NATA LIGHTING CO.,LTD.
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Address:380 JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:
LumCAT: 3-1548-A3
Luminaire: TE2213407-1+92.76.365.00

Report No: nata-0100	Voltage(V): 34.0000
Test No: 2017050607	Current(A): 0.6000
LampCAT: BRIDGELUX V18B	Power (W): 20.4000
Lamp flux(lm): 2960.0	PF: 0.0000
Number of Lamps: 1	Ballast type: CC600mA
Length(mm): 78	Width(mm): 78
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2718.79, Efficiency(%): 91.85% , Luminous Efficacy(lm/W): 133.27
Central intensity(cd): 13709.040, Maximum intensity(cd): 13709.040
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=19.2
[C90/270]Total=19.2
Field angle(10%Imax): [C0/180]Total=42.4
[C90/270]Total=42.4
Maximum s/h(1/2): C0_180=0.33 C90_270=0.33
Maximum s/h(1/4): C0_180=0.33 C90_270=0.33
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.96%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.490%

Equipment: gms1980	Date: 2017/5/6	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13709.044	3.280	3.28	.111%	.121%
1.0	13636.094	26.097	29.377	.882%	1.081%
2.0	13443.396	51.449	80.827	1.738%	2.973%
3.0	13058.002	74.943	155.769	2.532%	5.729%
4.0	12425.541	95.050	250.819	3.211%	9.225%
5.0	11749.724	112.299	363.118	3.794%	13.356%
6.0	10805.369	123.859	486.976	4.184%	17.912%
7.0	9734.522	130.095	617.071	4.395%	22.697%
8.0	8738.827	133.371	750.442	4.506%	27.602%
9.0	7557.592	129.649	880.091	4.380%	32.371%
10.0	6388.194	121.647	1001.737	4.110%	36.845%
11.0	5454.162	114.124	1115.862	3.856%	41.043%
12.0	4522.883	103.121	1218.982	3.484%	44.835%
13.0	3712.040	91.570	1310.552	3.094%	48.204%
14.0	3109.861	82.503	1393.055	2.787%	51.238%
15.0	2694.185	76.467	1469.522	2.583%	54.051%
16.0	2267.911	68.551	1538.073	2.316%	56.572%
17.0	1995.795	63.989	1602.062	2.162%	58.926%
18.0	1772.954	60.080	1662.142	2.030%	61.135%
19.0	1612.877	57.583	1719.725	1.945%	63.253%
20.0	1485.835	55.728	1775.453	1.883%	65.303%
21.0	1382.604	54.335	1829.788	1.836%	67.302%
22.0	1310.342	53.828	1883.617	1.819%	69.281%
23.0	1255.836	53.810	1937.427	1.818%	71.261%
24.0	1207.249	53.847	1991.274	1.819%	73.241%
25.0	1163.906	53.941	2045.215	1.822%	75.225%
26.0	1131.863	54.411	2099.626	1.838%	77.227%
27.0	1097.522	54.640	2154.266	1.846%	79.236%
28.0	1070.173	55.095	2209.361	1.861%	81.263%
29.0	1035.542	55.054	2264.415	1.860%	83.288%
30.0	997.581	54.698	2319.113	1.848%	85.299%
31.0	940.762	53.134	2372.247	1.795%	87.254%
32.0	862.940	50.147	2422.394	1.694%	89.098%
33.0	782.627	46.743	2469.137	1.579%	90.818%
34.0	682.328	41.841	2510.978	1.414%	92.356%
35.0	586.681	36.902	2547.88	1.247%	93.714%
36.0	483.932	31.193	2579.072	1.054%	94.861%
37.0	389.497	25.705	2604.777	.868%	95.807%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	292.487	19.747	2624.524	.667%	96.533%
39.0	225.318	15.550	2640.074	.525%	97.105%
40.0	151.020	10.645	2650.719	.360%	97.496%
41.0	85.158	6.127	2656.846	.207%	97.722%
42.0	48.766	3.578	2660.424	.121%	97.853%
43.0	28.698	2.146	2662.571	.073%	97.932%
44.0	21.637	1.648	2664.219	.056%	97.993%
45.0	18.017	1.397	2665.616	.047%	98.044%
46.0	14.535	1.147	2666.762	.039%	98.086%
47.0	12.608	1.011	2667.774	.034%	98.124%
48.0	12.167	0.992	2668.765	.033%	98.160%
49.0	12.016	0.994	2669.76	.034%	98.197%
50.0	11.713	0.984	2670.744	.033%	98.233%
51.0	11.603	0.989	2671.732	.033%	98.269%
52.0	11.521	0.996	2672.728	.034%	98.306%
53.0	11.383	0.997	2673.725	.034%	98.342%
54.0	11.300	1.003	2674.727	.034%	98.379%
55.0	11.218	1.008	2675.735	.034%	98.416%
56.0	11.149	1.014	2676.749	.034%	98.454%
57.0	11.094	1.020	2677.769	.034%	98.491%
58.0	11.039	1.027	2678.796	.035%	98.529%
59.0	10.984	1.032	2679.828	.035%	98.567%
60.0	10.970	1.042	2680.87	.035%	98.605%
61.0	10.915	1.047	2681.917	.035%	98.644%
62.0	11.053	1.070	2682.987	.036%	98.683%
63.0	11.493	1.123	2684.11	.038%	98.724%
64.0	12.195	1.202	2685.312	.041%	98.769%
65.0	12.635	1.256	2686.568	.042%	98.815%
66.0	12.869	1.289	2687.857	.044%	98.862%
67.0	12.993	1.312	2689.168	.044%	98.911%
68.0	13.310	1.353	2690.522	.046%	98.960%
69.0	13.613	1.394	2691.915	.047%	99.012%
70.0	13.668	1.408	2693.324	.048%	99.063%
71.0	13.599	1.410	2694.734	.048%	99.115%
72.0	13.957	1.456	2696.189	.049%	99.169%
73.0	13.874	1.455	2697.644	.049%	99.222%
74.0	13.778	1.452	2699.097	.049%	99.276%
75.0	13.971	1.480	2700.577	.050%	99.330%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.530	1.440	2702.016	.049%	99.383%
77.0	13.571	1.450	2703.466	.049%	99.436%
78.0	13.337	1.431	2704.897	.048%	99.489%
79.0	12.869	1.385	2706.282	.047%	99.540%
80.0	12.223	1.320	2707.602	.045%	99.589%
81.0	11.837	1.282	2708.884	.043%	99.636%
82.0	11.521	1.251	2710.135	.042%	99.682%
83.0	11.163	1.215	2711.35	.041%	99.726%
84.0	10.915	1.190	2712.541	.040%	99.770%
85.0	10.598	1.158	2713.699	.039%	99.813%
86.0	10.488	1.147	2714.846	.039%	99.855%
87.0	10.364	1.135	2715.981	.038%	99.897%
88.0	10.254	1.124	2717.105	.038%	99.938%
89.0	10.240	1.123	2718.228	.038%	99.979%
90.0	10.240	0.561	2718.789	.019%	100.000%

