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

Client:
LumCAT: CT01D03624AH
Luminaire:

Report No: GC2019091909	Voltage(V): 220.5000
Test No: NATA07	Current(A): 0.0420
LampCAT: TRIDONIC SLE G7 9MM	Power (W): 8.3400
Lamp flux(lm): 1030.0	PF: 0.8970
Number of Lamps: 1	Ballast type: AC
Length(mm): 36	Width(mm): 36
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 837.54, Efficiency(%): 81.31% , Luminous Efficacy(lm/W): 100.42
Central intensity(cd): 3007.911, Maximum intensity(cd): 3007.911
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.6
[C90/270]Total=23.6
Field angle(10%Imax): [C0/180]Total=43.8
[C90/270]Total=43.8
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.39 C90_270=0.39
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.31%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 90.309%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3007.911	0.000	0	.000%	.000%
1.0	2997.644	2.874	2.874	.279%	.343%
2.0	2970.498	8.566	11.44	.832%	1.366%
3.0	2920.383	14.089	25.529	1.368%	3.048%
4.0	2852.750	19.325	44.853	1.876%	5.355%
5.0	2750.953	24.107	68.96	2.340%	8.234%
6.0	2633.494	28.297	97.257	2.747%	11.612%
7.0	2487.672	31.787	129.044	3.086%	15.408%
8.0	2309.367	34.331	163.375	3.333%	19.507%
9.0	2122.535	35.918	199.293	3.487%	23.795%
10.0	1907.572	36.471	235.764	3.541%	28.150%
11.0	1699.511	36.042	271.806	3.499%	32.453%
12.0	1444.791	34.372	306.178	3.337%	36.557%
13.0	1192.694	31.300	337.478	3.039%	40.294%
14.0	1028.182	28.427	365.905	2.760%	43.688%
15.0	891.866	26.359	392.265	2.559%	46.836%
16.0	754.136	24.119	416.383	2.342%	49.715%
17.0	627.019	21.508	437.892	2.088%	52.283%
18.0	523.499	18.970	456.861	1.842%	54.548%
19.0	447.009	16.885	473.746	1.639%	56.564%
20.0	385.374	15.235	488.981	1.479%	58.383%
21.0	337.863	13.888	502.869	1.348%	60.041%
22.0	298.408	12.786	515.655	1.241%	61.568%
23.0	266.837	11.860	527.515	1.151%	62.984%
24.0	239.151	11.063	538.578	1.074%	64.305%
25.0	222.521	10.497	549.075	1.019%	65.558%
26.0	206.263	10.122	559.197	.983%	66.767%
27.0	181.379	9.484	568.68	.921%	67.899%
28.0	165.724	8.788	577.468	.853%	68.948%
29.0	154.790	8.386	585.854	.814%	69.950%
30.0	143.746	8.060	593.914	.783%	70.912%
31.0	134.692	7.749	601.663	.752%	71.837%
32.0	125.649	7.458	609.121	.724%	72.728%
33.0	117.986	7.178	616.299	.697%	73.585%
34.0	110.092	6.902	623.201	.670%	74.409%
35.0	103.450	6.632	629.833	.644%	75.201%
36.0	97.401	6.395	636.228	.621%	75.964%
37.0	92.331	6.188	642.416	.601%	76.703%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	87.847	6.014	648.43	.584%	77.421%
39.0	83.833	5.860	654.29	.569%	78.121%
40.0	80.382	5.727	660.017	.556%	78.805%
41.0	77.285	5.614	665.632	.545%	79.475%
42.0	74.588	5.518	671.15	.536%	80.134%
43.0	72.302	5.441	676.591	.528%	80.783%
44.0	70.179	5.378	681.968	.522%	81.425%
45.0	68.549	5.332	687.3	.518%	82.062%
46.0	66.670	5.288	692.588	.513%	82.693%
47.0	64.965	5.235	697.824	.508%	83.319%
48.0	63.184	5.180	703.004	.503%	83.937%
49.0	61.299	5.112	708.116	.496%	84.547%
50.0	59.512	5.037	713.153	.489%	85.149%
51.0	57.099	4.934	718.087	.479%	85.738%
52.0	55.040	4.812	722.899	.467%	86.312%
53.0	52.685	4.686	727.585	.455%	86.872%
54.0	50.330	4.540	732.125	.441%	87.414%
55.0	48.068	4.392	736.518	.426%	87.939%
56.0	45.968	4.249	740.767	.413%	88.446%
57.0	43.880	4.108	744.875	.399%	88.936%
58.0	41.792	3.962	748.837	.385%	89.409%
59.0	40.087	3.828	752.664	.372%	89.866%
60.0	38.312	3.704	756.368	.360%	90.309%
61.0	36.676	3.579	759.947	.347%	90.736%
62.0	35.238	3.465	763.412	.336%	91.150%
63.0	33.985	3.367	766.779	.327%	91.552%
64.0	32.819	3.278	770.057	.318%	91.943%
65.0	31.595	3.188	773.245	.309%	92.324%
66.0	30.377	3.092	776.337	.300%	92.693%
67.0	29.362	3.004	779.34	.292%	93.051%
68.0	28.521	2.932	782.272	.285%	93.402%
69.0	27.569	2.861	785.134	.278%	93.743%
70.0	26.676	2.786	787.92	.270%	94.076%
71.0	25.881	2.716	790.636	.264%	94.400%
72.0	24.965	2.644	793.28	.257%	94.716%
73.0	24.246	2.573	795.854	.250%	95.023%
74.0	23.631	2.517	798.371	.244%	95.324%
75.0	23.062	2.467	800.838	.240%	95.618%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	22.656	2.427	803.265	.236%	95.908%
77.0	22.697	2.418	805.683	.235%	96.197%
78.0	22.952	2.444	808.126	.237%	96.488%
79.0	23.254	2.483	810.609	.241%	96.785%
80.0	23.445	2.518	813.127	.244%	97.085%
81.0	23.643	2.546	815.673	.247%	97.389%
82.0	23.962	2.581	818.254	.251%	97.698%
83.0	23.996	2.607	820.862	.253%	98.009%
84.0	23.579	2.592	823.453	.252%	98.318%
85.0	23.004	2.542	825.996	.247%	98.622%
86.0	22.250	2.474	828.469	.240%	98.917%
87.0	21.299	2.383	830.853	.231%	99.202%
88.0	20.359	2.282	833.135	.222%	99.474%
89.0	19.982	2.211	835.346	.215%	99.738%
90.0	19.977	2.191	837.537	.213%	100.000%

