
72.0	3.340	0.347	753.337	.041%	99.157%
73.0	3.319	0.348	753.686	.041%	99.202%
74.0	3.319	0.349	754.035	.041%	99.248%
75.0	3.319	0.351	754.385	.042%	99.295%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.319	0.352	754.738	.042%	99.341%
77.0	3.326	0.354	755.092	.042%	99.388%
78.0	3.312	0.355	755.447	.042%	99.434%
79.0	3.319	0.356	755.803	.042%	99.481%
80.0	3.312	0.357	756.161	.042%	99.528%
81.0	3.305	0.358	756.519	.042%	99.575%
82.0	3.305	0.358	756.877	.042%	99.623%
83.0	3.284	0.358	757.235	.042%	99.670%
84.0	3.284	0.358	757.593	.042%	99.717%
85.0	3.291	0.359	757.952	.043%	99.764%
86.0	3.277	0.359	758.311	.043%	99.811%
87.0	3.270	0.358	758.669	.042%	99.858%
88.0	3.284	0.359	759.028	.043%	99.906%
89.0	3.263	0.359	759.387	.043%	99.953%
90.0	3.263	0.358	759.745	.042%	100.000%

Zonal flux distribution table

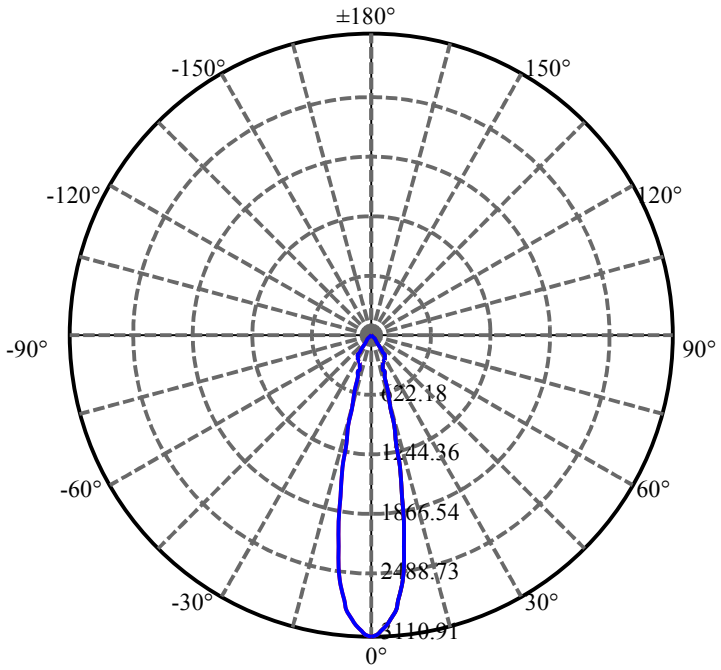
ZONAL LUMEN SUMMARY

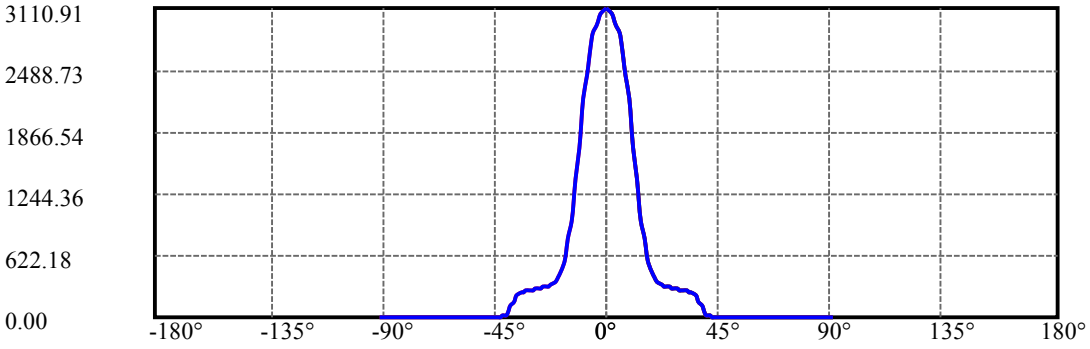
Zone	Lumens	%Lamp	%Fixt
0-30	621.44	73.63%	81.80%
0-40	741.24	87.83%	97.56%
0-60	749.27	88.78%	98.62%
0-90	759.39	89.97%	99.95%
0-120	759.39	89.97%	99.95%
0-180	759.74	90.02%	100.00%
60-90	10.44	1.24%	1.37%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.08	607.80	72.01%	80.00%

ZONAL LUMEN SUMMARY

0-10	244.68
10-20	236.07
20-30	140.69
30-40	119.81
40-50	4.79
50-60	3.24
60-70	3.37
70-80	3.52
80-90	3.23
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):