Zonal flux distribution table

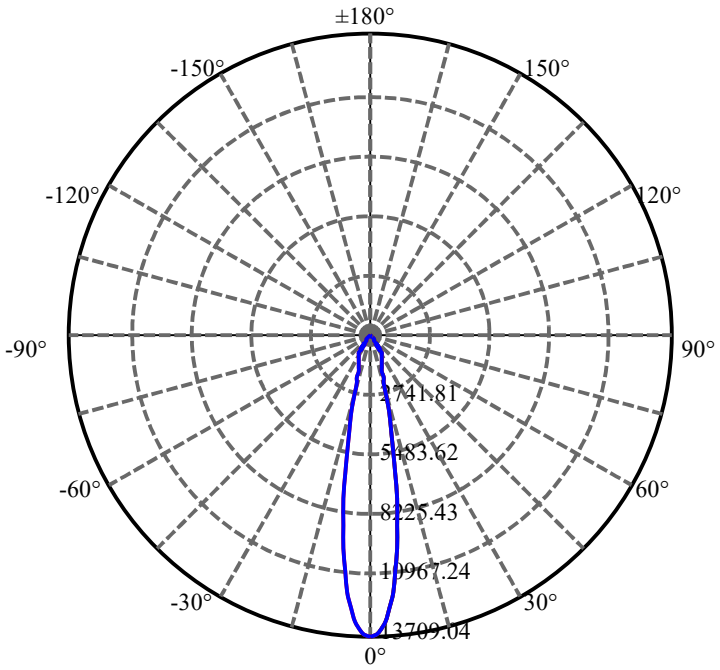
ZONAL LUMEN SUMMARY

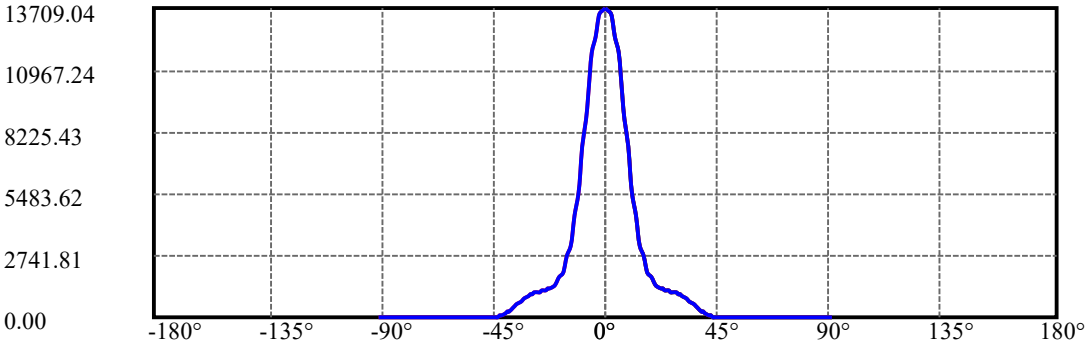
Zone	Lumens	%Lamp	%Fixt
0-30	2319.11	78.35%	85.30%
0-40	2650.72	89.55%	97.50%
0-60	2680.87	90.57%	98.61%
0-90	2718.23	91.83%	99.98%
0-120	2718.23	91.83%	99.98%
0-180	2718.79	91.85%	100.00%
60-90	38.40	1.30%	1.41%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.38	2175.03	73.48%	80.00%

ZONAL LUMEN SUMMARY

0-10	1001.74
10-20	773.72
20-30	543.66
30-40	331.61
40-50	20.02
50-60	10.13
60-70	12.45
70-80	14.28
80-90	10.63
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:21.2 Right:21.2
:C90/270Left:21.2 Right:21.2

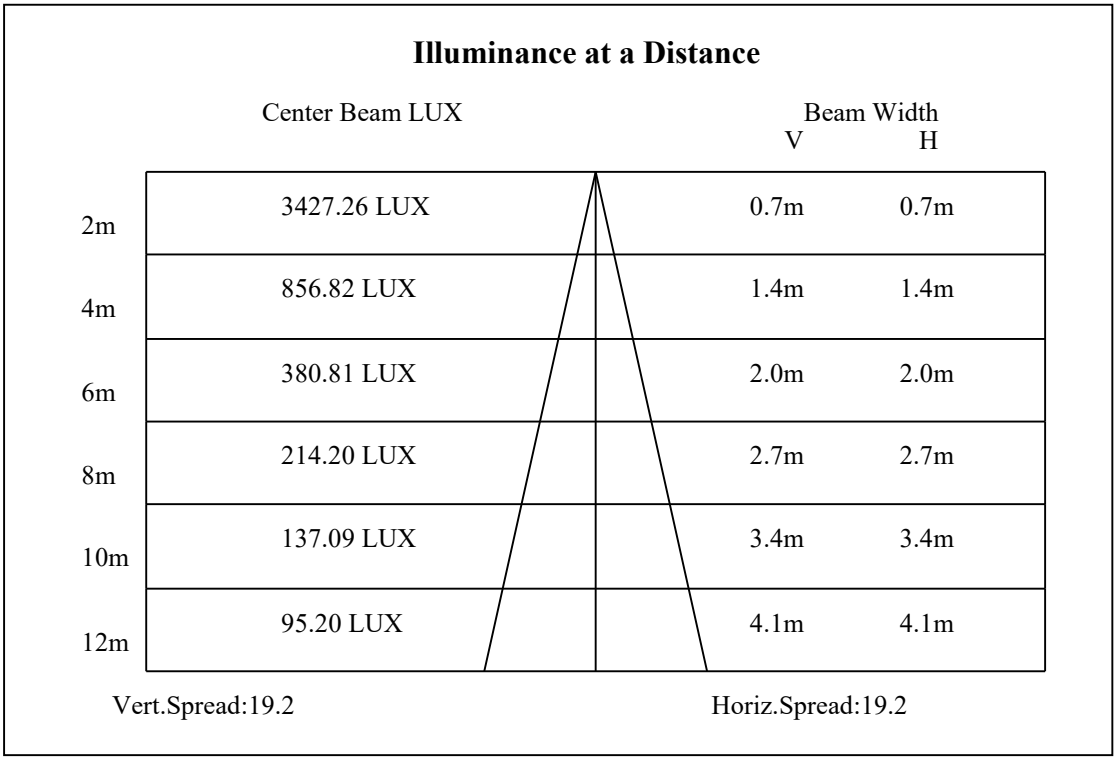
Beam Angle(50%Imax):C0/180Left:9.6 Right:9.6
:C90/270Left:9.6 Right:9.6

