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

Nata

LumCAT: 3-2545-M
Luminaire: 92.70.131.00
Report No: 200919-B039
Test No: 200919-C039
LampCAT: OSRAM OPTO SOLERIQ S13
Lamp flux(lm): 1409.3
Number of Lamps: 1
Length(feet)(ft.):0.000
Phm Type: C

Voltage(V): 230.5000
Current(A): 0.0850
Power (W): 18.6400
PF: 0.9500
Ballast type: AC
Width(feet)(ft.):0.000
Height(feet)(ft.):0.000

Photometric Results

Lumens(lm): 1368.19
Efficiency(%): 97.08%
Lumens(lm)/Power(W): 73.40
Central intensity(cd): 12348.390
Maximum intensity(cd): 12348.390
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.9
[C90/270]Total=13.9
Field angle(10%Imax): [C0/180]Total=29.6
[C90/270]Total=29.6
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 97.29%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.619%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12348.394	2.954	2.954	.210%	.216%
1.0	11914.842	22.803	25.757	1.618%	1.883%
2.0	11287.265	43.198	68.955	3.065%	5.040%
3.0	10722.914	61.541	130.496	4.367%	9.538%
4.0	9660.364	73.897	204.394	5.244%	14.939%
5.0	8622.031	82.406	286.799	5.847%	20.962%
6.0	7389.385	84.702	371.501	6.010%	27.153%
7.0	6130.288	81.927	453.428	5.813%	33.141%
8.0	5144.913	78.521	531.949	5.572%	38.880%
9.0	4045.444	69.399	601.348	4.924%	43.952%
10.0	3156.761	60.112	661.46	4.265%	48.346%
11.0	2616.801	54.755	716.215	3.885%	52.348%
12.0	2121.271	48.365	764.579	3.432%	55.883%
13.0	1763.066	43.492	808.071	3.086%	59.061%
14.0	1504.971	39.926	847.997	2.833%	61.980%
15.0	1175.339	33.359	881.356	2.367%	64.418%
16.0	998.281	30.175	911.531	2.141%	66.623%
17.0	889.268	28.511	940.042	2.023%	68.707%
18.0	789.785	26.764	966.806	1.899%	70.663%
19.0	712.964	25.454	992.26	1.806%	72.524%
20.0	647.924	24.301	1016.561	1.724%	74.300%
21.0	597.872	23.496	1040.057	1.667%	76.017%
22.0	559.752	22.994	1063.051	1.632%	77.698%
23.0	532.461	22.815	1085.866	1.619%	79.365%
24.0	508.673	22.688	1108.555	1.610%	81.024%
25.0	492.252	22.813	1131.368	1.619%	82.691%
26.0	477.485	22.954	1154.322	1.629%	84.369%
27.0	465.878	23.194	1177.515	1.646%	86.064%
28.0	456.081	23.480	1200.996	1.666%	87.780%
29.0	446.052	23.714	1224.71	1.683%	89.513%
30.0	425.571	23.334	1248.044	1.656%	91.219%
31.0	400.989	22.648	1270.692	1.607%	92.874%
32.0	361.099	20.984	1291.676	1.489%	94.408%
33.0	312.178	18.645	1310.321	1.323%	95.771%
34.0	256.500	15.729	1326.05	1.116%	96.920%
35.0	206.489	12.988	1339.038	.922%	97.869%
36.0	148.061	9.544	1348.581	.677%	98.567%
37.0	106.484	7.027	1355.609	.499%	99.081%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	46.003	3.106	1358.715	.220%	99.308%
39.0	23.341	1.611	1360.325	.114%	99.425%
40.0	10.534	0.742	1361.068	.053%	99.480%
41.0	6.369	0.458	1361.526	.033%	99.513%
42.0	5.412	0.397	1361.923	.028%	99.542%
43.0	4.693	0.351	1362.274	.025%	99.568%
44.0	4.020	0.306	1362.58	.022%	99.590%
45.0	3.538	0.274	1362.855	.019%	99.610%
46.0	3.277	0.259	1363.113	.018%	99.629%
47.0	3.086	0.247	1363.361	.018%	99.647%
48.0	2.918	0.238	1363.599	.017%	99.665%
49.0	2.796	0.231	1363.83	.016%	99.682%
50.0	2.639	0.222	1364.052	.016%	99.698%
51.0	2.488	0.212	1364.264	.015%	99.713%
52.0	2.291	0.198	1364.462	.014%	99.728%
53.0	2.088	0.183	1364.645	.013%	99.741%
54.0	1.937	0.172	1364.816	.012%	99.754%
55.0	1.920	0.172	1364.989	.012%	99.766%
56.0	1.920	0.175	1365.163	.012%	99.779%
57.0	1.949	0.179	1365.343	.013%	99.792%
58.0	1.955	0.182	1365.524	.013%	99.805%
59.0	1.897	0.178	1365.703	.013%	99.818%
60.0	1.752	0.166	1365.869	.012%	99.831%
61.0	1.543	0.148	1366.017	.011%	99.841%
62.0	1.520	0.147	1366.164	.010%	99.852%
63.0	1.479	0.145	1366.309	.010%	99.863%
64.0	1.456	0.143	1366.452	.010%	99.873%
65.0	1.456	0.145	1366.597	.010%	99.884%
66.0	1.462	0.146	1366.743	.010%	99.894%
67.0	1.398	0.141	1366.885	.010%	99.905%
68.0	1.293	0.132	1367.016	.009%	99.914%
69.0	1.189	0.122	1367.138	.009%	99.923%
70.0	1.021	0.105	1367.243	.007%	99.931%
71.0	0.829	0.086	1367.329	.006%	99.937%
72.0	0.661	0.069	1367.398	.005%	99.942%
73.0	0.557	0.058	1367.456	.004%	99.947%
74.0	0.481	0.051	1367.507	.004%	99.950%
75.0	0.592	0.063	1367.57	.004%	99.955%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	0.638	0.068	1367.638	.005%	99.960%
77.0	0.534	0.057	1367.695	.004%	99.964%
78.0	0.406	0.044	1367.738	.003%	99.967%
79.0	0.377	0.041	1367.779	.003%	99.970%
80.0	0.383	0.041	1367.82	.003%	99.973%
81.0	0.354	0.038	1367.858	.003%	99.976%
82.0	0.336	0.037	1367.895	.003%	99.979%
83.0	0.313	0.034	1367.929	.002%	99.981%
84.0	0.319	0.035	1367.964	.002%	99.984%
85.0	0.307	0.034	1367.997	.002%	99.986%
86.0	0.307	0.034	1368.031	.002%	99.989%
87.0	0.412	0.045	1368.076	.003%	99.992%
88.0	0.406	0.044	1368.121	.003%	99.995%
89.0	0.412	0.045	1368.166	.003%	99.998%
90.0	0.389	0.021	1368.187	.002%	100.000%