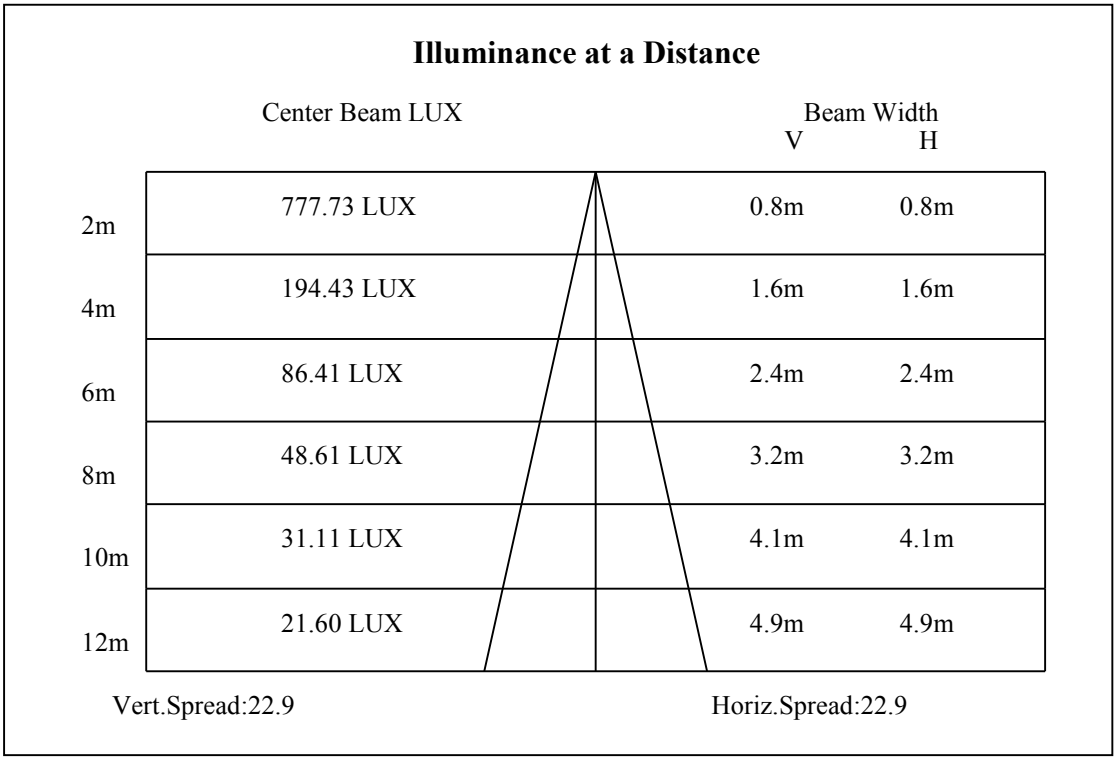
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:23.7 Right:23.7
:C90/270Left:23.7 Right:23.7

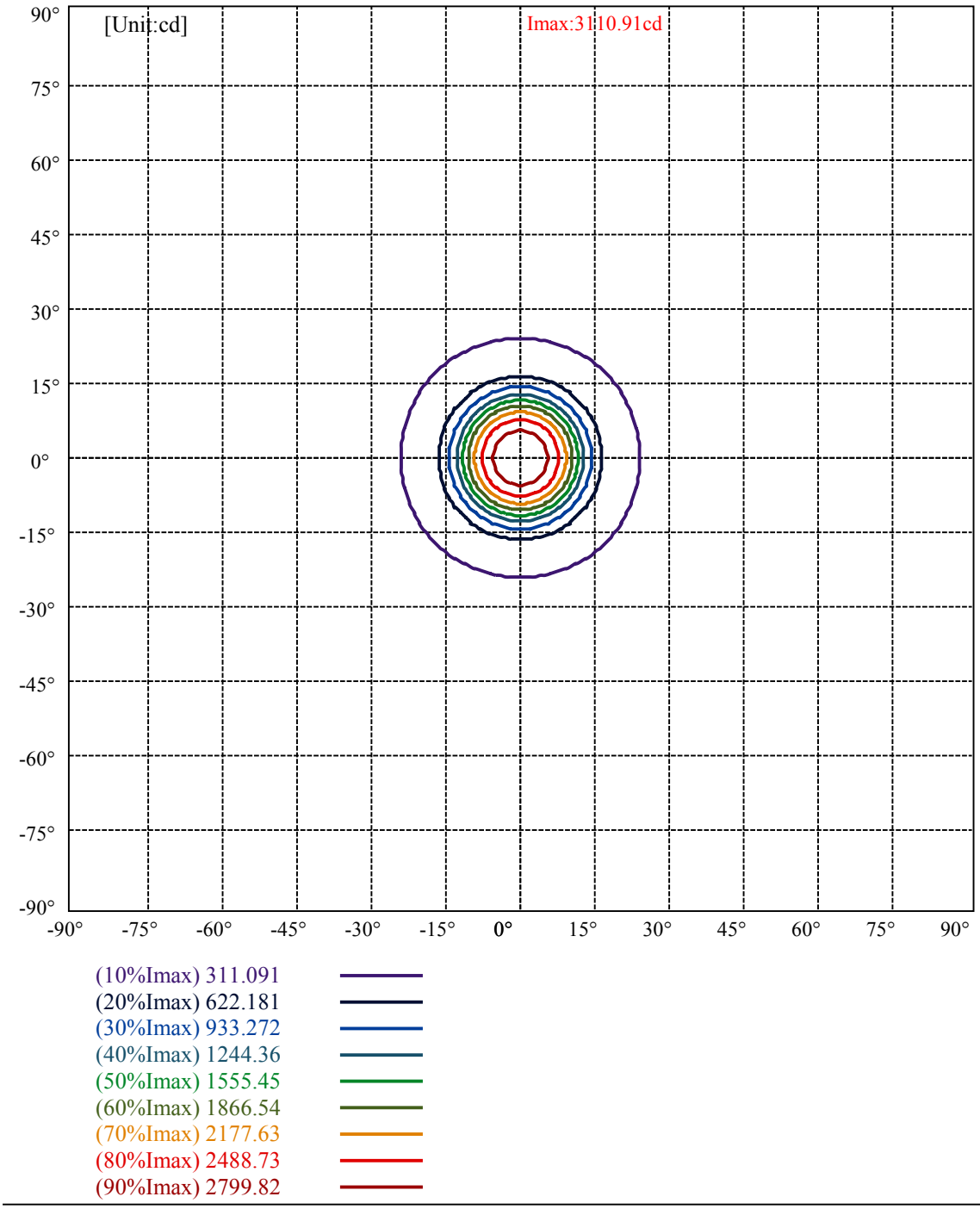
Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5

Lux distance Curve



Equipment: GMS1980 Date: 2020/1/16 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)

