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

Nata

Client:
LumCAT: 1405-N
Luminaire: 92.70.043.00

Report No:	Voltage(V): 31.5600
Test No: GC20190824010	Current(A): 0.1970
LampCAT: XICATO XOB LES 6MM	Power (W): 6.2200
Lamp flux(lm): 658.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 570.41, Efficiency(%): 86.69% , Luminous Efficacy(lm/W): 91.71
Central intensity(cd): 1617.188, Maximum intensity(cd): 1617.188
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=20.0
[C90/270]Total=20.0
Field angle(10%Imax): [C0/180]Total=69.4
[C90/270]Total=69.4
Maximum s/h(1/2): C0_180=0.34 C90_270=0.34
Maximum s/h(1/4): C0_180=0.38 C90_270=0.38
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.69%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.671%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1617.188	0.000	0	.000%	.000%
1.0	1603.547	1.541	1.541	.234%	.270%
2.0	1565.719	4.549	6.09	.691%	1.068%
3.0	1503.352	7.340	13.43	1.116%	2.354%
4.0	1425.164	9.803	23.233	1.490%	4.073%
5.0	1322.241	11.819	35.052	1.796%	6.145%
6.0	1224.352	13.383	48.435	2.034%	8.491%
7.0	1116.661	14.531	62.966	2.208%	11.039%
8.0	1007.655	15.203	78.169	2.311%	13.704%
9.0	907.748	15.523	93.692	2.359%	16.426%
10.0	806.048	15.509	109.201	2.357%	19.144%
11.0	719.859	15.247	124.448	2.317%	21.817%
12.0	641.341	14.880	139.328	2.261%	24.426%
13.0	565.713	14.325	153.653	2.177%	26.937%
14.0	506.735	13.727	167.38	2.086%	29.344%
15.0	456.005	13.217	180.597	2.009%	31.661%
16.0	411.954	12.718	193.315	1.933%	33.891%
17.0	374.822	12.252	205.567	1.862%	36.039%
18.0	344.377	11.858	217.425	1.802%	38.118%
19.0	320.119	11.561	228.986	1.757%	40.144%
20.0	299.876	11.348	240.334	1.725%	42.134%
21.0	279.598	11.127	251.461	1.691%	44.085%
22.0	266.723	10.979	262.44	1.668%	46.009%
23.0	252.429	10.893	273.333	1.656%	47.919%
24.0	241.137	10.791	284.124	1.640%	49.811%
25.0	231.448	10.746	294.869	1.633%	51.695%
26.0	223.088	10.729	305.599	1.631%	53.576%
27.0	215.156	10.722	316.32	1.629%	55.455%
28.0	207.415	10.699	327.019	1.626%	57.331%
29.0	200.278	10.666	337.685	1.621%	59.201%
30.0	193.929	10.644	348.329	1.618%	61.067%
31.0	186.722	10.593	358.922	1.610%	62.924%
32.0	179.768	10.500	369.421	1.596%	64.765%
33.0	173.545	10.409	379.83	1.582%	66.589%
34.0	166.479	10.290	390.12	1.564%	68.393%
35.0	159.272	10.117	400.237	1.537%	70.167%
36.0	152.051	9.913	410.15	1.506%	71.905%
37.0	144.591	9.675	419.824	1.470%	73.601%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	136.617	9.386	429.211	1.426%	75.246%
39.0	128.580	9.052	438.263	1.376%	76.833%
40.0	120.473	8.686	446.949	1.320%	78.356%
41.0	112.430	8.294	455.242	1.260%	79.810%
42.0	104.351	7.876	463.118	1.197%	81.191%
43.0	95.857	7.416	470.535	1.127%	82.491%
44.0	88.221	6.948	477.482	1.056%	83.709%
45.0	80.965	6.502	483.984	.988%	84.849%
46.0	73.498	6.041	490.025	.918%	85.908%
47.0	66.945	5.586	495.611	.849%	86.887%
48.0	61.291	5.184	500.795	.788%	87.796%
49.0	55.659	4.803	505.597	.730%	88.638%
50.0	50.252	4.416	510.013	.671%	89.412%
51.0	45.921	4.069	514.082	.618%	90.126%
52.0	41.899	3.768	517.85	.573%	90.786%
53.0	38.215	3.485	521.335	.530%	91.397%
54.0	35.002	3.227	524.562	.490%	91.963%
55.0	32.309	3.005	527.567	.457%	92.490%
56.0	29.848	2.809	530.376	.427%	92.982%
57.0	27.675	2.630	533.006	.400%	93.443%
58.0	25.727	2.470	535.475	.375%	93.876%
59.0	24.096	2.329	537.805	.354%	94.284%
60.0	22.528	2.203	540.007	.335%	94.671%
61.0	21.045	2.079	542.087	.316%	95.035%
62.0	19.793	1.968	544.054	.299%	95.380%
63.0	18.633	1.869	545.923	.284%	95.708%
64.0	17.466	1.771	547.695	.269%	96.018%
65.0	16.411	1.677	549.371	.255%	96.312%
66.0	15.504	1.592	550.964	.242%	96.591%
67.0	14.611	1.514	552.478	.230%	96.857%
68.0	13.718	1.435	553.913	.218%	97.108%
69.0	12.923	1.359	555.272	.207%	97.347%
70.0	12.157	1.288	556.56	.196%	97.572%
71.0	11.398	1.217	557.777	.185%	97.786%
72.0	10.709	1.149	558.927	.175%	97.987%
73.0	10.048	1.085	560.012	.165%	98.178%
74.0	9.422	1.024	561.036	.156%	98.357%
75.0	8.768	0.961	561.997	.146%	98.526%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.156	0.898	562.895	.137%	98.683%
77.0	7.594	0.840	563.735	.128%	98.830%
78.0	7.045	0.784	564.519	.119%	98.968%
79.0	6.490	0.727	565.246	.111%	99.095%
80.0	5.984	0.672	565.918	.102%	99.213%
81.0	5.548	0.624	566.542	.095%	99.322%
82.0	5.091	0.577	567.119	.088%	99.424%
83.0	4.655	0.530	567.649	.081%	99.516%
84.0	4.310	0.488	568.137	.074%	99.602%
85.0	3.994	0.453	568.59	.069%	99.682%
86.0	3.691	0.420	569.01	.064%	99.755%
87.0	3.375	0.387	569.397	.059%	99.823%
88.0	3.136	0.357	569.754	.054%	99.886%
89.0	2.974	0.335	570.089	.051%	99.944%
90.0	2.827	0.318	570.407	.048%	100.000%

