



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: 2-1678-M

Luminaire: 92.70.124.00

Report No:

Voltage(V): 33.2500

Test No: GC2019082904

Current(A): 0.2970

LampCAT: XICATO XOB LES 9.8MM

Power (W): 9.8800

Lamp flux(lm): 902.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 70

Width(mm): 70

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 799.90, Efficiency(%): 88.68% , Luminous Efficacy(lm/W): 80.96

Central intensity(cd): 9366.328, Maximum intensity(cd): 9366.328

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=10.8

[C90/270]Total=10.8

Field angle(10%Imax): [C0/180]Total=21.2

[C90/270]Total=21.2

Maximum s/h(1/2): C0_180=0.19 C90_270=0.19

Maximum s/h(1/4): C0_180=0.19 C90_270=0.19

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.68%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.614%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9366.328	0.000	0	.000%	.000%
1.0	9124.523	8.848	8.848	.981%	1.106%
2.0	8513.578	25.316	34.163	2.807%	4.271%
3.0	7525.828	38.361	72.524	4.253%	9.067%
4.0	6357.164	46.471	118.995	5.152%	14.876%
5.0	5189.133	49.672	168.667	5.507%	21.086%
6.0	3967.453	48.120	216.787	5.335%	27.102%
7.0	2928.495	42.803	259.59	4.745%	32.453%
8.0	2133.098	36.225	295.815	4.016%	36.982%
9.0	1532.813	29.710	325.525	3.294%	40.696%
10.0	1066.148	23.520	349.045	2.607%	43.636%
11.0	849.410	19.140	368.185	2.122%	46.029%
12.0	682.313	16.744	384.929	1.856%	48.122%
13.0	561.059	14.756	399.685	1.636%	49.967%
14.0	492.462	13.485	413.17	1.495%	51.653%
15.0	448.474	12.918	426.087	1.432%	53.268%
16.0	415.238	12.656	438.743	1.403%	54.850%
17.0	394.566	12.611	451.354	1.398%	56.426%
18.0	379.041	12.755	464.109	1.414%	58.021%
19.0	366.968	12.979	477.088	1.439%	59.644%
20.0	357.279	13.256	490.344	1.470%	61.301%
21.0	348.961	13.561	503.905	1.503%	62.996%
22.0	341.747	13.880	517.785	1.539%	64.731%
23.0	335.285	14.206	531.991	1.575%	66.507%
24.0	329.372	14.532	546.523	1.611%	68.324%
25.0	323.023	14.834	561.357	1.645%	70.178%
26.0	317.981	15.131	576.488	1.677%	72.070%
27.0	312.792	15.432	591.92	1.711%	73.999%
28.0	306.872	15.689	607.608	1.739%	75.961%
29.0	301.880	15.927	623.535	1.766%	77.952%
30.0	296.859	16.166	639.701	1.792%	79.973%
31.0	291.270	16.367	656.068	1.814%	82.019%
32.0	284.576	16.497	672.565	1.829%	84.081%
33.0	275.899	16.512	689.077	1.831%	86.145%
34.0	260.775	16.241	705.318	1.801%	88.176%
35.0	240.483	15.567	720.885	1.726%	90.122%
36.0	213.180	14.445	735.33	1.601%	91.928%
37.0	178.172	12.764	748.094	1.415%	93.524%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	140.203	10.627	758.721	1.178%	94.852%
39.0	101.524	8.251	766.972	.915%	95.884%
40.0	68.632	5.934	772.906	.658%	96.625%
41.0	44.719	4.036	776.942	.447%	97.130%
42.0	26.831	2.600	779.542	.288%	97.455%
43.0	15.230	1.558	781.1	.173%	97.650%
44.0	10.315	0.964	782.064	.107%	97.770%
45.0	8.002	0.704	782.768	.078%	97.858%
46.0	6.497	0.567	783.335	.063%	97.929%
47.0	5.527	0.478	783.813	.053%	97.989%
48.0	5.091	0.429	784.242	.048%	98.043%
49.0	4.802	0.406	784.649	.045%	98.093%
50.0	4.683	0.395	785.044	.044%	98.143%
51.0	4.577	0.392	785.436	.043%	98.192%
52.0	4.465	0.388	785.824	.043%	98.240%
53.0	4.366	0.384	786.208	.043%	98.288%
54.0	4.275	0.381	786.589	.042%	98.336%
55.0	4.184	0.378	786.967	.042%	98.383%
56.0	4.106	0.375	787.341	.042%	98.430%
57.0	4.036	0.372	787.713	.041%	98.477%
58.0	3.952	0.369	788.083	.041%	98.523%
59.0	3.902	0.367	788.45	.041%	98.569%
60.0	3.825	0.365	788.815	.040%	98.614%
61.0	3.783	0.363	789.178	.040%	98.660%
62.0	3.748	0.363	789.541	.040%	98.705%
63.0	3.720	0.363	789.904	.040%	98.750%
64.0	3.684	0.363	790.267	.040%	98.796%
65.0	3.649	0.363	790.63	.040%	98.841%
66.0	3.628	0.363	790.993	.040%	98.887%
67.0	3.614	0.364	791.358	.040%	98.932%
68.0	3.600	0.365	791.723	.041%	98.978%
69.0	3.565	0.366	792.089	.041%	99.024%
70.0	3.537	0.365	792.453	.040%	99.069%
71.0	3.537	0.366	792.819	.041%	99.115%
72.0	3.537	0.368	793.187	.041%	99.161%
73.0	3.516	0.369	793.555	.041%	99.207%
74.0	3.502	0.369	793.924	.041%	99.253%
75.0	3.502	0.370	794.294	.041%	99.299%