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/6
Humidity(%): 60.0%

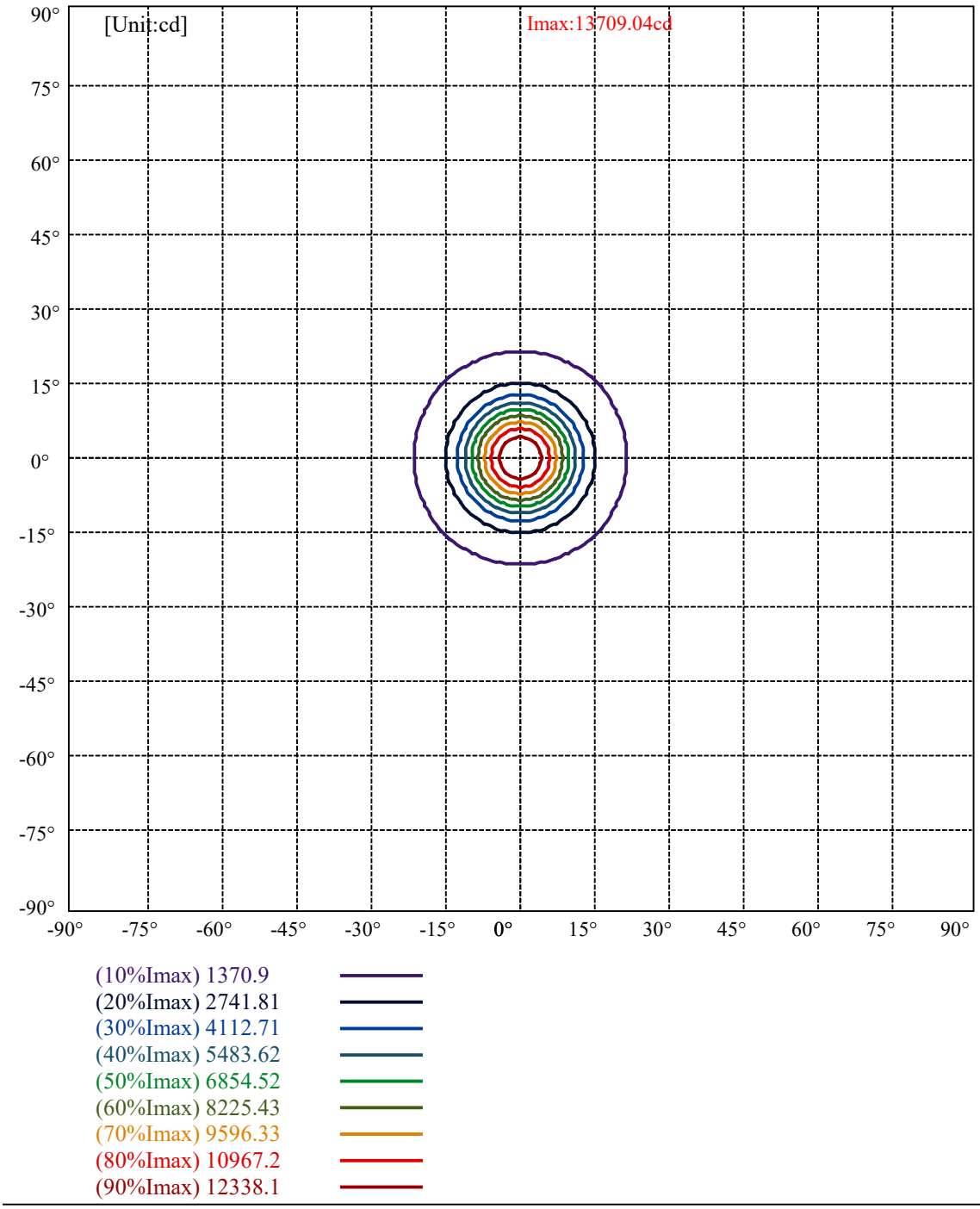
Operator: NT07
Distance(m): 7.42

Lux distance Curve



Equipment: gms1980 Date: 2017/5/6 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)