Zonal flux distribution table

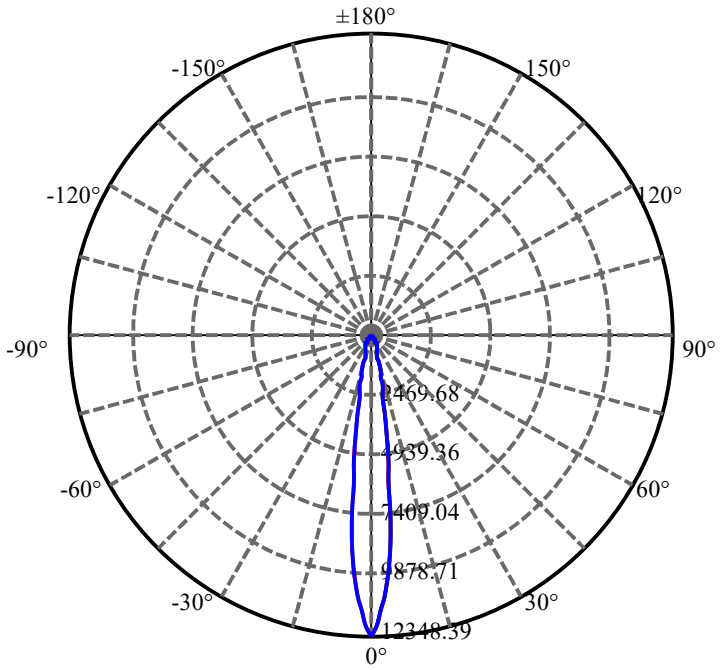
ZONAL LUMEN SUMMARY

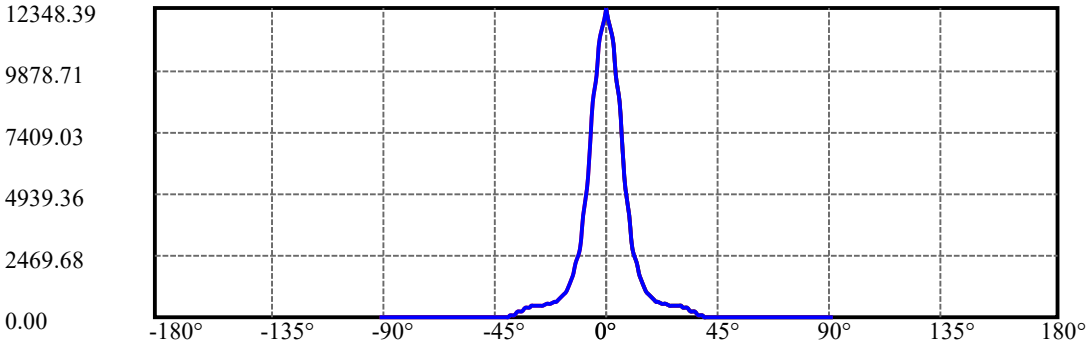
Zone	Lumens	%Lamp	%Fixt
0-30	1248.04	88.56%	91.22%
0-40	1361.07	96.58%	99.48%
0-60	1365.87	96.92%	99.83%
0-90	1368.17	97.08%	100.00%
0-120	1368.17	97.08%	100.00%
0-180	1368.19	97.08%	100.00%
60-90	2.46	0.17%	0.18%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.38	1094.55	77.67%	80.00%

ZONAL LUMEN SUMMARY

0-10	661.46
10-20	355.10
20-30	231.48
30-40	113.02
40-50	2.98
50-60	1.82
60-70	1.37
70-80	0.58
80-90	0.35
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):

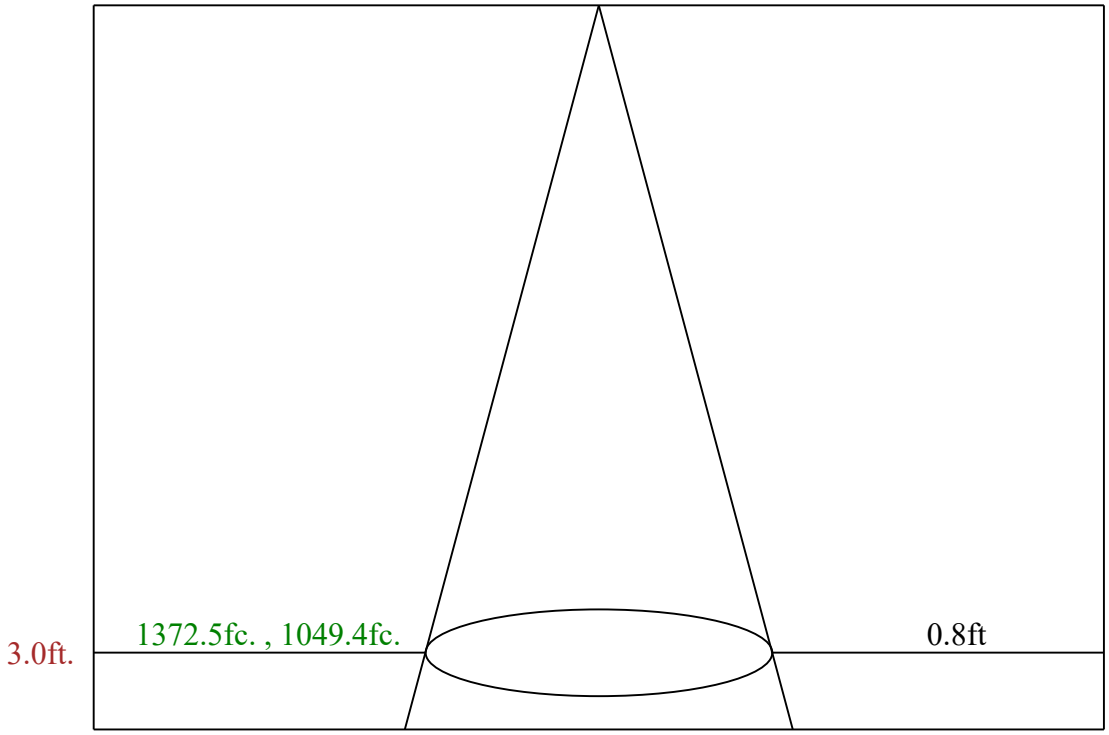
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.8 Right:14.8
:C90/270Left:14.8 Right:14.8