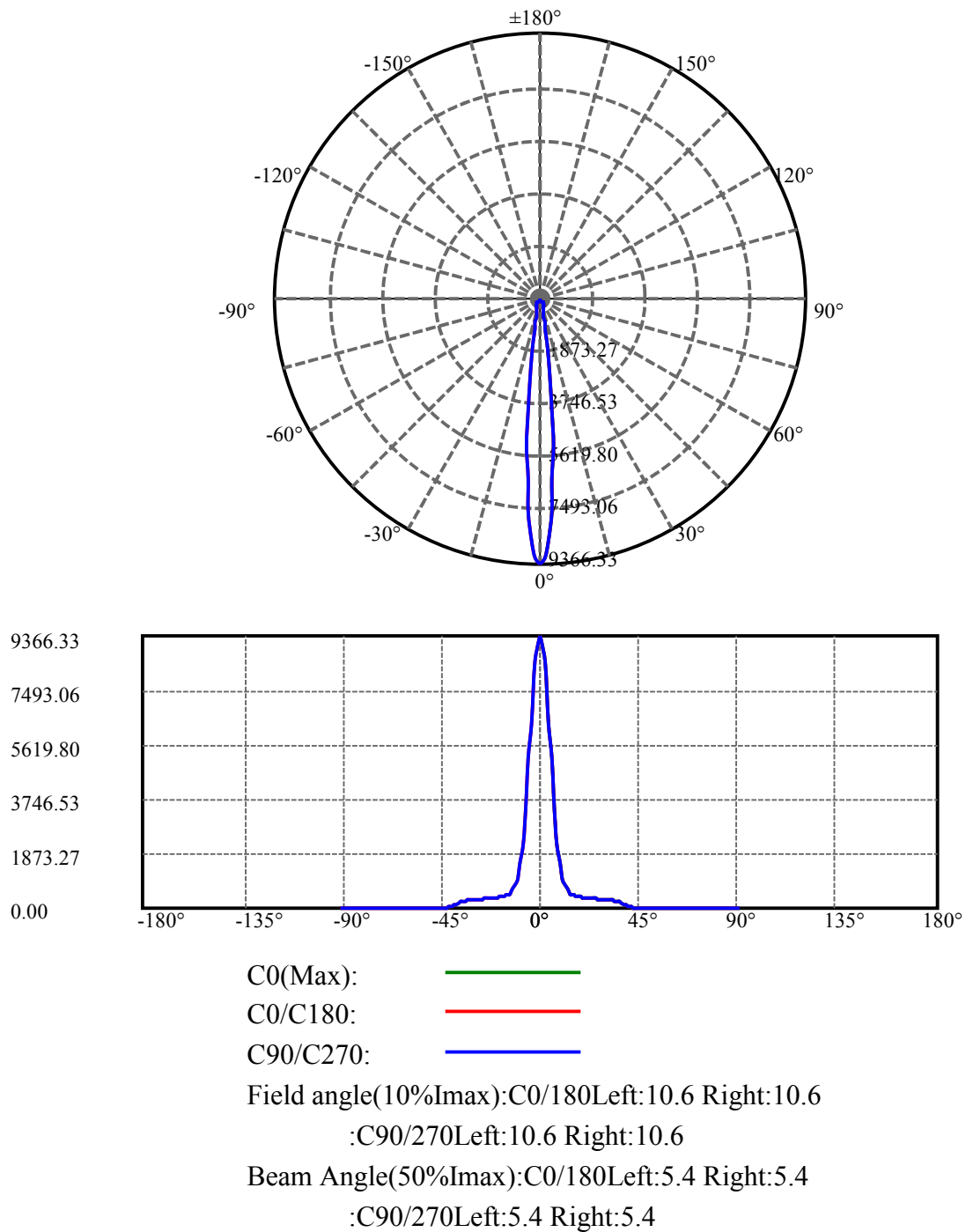
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.488	0.371	794.665	.041%	99.346%
77.0	3.480	0.372	795.037	.041%	99.392%
78.0	3.488	0.373	795.41	.041%	99.439%
79.0	3.459	0.373	795.783	.041%	99.485%
80.0	3.452	0.373	796.156	.041%	99.532%
81.0	3.459	0.374	796.53	.041%	99.579%
82.0	3.445	0.374	796.904	.042%	99.626%
83.0	3.438	0.374	797.278	.041%	99.672%
84.0	3.438	0.375	797.653	.042%	99.719%
85.0	3.445	0.376	798.028	.042%	99.766%
86.0	3.417	0.375	798.404	.042%	99.813%
87.0	3.424	0.374	798.778	.042%	99.860%
88.0	3.403	0.374	799.152	.041%	99.907%
89.0	3.410	0.373	799.525	.041%	99.953%
90.0	3.403	0.374	799.899	.041%	100.000%