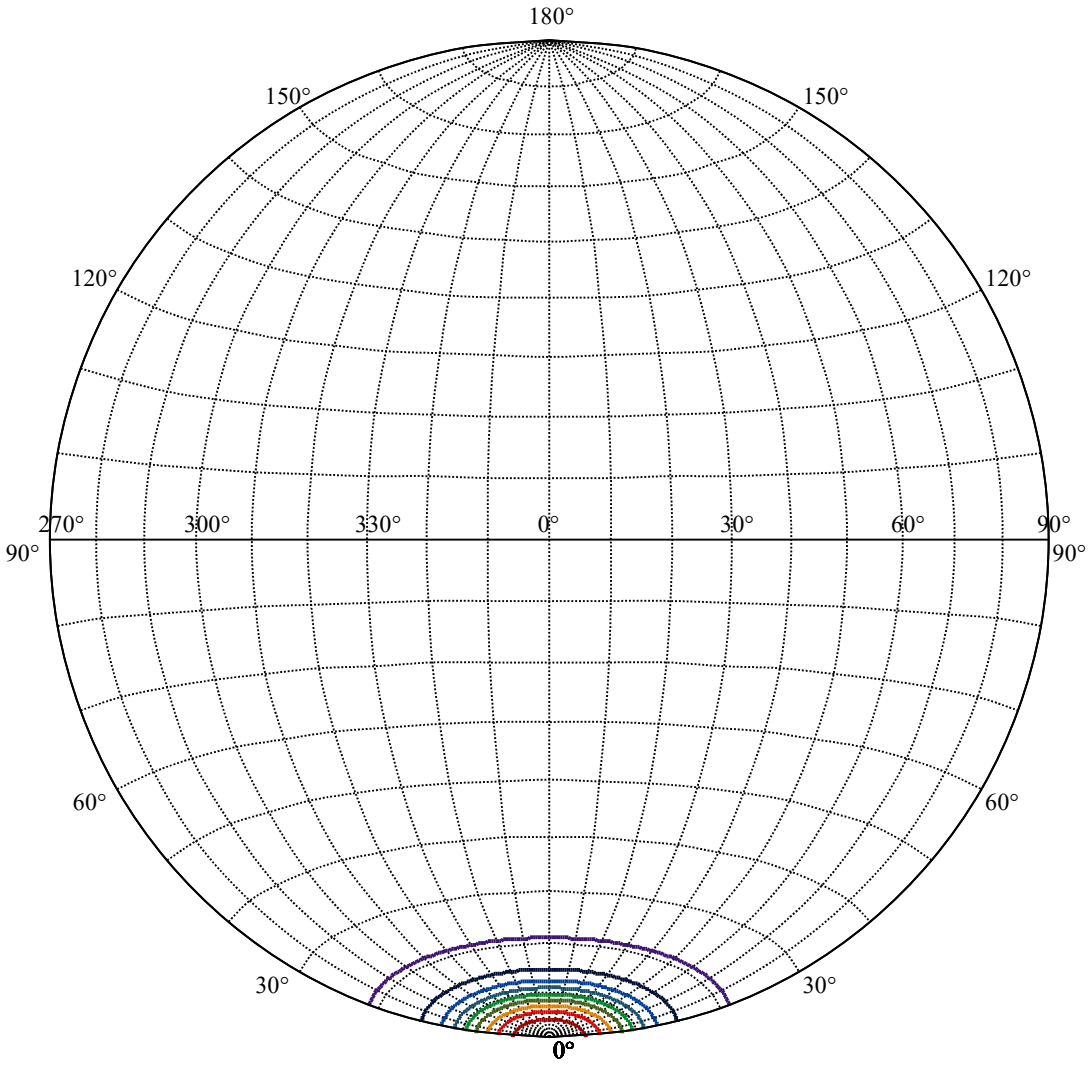
(10%Imax) 1370.9
(20%Imax) 2741.81
(30%Imax) 4112.71
(40%Imax) 5483.62
(50%Imax) 6854.52
(60%Imax) 8225.43
(70%Imax) 9596.33
(80%Imax) 10967.2
(90%Imax) 12338.1

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:13709.04

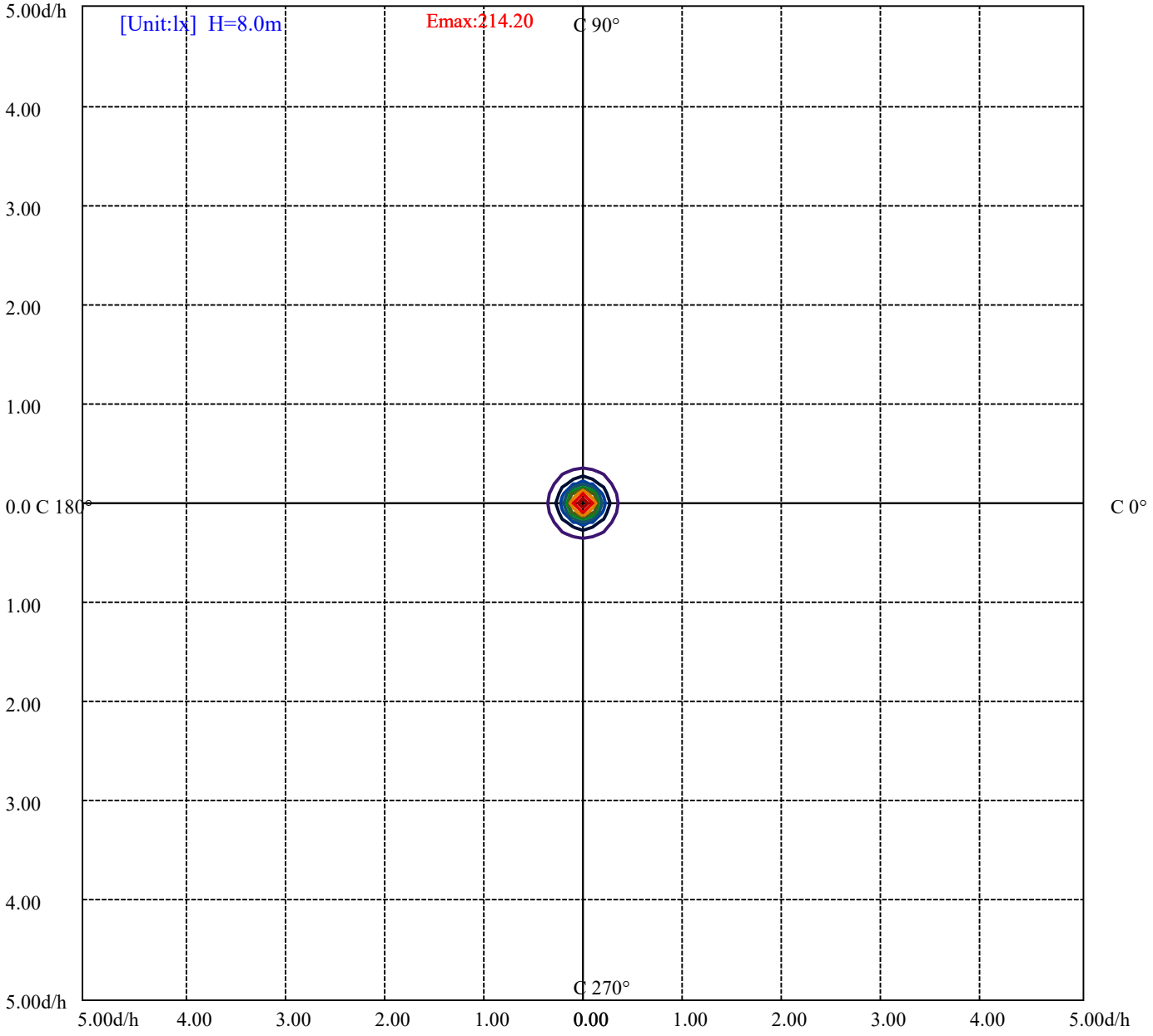
(10%Imax) 1370.9
(20%Imax) 2741.81
(30%Imax) 4112.71
(40%Imax) 5483.62
(50%Imax) 6854.52
(60%Imax) 8225.43
(70%Imax) 9596.33
(80%Imax) 10967.2
(90%Imax) 12338.1