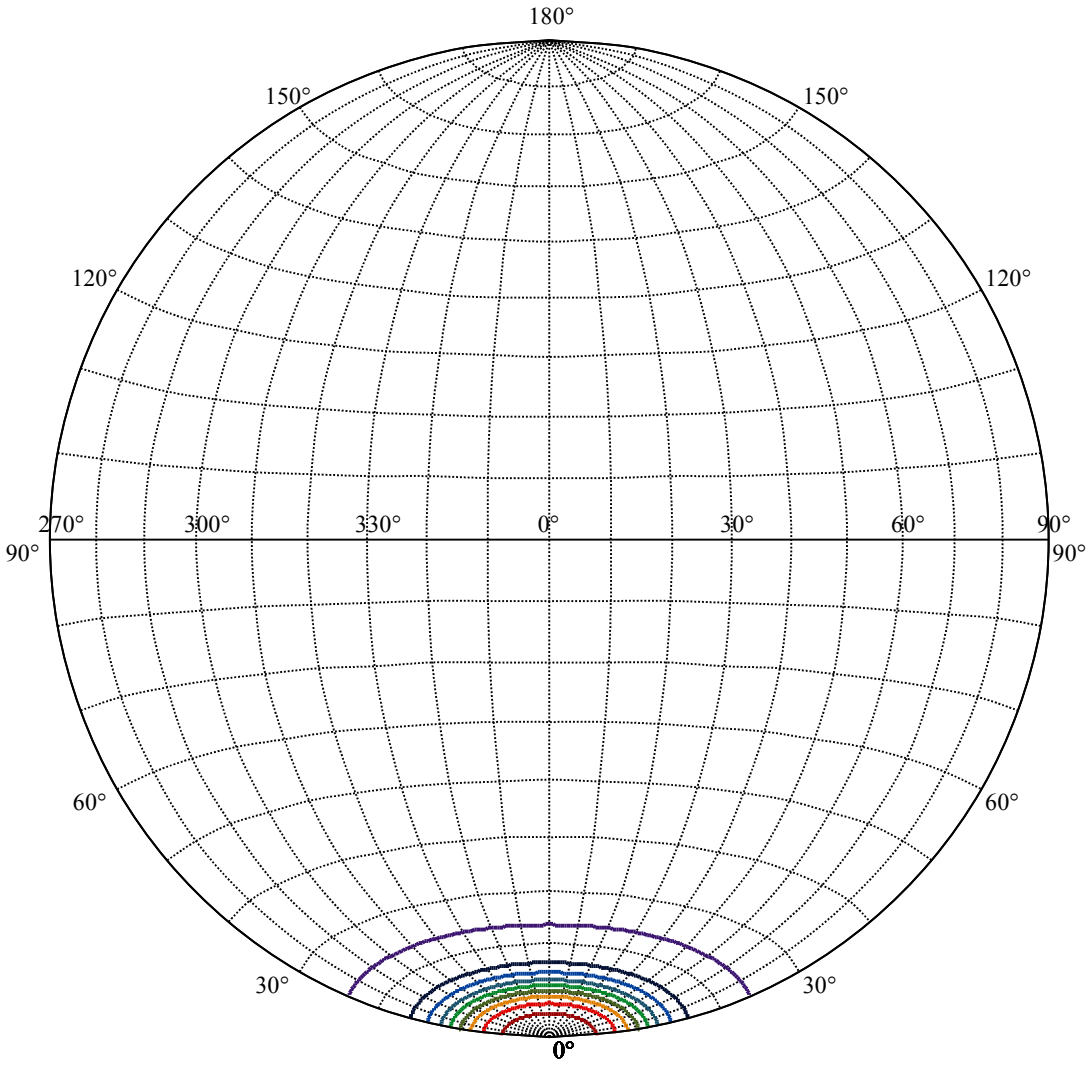


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/1/16
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