Zonal flux distribution table

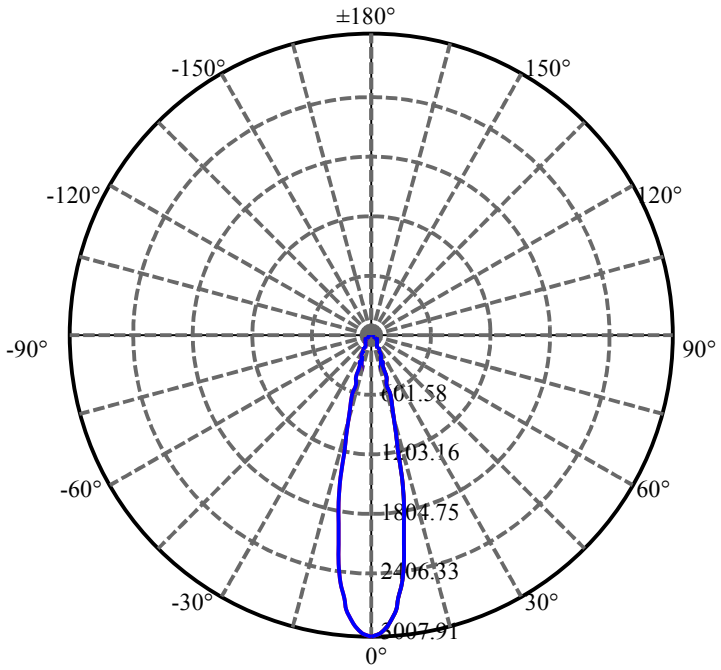
ZONAL LUMEN SUMMARY

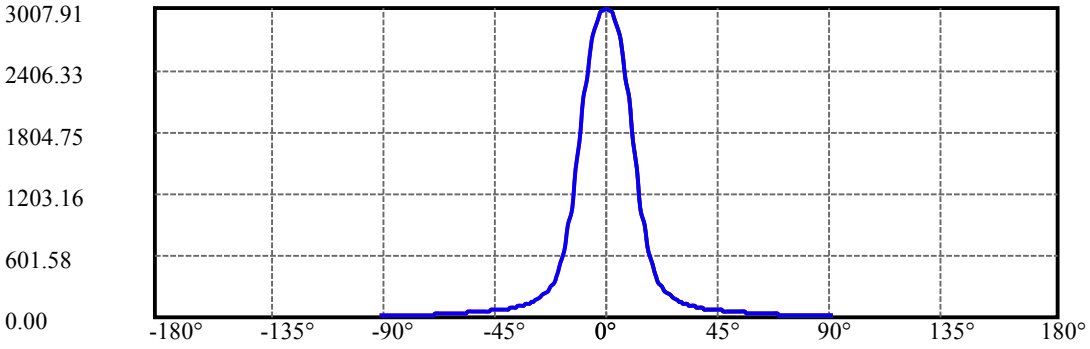
Zone	Lumens	%Lamp	%Fixt
0-30	593.91	57.66%	70.91%
0-40	660.02	64.08%	78.80%
0-60	756.37	73.43%	90.31%
0-90	835.35	81.10%	99.74%
0-120	835.35	81.10%	99.74%
0-180	837.54	81.31%	100.00%
60-90	82.68	8.03%	9.87%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-41.80	670.03	65.05%	80.00%

ZONAL LUMEN SUMMARY

0-10	235.76
10-20	253.22
20-30	104.93
30-40	66.10
40-50	53.14
50-60	43.22
60-70	31.55
70-80	25.21
80-90	22.22
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):

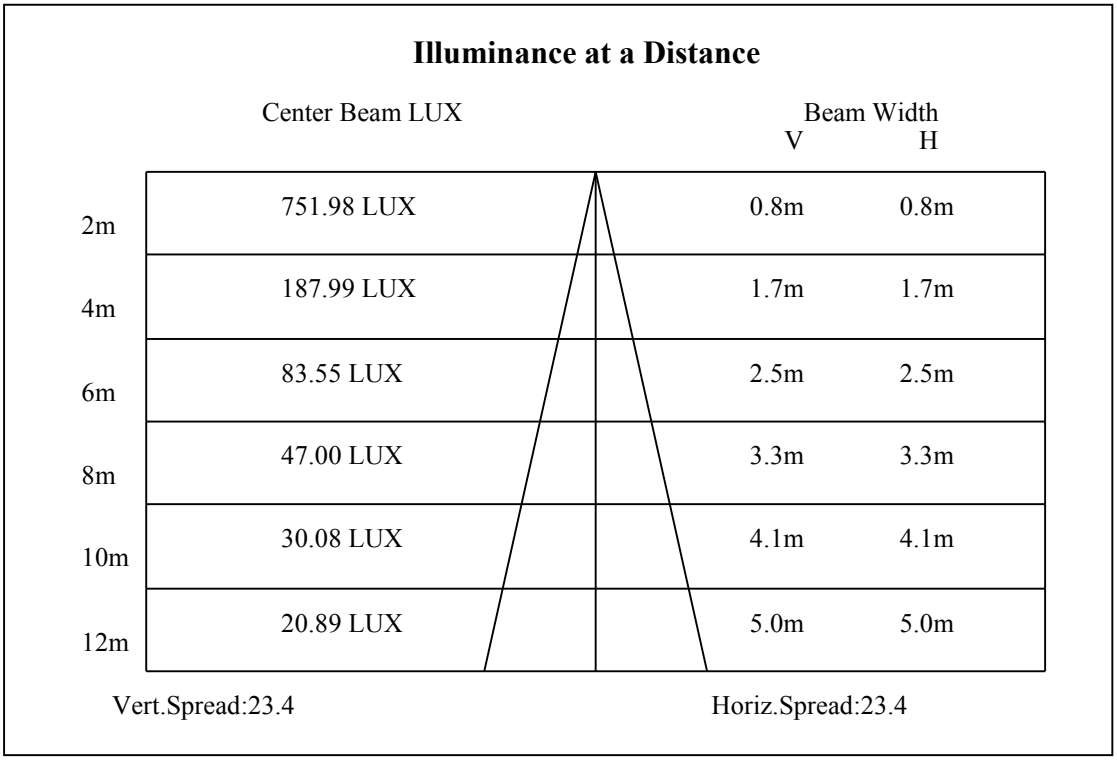
C0/C180:

C90/C270:

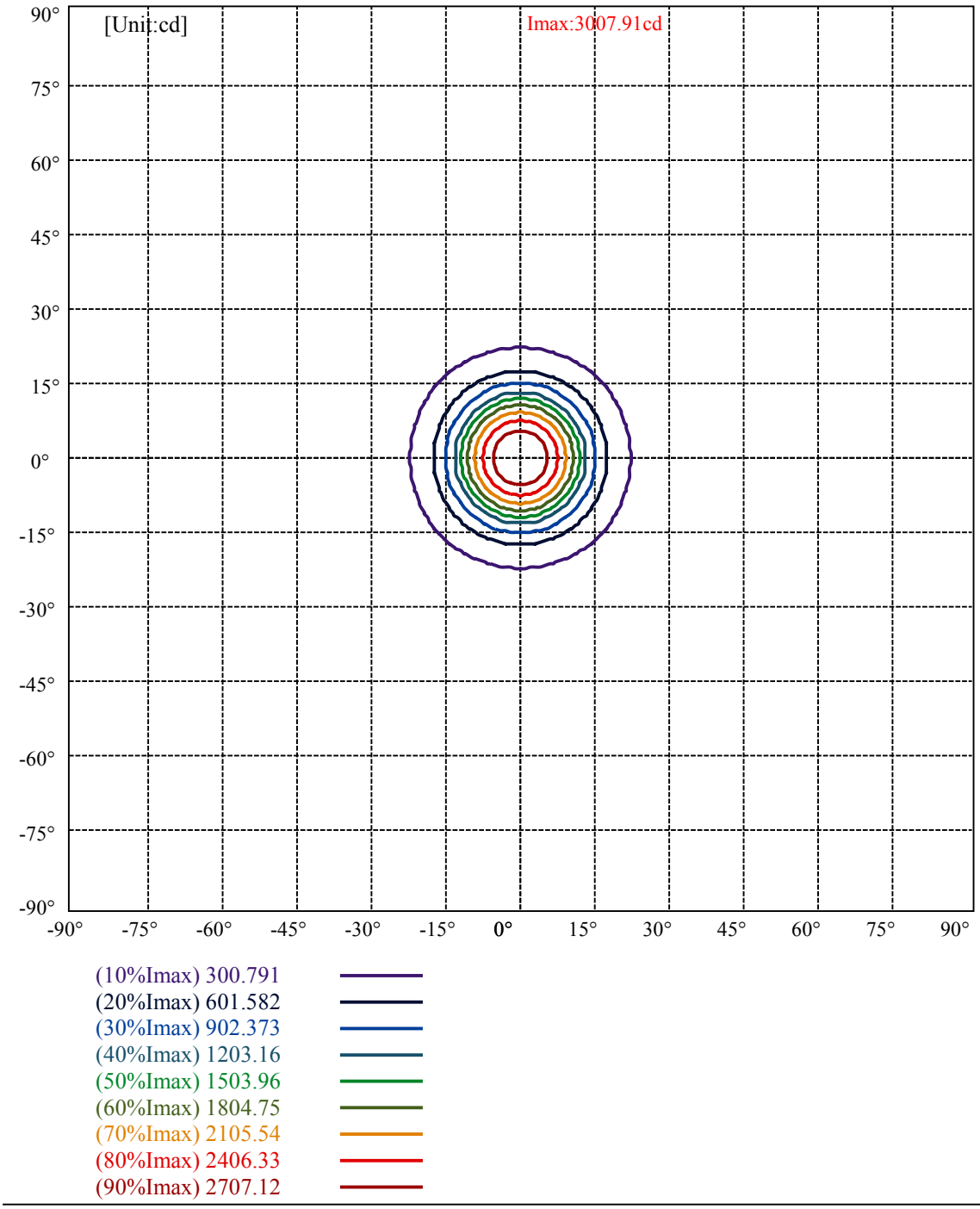
Field angle(10%Imax):C0/180Left:21.9 Right:21.9
:C90/270Left:21.9 Right:21.9

Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8
:C90/270Left:11.8 Right:11.8

Lux distance Curve



ISO-Intensity(V-H)

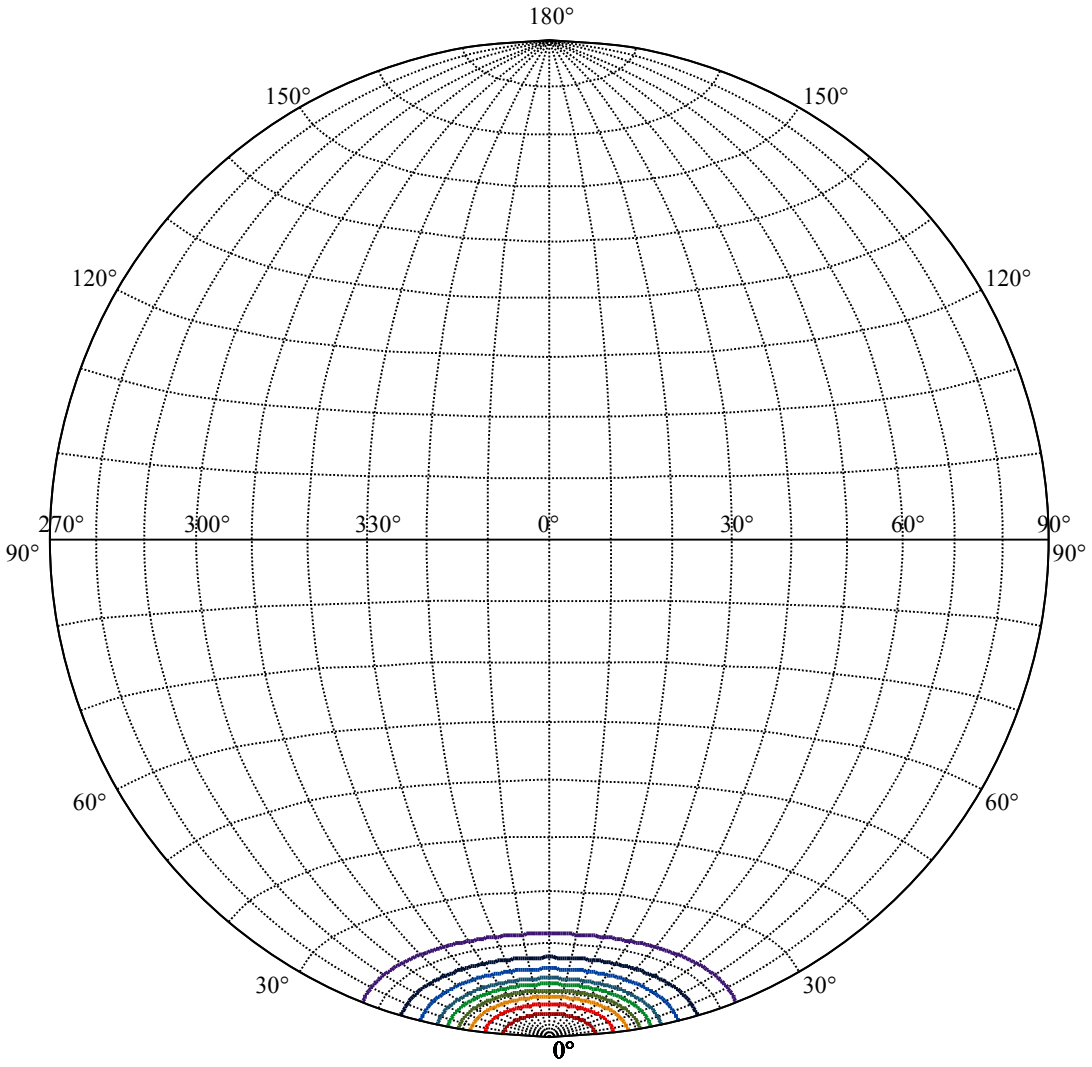


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2019/9/24
Humidity(%): 60.0%