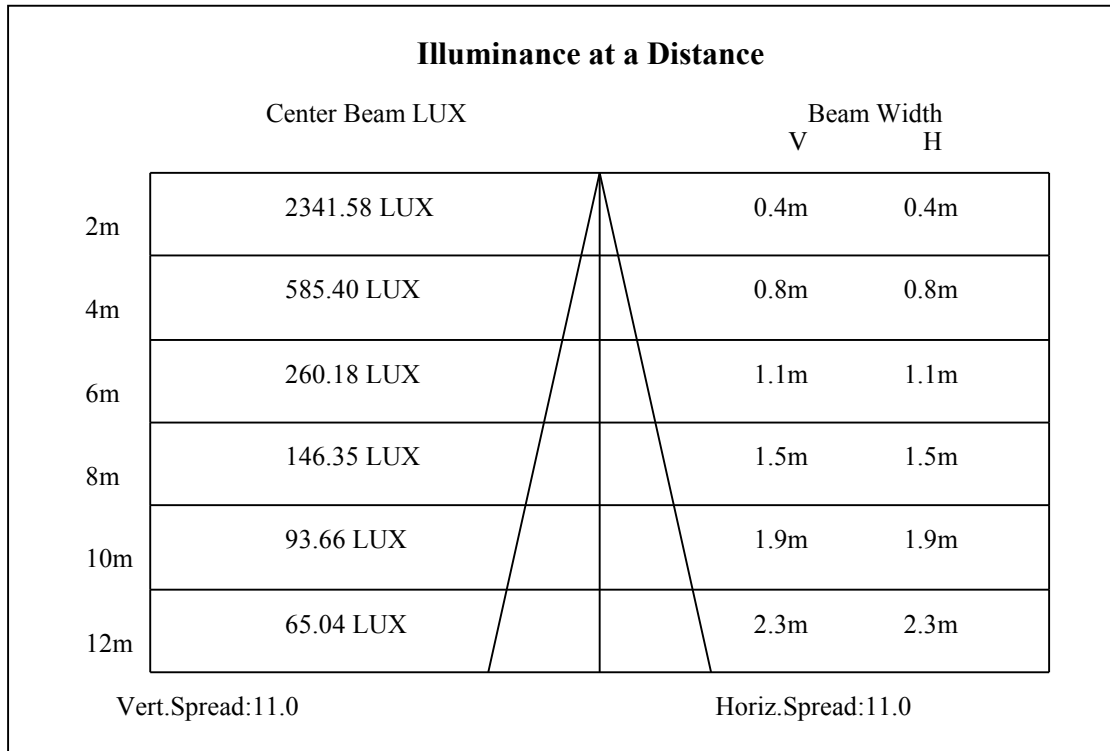
ZONAL LUMEN SUMMARY

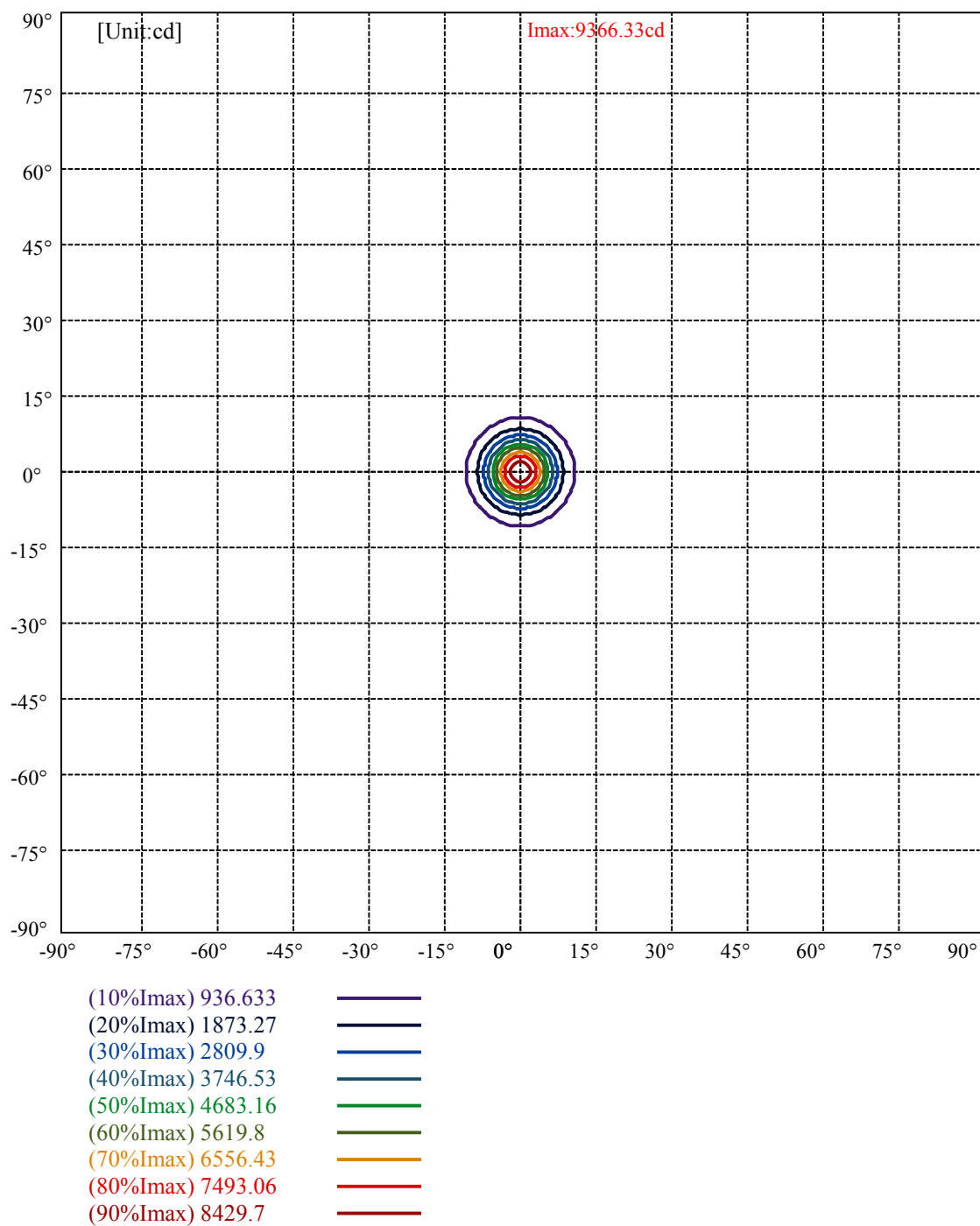
Zone	Lumens	%Lamp	%Fixt
0-30	639.70	70.92%	79.97%
0-40	772.91	85.69%	96.63%
0-60	788.82	87.45%	98.61%
0-90	799.53	88.64%	99.95%
0-120	799.53	88.64%	99.95%
0-180	799.90	88.68%	100.00%
60-90	11.08	1.23%	1.38%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.01	639.92	70.94%	80.00%