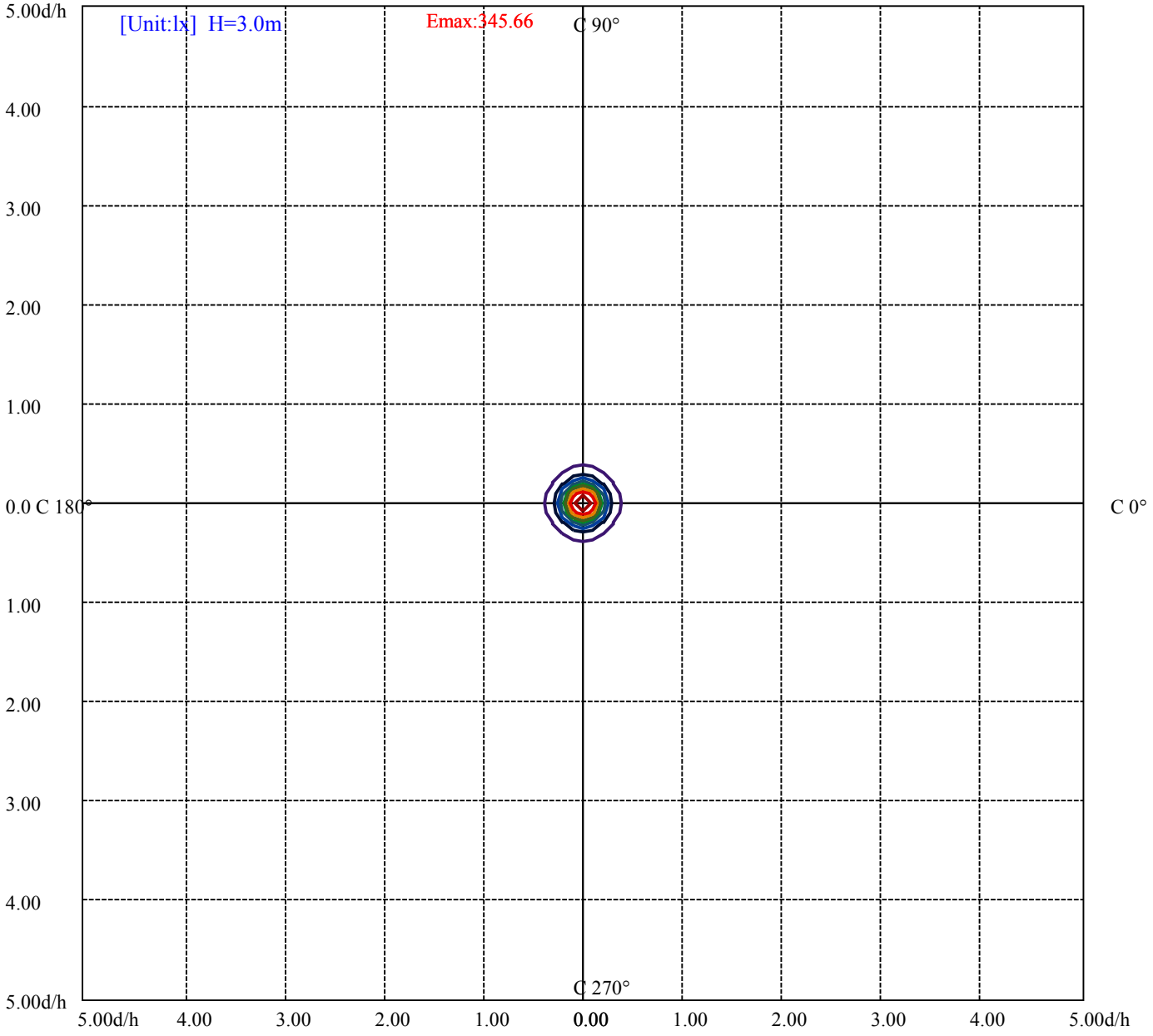
House [Unit:cd] Road

Imax:3110.91

(10%Imax) 311.091
(20%Imax) 622.181
(30%Imax) 933.272
(40%Imax) 1244.36
(50%Imax) 1555.45
(60%Imax) 1866.54
(70%Imax) 2177.63
(80%Imax) 2488.73
(90%Imax) 2799.82

Equipment: GMS1980 Date: 2020/1/16 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO illuminance diagram

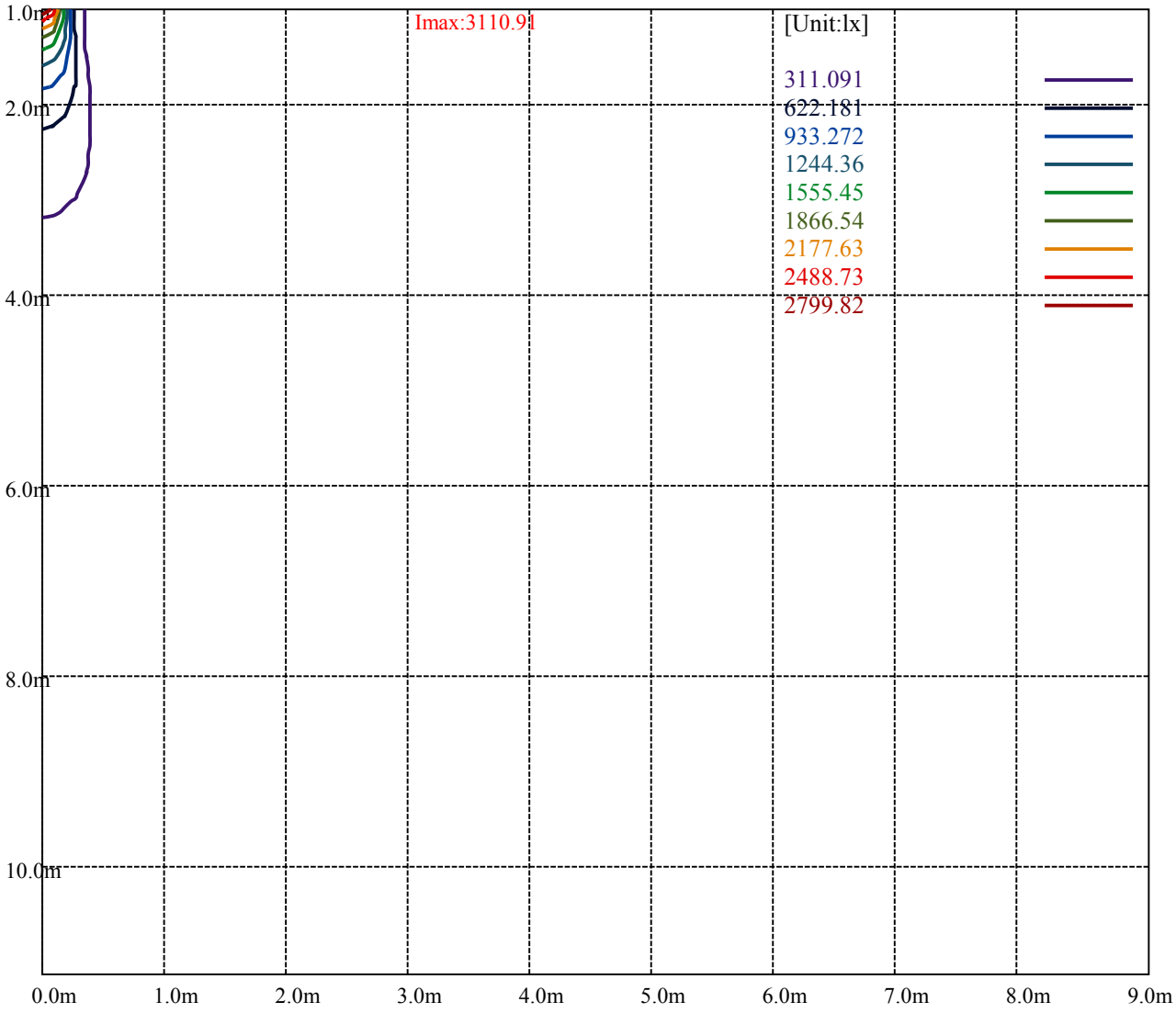


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/1/16
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/1/16
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