Operator: GC2019092410
Distance(m): 6.81

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:3007.91

(10%Imax) 300.791
(20%Imax) 601.582
(30%Imax) 902.373
(40%Imax) 1203.16
(50%Imax) 1503.96
(60%Imax) 1804.75
(70%Imax) 2105.54
(80%Imax) 2406.33
(90%Imax) 2707.12

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2019/9/24
Humidity(%): 60.0%

Operator: GC2019092410
Distance(m): 6.81

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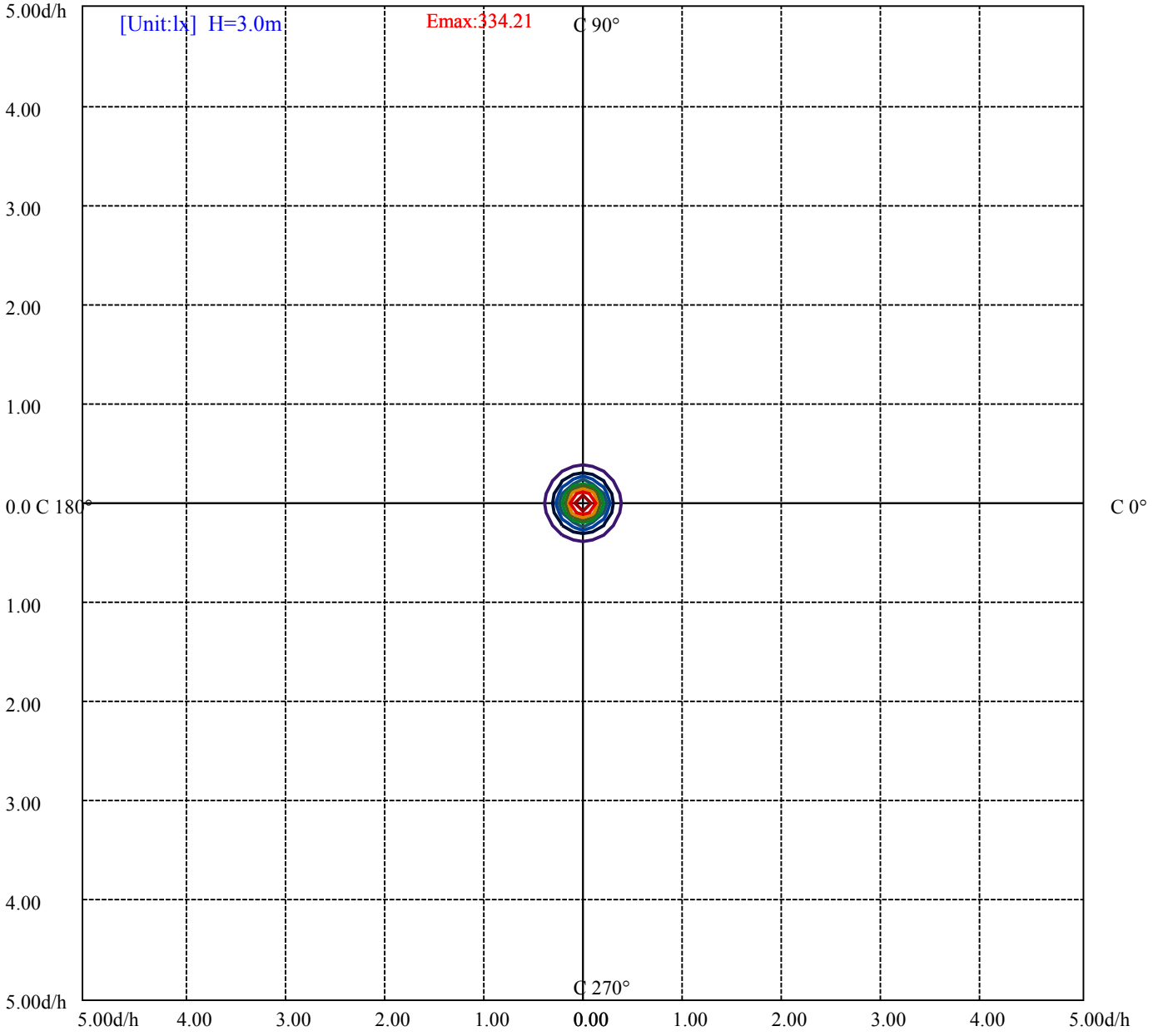
ISO illuminance diagram