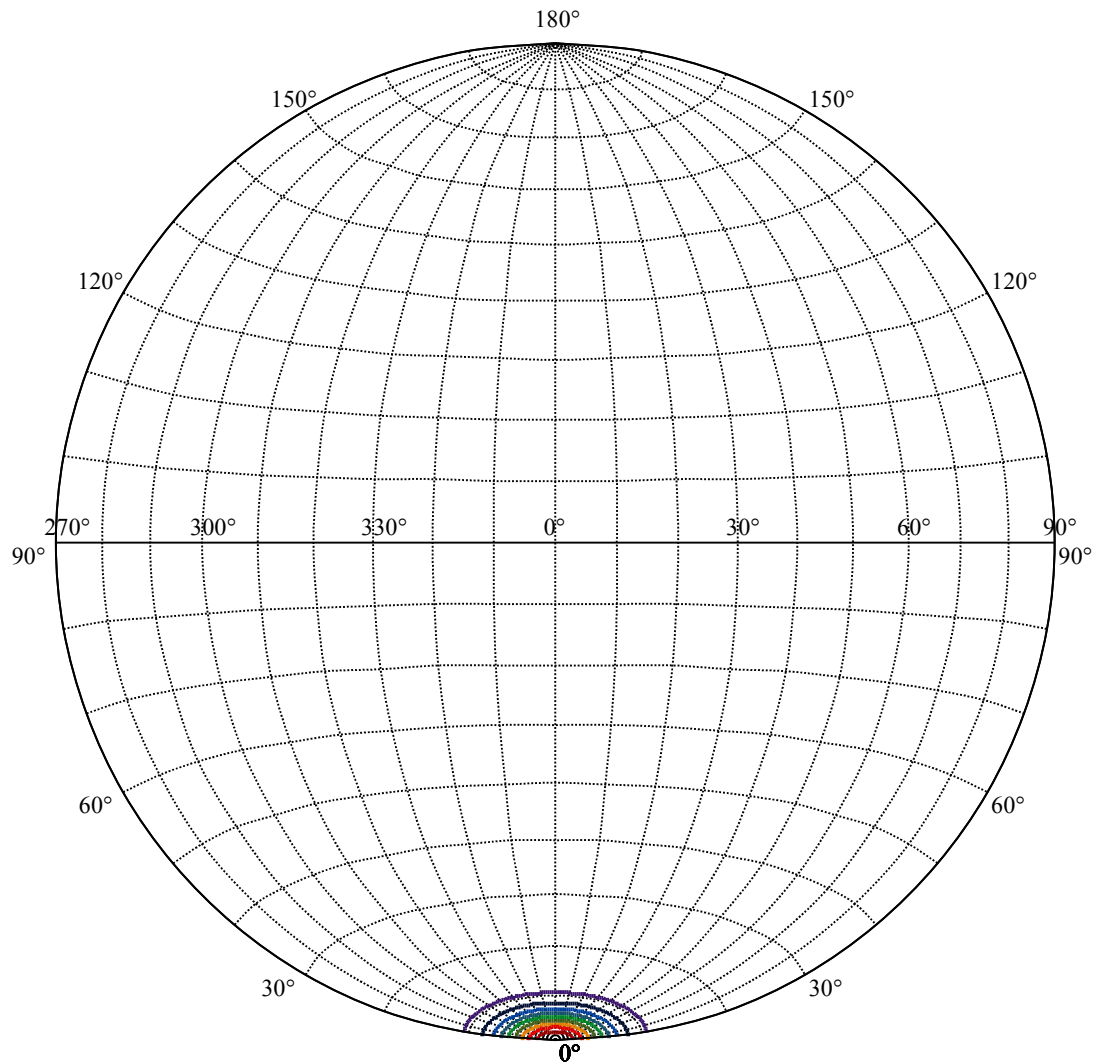
ZONAL LUMEN SUMMARY

0-10	349.04
10-20	141.30
20-30	149.36
30-40	133.21
40-50	12.14
50-60	3.77
60-70	3.64
70-80	3.70
80-90	3.37
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









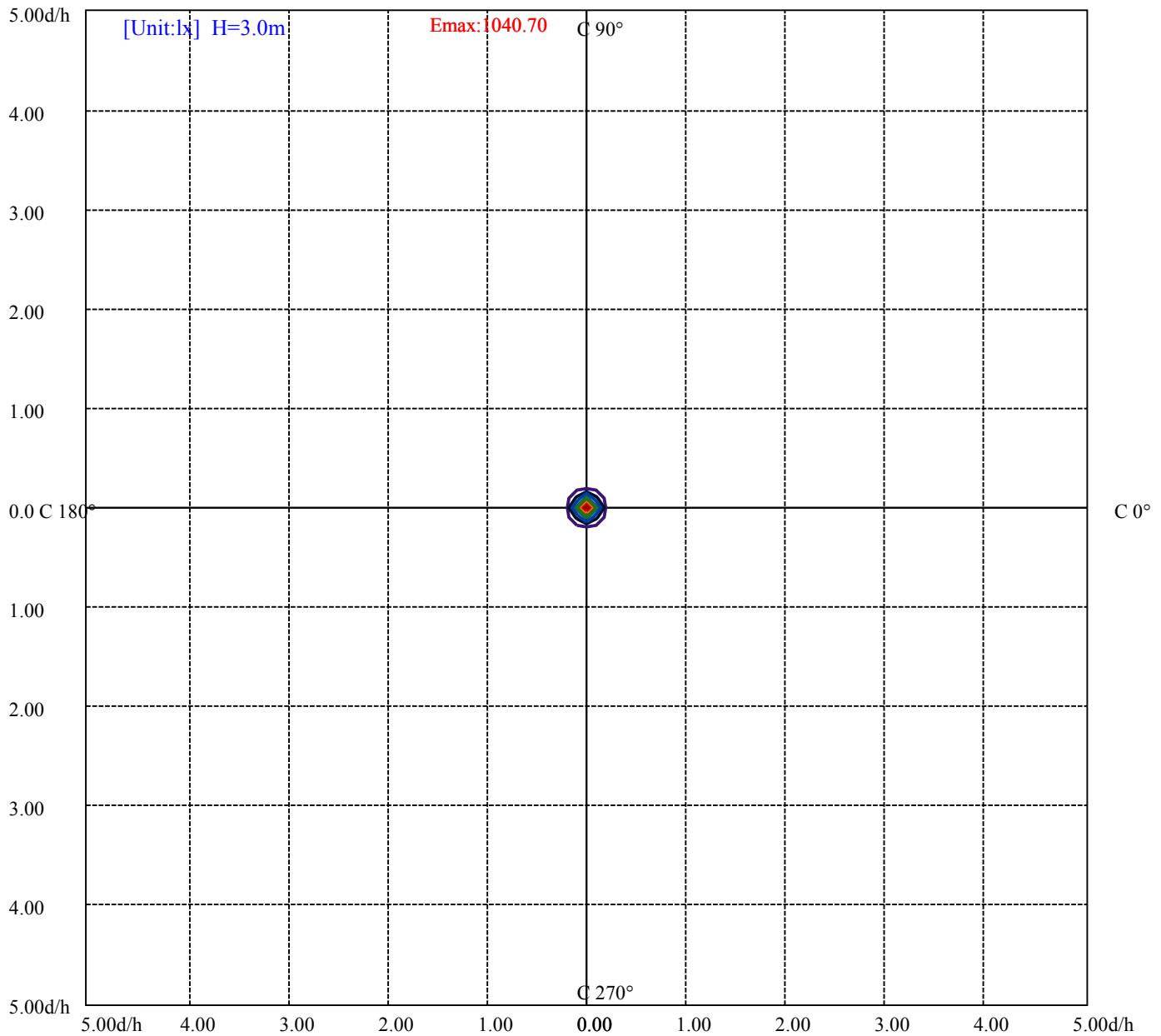
House

[Unit:cd]