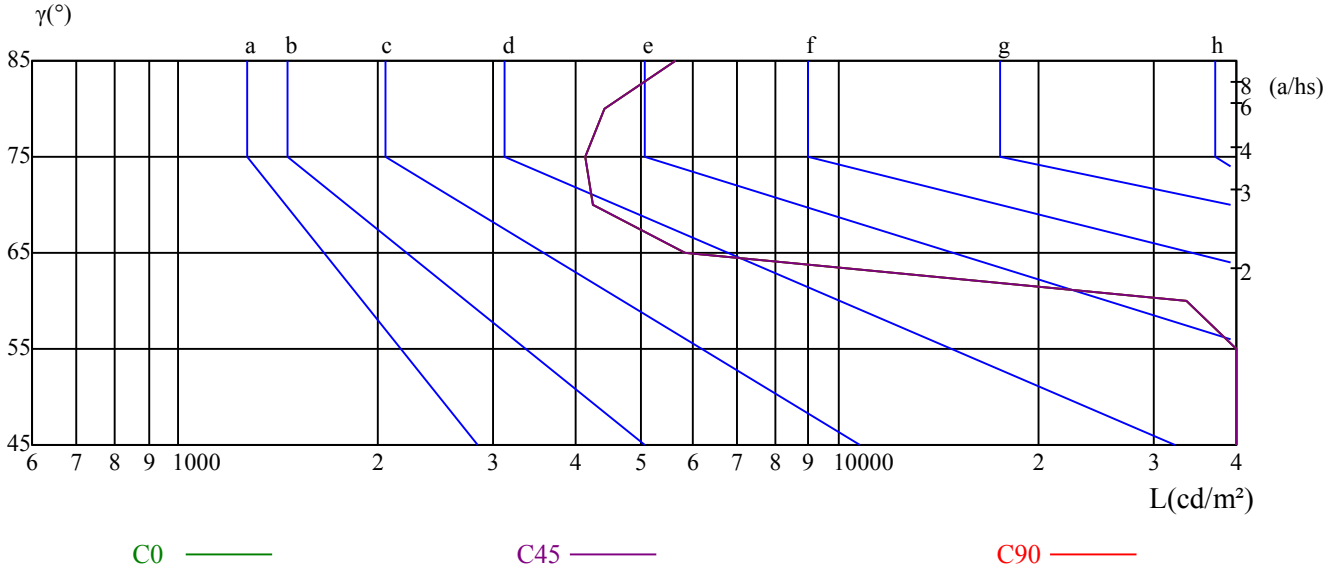
γ	45	50	55	60	65	70	75	80	85
C0	46650	52836	53885	33658	5848	4245	4131	4405	5640
C45	46650	52836	53885	33658	5848	4245	4131	4405	5640
C90	46650	52836	53885	33658	5848	4245	4131	4405	5640

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5848	5848	5848	4131	4131	4131	5640	5640	5640