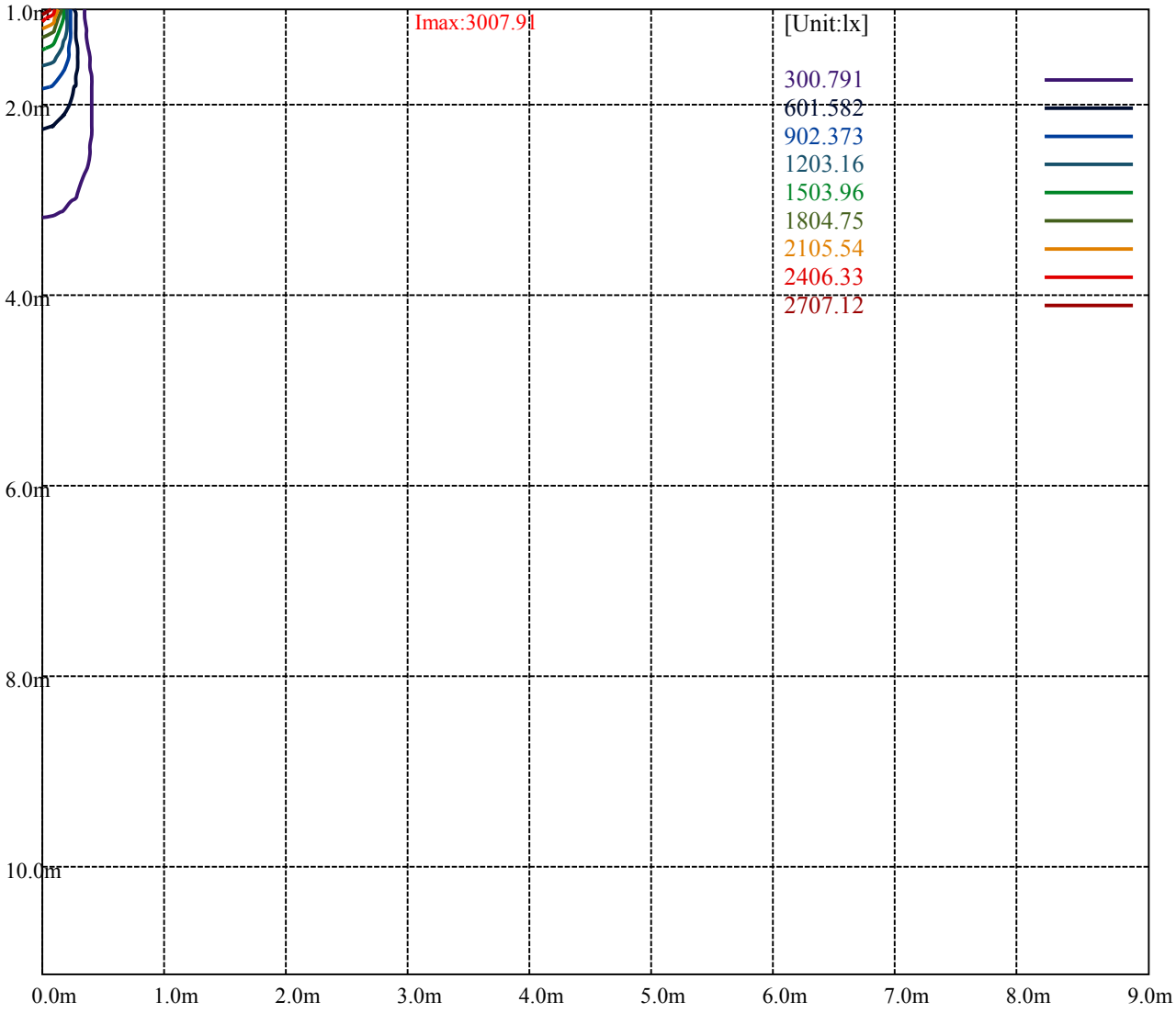


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2019/9/24
Humidity(%): 60.0%

Operator: GC2019092410
Distance(m): 6.81

Space ISO Lux diagram



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2019/9/24
Humidity(%): 60.0%

Operator: GC2019092410
Distance(m): 6.81

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Luminance Limitting Curve(no luminous side)

Luminance Table

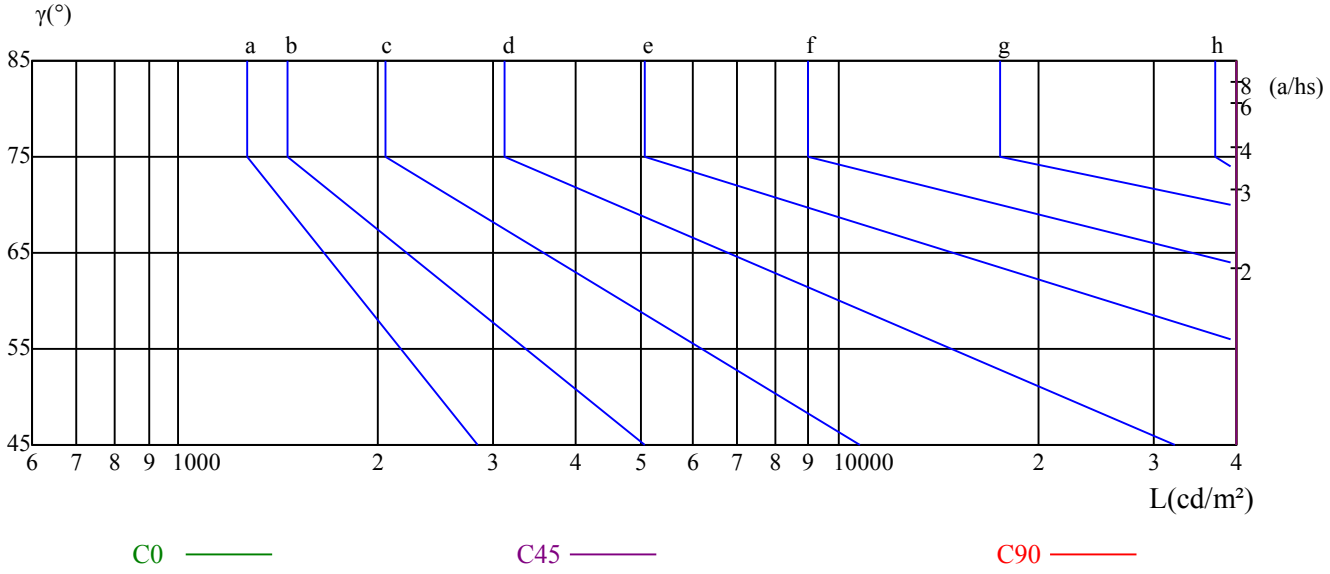
γ	45	50	55	60	65	70	75	80	85
C0	74802	71439	64664	59123	57685	60182	68755	104179	203662
C45	74802	71439	64664	59123	57685	60182	68755	104179	203662
C90	74802	71439	64664	59123	57685	60182	68755	104179	203662

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
57685	57685	57685	68755	68755	68755	203662	203662	203662