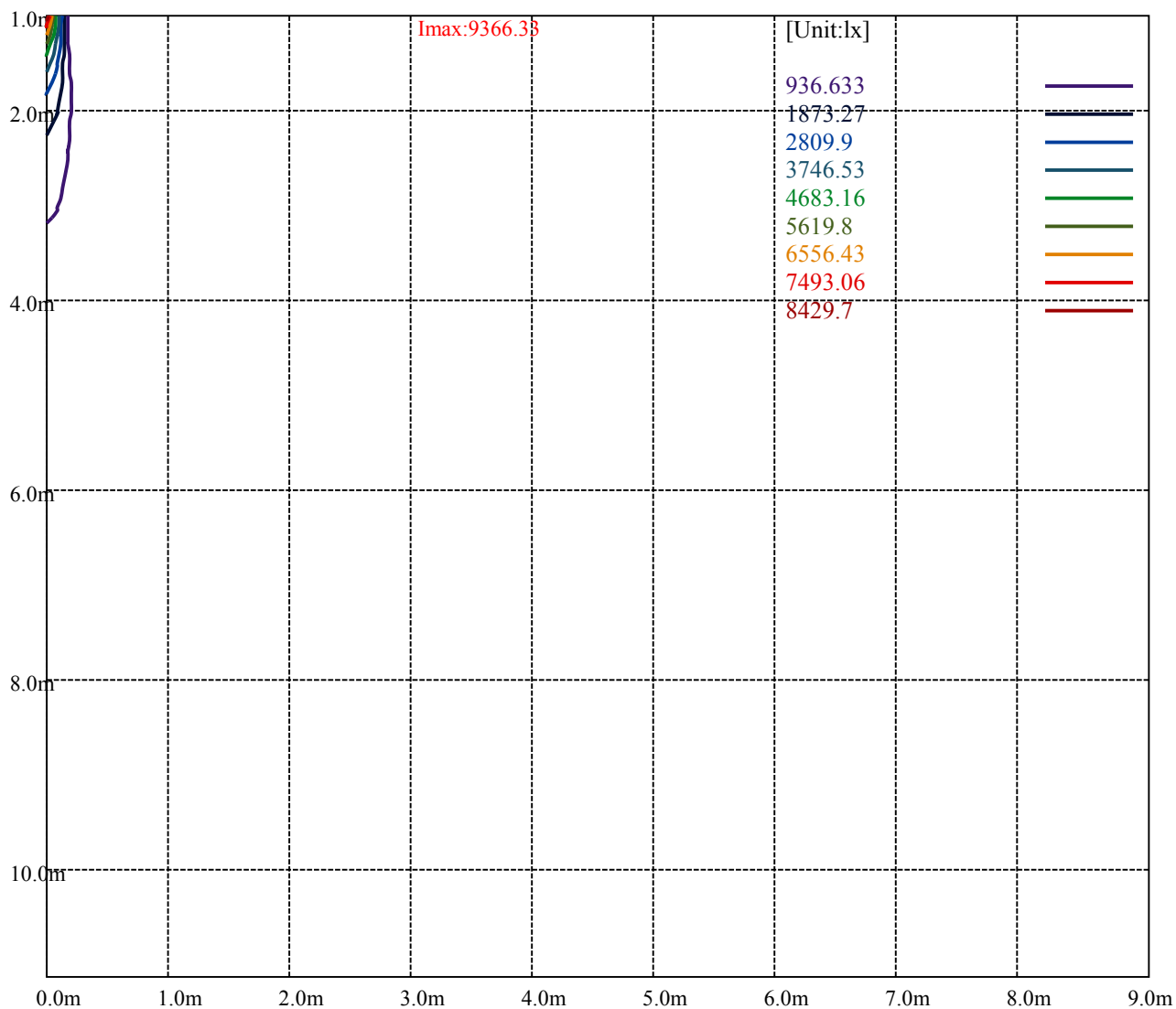
Road

Imax:9366.33

(10%Imax)	936.633	—
(20%Imax)	1873.27	—
(30%Imax)	2809.9	—
(40%Imax)	3746.53	—
(50%Imax)	4683.16	—
(60%Imax)	5619.8	—
(70%Imax)	6556.43	—
(80%Imax)	7493.06	—
(90%Imax)	8429.7	—



(10%E _{max}) 104.0699	—
(20%E _{max}) 208.14	—
(30%E _{max}) 312.21	—
(40%E _{max}) 416.28	—
(50%E _{max}) 520.35	—
(60%E _{max}) 624.42	—
(70%E _{max}) 728.4889	—
(80%E _{max}) 832.5588	—
(90%E _{max}) 936.6289	—



Luminance Table

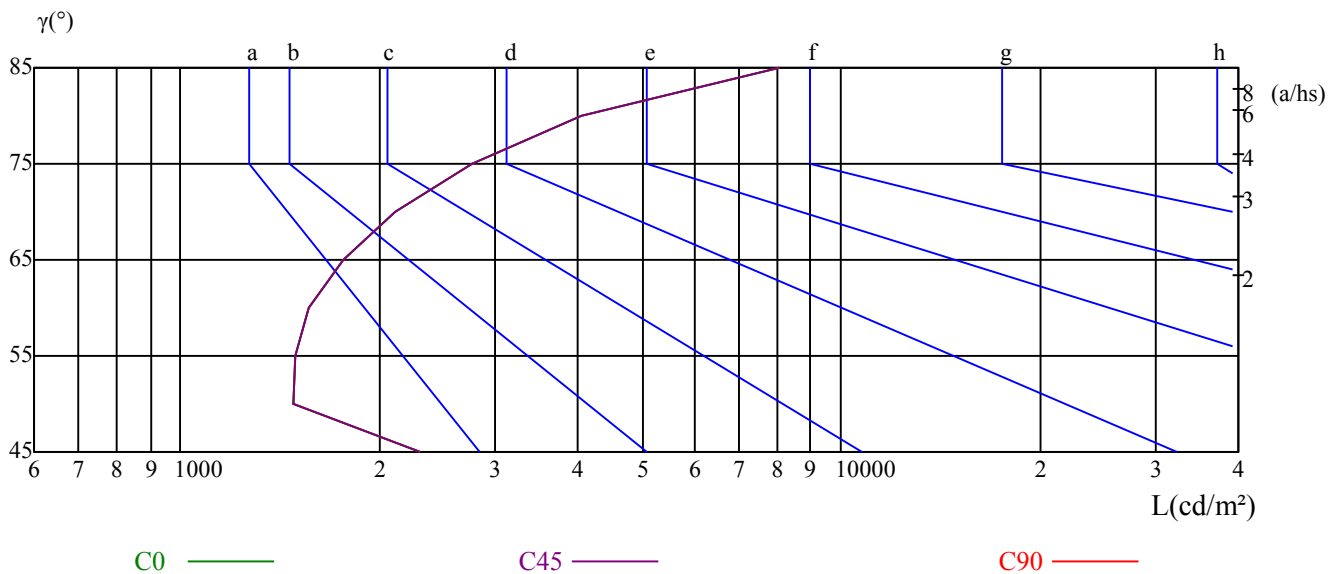
γ	45	50	55	60	65	70	75	80	85
C0	2309	1487	1489	1561	1762	2110	2761	4057	8067
C45	2309	1487	1489	1561	1762	2110	2761	4057	8067
C90	2309	1487	1489	1561	1762	2110	2761	4057	8067