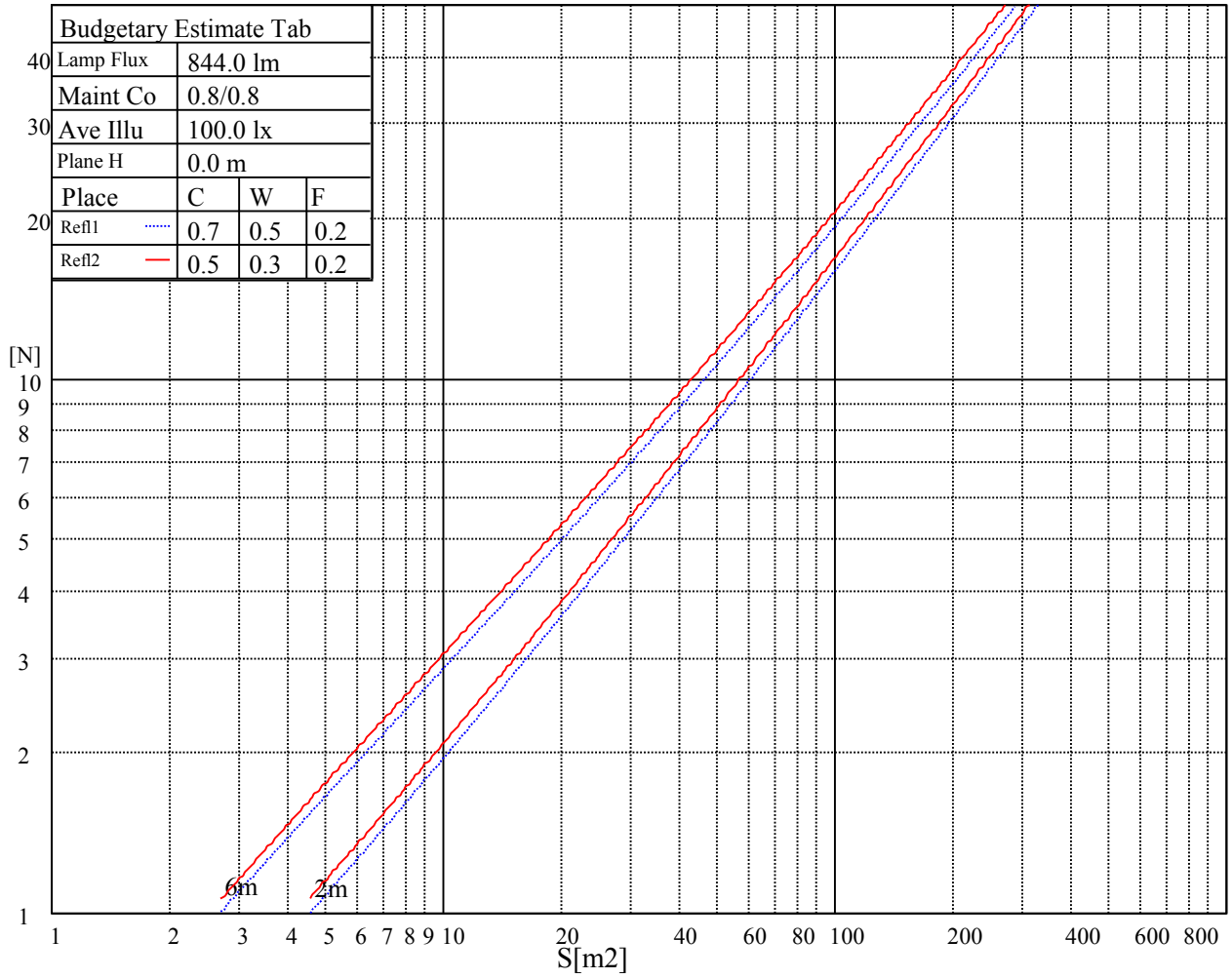
Glare Table

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

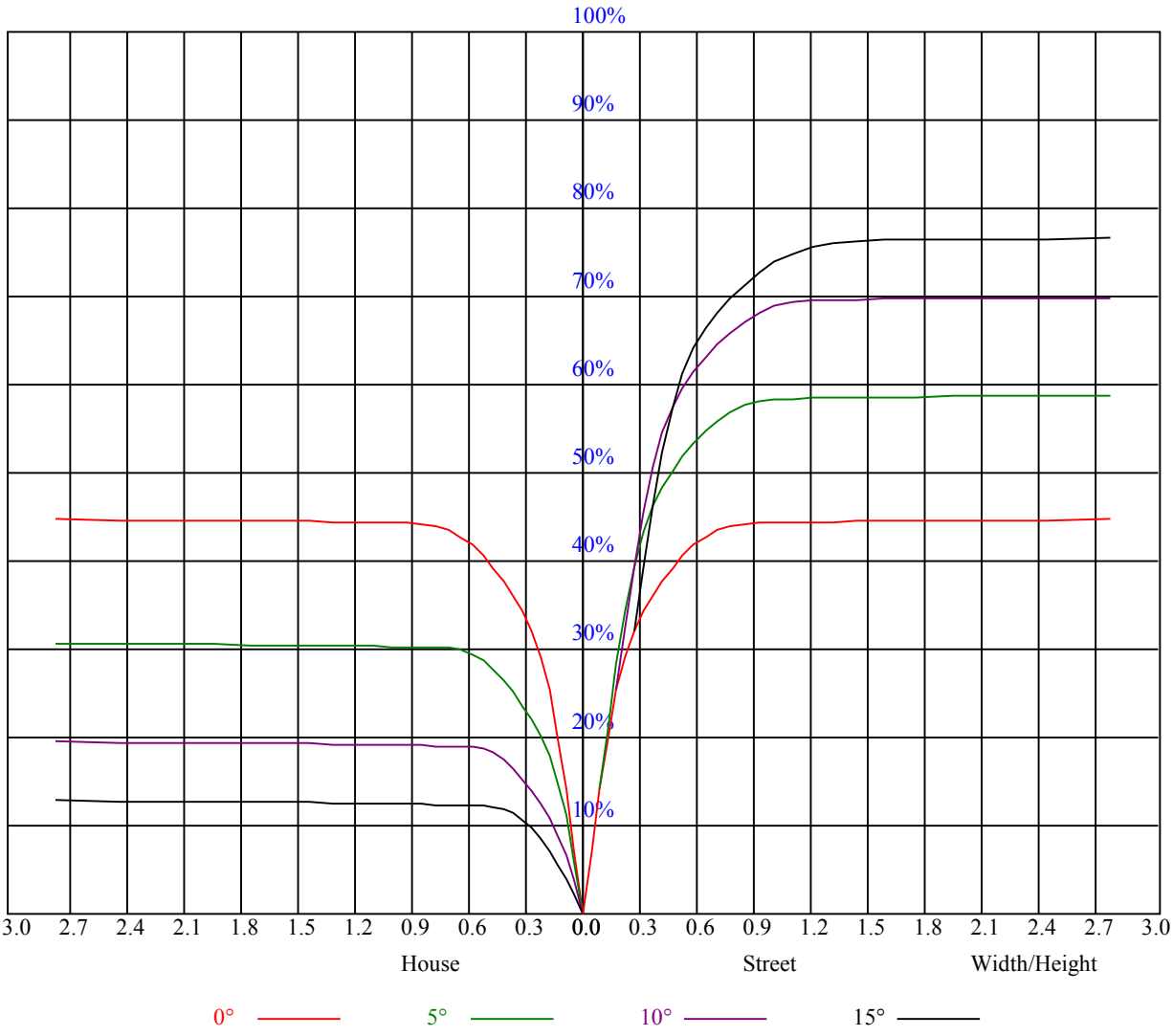


Equipment: GMS1980 Date: 2020/1/16 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Utilization factor table for indoor luminaire