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

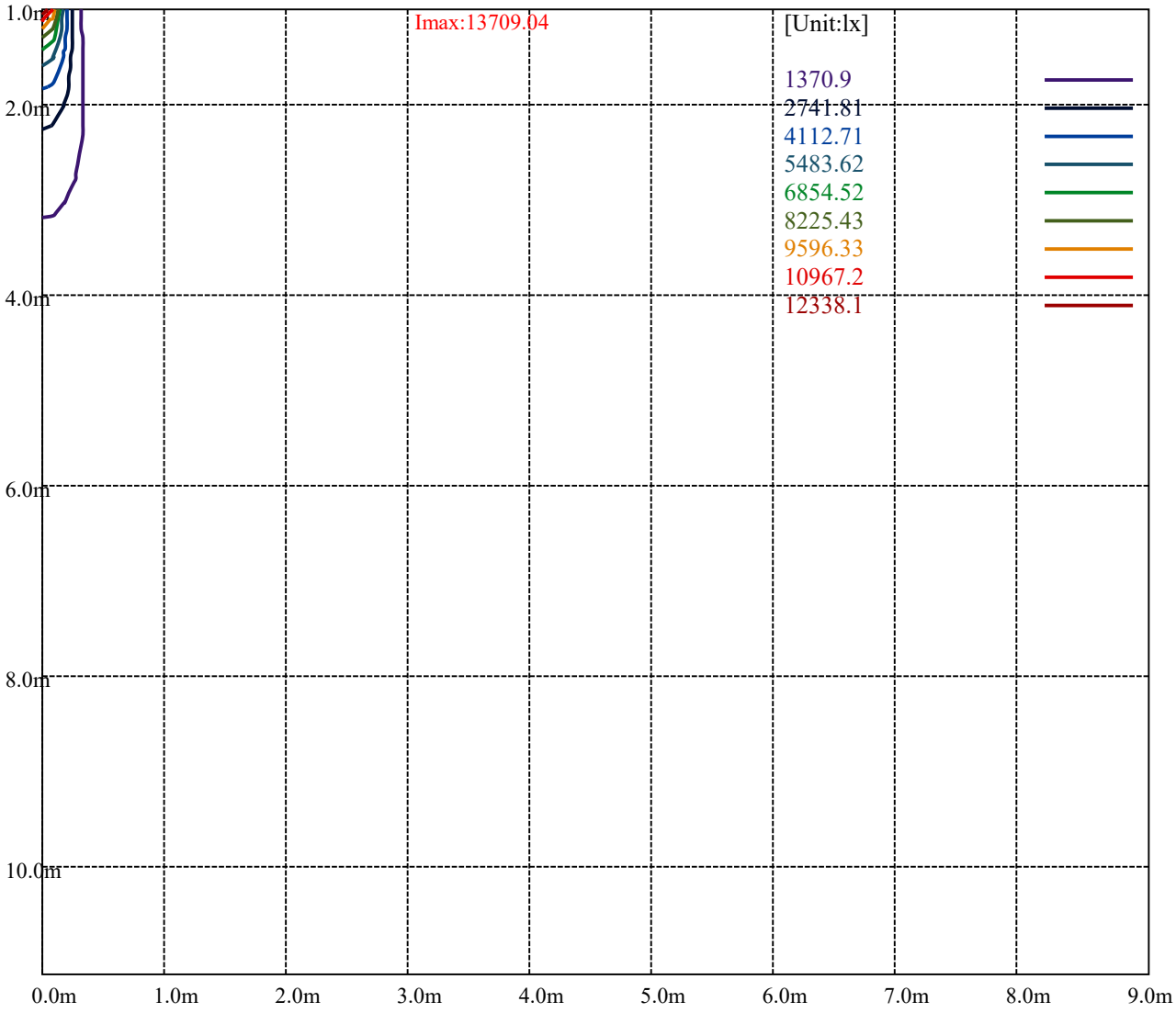
ISO illuminance diagram



(10%Emax) 21.42031
(20%Emax) 42.84078
(30%Emax) 64.26109
(40%Emax) 85.6814
(50%Emax) 107.1019
(60%Emax) 128.5222
(70%Emax) 149.9425
(80%Emax) 171.3625
(90%Emax) 192.7828

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/6
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

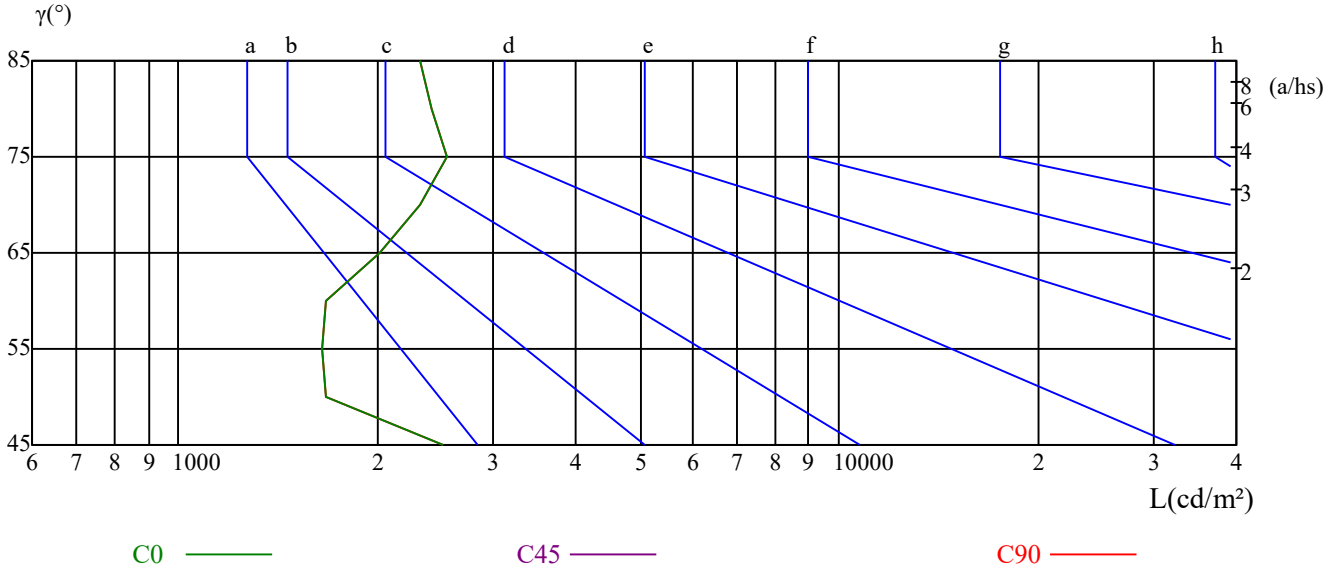
γ	45	50	55	60	65	70	75	80	85
C0	2513	1669	1647	1674	2023	2320	2544	2420	2319
C45	0	0	0	0	0	0	0	0	0
C90	2513	1669	1647	1674	2023	2320	2544	2420	2319