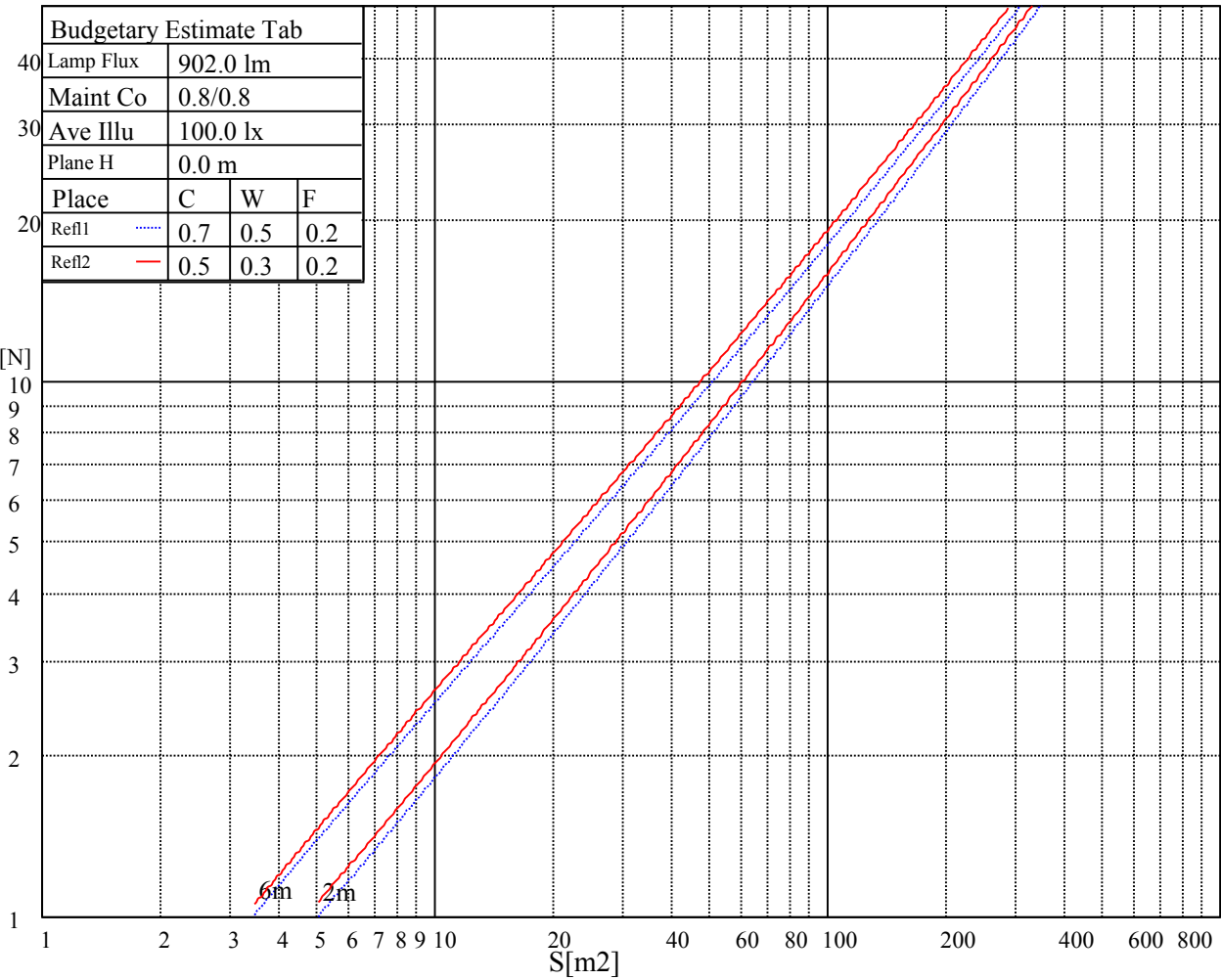
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1762	1762	1762	2761	2761	2761	8067	8067	8067