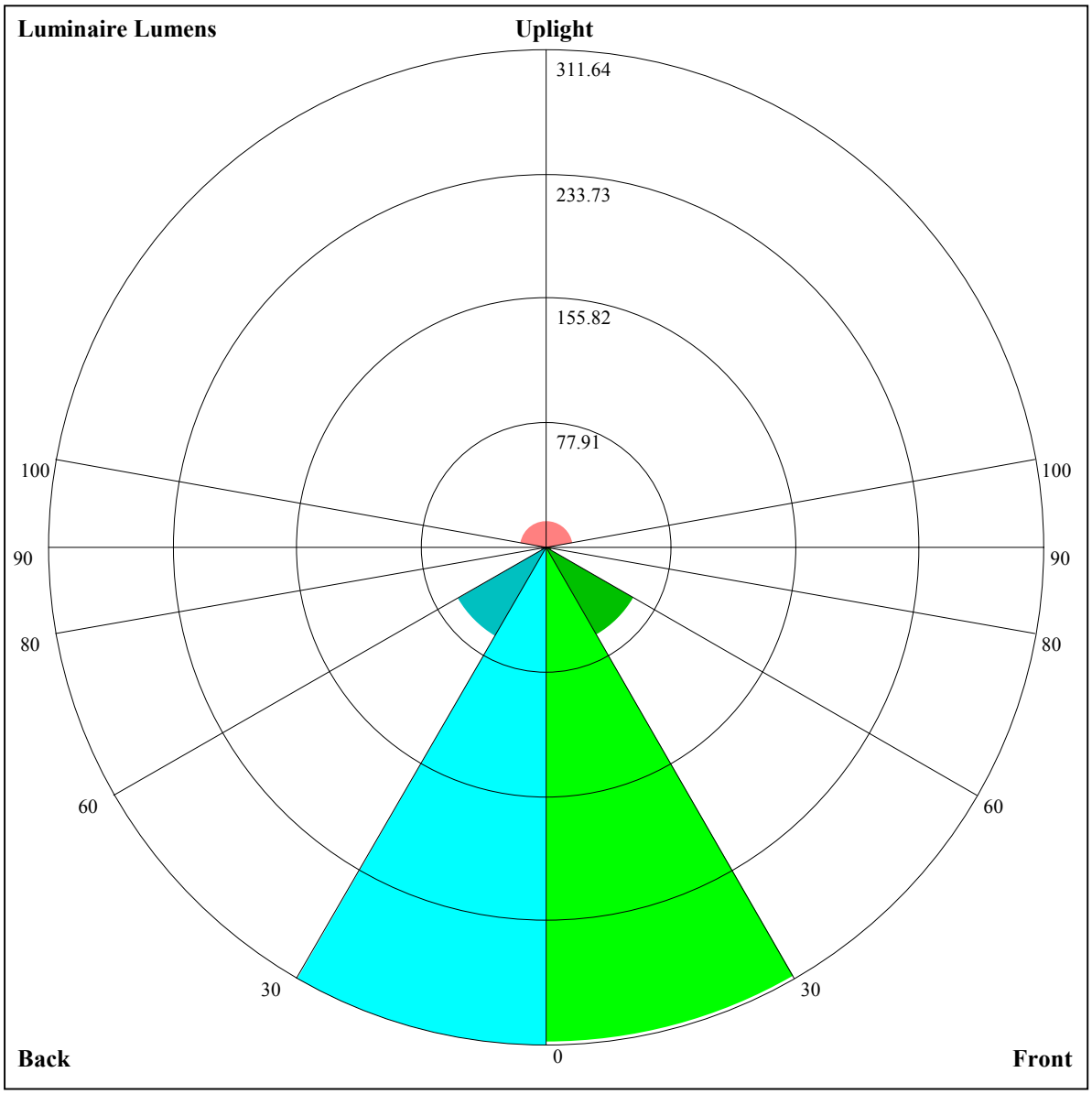
RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.77	0.80	0.78	0.76	0.75
5	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.71
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.61
10	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.62	0.60	0.59

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/1/16	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

LCS Graph



Luminaire Lumens:

FL=309.47,FM=63.57,FH=3.44,FVH=1.79

BL=311.64,BM=64.72,BH=3.44,BVH=1.79

UL=3.56,UH=16.94

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	3109.50	3090.38	3041.44	2989.69	2929.50	2829.94	2719.69	2584.13	2399.06
45.0	3120.19	3105.00	3065.06	3015.56	2961.56	2895.75	2808.56	2691.00	2540.81
90.0	3111.75	3084.75	3049.31	2996.44	2930.63	2864.25	2762.44	2619.00	2459.81
135.0	3102.19	3104.44	3076.31	3038.06	2983.50	2896.88	2813.06	2711.25	2584.69
180.0	3109.50	3108.94	3087.56	3034.13	2967.75	2877.75	2775.94	2626.88	2441.81
225.0	3120.19	3111.19	3077.44	3017.25	2933.44	2838.38	2716.88	2527.31	2340.56
270.0	3111.75	3106.69	3067.31	3003.19	2932.31	2859.75	2707.31	2563.31	2411.44
315.0	3102.19	3073.50	3015.56	2940.75	2858.63	2742.75	2615.06	2442.38	2233.13
360.0	3109.50	3090.38	3041.44	2989.69	2929.50	2829.94	2719.69	2584.13	2399.06

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2176.88	1947.94	1676.81	1429.88	1169.44	943.88	777.94	627.75	520.88
45.0	2307.94	2082.38	1838.81	1563.19	1300.50	1091.81	889.88	722.81	605.81
90.0	2262.94	1977.19	1737.56	1497.94	1086.98	1015.54	842.91	699.08	559.18
135.0	2381.06	2176.88	1944.56	1665.00	1387.13	1129.50	929.25	744.19	614.81
180.0	2245.50	1985.63	1706.06	1455.75	1102.67	950.12	776.93	637.26	529.20
225.0	2124.00	1816.31	1562.63	1110.60	1057.39	845.21	693.11	560.19	475.09
270.0	2126.25	1883.25	1661.63	1348.88	1094.63	921.38	720.00	595.13	502.88
315.0	2014.31	1738.13	1454.06	1102.67	1001.03	784.97	649.58	545.23	461.64
360.0	2176.88	1947.94	1676.81	1429.88	1169.44	943.88	777.94	627.75	520.88

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	455.06	410.63	374.06	354.38	339.19	324.56	316.13	307.69	300.38
45.0	505.69	443.81	399.38	365.63	347.63	331.31	319.50	310.50	303.75
90.0	477.79	421.59	379.74	352.18	335.31	320.96	310.33	300.71	293.46
135.0	503.44	434.81	388.13	356.06	338.06	320.06	310.50	302.63	295.31
180.0	435.77	389.98	361.07	337.50	324.06	313.31	304.09	296.38	290.76
225.0	412.31	373.05	349.93	331.54	316.74	306.06	297.96	290.25	285.24
270.0	426.38	388.13	362.25	339.19	325.69	314.44	303.75	297.00	291.94
315.0	407.81	375.92	351.56	334.46	322.76	311.96	304.03	297.11	291.38
360.0	455.06	410.63	374.06	354.38	339.19	324.56	316.13	307.69	300.38