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4914	4914	0	8872	8872	0	19987	19987	0

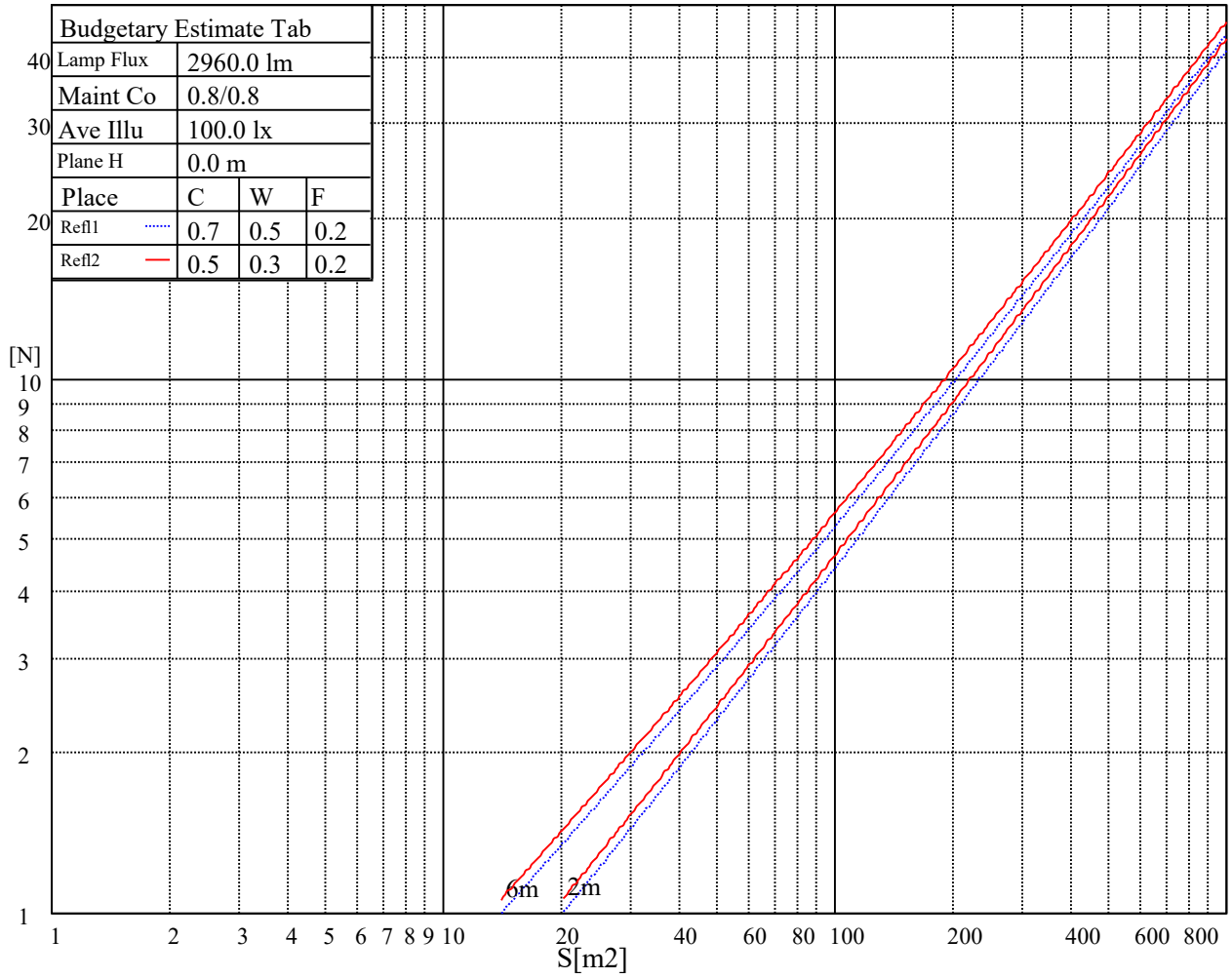
Glare Table

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

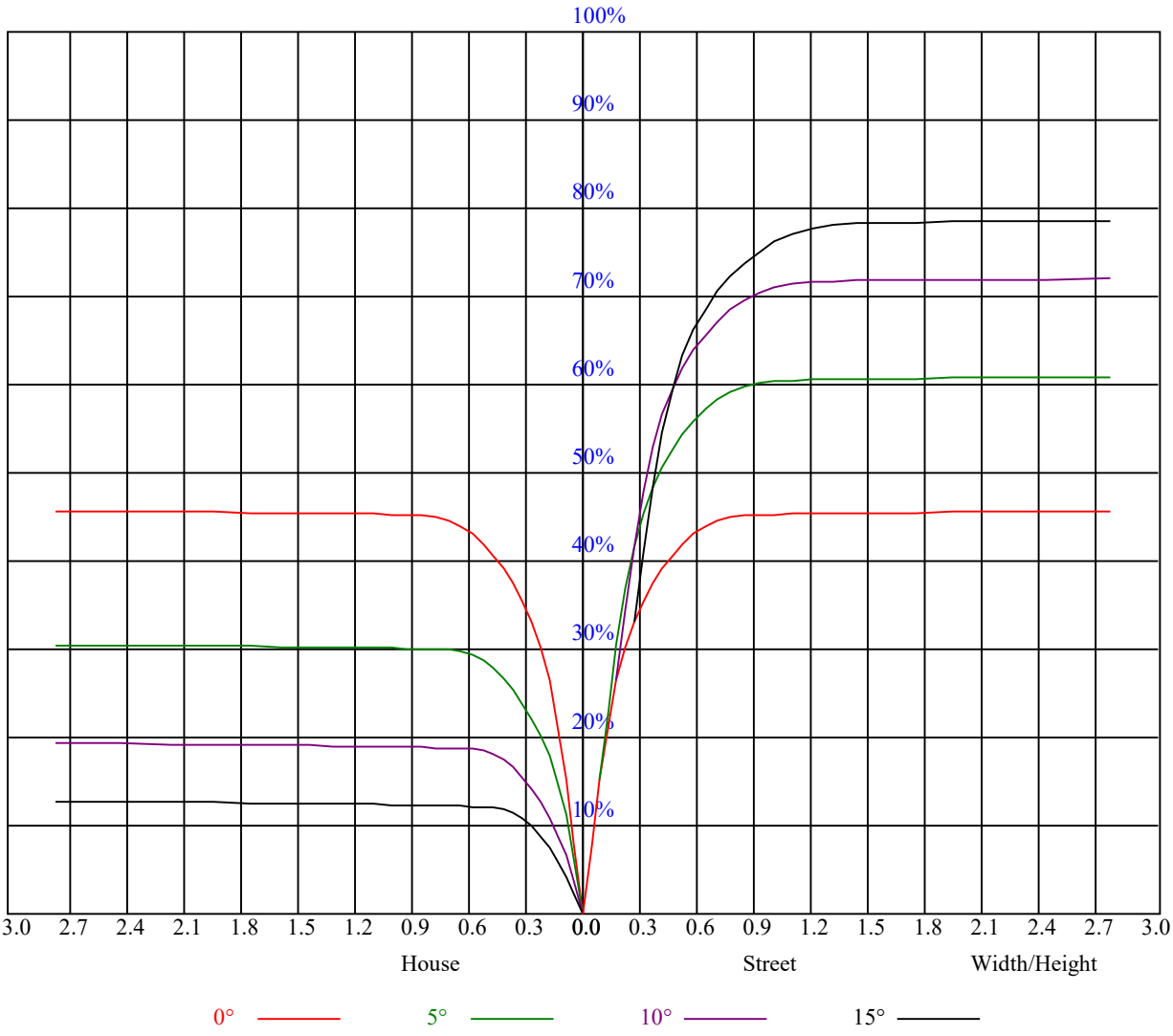


Equipment: gms1980	Date: 2017/5/6	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Utilization factor table for indoor luminaire

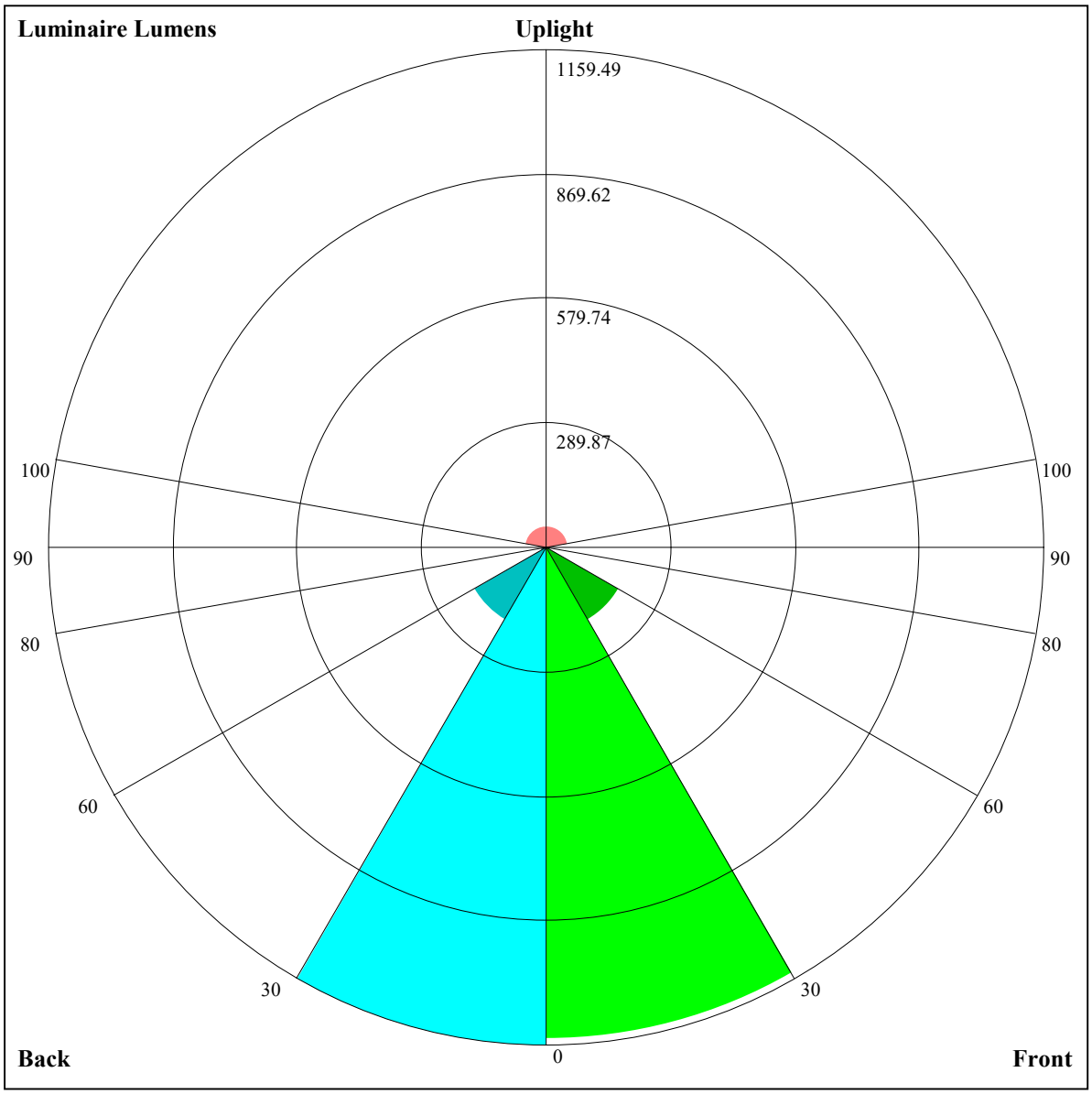
RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.97	0.94	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.90	0.89	0.87	0.88	0.86	0.85	0.84
3	0.93	0.89	0.86	0.92	0.88	0.85	0.89	0.86	0.84	0.87	0.85	0.83	0.85	0.83	0.82	0.80
4	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.72
7	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
8	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63