Zonal flux distribution table

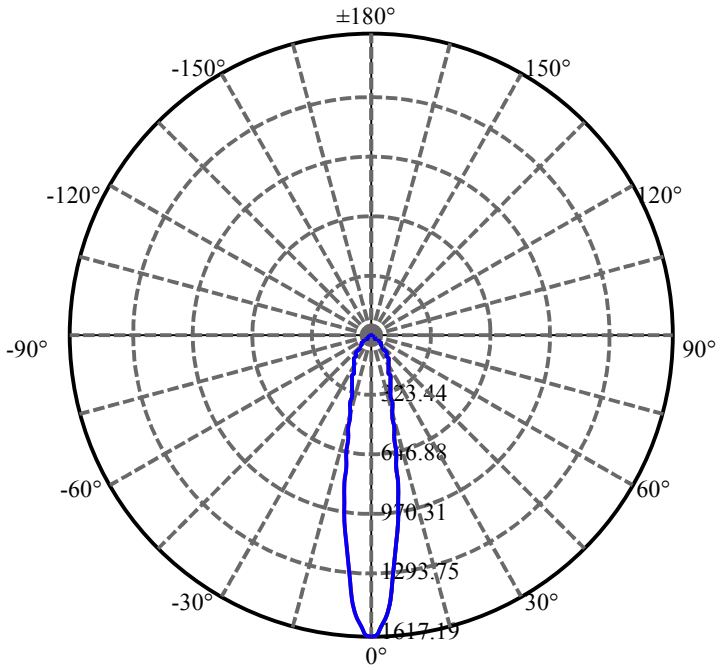
ZONAL LUMEN SUMMARY

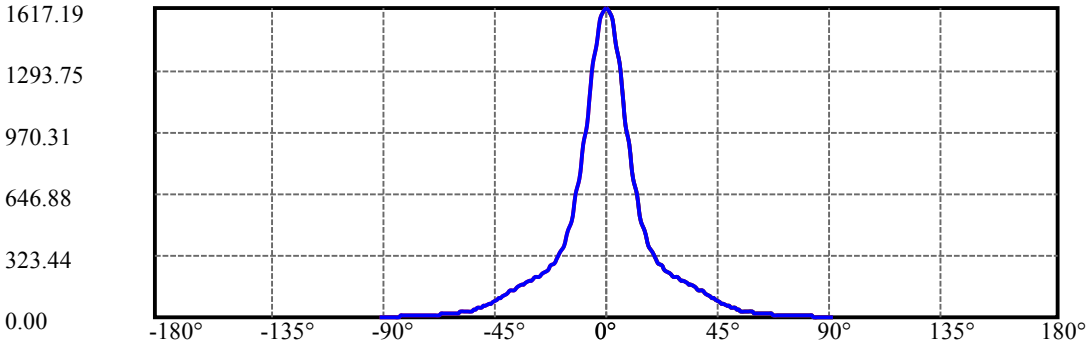
Zone	Lumens	%Lamp	%Fixt
0-30	348.33	52.94%	61.07%
0-40	446.95	67.93%	78.36%
0-60	540.01	82.07%	94.67%
0-90	570.09	86.64%	99.94%
0-120	570.09	86.64%	99.94%
0-180	570.41	86.69%	100.00%
60-90	32.28	4.91%	5.66%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-41.14	456.33	69.35%	80.00%

ZONAL LUMEN SUMMARY

0-10	109.20
10-20	131.13
20-30	108.00
30-40	98.62
40-50	63.06
50-60	29.99
60-70	16.55
70-80	9.36
80-90	4.17
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):

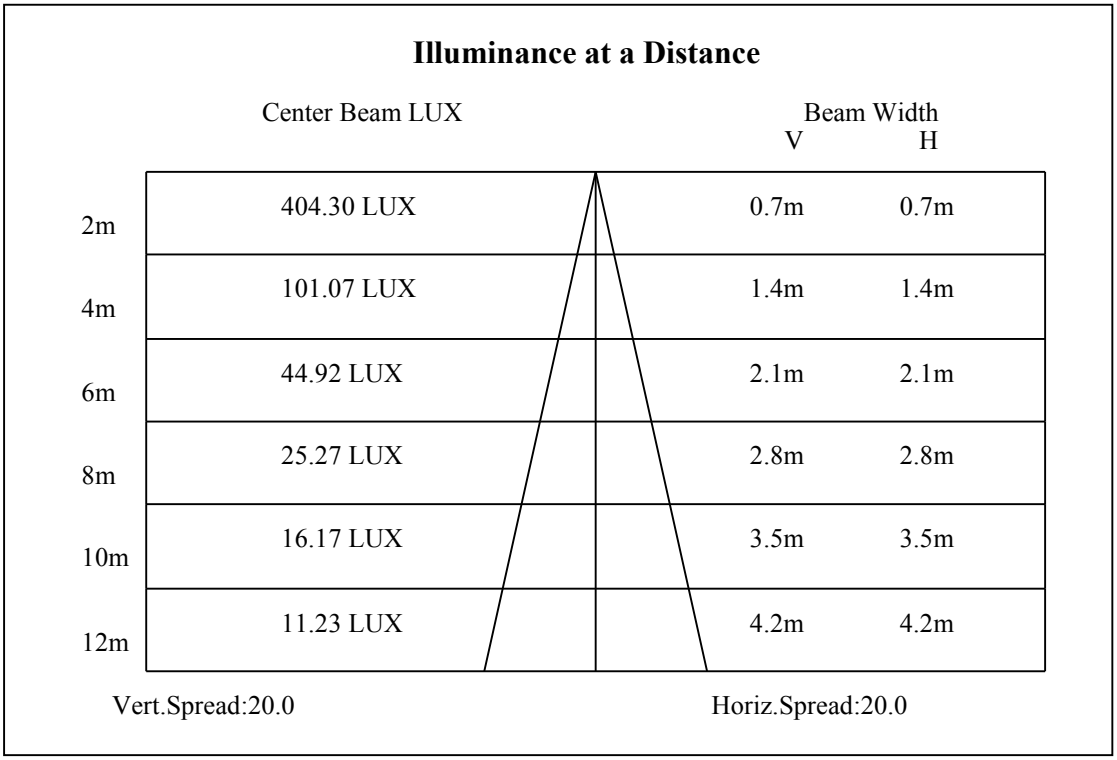
C0/C180:

C90/C270:

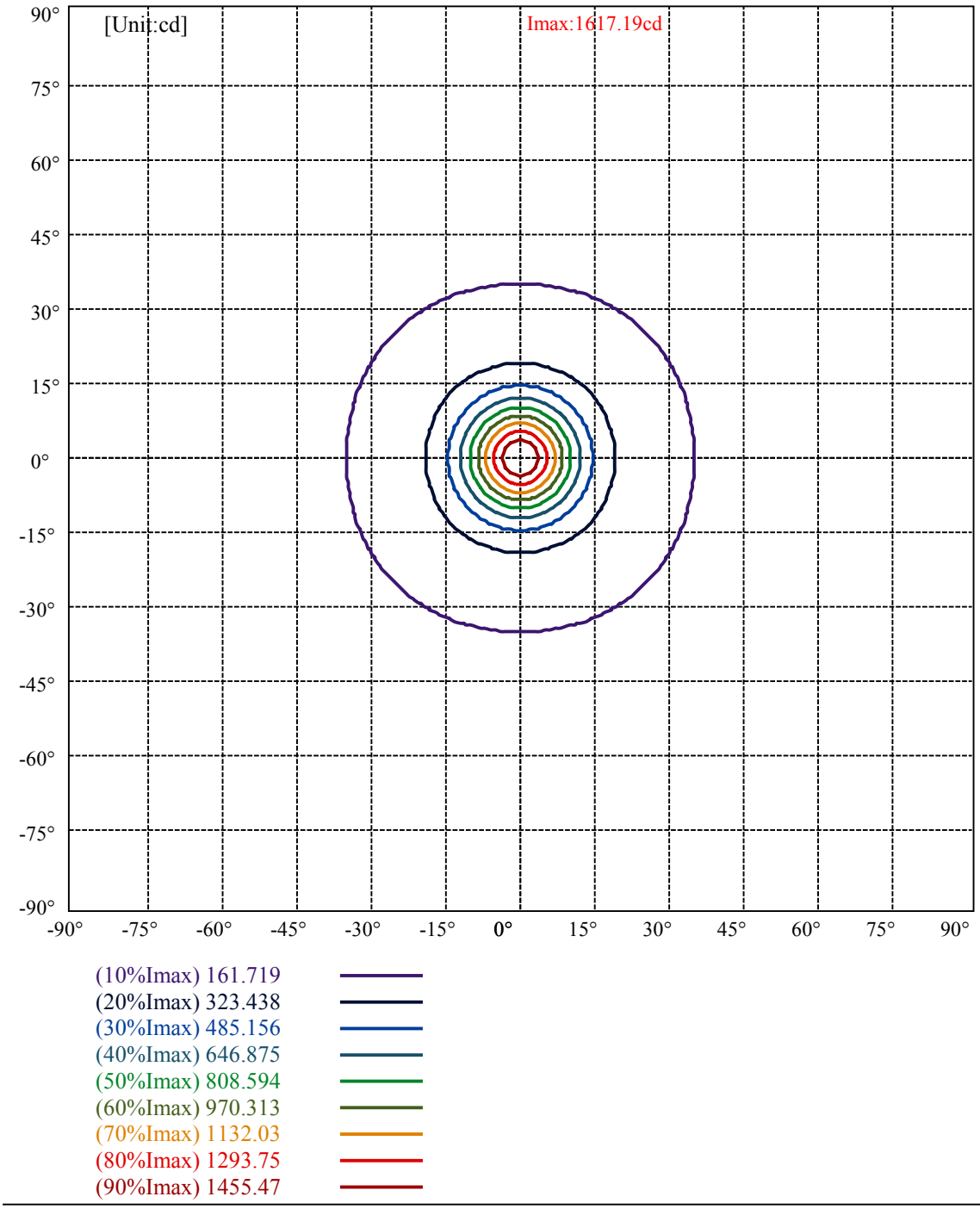
Field angle(10%Imax):C0/180Left:34.7 Right:34.7
:C90/270Left:34.7 Right:34.7

Beam Angle(50%Imax):C0/180Left:10.0 Right:10.0
:C90/270Left:10.0 Right:10.0

Lux distance Curve



ISO-Intensity(V-H)

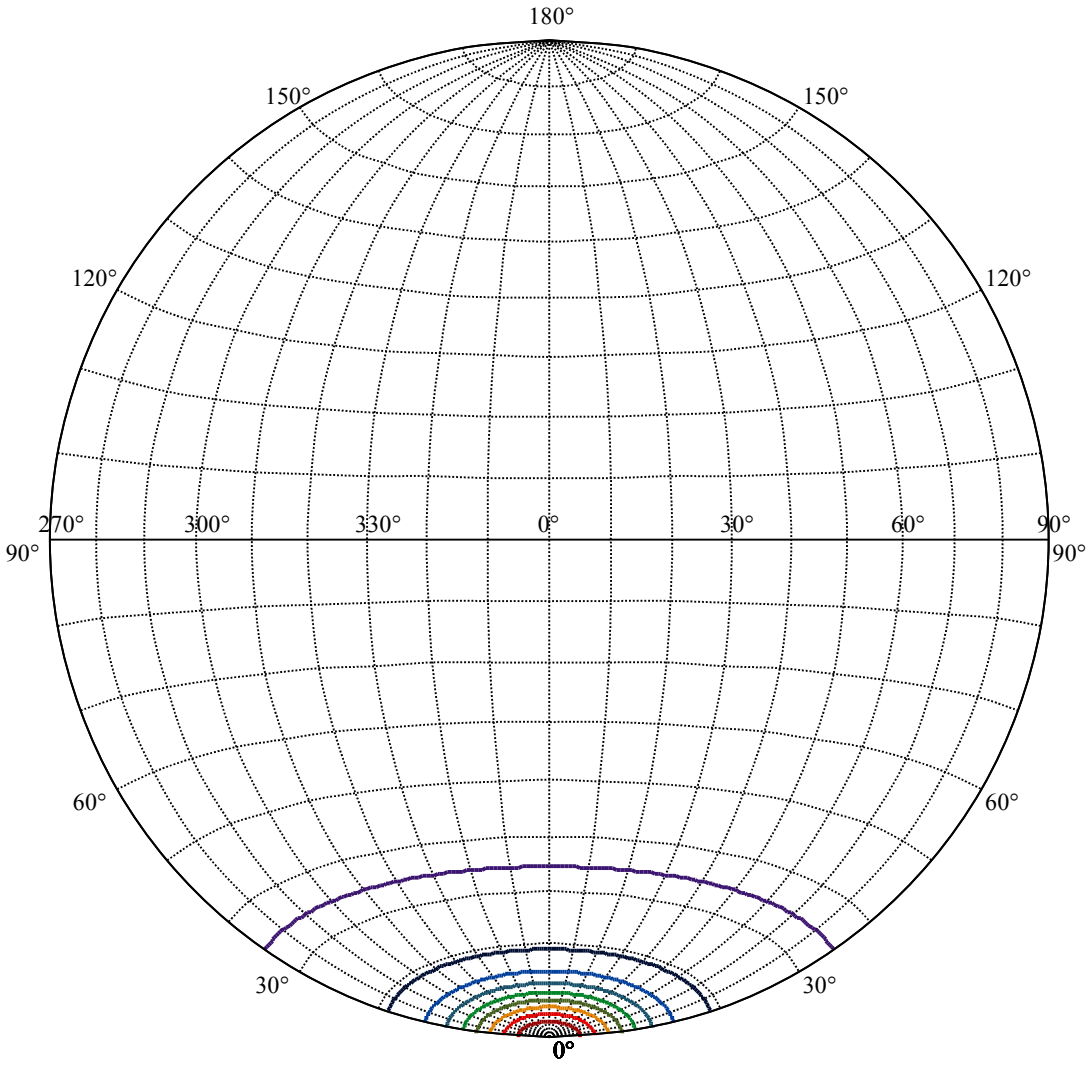


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/24
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1617.19