Glare Table

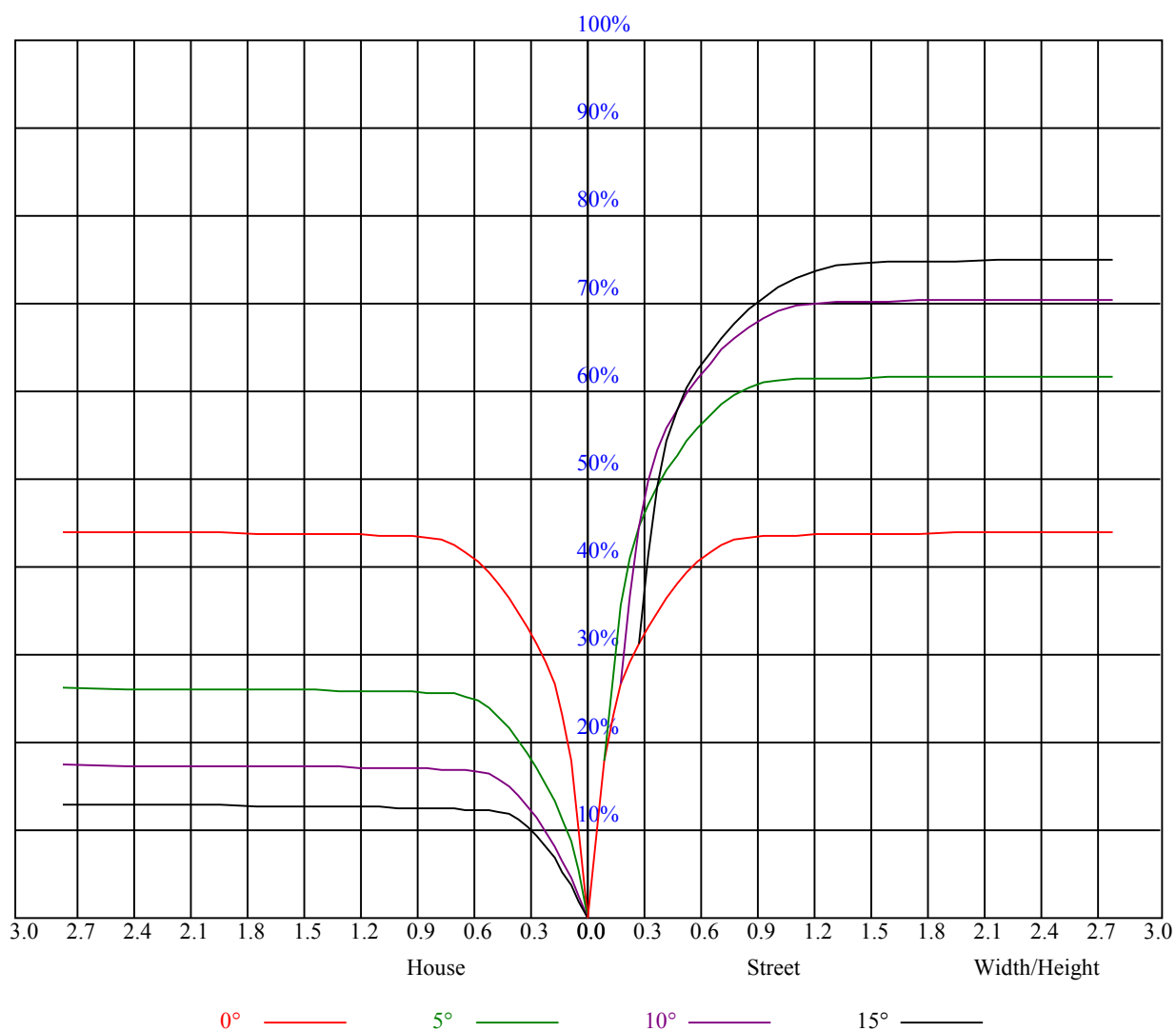
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

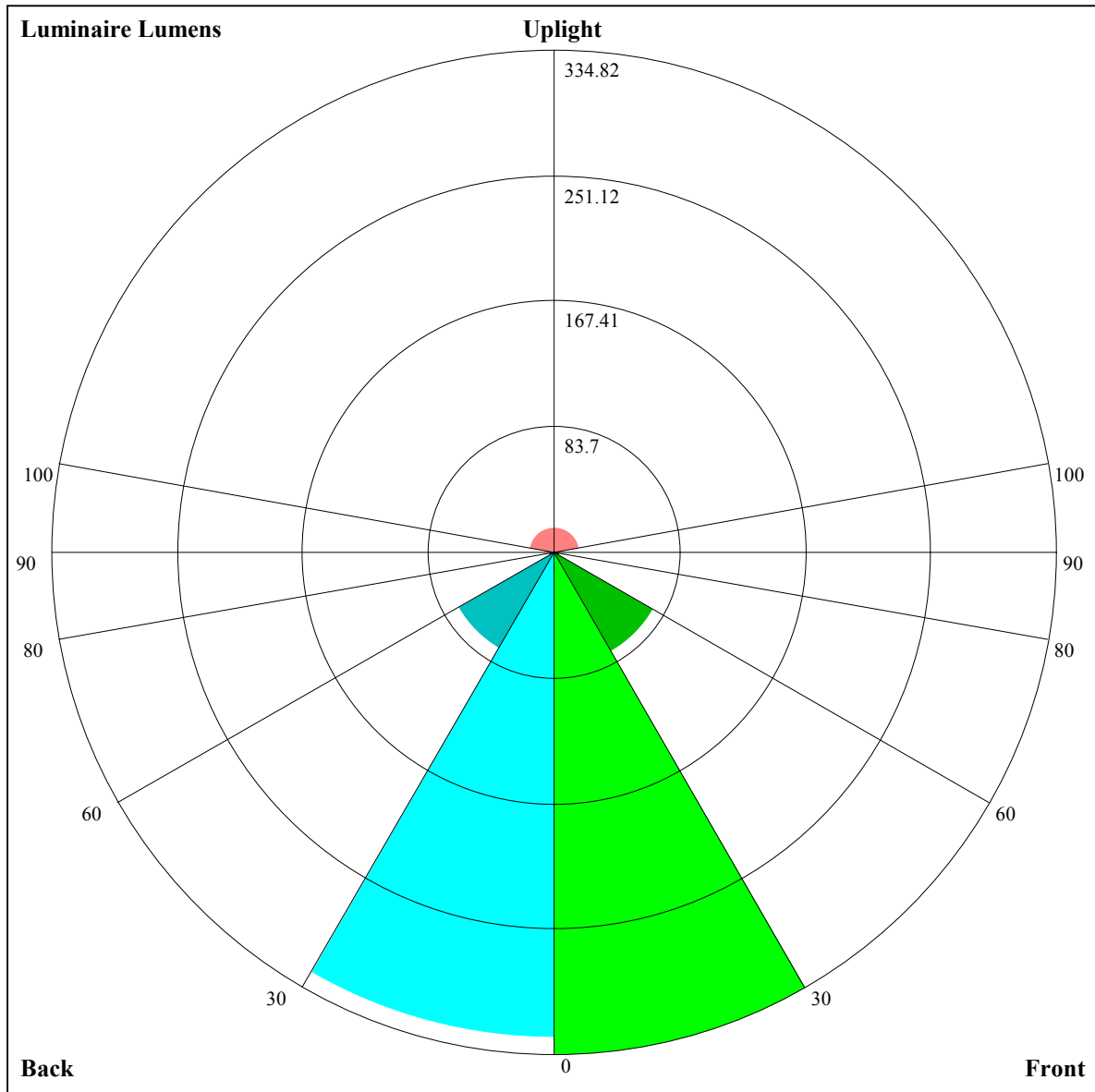
Luminance Limiting Curve





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	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.99	0.98	0.96	0.97	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.85	0.83	0.82	0.81
3	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.78
4	0.85	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.76	0.74
5	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.76	0.74	0.78	0.76	0.73	0.77	0.75	0.73	0.72
6	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=334.82,FM=76.2,FH=3.67,FVH=1.88