Beam Angle(50%Imax):C0/180Left:7.0 Right:7.0
:C90/270Left:7.0 Right:7.0

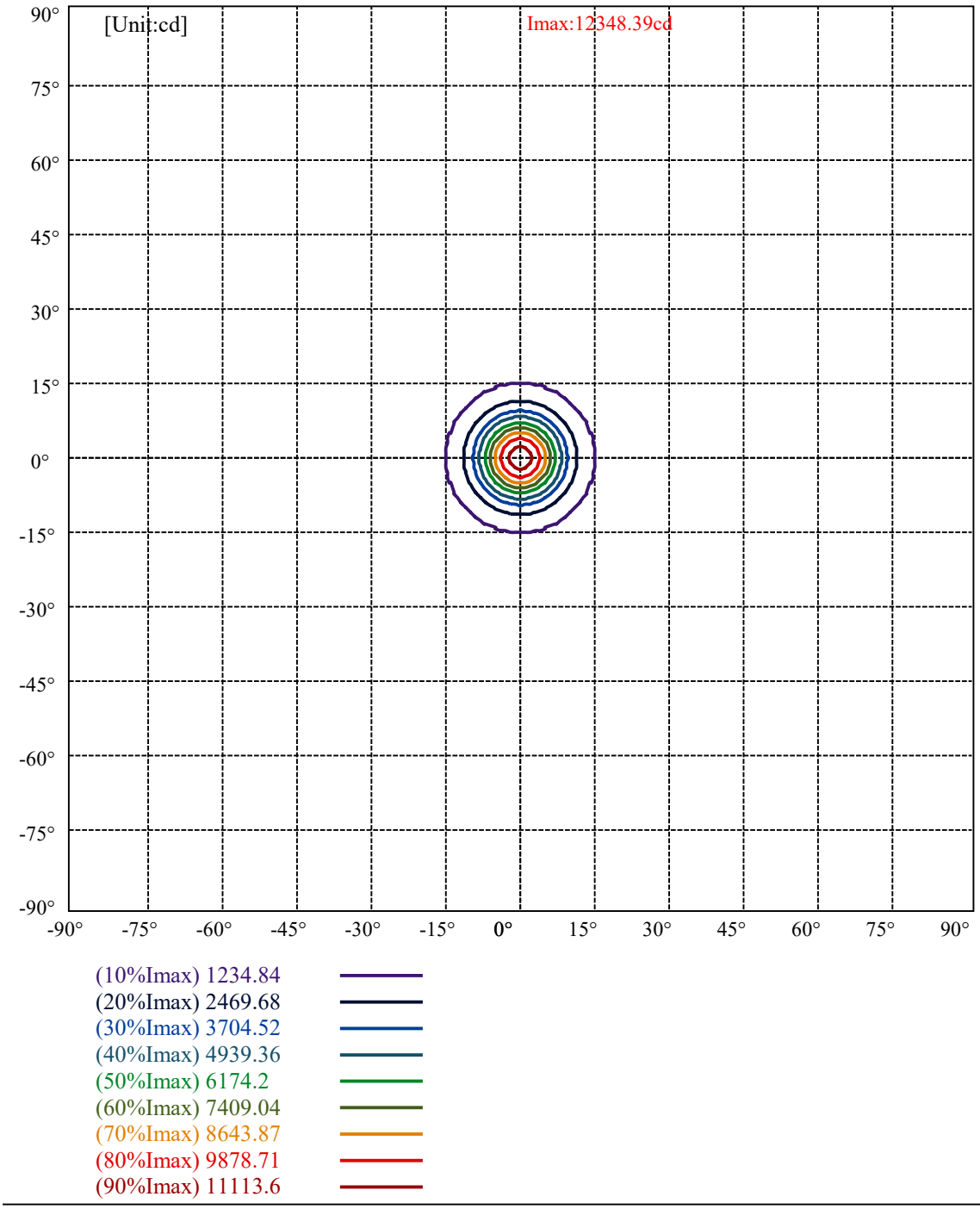
Lux distance Curve



Max , Ave

Beam angle of C0 plane 14.35

ISO-Intensity(V-H)