(10%Imax) 161.719
(20%Imax) 323.438
(30%Imax) 485.156
(40%Imax) 646.875
(50%Imax) 808.594
(60%Imax) 970.313
(70%Imax) 1132.03
(80%Imax) 1293.75
(90%Imax) 1455.47

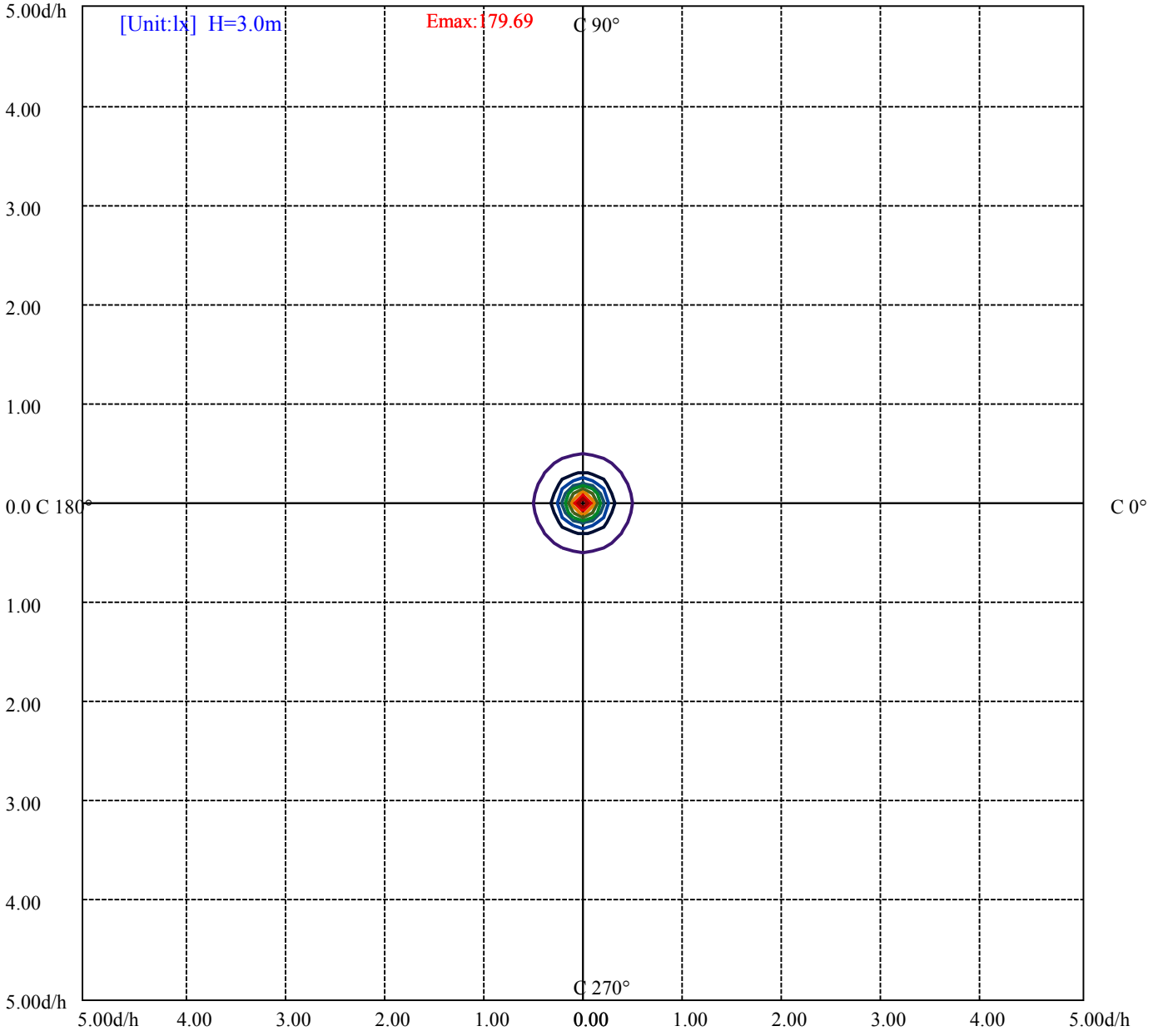
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/24
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata 1405-N