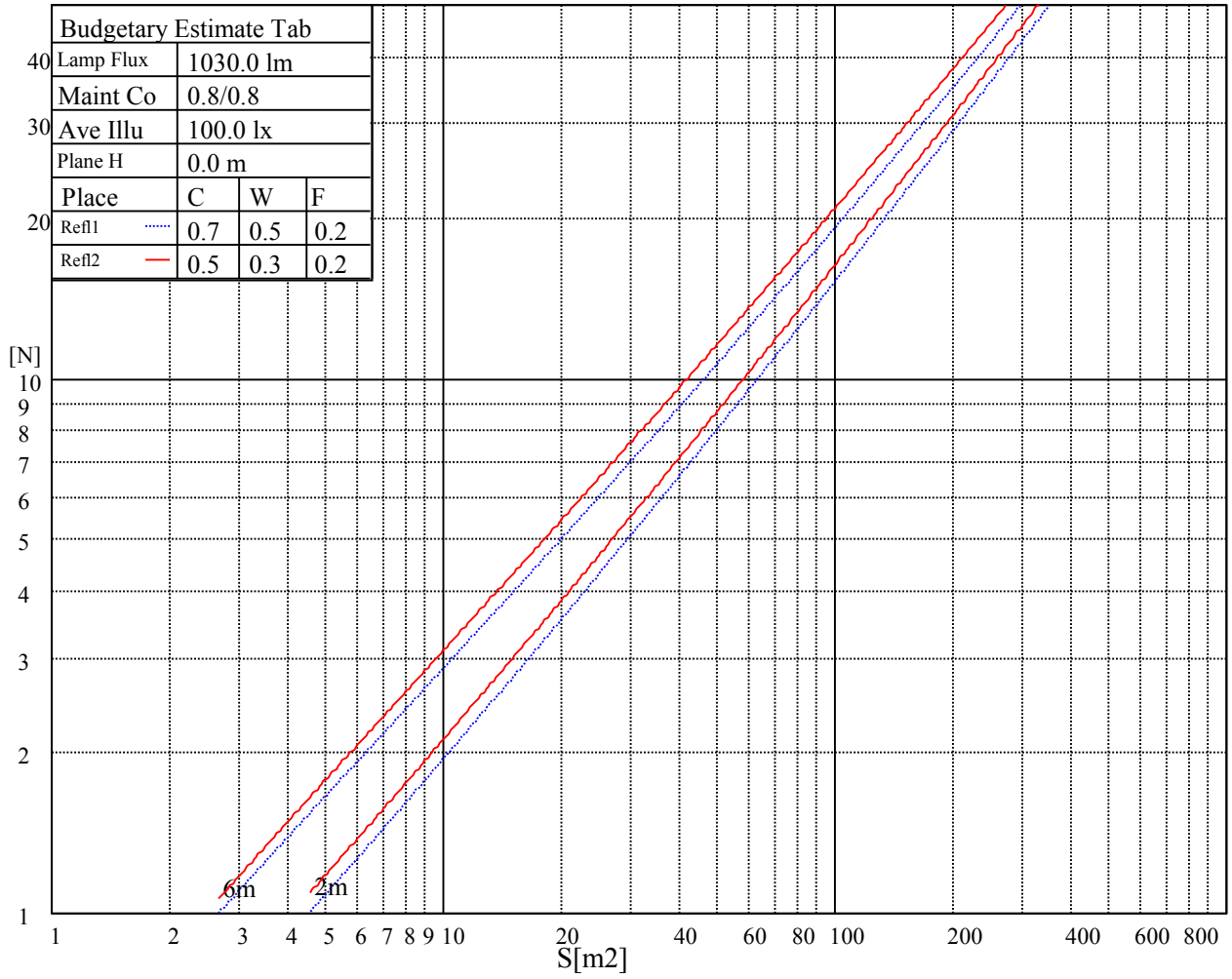
Glare Table

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
Temperature(°C): 25.0

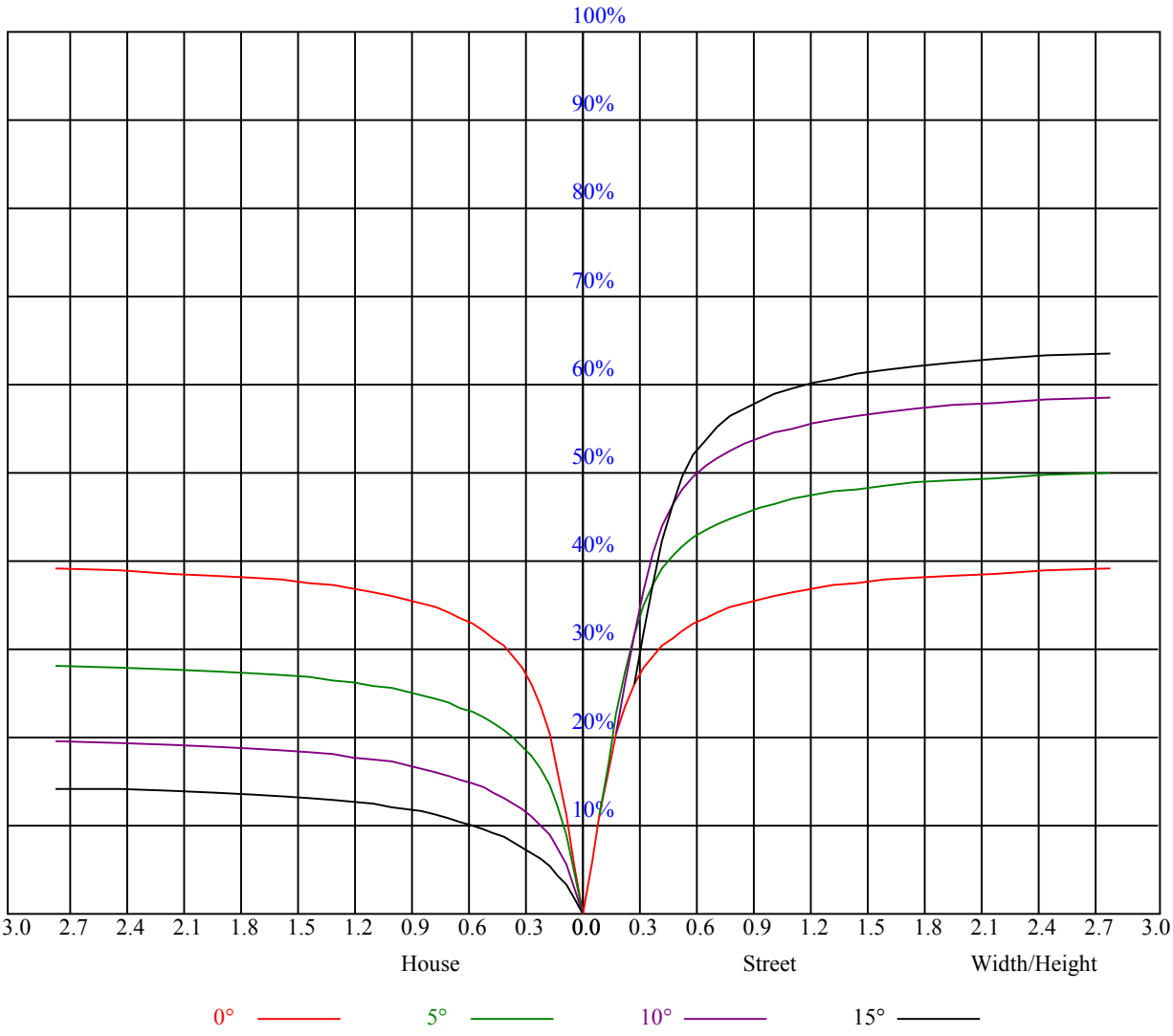
Date: 2019/9/24
Humidity(%): 60.0%

Operator: GC2019092410
Distance(m): 6.81

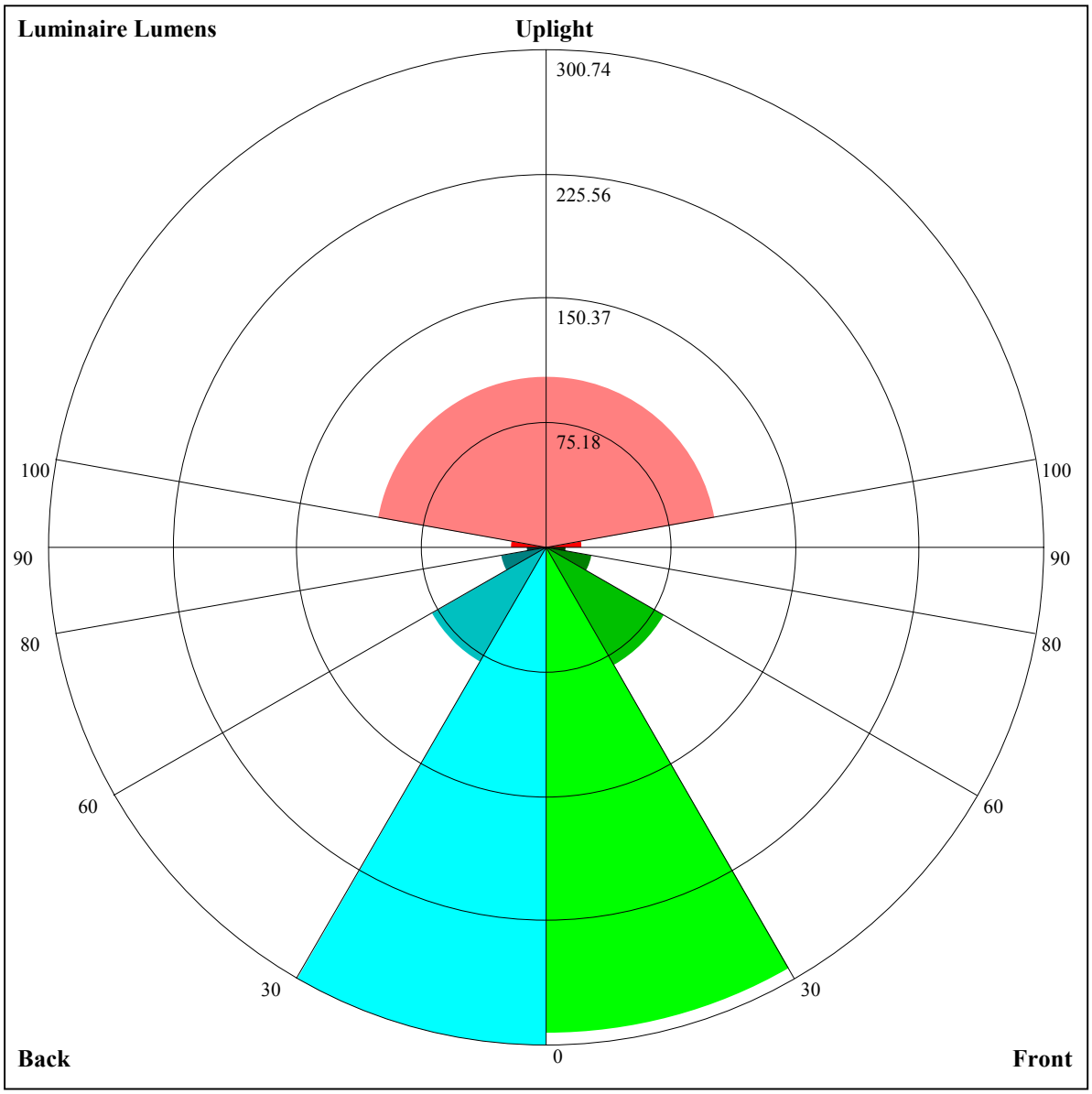
Utilization factor table for indoor luminaire

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	0.97	0.97	0.97	0.95	0.95	0.95	0.90	0.90	0.90	0.87	0.87	0.87	0.83	0.83	0.83	0.81
1	0.88	0.86	0.84	0.87	0.84	0.82	0.83	0.81	0.80	0.80	0.79	0.77	0.77	0.76	0.75	0.74
2	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.75	0.73	0.71	0.73	0.71	0.69	0.68
3	0.77	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.67	0.71	0.68	0.66	0.69	0.67	0.65	0.64
4	0.72	0.67	0.64	0.71	0.67	0.64	0.69	0.66	0.63	0.68	0.65	0.62	0.66	0.64	0.61	0.60
5	0.68	0.64	0.60	0.68	0.63	0.60	0.66	0.62	0.59	0.65	0.61	0.59	0.63	0.61	0.58	0.57
6	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.54
7	0.62	0.57	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52
8	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.51	0.57	0.54	0.51	0.50
9	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.55	0.52	0.49	0.55	0.52	0.49	0.48
10	0.55	0.51	0.48	0.55	0.51	0.48	0.54	0.51	0.48	0.54	0.50	0.48	0.53	0.50	0.48	0.47

Coefficient Utilization Curve



Equipment: GMS 1800	Date: 2019/9/24	Operator: GC2019092410
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 6.81



Luminaire Lumens:
FL=293.58,FM=82.66,FH=28.23,FVH=11.8
BL=300.74,BM=80.54,BH=28.48,BVH=12.56
UL=21.8,UH=103.72

BUG Rating:B1-U3-G1

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	3009.30	2985.17	2942.48	2866.38	2771.25	2635.76	2477.98	2290.52	2090.05
45.0	3001.88	3015.80	3020.90	3004.66	2960.58	2901.65	2806.98	2691.44	2542.02
90.0	3020.90	3023.22	3005.59	2976.82	2918.82	2838.54	2737.84	2613.02	2487.73