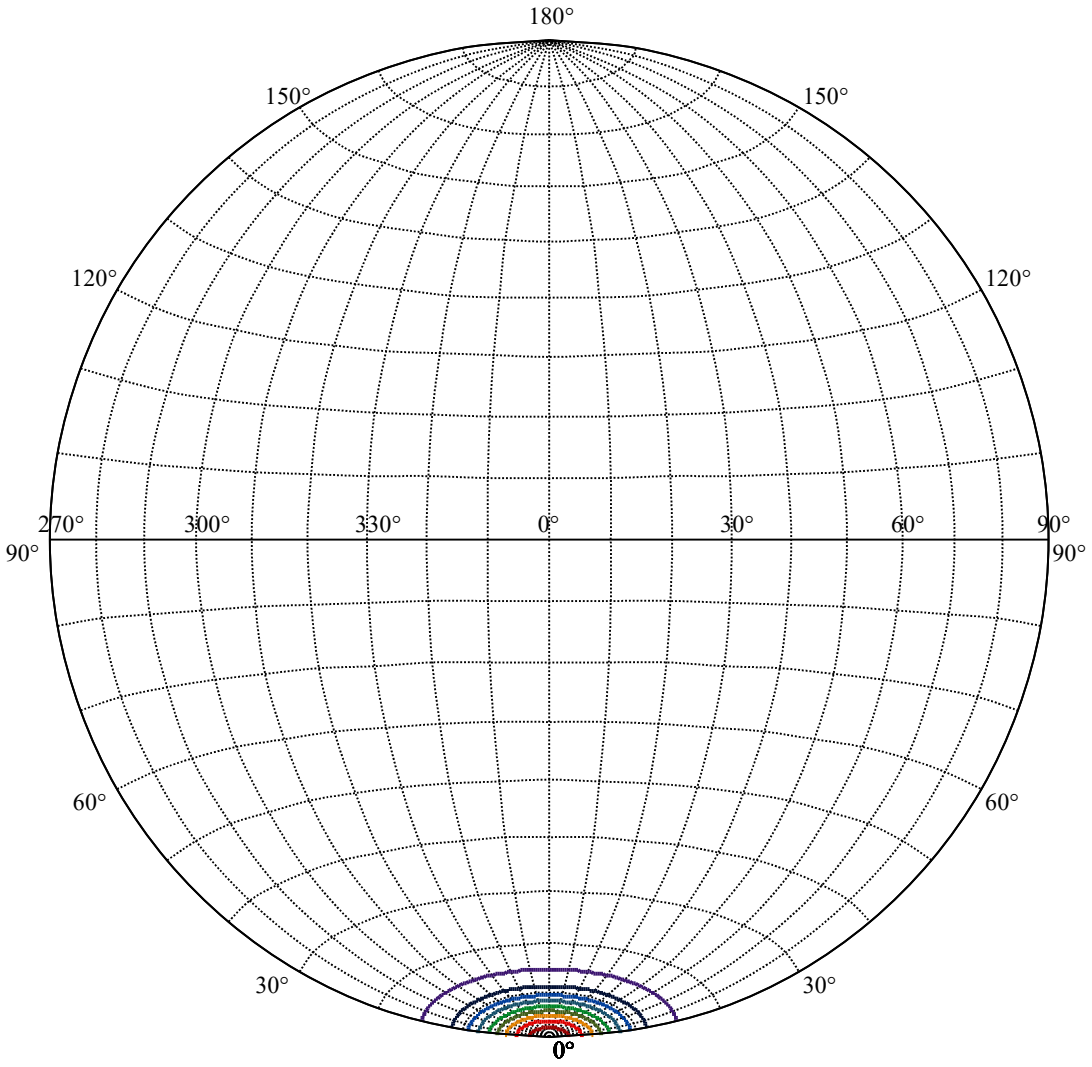
(10%Imax) 1234.84
(20%Imax) 2469.68
(30%Imax) 3704.52
(40%Imax) 4939.36
(50%Imax) 6174.2
(60%Imax) 7409.04
(70%Imax) 8643.87
(80%Imax) 9878.71
(90%Imax) 11113.6

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:12348.39

(10%Imax) 1234.84
(20%Imax) 2469.68
(30%Imax) 3704.52
(40%Imax) 4939.36
(50%Imax) 6174.2
(60%Imax) 7409.04
(70%Imax) 8643.87
(80%Imax) 9878.71
(90%Imax) 11113.6

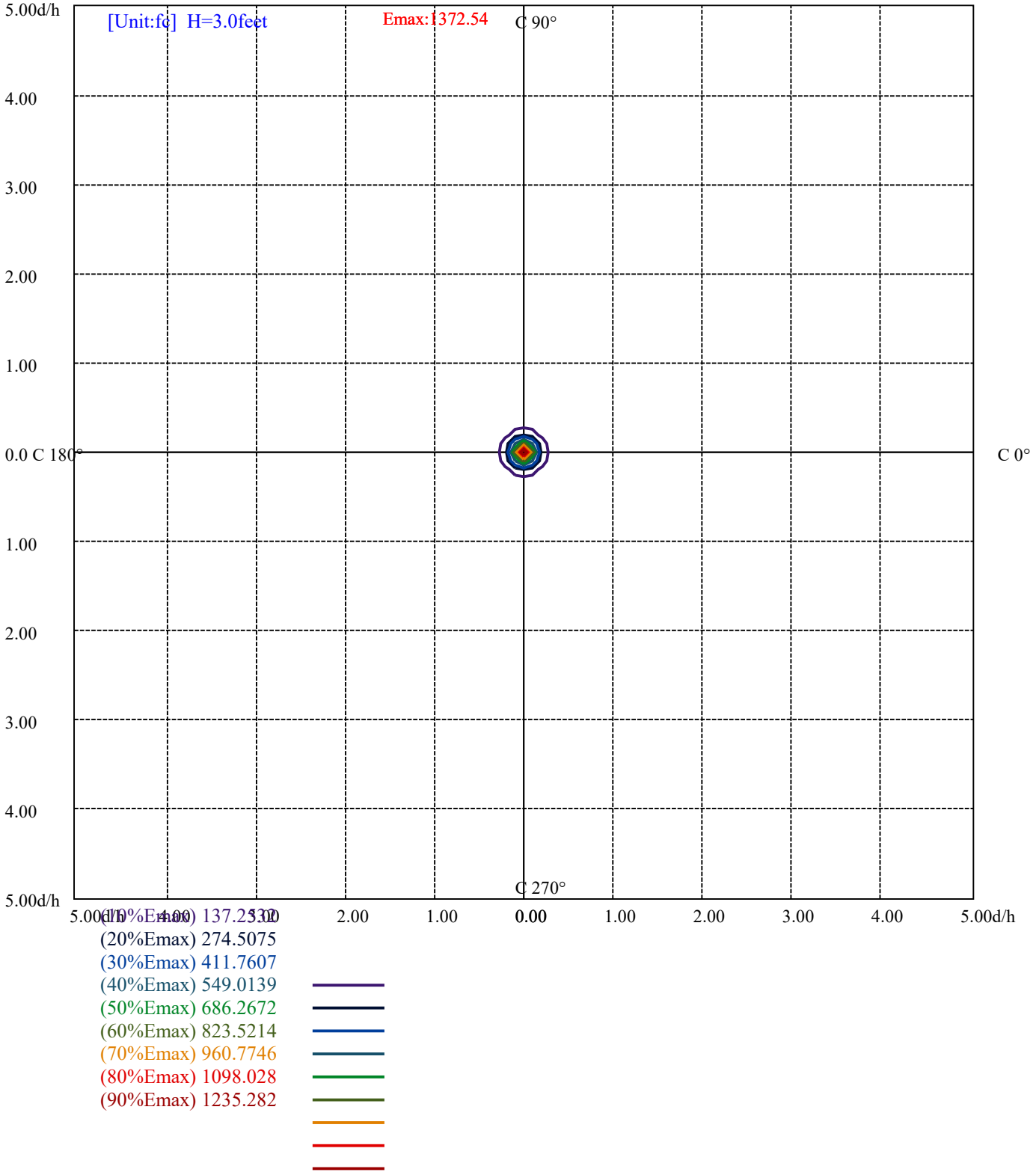
Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