ISO illuminance diagram

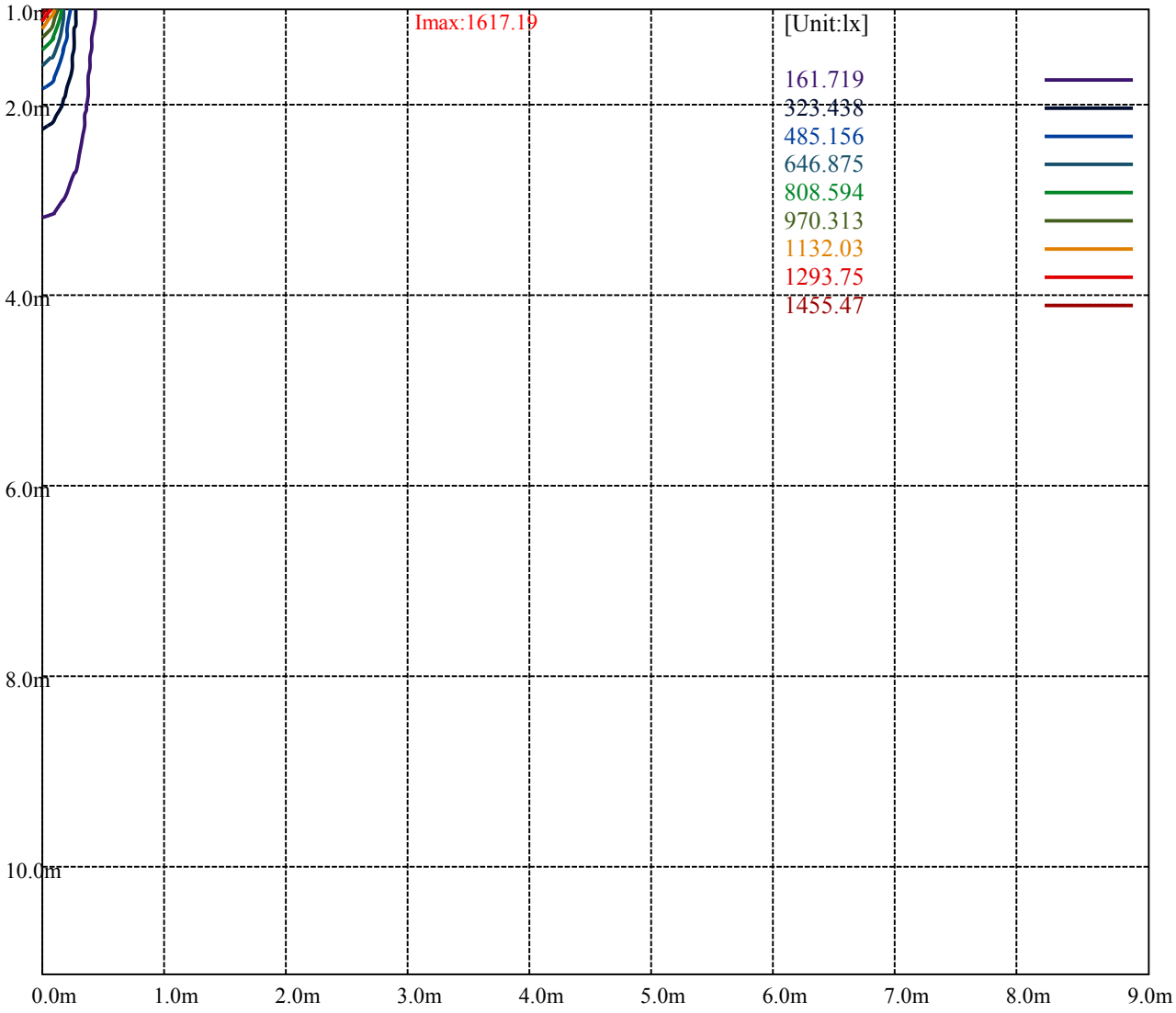


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/24
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/24
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata 1405-N

Luminance Limitting Curve(no luminous side)

Luminance Table

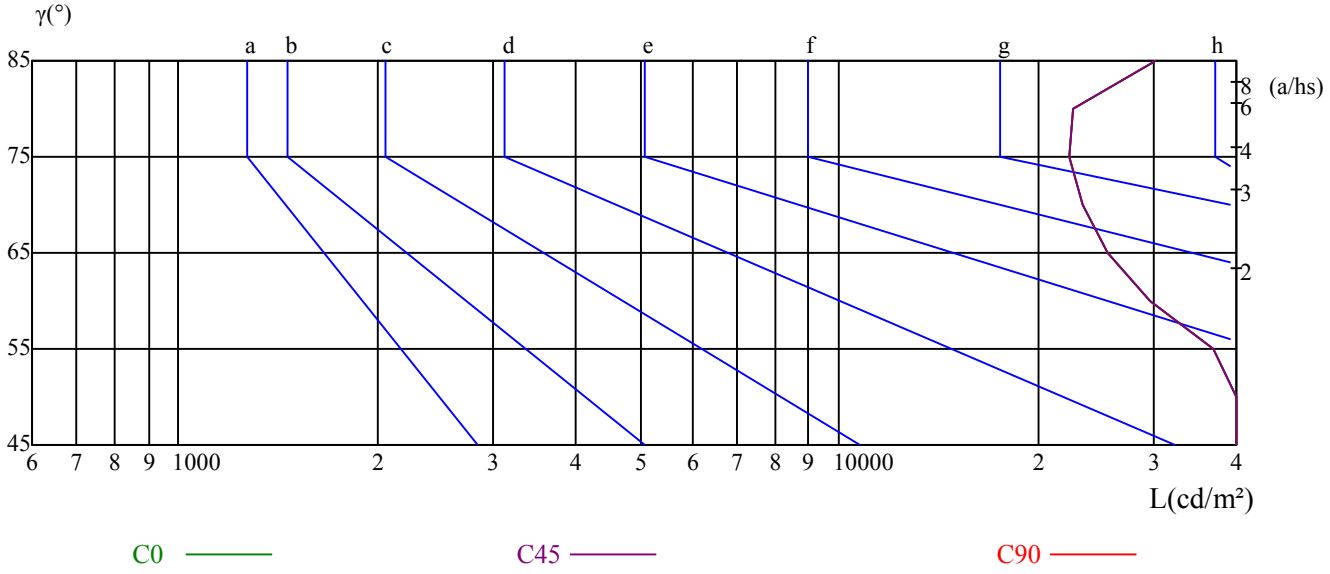
γ	45	50	55	60	65	70	75	80	85
C0	75280	51400	37034	29623	25530	23369	22273	22655	30127
C45	75280	51400	37034	29623	25530	23369	22273	22655	30127
C90	75280	51400	37034	29623	25530	23369	22273	22655	30127

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
25530	25530	25530	22273	22273	22273	30127	30127	30127