135.0	2999.56	3009.77	3014.87	2999.56	2964.76	2911.86	2846.89	2747.12	2621.37
180.0	3009.30	3007.91	2999.56	2963.36	2905.36	2843.64	2741.09	2632.51	2516.04
225.0	3001.88	2970.32	2912.78	2827.87	2720.67	2599.10	2426.94	2248.75	2039.47
270.0	3020.90	3003.73	2965.22	2904.90	2817.66	2710.93	2569.86	2407.92	2213.02
315.0	2999.56	2965.22	2902.58	2819.51	2762.90	2566.15	2460.35	2270.10	1965.23
360.0	3009.30	2985.17	2942.48	2866.38	2771.25	2635.76	2477.98	2290.52	2090.05

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1870.57	1651.08	1433.91	1227.41	836.93	836.93	810.85	687.23	585.47
45.0	2426.48	2142.95	1909.08	1765.69	1529.04	1294.24	1084.96	897.02	738.32
90.0	2250.14	2018.59	1824.63	1574.98	1332.29	826.40	826.40	722.41	579.07
135.0	2465.46	2276.13	2053.86	1811.63	1563.38	1322.08	1092.85	926.72	743.89
180.0	2342.95	2134.14	1901.19	1652.47	1411.17	1182.87	980.55	809.78	669.18
225.0	1806.53	1661.75	1432.52	896.84	836.79	836.79	702.13	592.62	505.15
270.0	1991.68	1768.48	1637.16	1424.63	1150.85	1045.05	889.13	759.67	647.84
315.0	1826.48	1607.46	1403.75	1204.68	881.11	881.11	748.07	637.63	547.23
360.0	1870.57	1651.08	1433.91	1227.41	836.93	836.93	810.85	687.23	585.47

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	504.50	439.72	386.91	342.18	304.55	271.69	244.17	221.99	200.46
45.0	613.03	510.48	432.99	371.27	323.01	283.11	251.09	239.49	213.97
90.0	471.74	393.31	335.03	293.50	262.69	237.40	216.56	197.31	186.82
135.0	573.59	486.82	405.15	345.29	303.06	269.65	240.88	235.78	210.30
180.0	556.89	471.50	406.08	353.18	309.56	273.83	244.13	238.56	238.56
225.0	436.05	376.80	329.09	289.19	256.56	229.74	206.73	186.73	169.93
270.0	556.42	481.25	420.92	372.67	330.90	296.10	265.01	239.95	229.74
315.0	475.77	416.19	366.82	335.64	296.93	273.18	244.64	220.37	200.32
360.0	504.50	439.72	386.91	342.18	304.55	271.69	244.17	221.99	200.46