Nata 3-2545-M

ISO illuminance diagram

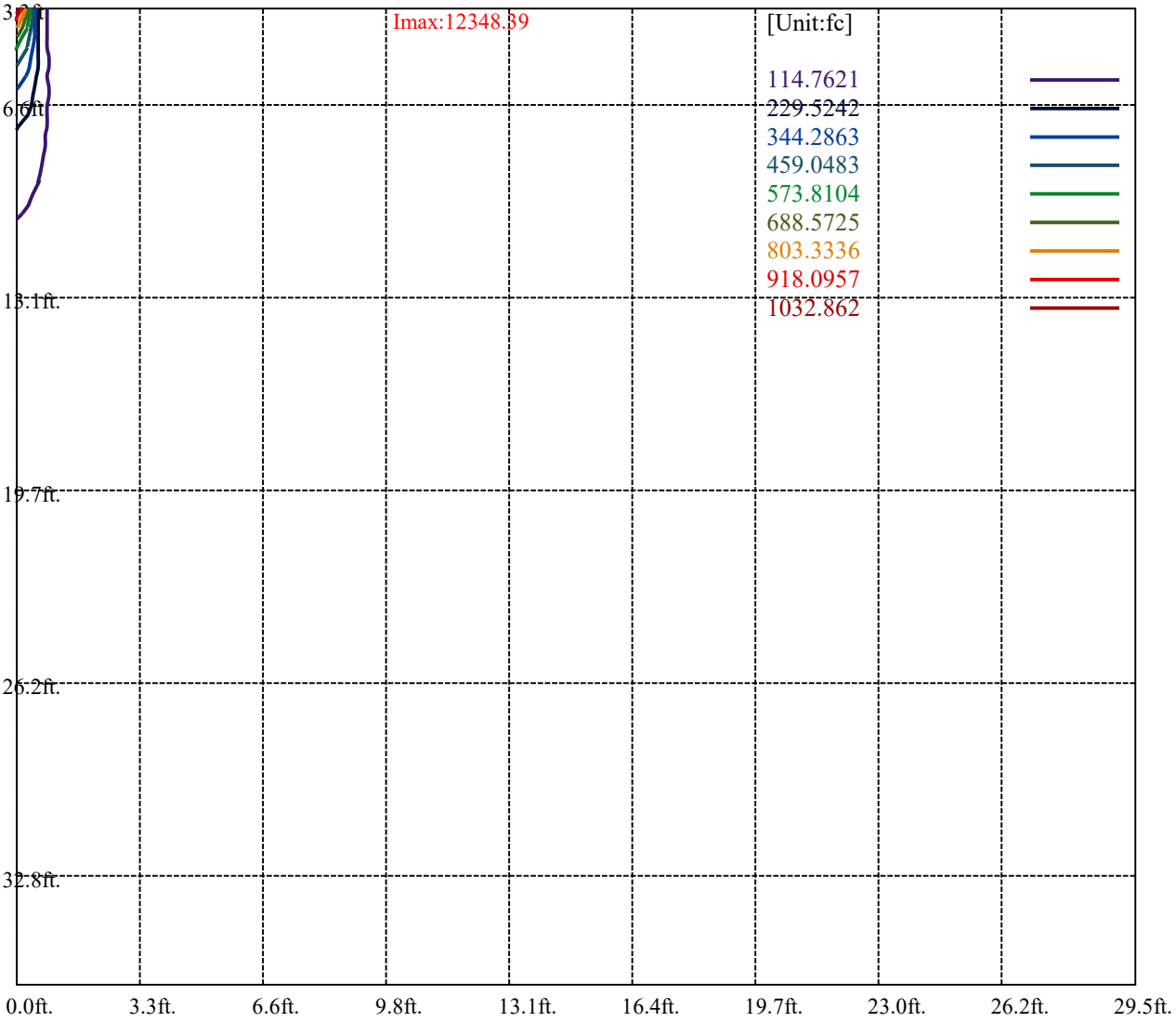


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

Space ISO Lux diagram



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

Nata 3-2545-M

Luminance Limitting Curve(no luminous side)

Luminance Table

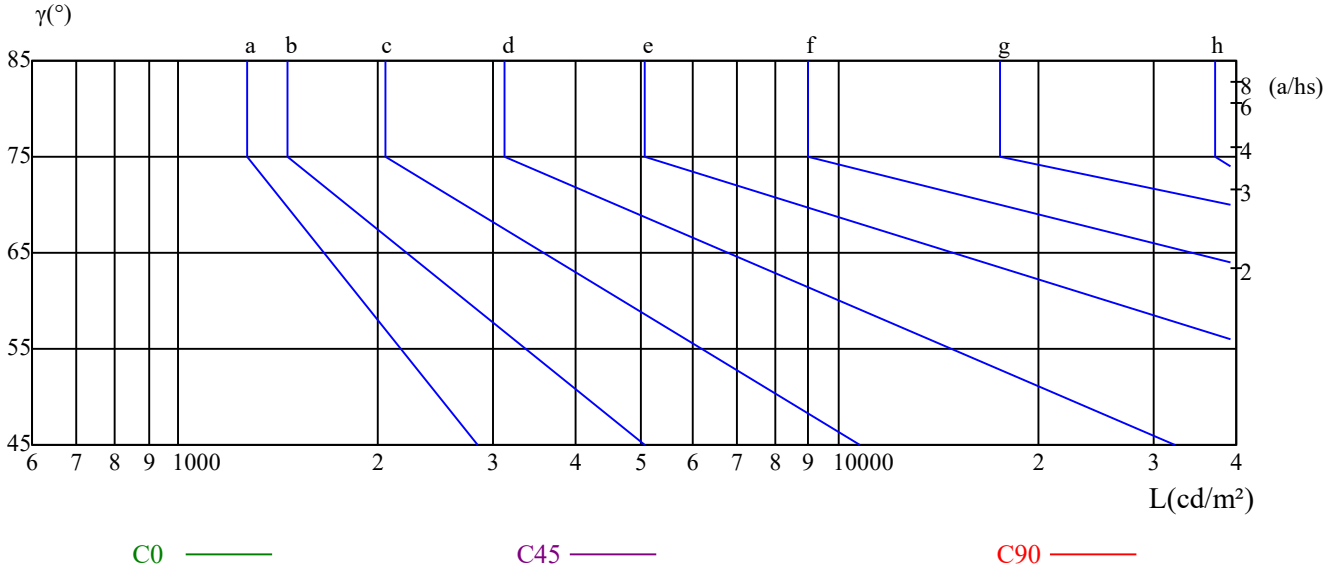
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