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

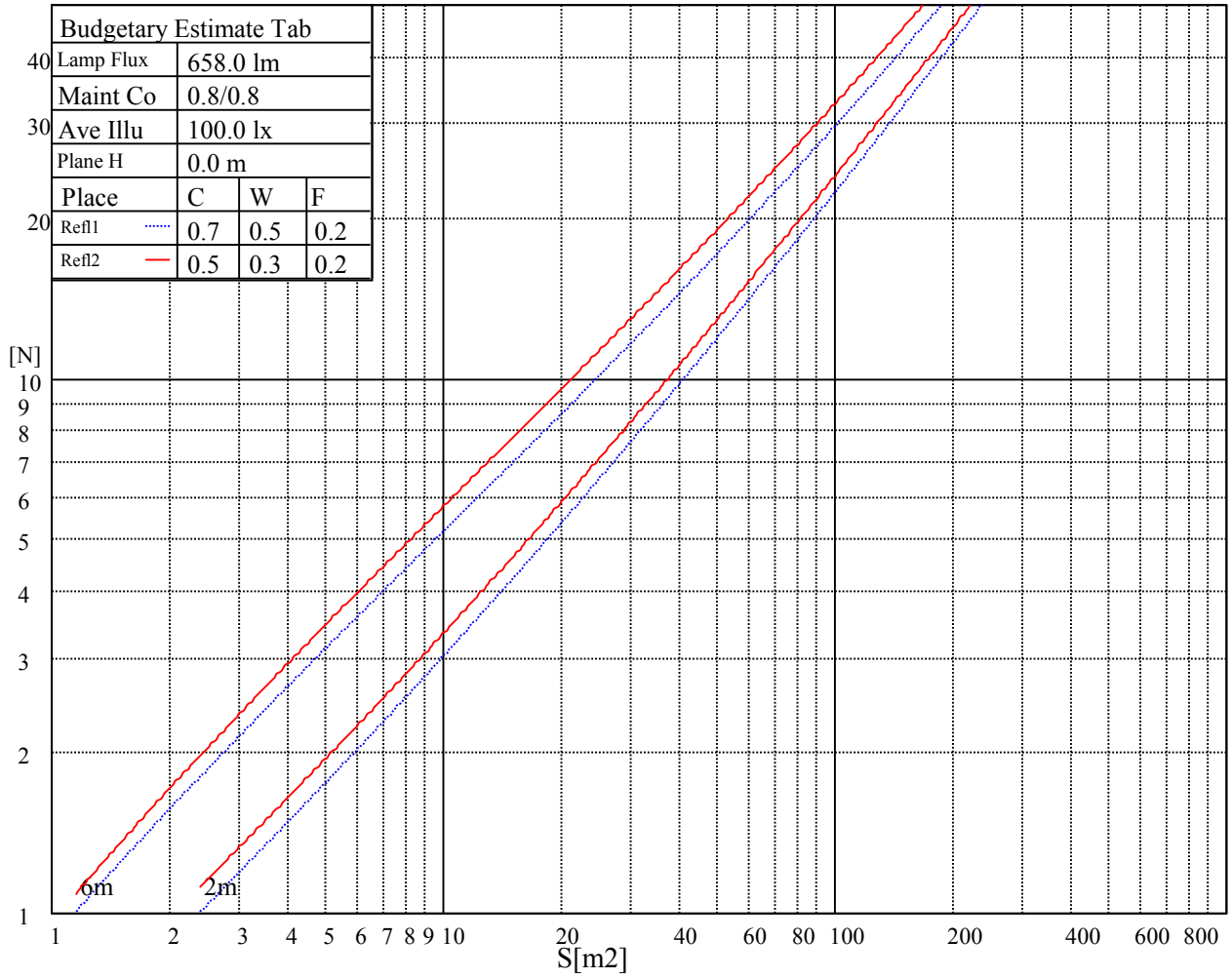


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/24
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

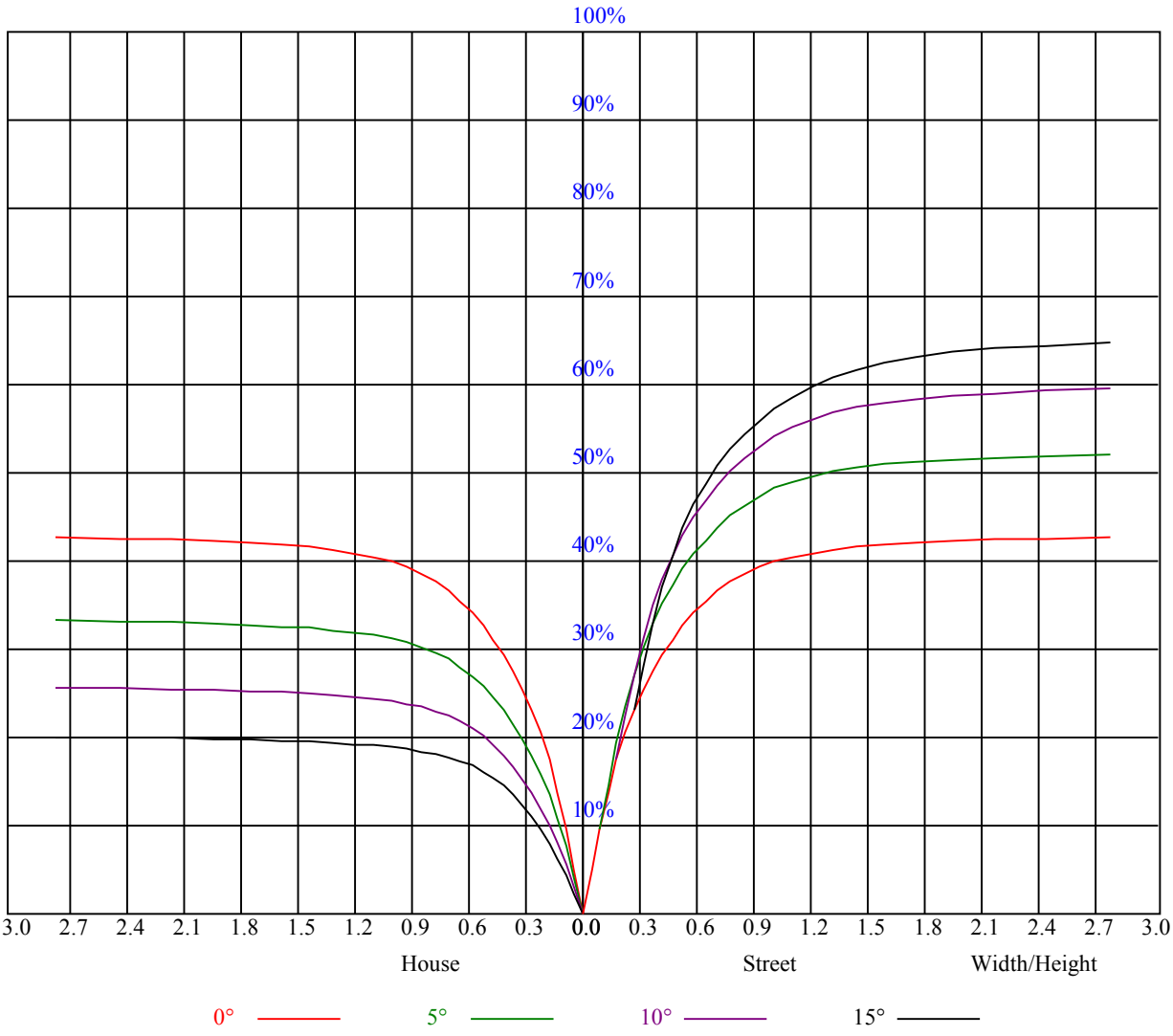


Equipment: GMS1980	Date: 2019/8/24	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