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	182.09	166.40	152.99	141.90	132.16	125.20	117.21	108.54	103.57
45.0	186.91	164.64	156.89	144.59	134.15	124.78	117.12	110.12	103.67
90.0	165.29	158.47	149.00	140.83	132.44	124.22	116.52	108.91	101.95
135.0	178.65	168.44	161.02	152.48	146.59	132.95	127.24	116.89	107.52
180.0	187.75	170.44	155.50	143.39	132.99	124.82	117.12	109.70	103.29
225.0	155.59	148.03	136.98	127.24	119.16	111.69	104.92	98.61	92.99
270.0	210.25	178.84	167.10	152.06	142.97	133.69	124.45	116.10	108.91
315.0	184.50	170.53	158.84	147.47	137.08	127.84	119.30	111.88	105.71
360.0	182.09	166.40	152.99	141.90	132.16	125.20	117.21	108.54	103.57

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	97.91	93.22	88.68	85.34	82.13	79.49	77.17	75.36	73.32
45.0	97.54	92.34	87.66	83.20	79.58	76.29	73.46	71.09	69.05
90.0	95.50	90.63	86.36	82.64	79.54	76.57	73.92	71.69	69.74
135.0	99.54	93.87	89.19	85.06	81.48	78.14	75.17	72.30	69.84
180.0	97.49	91.97	87.38	82.88	79.02	75.92	72.76	70.86	68.72
225.0	88.07	83.94	80.05	76.47	73.18	69.98	67.33	65.10	63.15
270.0	102.64	96.94	92.06	87.42	83.80	80.14	77.26	74.52	72.30
315.0	100.51	95.73	91.41	87.66	84.31	81.76	79.63	77.49	75.31
360.0	97.91	93.22	88.68	85.34	82.13	79.49	77.17	75.36	73.32

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	71.46	69.05	67.01	64.83	62.37	60.09	57.35	54.66	51.97
45.0	68.26	66.26	64.83	64.08	61.53	60.37	58.47	56.61	54.76
90.0	68.07	66.64	65.38	63.48	62.04	60.19	57.22	55.36	52.99
135.0	67.56	65.75	64.04	62.51	61.25	59.95	58.19	56.57	53.83
180.0	66.77	65.66	64.27	62.88	61.48	59.81	57.96	55.87	53.64
225.0	61.72	59.95	58.47	56.57	55.36	53.41	51.37	49.05	47.15
270.0	70.39	68.26	66.31	64.22	62.27	60.70	57.59	56.24	53.92
315.0	74.15	71.79	69.42	66.91	64.08	61.58	58.65	55.96	53.22
360.0	71.46	69.05	67.01	64.83	62.37	60.09	57.35	54.66	51.97

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	49.42	47.15	45.66	43.57	40.70	39.49	37.73	36.01	34.57
45.0	52.53	50.49	48.49	46.50	44.36	42.60	40.79	39.03	37.35
90.0	50.67	48.17	45.89	43.71	41.90	40.05	38.28	36.61	35.17
135.0	51.46	49.37	46.96	44.83	42.83	41.16	39.40	37.73	36.19
180.0	51.55	49.47	47.52	45.20	43.02	41.30	39.44	37.63	36.06
225.0	45.10	43.06	41.21	39.54	37.96	36.29	34.80	33.64	32.67
270.0	51.51	49.09	46.59	44.36	42.27	40.51	38.51	36.71	35.27
315.0	50.39	47.75	45.43	43.34	41.30	39.30	37.54	36.06	34.62
360.0	49.42	47.15	45.66	43.57	40.70	39.49	37.73	36.01	34.57

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	33.41	32.11	30.86	29.51	28.58	27.98	27.01	25.89	25.24
45.0	35.96	34.57	33.46	32.16	31.00	29.88	29.19	28.54	27.80
90.0	33.92	32.85	31.74	30.49	29.37	28.86	27.93	26.82	26.40
135.0	34.99	33.92	32.90	31.74	30.49	29.05	28.17	27.38	26.08
180.0	34.71	33.55	32.62	30.95	30.25	29.23	28.49	28.03	27.01
225.0	31.46	30.25	29.23	28.35	27.61	27.01	25.85	25.15	24.32
270.0	33.97	32.67	31.18	29.79	28.58	27.84	26.96	25.75	25.24
315.0	33.46	32.62	30.77	30.02	29.00	28.31	26.96	25.85	24.96
360.0	33.41	32.11	30.86	29.51	28.58	27.98	27.01	25.89	25.24

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	24.59	23.57	22.74	22.00	21.58	21.58	21.76	21.58	21.39
45.0	27.05	26.36	25.71	24.92	24.13	23.48	23.20	23.34	23.34
90.0	25.24	24.64	23.90	23.29	23.02	23.25	23.80	24.45	24.45
135.0	25.06	24.92	25.66	26.22	26.68	27.98	29.56	31.18	32.95
180.0	26.45	25.75	24.96	23.99	23.11	22.69	22.51	22.51	22.09
225.0	23.29	22.60	21.95	21.44	20.88	20.56	20.19	19.91	19.72
270.0	23.85	23.25	22.32	21.44	20.79	20.84	21.30	21.44	21.21
315.0	24.18	22.88	21.81	21.21	21.07	21.21	21.30	21.62	22.41
360.0	24.59	23.57	22.74	22.00	21.58	21.58	21.76	21.58	21.39

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	21.62	21.53	21.35	20.79	20.28	19.91	19.44	19.63	20.09
45.0	22.92	22.78	22.92	22.78	22.60	22.27	21.76	21.35	21.07
90.0	24.78	25.15	25.06	24.78	23.99	23.06	22.00	20.97	20.19
135.0	34.11	35.82	36.66	37.12	36.66	34.34	29.74	22.83	19.21
180.0	21.72	21.86	21.76	21.72	21.35	20.84	20.37	19.91	19.95
225.0	19.44	19.12	18.93	18.75	18.28	17.87	17.68	17.87	17.87
270.0	21.39	21.81	21.81	21.35	20.93	20.37	20.23	20.60	21.25
315.0	23.16	23.62	23.48	21.35	19.95	19.35	19.16	19.72	20.23
360.0	21.62	21.53	21.35	20.79	20.28	19.91	19.44	19.63	20.09

Intensity data(cd)

C/γ(°)	90.0
0.0	20.46
45.0	20.65
90.0	19.95
135.0	18.75
180.0	20.42
225.0	17.73
270.0	21.48
315.0	20.37
360.0	20.46