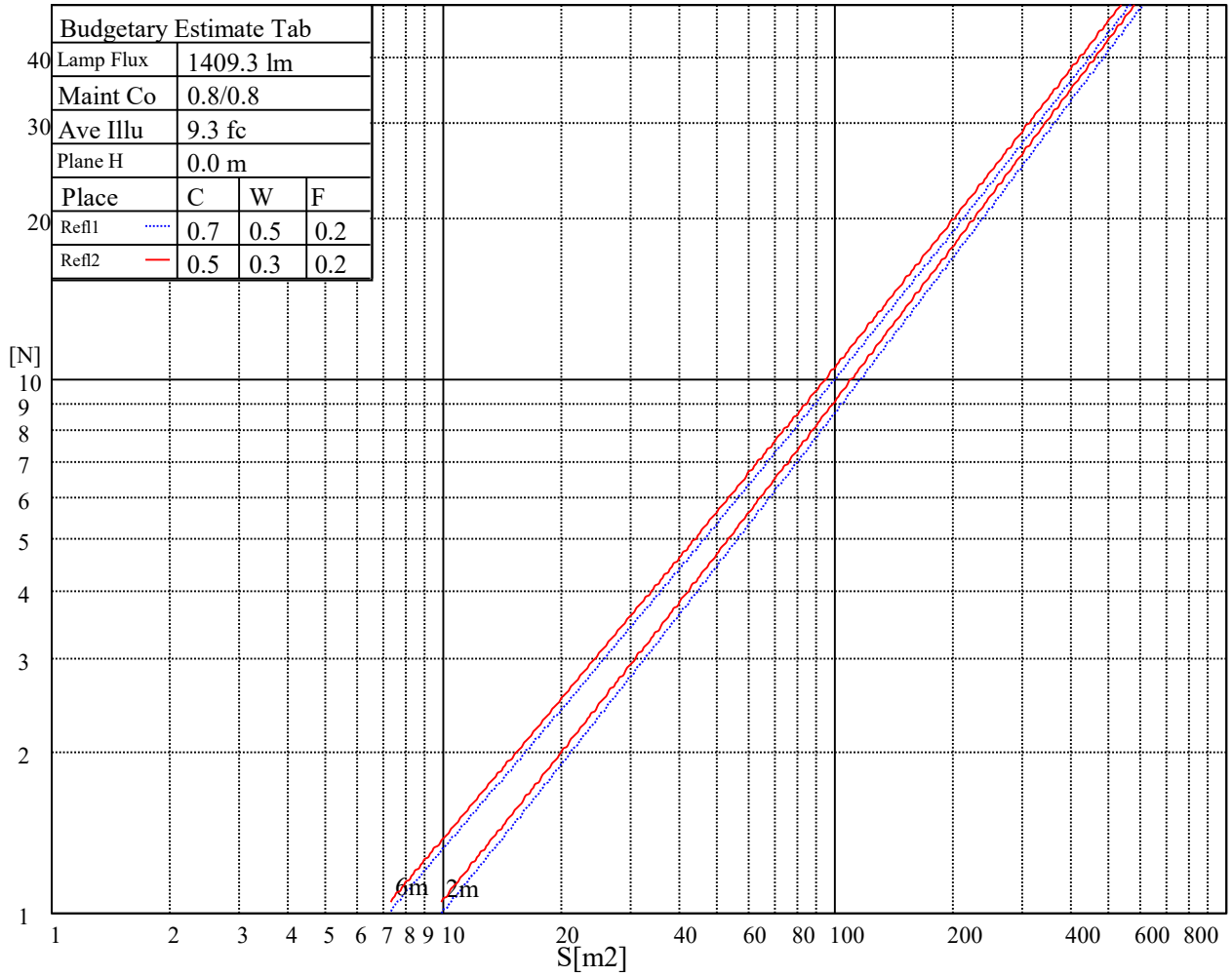


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

Budgetary Estimate Table



Equipment: GMS 1800
Temperature(°C): 25.0

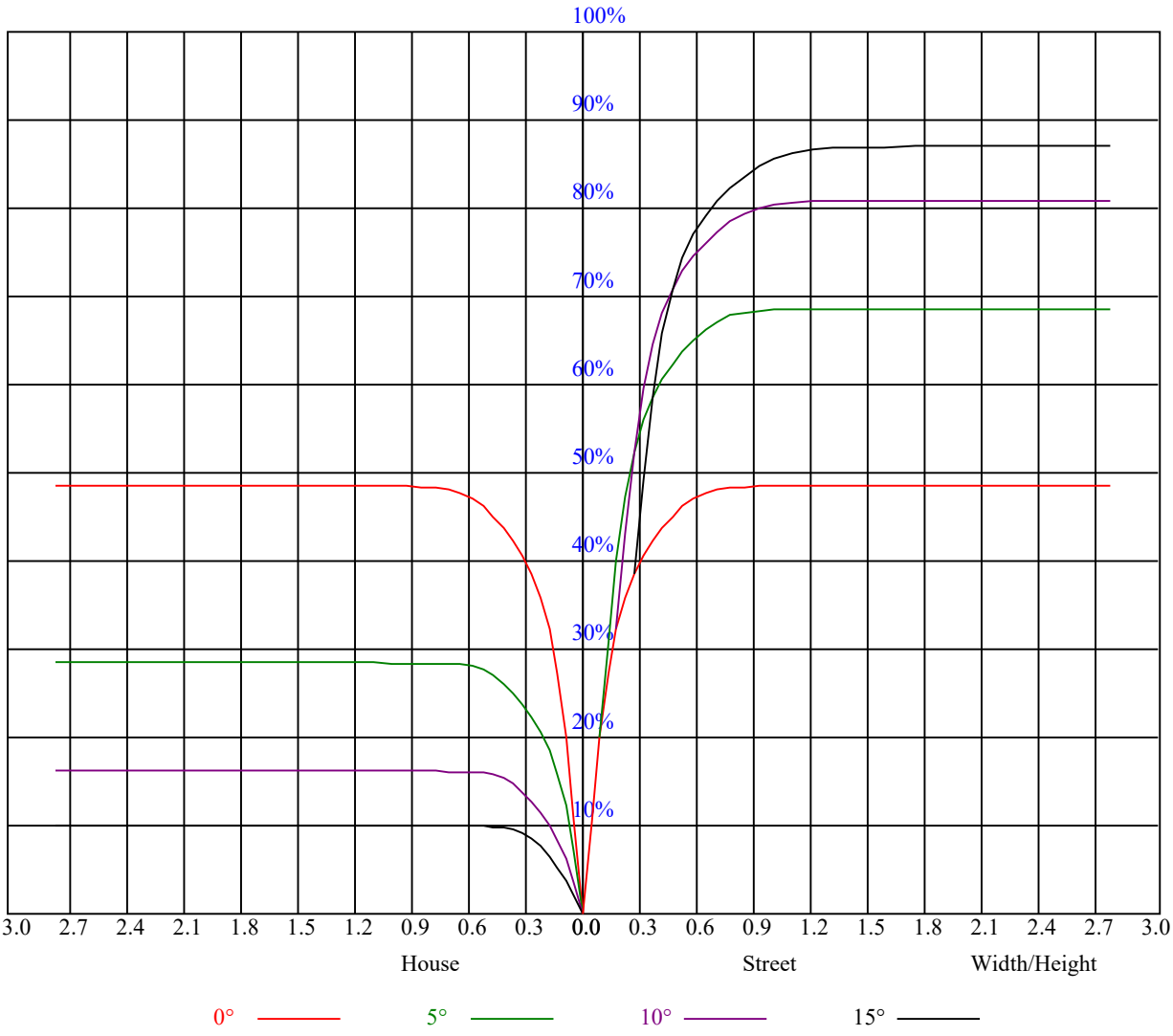
Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