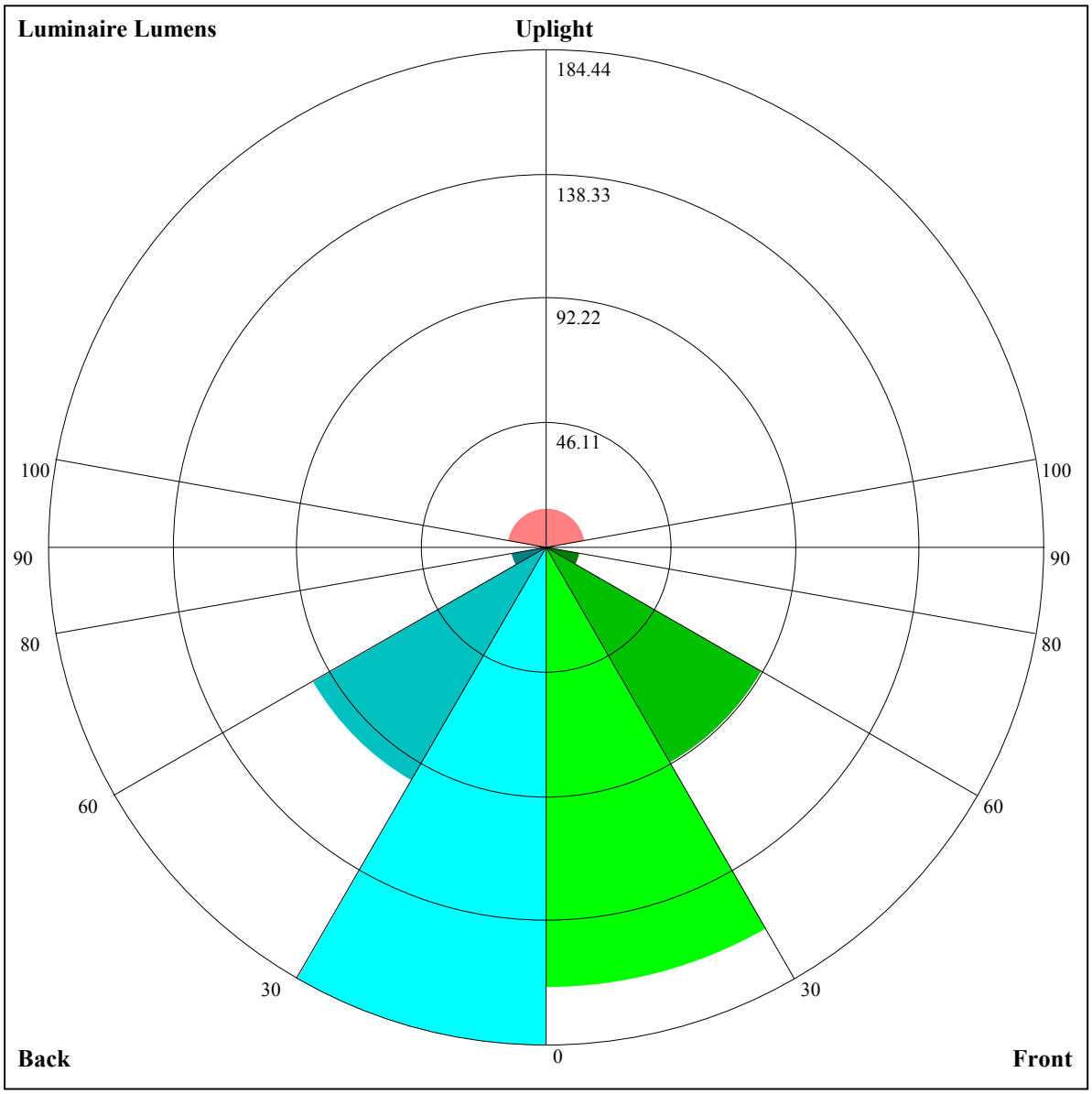
Utilization factor table for indoor luminaire

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	1.03	1.03	1.03	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.87
1	0.95	0.92	0.90	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.79
2	0.87	0.83	0.80	0.86	0.82	0.79	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.74	0.73
3	0.81	0.76	0.72	0.80	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.69	0.73	0.71	0.68	0.67
4	0.75	0.70	0.66	0.74	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.63	0.62
5	0.70	0.65	0.61	0.70	0.64	0.61	0.68	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.59	0.58
6	0.66	0.61	0.57	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.54
7	0.62	0.57	0.53	0.62	0.56	0.53	0.61	0.56	0.53	0.59	0.55	0.52	0.58	0.55	0.52	0.51
8	0.59	0.53	0.50	0.58	0.53	0.50	0.57	0.53	0.49	0.56	0.52	0.49	0.56	0.52	0.49	0.48
9	0.56	0.51	0.47	0.55	0.50	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.49	0.46	0.45
10	0.53	0.48	0.45	0.53	0.48	0.45	0.52	0.48	0.44	0.51	0.47	0.44	0.51	0.47	0.44	0.43

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/8/24	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50



Luminaire Lumens:
FL=162.95,FM=92.16,FH=12.67,FVH=2.21
BL=184.44,BM=99.9,BH=13.19,BVH=2.3
UL=3.08,UH=14.68

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	1609.88	1555.88	1461.38	1372.50	1276.31	1161.00	1049.63	952.88	851.06
45.0	1638.00	1592.44	1517.06	1423.69	1325.25	1221.75	1093.50	986.63	889.88
90.0	1619.44	1580.06	1526.06	1440.56	1339.31	1240.31	1122.19	992.76	906.30
135.0	1601.44	1620.00	1612.69	1576.69	1523.25	1443.94	1348.88	1251.00	1160.44
180.0	1609.88	1641.94	1659.94	1642.50	1605.38	1536.75	1445.63	1347.19	1195.88
225.0	1638.00	1660.50	1653.19	1616.63	1551.38	1471.50	1368.00	1251.00	1114.93
270.0	1619.44	1625.63	1603.13	1549.13	1479.94	1380.38	1269.56	1164.94	1061.44
315.0	1601.44	1551.94	1492.31	1405.13	1300.50	1122.30	1097.44	986.91	881.33
360.0	1609.88	1555.88	1461.38	1372.50	1276.31	1161.00	1049.63	952.88	851.06

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	756.00	678.94	601.31	541.13	480.94	430.88	392.63	359.44	324.56
45.0	790.88	698.63	626.06	562.50	492.19	447.75	407.81	370.69	339.19
90.0	815.51	700.09	636.47	571.84	508.50	454.05	412.88	373.67	343.63
135.0	1022.06	920.81	837.00	726.75	637.88	579.94	506.81	450.56	415.13
180.0	1117.52	996.47	880.26	787.61	694.18	610.65	548.16	492.81	435.94
225.0	1033.03	903.77	805.67	718.99	622.41	557.38	502.20	449.10	405.79
270.0	935.44	839.81	752.06	664.31	586.69	527.63	470.81	424.69	390.38
315.0	791.55	709.88	620.04	557.61	502.93	445.61	406.74	374.68	343.97
360.0	756.00	678.94	601.31	541.13	480.94	430.88	392.63	359.44	324.56

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	302.63	284.63	264.04	245.87	233.83	222.98	212.40	204.19	196.88
45.0	313.88	294.75	284.63	262.24	251.38	242.16	233.94	226.97	221.12
90.0	316.29	292.67	277.03	261.62	249.08	239.63	231.41	222.69	216.28
135.0	371.81	343.13	318.94	293.06	284.06	258.47	244.63	233.55	224.55
180.0	397.80	364.39	334.24	309.09	291.04	274.05	259.43	248.29	237.43
225.0	374.51	344.87	323.16	301.89	284.85	271.86	258.47	246.88	237.88
270.0	359.44	336.94	315.00	295.88	284.06	266.85	254.31	244.24	235.46
315.0	318.66	299.59	281.98	267.13	255.49	243.45	234.51	224.78	215.10
360.0	302.63	284.63	264.04	245.87	233.83	222.98	212.40	204.19	196.88