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	293.63	288.00	284.06	274.84	270.90	267.02	263.36	256.84	247.50
45.0	294.75	289.13	284.63	274.73	269.49	265.33	260.33	254.53	249.36
90.0	288.00	282.21	275.06	268.65	263.76	258.69	255.04	250.20	243.96
135.0	288.56	284.63	277.31	271.07	266.40	262.29	258.24	253.58	248.46
180.0	284.85	279.28	273.77	268.43	264.49	260.27	256.05	250.71	245.93
225.0	280.80	275.74	270.11	266.18	262.07	258.08	253.86	247.84	233.66
270.0	286.31	284.06	274.22	269.49	265.39	261.84	257.18	251.55	241.31
315.0	286.82	281.59	275.68	271.63	267.75	262.97	257.23	251.89	221.06
360.0	293.63	288.00	284.06	274.84	270.90	267.02	263.36	256.84	247.50

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	212.96	163.74	94.05	46.13	16.71	9.62	7.59	6.08	5.01
45.0	226.80	184.89	129.60	73.91	31.16	10.58	8.04	6.24	4.84
90.0	223.03	181.13	126.79	72.39	31.39	10.74	8.89	6.81	5.29
135.0	239.29	207.06	152.89	92.98	46.97	17.44	9.45	7.59	5.85
180.0	214.31	168.36	114.36	53.33	20.02	10.13	8.10	6.08	4.84
225.0	187.14	130.89	81.00	31.73	11.98	9.34	7.31	5.57	4.84
270.0	198.34	148.22	96.30	38.03	13.84	9.62	7.03	5.34	4.39
315.0	174.43	119.98	56.48	24.13	10.41	8.27	6.69	5.23	4.78
360.0	212.96	163.74	94.05	46.13	16.71	9.62	7.59	6.08	5.01

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	4.61	4.16	4.05	3.99	3.88	3.83	3.83	3.71	3.71
45.0	4.16	4.05	3.94	3.94	3.83	3.83	3.77	3.71	3.66
90.0	4.73	4.61	3.94	3.88	3.88	3.77	3.71	3.71	3.66
135.0	4.50	4.22	4.05	3.99	3.94	3.88	3.83	3.77	3.71
180.0	4.33	4.11	3.99	3.88	3.88	3.83	3.77	3.77	3.71
225.0	4.67	4.05	3.94	3.94	3.83	3.77	3.71	3.66	3.66
270.0	4.16	4.05	3.99	3.88	3.83	3.77	3.71	3.71	3.66
315.0	4.28	4.05	3.99	3.94	3.83	3.77	3.77	3.66	3.66
360.0	4.61	4.16	4.05	3.99	3.88	3.83	3.83	3.71	3.71

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.66	3.66	3.60	3.54	3.54	3.49	3.49	3.49	3.43
45.0	3.66	3.60	3.54	3.54	3.54	3.49	3.49	3.49	3.43
90.0	3.60	3.60	3.60	3.54	3.49	3.49	3.49	3.43	3.49
135.0	3.66	3.66	3.66	3.60	3.54	3.54	3.49	3.49	3.49
180.0	3.66	3.60	3.60	3.54	3.54	3.49	3.49	3.49	3.49
225.0	3.60	3.54	3.54	3.49	3.49	3.49	3.43	3.43	3.38
270.0	3.54	3.54	3.54	3.49	3.49	3.43	3.43	3.43	3.43
315.0	3.60	3.60	3.54	3.54	3.49	3.43	3.43	3.43	3.43
360.0	3.66	3.66	3.60	3.54	3.54	3.49	3.49	3.49	3.43

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.43	3.43	3.38	3.38	3.38	3.38	3.38	3.38	3.32
45.0	3.43	3.43	3.38	3.38	3.38	3.38	3.38	3.38	3.32
90.0	3.43	3.43	3.38	3.38	3.38	3.32	3.32	3.32	3.32
135.0	3.49	3.43	3.43	3.43	3.38	3.38	3.38	3.38	3.38
180.0	3.43	3.43	3.38	3.43	3.38	3.38	3.38	3.38	3.38
225.0	3.38	3.38	3.38	3.38	3.38	3.38	3.32	3.32	3.32
270.0	3.38	3.38	3.38	3.38	3.38	3.38	3.32	3.32	3.32
315.0	3.43	3.43	3.38	3.38	3.32	3.32	3.38	3.32	3.32
360.0	3.43	3.43	3.38	3.38	3.38	3.38	3.38	3.38	3.32

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
45.0	3.38	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
90.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.26
135.0	3.38	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
180.0	3.32	3.32	3.32	3.32	3.32	3.38	3.32	3.32	3.32
225.0	3.32	3.32	3.32	3.32	3.32	3.32	3.26	3.32	3.32
270.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
315.0	3.38	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
360.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.32	3.32	3.32	3.32	3.32	3.26	3.26	3.32	3.26
45.0	3.32	3.32	3.32	3.26	3.32	3.26	3.32	3.32	3.26
90.0	3.26	3.26	3.26	3.26	3.32	3.32	3.26	3.26	3.26
135.0	3.32	3.32	3.26	3.26	3.26	3.26	3.26	3.32	3.26
180.0	3.32	3.32	3.32	3.32	3.32	3.32	3.26	3.26	3.26
225.0	3.26	3.32	3.26	3.26	3.26	3.26	3.26	3.26	3.26
270.0	3.32	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26
315.0	3.32	3.32	3.26	3.32	3.26	3.26	3.26	3.26	3.26
360.0	3.32	3.32	3.32	3.32	3.32	3.26	3.26	3.32	3.26

Intensity data(cd)

C/γ(°)	90.0
0.0	3.26
45.0	3.26
90.0	3.26
135.0	3.26
180.0	3.26
225.0	3.26
270.0	3.26
315.0	3.26
360.0	3.26