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	1.16	1.16	1.16	1.13	1.13	1.13	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.97
1	1.10	1.08	1.06	1.08	1.06	1.05	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.94
2	1.05	1.02	0.99	1.03	1.01	0.98	1.00	0.98	0.96	0.97	0.96	0.94	0.95	0.93	0.92	0.91
3	1.01	0.97	0.94	0.99	0.96	0.94	0.97	0.94	0.92	0.95	0.93	0.91	0.93	0.91	0.89	0.88
4	0.97	0.93	0.90	0.96	0.92	0.90	0.94	0.91	0.89	0.92	0.90	0.88	0.90	0.88	0.87	0.86
5	0.93	0.90	0.87	0.93	0.89	0.86	0.91	0.88	0.86	0.90	0.87	0.85	0.88	0.86	0.84	0.83
6	0.90	0.87	0.84	0.90	0.86	0.83	0.89	0.85	0.83	0.87	0.85	0.82	0.86	0.84	0.82	0.81
7	0.88	0.84	0.81	0.87	0.84	0.81	0.86	0.83	0.81	0.85	0.82	0.80	0.84	0.82	0.80	0.79
8	0.85	0.81	0.79	0.85	0.81	0.79	0.84	0.81	0.78	0.83	0.80	0.78	0.82	0.80	0.78	0.77
9	0.83	0.79	0.77	0.83	0.79	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.81	0.78	0.76	0.75
10	0.81	0.77	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.79	0.77	0.74	0.79	0.76	0.74	0.73

Coefficient Utilization Curve



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/19
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

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	12165.10	11413.37	8959.33	8959.33	7654.00	6311.09	5015.51	3887.44	3011.81
45.0	12346.07	12499.20	12234.71	11631.46	10763.72	9668.60	8415.71	7107.14	5793.92
90.0	12708.02	12791.55	12457.44	11733.55	9079.97	9079.97	8014.09	6643.80	5849.37
135.0	12174.38	12754.42	12935.40	12684.82	12327.51	11501.53	10448.18	9209.21	7854.23
180.0	12165.10	12596.65	12647.70	12253.27	11534.02	10554.90	9371.62	8053.76	7227.78
225.0	12346.07	11826.36	10670.91	9186.24	9186.24	7844.25	6481.85	5192.77	4045.21
270.0	12708.02	12230.07	11445.85	10387.85	9172.08	7831.03	6466.77	5158.20	4448.22
315.0	12174.38	9207.12	8946.80	8946.80	7565.37	6184.87	4901.35	3789.99	2928.75
360.0	12165.10	11413.37	8959.33	8959.33	7654.00	6311.09	5015.51	3887.44	3011.81

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2386.29	2101.38	1720.87	1429.92	1211.82	915.35	915.35	803.20	718.23
45.0	4587.43	3580.48	2810.19	2355.43	2355.43	1498.60	1357.07	1158.46	1001.62
90.0	4163.54	3230.37	2794.18	2054.51	1823.88	1518.09	1281.89	900.22	900.22
135.0	6476.05	5148.92	3979.55	3060.76	2411.12	2411.12	1555.21	1305.09	1111.59
180.0	5868.17	4165.16	3566.56	2768.42	2401.84	2401.84	1493.49	1262.40	1082.82
225.0	3137.56	2464.71	1992.33	1646.62	1382.12	1172.84	855.96	855.96	791.78
270.0	3427.35	2680.26	2448.24	2336.87	1469.36	1241.99	1063.80	923.66	809.97
315.0	2317.15	1882.82	1622.49	1317.62	1048.95	879.95	879.95	777.26	697.91
360.0	2386.29	2101.38	1720.87	1429.92	1211.82	915.35	915.35	803.20	718.23

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	652.20	601.34	564.22	535.77	513.78	495.96	482.04	473.31	461.25
45.0	877.26	778.88	701.85	640.60	594.19	558.93	530.62	508.81	489.32
90.0	830.43	736.28	663.29	608.44	568.72	538.56	514.52	498.88	480.37
135.0	960.32	883.75	774.70	688.86	622.96	577.03	544.54	518.09	498.60
180.0	938.04	821.57	731.55	660.55	605.80	572.85	534.80	512.52	497.68
225.0	705.42	641.02	591.74	555.68	529.51	508.67	492.15	478.60	467.19
270.0	719.95	653.13	603.01	566.35	537.58	519.02	494.89	482.83	470.30
315.0	634.66	587.74	553.04	526.72	505.47	488.67	475.82	464.96	455.17
360.0	652.20	601.34	564.22	535.77	513.78	495.96	482.04	473.31	461.25