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	188.55	182.36	176.63	170.66	164.53	158.79	152.72	146.76	140.29
45.0	216.62	208.46	202.44	197.33	188.66	182.19	175.78	167.40	158.79
90.0	210.09	204.58	197.44	192.04	186.19	178.71	172.86	166.56	159.13
135.0	214.48	206.66	199.80	192.54	185.79	179.89	173.42	166.73	160.54
180.0	228.94	220.44	212.23	205.26	199.24	190.80	185.74	179.83	172.46
225.0	229.56	219.88	213.02	206.49	198.00	191.93	185.63	177.98	170.61
270.0	225.51	216.62	209.19	202.33	193.67	186.75	179.78	171.34	165.04
315.0	207.51	200.31	191.48	184.78	177.69	169.09	162.45	155.25	147.32
360.0	188.55	182.36	176.63	170.66	164.53	158.79	152.72	146.76	140.29

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	132.75	126.62	120.09	111.83	105.13	98.72	90.73	84.38	78.24
45.0	152.04	142.93	134.27	126.51	116.66	108.51	100.46	91.24	83.87
90.0	151.09	143.55	134.89	125.72	117.56	108.06	99.90	90.96	82.29
135.0	153.79	147.15	139.39	131.29	123.86	115.93	106.09	98.38	90.90
180.0	166.33	160.43	151.65	144.79	137.25	127.35	120.04	110.93	100.46
225.0	163.35	154.01	147.38	138.94	129.21	122.46	114.53	103.89	97.14
270.0	157.67	149.63	141.19	133.54	124.99	117.62	109.18	100.86	93.94
315.0	139.39	132.41	124.09	116.04	109.13	100.80	93.88	86.23	78.92
360.0	132.75	126.62	120.09	111.83	105.13	98.72	90.73	84.38	78.24

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	71.55	65.25	60.02	54.68	50.12	45.62	41.57	38.36	35.10
45.0	77.12	69.30	63.56	58.33	52.99	48.09	44.33	40.50	36.96
90.0	75.32	68.57	61.14	55.97	51.13	45.79	42.02	38.64	35.33
135.0	81.90	74.93	68.63	62.21	56.31	51.41	46.46	42.53	38.70
180.0	93.32	84.26	75.09	68.79	62.27	54.90	49.84	45.28	40.89
225.0	89.66	80.04	74.19	67.89	61.20	55.18	50.46	45.68	42.02
270.0	86.18	78.75	72.68	66.88	60.08	54.79	49.95	44.61	40.28
315.0	72.68	66.88	60.24	55.58	51.19	46.24	42.75	39.60	36.45
360.0	71.55	65.25	60.02	54.68	50.12	45.62	41.57	38.36	35.10

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	32.23	29.98	27.90	25.65	24.02	22.50	20.81	19.58	18.45
45.0	34.26	31.61	29.53	27.62	25.65	24.19	22.73	21.26	20.08
90.0	32.40	30.21	28.01	26.27	24.47	22.89	21.60	20.31	19.13
135.0	35.33	32.79	30.09	27.90	25.99	24.36	22.56	21.15	19.91
180.0	37.13	34.26	31.44	29.03	27.11	25.26	23.74	22.16	20.70
225.0	38.42	35.16	32.57	29.98	27.73	25.99	24.36	22.50	21.21
270.0	36.68	33.19	30.21	27.84	25.59	24.02	22.28	20.76	19.46
315.0	33.58	31.28	29.03	27.11	25.26	23.57	22.16	20.64	19.41
360.0	32.23	29.98	27.90	25.65	24.02	22.50	20.81	19.58	18.45

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	17.27	16.20	15.24	14.29	13.50	12.66	11.81	11.08	10.35
45.0	18.96	17.78	16.82	15.98	15.13	14.29	13.56	12.83	12.04
90.0	18.06	17.16	16.09	15.24	14.51	13.73	12.99	12.32	11.64
135.0	18.56	17.44	16.43	15.41	14.51	13.73	12.88	12.21	11.48
180.0	19.52	18.28	17.16	16.26	15.36	14.34	13.56	12.83	12.09
225.0	19.97	18.62	17.55	16.59	15.64	14.51	13.67	12.88	12.09
270.0	18.45	16.99	15.98	15.19	14.01	13.22	12.54	11.53	10.74
315.0	18.28	17.27	16.03	15.08	14.23	13.28	12.38	11.59	10.74
360.0	17.27	16.20	15.24	14.29	13.50	12.66	11.81	11.08	10.35

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.68	9.06	8.49	7.82	7.26	6.81	6.24	5.74	5.29
45.0	11.53	10.80	10.24	9.62	9.00	8.44	7.99	7.37	6.86
90.0	10.97	10.41	9.79	9.17	8.61	8.04	7.54	7.03	6.47
135.0	10.80	10.13	9.56	8.83	8.21	7.71	7.09	6.64	6.13
180.0	11.25	10.63	9.96	9.23	8.61	8.10	7.43	6.86	6.36
225.0	11.25	10.58	9.90	9.17	8.61	7.93	7.37	6.81	6.30
270.0	10.18	9.39	8.78	8.21	7.54	6.98	6.47	5.79	5.34
315.0	10.01	9.39	8.66	8.10	7.43	6.75	6.24	5.68	5.12
360.0	9.68	9.06	8.49	7.82	7.26	6.81	6.24	5.74	5.29

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.89	4.44	4.11	3.71	3.43	3.15	2.93	2.76	2.64
45.0	6.41	6.02	5.57	5.29	4.95	4.73	4.05	3.83	3.60
90.0	6.02	5.63	5.12	4.73	4.44	4.16	3.77	3.60	3.43
135.0	5.63	5.12	4.73	4.33	3.99	3.60	3.38	3.04	2.81
180.0	5.85	5.40	4.89	4.50	4.11	3.77	3.49	3.09	2.93
225.0	5.91	5.46	4.95	4.61	4.22	3.83	3.49	3.26	3.04
270.0	4.95	4.44	4.11	3.88	3.60	3.43	3.21	2.98	2.87
315.0	4.73	4.22	3.77	3.43	3.21	2.87	2.70	2.53	2.48
360.0	4.89	4.44	4.11	3.71	3.43	3.15	2.93	2.76	2.64

Intensity data(cd)

C/γ(°)	90.0
0.0	2.59
45.0	3.09
90.0	3.77
135.0	2.64
180.0	2.76
225.0	2.76
270.0	2.59
315.0	2.42
360.0	2.59