Coefficient Utilization Curve



Equipment: gms1980	Date: 2017/5/6	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

LCS Graph



Luminaire Lumens:

FL=1145.23,FM=194.33,FH=12.21,FVH=5.82

BL=1159.49,BM=194.99,BH=14.08,BVH=6.02

UL=11.17,UH=53.17

BUG Rating:B3-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	13753.09	13653.99	13389.72	12998.82	12321.62	11424.20	10515.77	9376.10	8308.01
90.0	13665.00	13797.13	13863.20	13808.15	13648.48	13279.60	12673.98	11958.25	11077.35
180.0	13753.09	13742.08	13620.95	13263.09	12767.58	12106.90	10920.44	10030.73	8953.82
270.0	13665.00	13351.18	12899.71	12161.96	10964.48	10188.19	9111.28	7573.01	6616.13
360.0	13753.09	13653.99	13389.72	12998.82	12321.62	11424.20	10515.77	9376.10	8308.01

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7124.30	5990.14	5076.20	4239.34	3402.49	2895.97	2791.36	2171.97	1911.01
90.0	9811.05	8720.93	7559.24	6281.94	5109.23	4200.80	3363.95	2824.39	2406.52
180.0	7707.35	6507.67	5509.49	4493.70	3733.93	3080.96	2597.56	2269.98	2015.61
270.0	5587.67	4334.04	3671.71	3076.55	2602.52	2261.72	2023.87	1805.30	1650.04
360.0	7124.30	5990.14	5076.20	4239.34	3402.49	2895.97	2791.36	2171.97	1911.01

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1729.32	1571.86	1452.39	1368.70	1295.48	1243.17	1196.93	1156.18	1124.25
90.0	2089.39	1872.47	1678.12	1526.16	1430.92	1358.79	1287.22	1238.77	1202.43
180.0	1765.11	1608.75	1490.38	1380.26	1314.20	1260.79	1215.65	1167.75	1136.91
270.0	1507.99	1398.43	1322.45	1255.29	1200.78	1160.59	1129.21	1092.92	1063.85
360.0	1729.32	1571.86	1452.39	1368.70	1295.48	1243.17	1196.93	1156.18	1124.25

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1092.32	1063.14	1038.91	1013.04	950.82	880.35	798.87	689.86	597.36
90.0	1162.24	1131.41	1104.98	1073.05	1042.22	989.36	922.75	823.64	735.00
180.0	1097.77	1080.59	1052.24	1023.88	965.58	884.48	802.23	704.45	611.35
270.0	1037.76	1005.55	946.03	880.35	804.43	697.56	606.67	511.36	403.01
360.0	1092.32	1063.14	1038.91	1013.04	950.82	880.35	798.87	689.86	597.36

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	501.56	403.01	287.94	278.03	144.52	73.61	38.26	28.52	22.74
90.0	628.74	533.50	426.69	326.48	284.09	164.51	97.61	47.18	31.71
180.0	504.59	400.15	312.56	219.51	137.20	77.63	38.81	23.23	19.27
270.0	300.83	221.33	142.76	77.24	38.26	24.89	20.37	15.86	12.83
360.0	501.56	403.01	287.94	278.03	144.52	73.61	38.26	28.52	22.74

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	17.01	12.44	12.11	11.89	11.78	11.51	11.40	11.29	11.18
90.0	26.54	20.21	13.43	12.33	12.11	11.89	11.73	11.67	11.51
180.0	16.02	13.21	12.83	12.61	12.44	11.89	11.78	11.73	11.62
270.0	12.50	12.28	12.06	11.84	11.73	11.56	11.51	11.40	11.23
360.0	17.01	12.44	12.11	11.89	11.78	11.51	11.40	11.29	11.18

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.12	11.01	10.96	10.90	10.85	10.79	10.74	10.68	10.74
90.0	11.40	11.29	11.23	11.18	11.12	11.07	11.07	11.01	10.96
180.0	11.51	11.45	11.34	11.29	11.23	11.18	11.18	11.07	11.12
270.0	11.18	11.12	11.07	11.01	10.96	10.90	10.90	10.90	11.40
360.0	11.12	11.01	10.96	10.90	10.85	10.79	10.74	10.68	10.74

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.68	10.74	10.74	10.79	10.74	10.79	10.79	10.79	10.85
90.0	10.90	10.90	11.01	11.12	11.29	11.40	11.51	11.67	11.67
180.0	12.06	14.09	14.98	15.42	15.86	16.96	18.00	18.00	17.78
270.0	12.33	13.05	13.82	14.15	14.09	14.09	14.15	14.20	14.09
360.0	10.68	10.74	10.74	10.79	10.74	10.79	10.79	10.79	10.85

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.85	10.85	10.79	10.74	10.74	10.68	10.68	10.63	10.63
90.0	11.62	11.56	11.78	11.84	11.62	11.73	11.56	11.51	11.40
180.0	18.99	18.83	18.39	18.88	17.89	18.06	17.45	15.91	14.04
270.0	14.37	14.26	14.15	14.42	13.87	13.82	13.65	13.43	12.83
360.0	10.85	10.85	10.79	10.74	10.74	10.68	10.68	10.63	10.63

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	10.41	10.41	10.41	10.24	10.19	10.19	10.19
90.0	11.29	11.23	11.01	10.90	10.79	10.74	10.57	10.35	10.35
180.0	13.10	12.77	12.33	11.62	10.85	10.68	10.46	10.24	10.19
270.0	12.50	11.67	10.90	10.74	10.35	10.30	10.24	10.24	10.24
360.0	10.46	10.41	10.41	10.41	10.41	10.24	10.19	10.19	10.19

C/γ(°)	90.0
0.0	10.19
90.0	10.30
180.0	10.19
270.0	10.30
360.0	10.19