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	453.73	445.33	433.04	399.35	347.19	285.01	221.39	158.14	98.24
45.0	474.94	463.80	454.06	445.24	440.14	406.73	379.81	323.20	259.63
90.0	469.23	461.57	451.92	443.80	431.74	396.15	346.40	286.03	222.04
135.0	482.83	470.76	461.02	451.27	442.92	434.57	408.12	361.71	305.10
180.0	481.90	468.91	459.16	449.88	442.46	430.86	396.98	345.01	284.22
225.0	457.49	449.23	440.69	420.28	377.86	321.58	259.12	195.64	157.40
270.0	460.09	450.81	442.92	429.46	393.27	342.22	280.51	241.99	241.99
315.0	446.82	438.23	425.61	365.29	332.34	271.69	205.10	140.28	83.29
360.0	453.73	445.33	433.04	399.35	347.19	285.01	221.39	158.14	98.24

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	46.73	14.52	7.52	6.22	4.64	3.43	2.97	2.46	2.37
45.0	259.63	118.98	64.32	24.45	7.89	6.45	5.38	4.08	3.34
90.0	158.56	98.65	49.28	15.92	7.80	7.01	6.08	5.06	4.55
135.0	267.05	267.05	112.39	70.44	28.07	9.10	7.42	6.40	4.87
180.0	247.10	247.10	96.66	46.54	15.36	8.03	7.10	6.36	5.01
225.0	75.27	32.11	16.24	8.17	7.47	6.50	5.38	5.10	4.59
270.0	92.39	62.23	14.01	8.54	8.17	6.77	5.89	5.20	4.83
315.0	37.77	11.23	7.61	6.45	4.87	3.67	3.06	2.88	2.60
360.0	46.73	14.52	7.52	6.22	4.64	3.43	2.97	2.46	2.37

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	2.32	2.23	2.09	2.09	2.04	1.90	1.76	1.53	1.44
45.0	2.92	2.88	2.83	2.69	2.69	2.51	2.46	2.32	2.13
90.0	4.13	3.90	3.43	3.29	3.20	3.06	3.02	2.83	2.46
135.0	3.94	3.43	3.16	2.78	2.64	2.60	2.51	2.32	2.13
180.0	4.18	3.85	3.48	3.06	2.83	2.69	2.60	2.55	2.32
225.0	4.04	3.67	3.57	3.43	3.20	3.06	2.78	2.41	2.13
270.0	4.32	3.94	3.85	3.76	3.67	3.43	3.11	2.74	2.41
315.0	2.46	2.32	2.27	2.23	2.09	1.86	1.67	1.62	1.67
360.0	2.32	2.23	2.09	2.09	2.04	1.90	1.76	1.53	1.44

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.48	1.67	1.72	1.76	1.76	1.67	1.48	1.35	1.44
45.0	1.90	1.76	1.76	1.86	1.90	1.90	1.90	1.86	1.67
90.0	2.18	2.13	2.13	2.13	2.23	2.27	2.18	2.00	1.90
135.0	1.90	1.76	1.58	1.62	1.67	1.72	1.76	1.76	1.67
180.0	1.95	1.67	1.58	1.53	1.62	1.67	1.72	1.67	1.48
225.0	2.04	2.13	2.13	2.13	2.09	2.00	1.81	1.62	1.53
270.0	2.27	2.41	2.55	2.60	2.60	2.51	2.09	1.25	1.72
315.0	1.76	1.81	1.90	1.95	1.76	1.44	1.07	0.84	0.74
360.0	1.48	1.67	1.72	1.76	1.76	1.67	1.48	1.35	1.44

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.48	1.44	1.44	1.48	1.35	1.16	0.93	0.79	0.60
45.0	1.58	1.53	1.53	1.53	1.44	1.48	1.44	1.30	1.07
90.0	1.76	1.67	1.58	1.58	1.62	1.53	1.44	1.30	1.11
135.0	1.53	1.39	1.35	1.30	1.30	1.25	1.30	1.25	1.07
180.0	1.35	1.25	1.25	1.21	1.16	1.21	1.25	1.16	0.97
225.0	1.48	1.53	1.44	1.44	1.44	1.25	1.02	0.79	0.65
270.0	1.76	1.76	1.76	1.76	1.67	1.53	1.35	1.02	0.74
315.0	0.88	1.07	1.30	1.39	1.21	0.93	0.79	0.56	0.42
360.0	1.48	1.44	1.44	1.48	1.35	1.16	0.93	0.79	0.60

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	0.51	0.46	0.42	0.37	0.46	0.42	0.37	0.37	0.37
45.0	0.93	0.70	0.56	0.51	0.46	0.42	0.37	0.42	0.37
90.0	0.74	0.65	0.46	0.46	0.46	0.42	0.42	0.42	0.42
135.0	0.88	0.70	0.51	0.42	0.46	0.37	0.42	0.42	0.46
180.0	0.84	0.60	0.42	0.37	0.37	0.37	0.37	0.32	0.42
225.0	0.46	0.42	0.37	0.42	0.42	0.37	0.37	0.32	0.28
270.0	0.56	0.46	0.42	0.37	0.56	0.84	0.46	0.37	0.37
315.0	0.37	0.46	0.70	1.81	1.90	1.07	0.46	0.37	0.37
360.0	0.51	0.46	0.42	0.37	0.46	0.42	0.37	0.37	0.37

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	0.32	0.32	0.28	0.32	0.32	0.28	0.28	0.28	0.23
45.0	0.32	0.32	0.32	0.37	0.28	0.32	0.32	0.28	0.32
90.0	0.37	0.32	0.32	0.32	0.37	0.32	0.37	0.60	1.21
135.0	0.46	0.42	0.37	0.32	0.32	0.32	0.28	0.28	0.32
180.0	0.37	0.32	0.28	0.32	0.23	0.32	0.28	0.28	0.28
225.0	0.28	0.32	0.28	0.28	0.23	0.23	0.28	0.28	0.28
270.0	0.37	0.32	0.32	0.28	0.32	0.32	1.16	0.88	0.37
315.0	0.32	0.32	0.32	0.32	0.37	0.32	0.32	0.37	0.28
360.0	0.32	0.32	0.28	0.32	0.32	0.28	0.28	0.28	0.23

Intensity data(cd)

C/γ(°)	90.0
0.0	0.32
45.0	0.28
90.0	1.02
135.0	0.28
180.0	0.28
225.0	0.32
270.0	0.37
315.0	0.23
360.0	0.32