BL=323.61,BM=73.48,BH=3.67,BVH=1.86

UL=3.71,UH=17.67

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	9161.44	9051.75	8402.63	7272.56	6023.25	4712.06	3260.81	2385.56	1756.69
45.0	9579.38	8705.25	7349.06	5912.44	4322.25	2998.69	2139.19	1486.13	1126.69
90.0	9157.50	7614.56	6060.94	4374.00	2986.31	2104.31	1335.94	1046.08	821.59
135.0	9567.00	8658.56	7284.94	5706.00	4351.50	3053.81	2080.13	1480.50	1091.81
180.0	9161.44	8750.81	8105.63	6958.13	5418.00	4325.06	3048.19	1964.81	1103.51
225.0	9579.38	9911.81	9842.06	9204.75	8229.94	6918.75	5118.19	3774.38	2660.06
270.0	9157.50	10176.75	10879.88	11032.88	10751.06	9862.88	8594.44	6846.75	5248.13
315.0	9567.00	10126.69	10183.50	9745.88	8775.00	7537.50	6162.75	4443.75	3256.31
360.0	9161.44	9051.75	8402.63	7272.56	6023.25	4712.06	3260.81	2385.56	1756.69
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1276.88	957.38	768.94	624.94	532.69	477.56	435.94	411.19	392.63
45.0	864.00	691.31	584.44	511.88	450.56	419.06	398.25	380.25	370.13
90.0	671.79	559.29	486.23	442.91	411.02	390.04	376.99	364.95	355.61
135.0	799.88	653.06	558.56	489.94	445.50	417.94	396.56	380.81	369.56
180.0	1064.08	796.61	638.66	550.74	489.54	448.88	420.92	401.63	382.44
225.0	1780.31	1113.47	946.63	755.38	616.44	529.09	476.04	435.15	410.51
270.0	3480.19	2416.50	1699.31	1234.69	879.19	705.38	592.88	502.88	457.88
315.0	2325.38	1341.56	1112.51	848.03	663.53	551.76	490.22	445.05	417.77
360.0	1276.88	957.38	768.94	624.94	532.69	477.56	435.94	411.19	392.63
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	379.13	370.69	361.69	352.69	346.50	339.19	332.44	327.38	321.75
45.0	361.13	352.13	344.25	338.06	331.31	324.00	318.94	313.88	309.38
90.0	346.84	338.74	332.55	326.08	320.57	316.24	311.68	306.17	301.84
135.0	358.88	351.00	343.69	336.94	331.31	326.25	320.06	315.00	310.50
180.0	371.03	361.07	350.89	343.41	337.28	331.14	325.74	320.79	314.72
225.0	391.84	378.28	367.88	358.65	349.88	343.07	336.60	328.89	324.23
270.0	426.94	403.31	387.00	375.75	365.63	358.31	352.13	343.13	337.50
315.0	396.56	380.53	370.29	360.11	351.51	344.08	337.39	328.95	323.94
360.0	379.13	370.69	361.69	352.69	346.50	339.19	332.44	327.38	321.75
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	316.13	311.63	306.56	299.81	294.75	290.81	286.31	284.63	267.98
45.0	304.88	298.13	292.50	289.13	284.06	279.28	268.03	238.67	203.46
90.0	295.99	290.14	285.47	280.63	274.39	261.06	235.35	194.74	153.56
135.0	305.44	298.69	294.19	288.56	284.06	275.18	267.47	239.91	205.65
180.0	310.28	305.16	299.03	292.84	287.44	282.21	276.13	269.72	249.53
225.0	319.56	314.38	309.15	303.69	296.44	291.38	287.04	280.80	275.63
270.0	331.31	324.00	319.50	315.56	308.81	303.19	297.56	291.94	287.44
315.0	318.77	312.86	308.64	304.65	300.21	293.51	289.29	285.81	280.63
360.0	316.13	311.63	306.56	299.81	294.75	290.81	286.31	284.63	267.98
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	237.49	199.41	155.59	101.03	62.04	32.23	15.02	11.81	8.89
45.0	162.79	114.81	70.20	38.14	17.16	12.66	9.56	7.09	6.08
90.0	105.86	62.27	32.29	15.75	12.66	10.07	8.04	5.46	5.18
135.0	164.53	116.44	70.82	38.25	17.21	13.28	10.35	7.93	6.75
180.0	219.15	181.07	134.21	87.81	51.13	22.73	14.63	11.87	8.94
225.0	257.18	222.47	183.26	135.11	88.31	52.48	26.38	15.13	12.60
270.0	284.06	273.04	250.82	217.07	170.49	127.24	80.44	41.79	20.53
315.0	274.39	255.88	224.44	179.04	130.05	87.08	50.23	20.76	13.56
360.0	237.49	199.41	155.59	101.03	62.04	32.23	15.02	11.81	8.89

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Intensity data(cd)										Appendix Page: 18 Total:19	
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	6.64	5.46	5.12	4.95	4.84	4.67	4.56	4.44	4.39		
45.0	5.23	5.06	4.89	4.78	4.67	4.56	4.50	4.39	4.28		
90.0	5.06	4.89	4.73	4.61	4.56	4.44	4.33	4.22	4.16		
135.0	5.18	5.06	4.89	4.84	4.61	4.56	4.50	4.39	4.28		
180.0	7.59	5.18	5.01	4.84	4.73	4.61	4.50	4.44	4.33		
225.0	9.96	7.82	5.34	5.12	4.95	4.84	4.73	4.61	4.50		
270.0	13.61	10.46	7.88	6.47	5.12	5.01	4.84	4.67	4.56		
315.0	10.74	8.04	6.36	5.12	4.95	4.78	4.67	4.56	4.44		
360.0	6.64	5.46	5.12	4.95	4.84	4.67	4.56	4.44	4.39		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	4.28	4.16	4.11	4.05	3.94	3.88	3.83	3.77	3.77		
45.0	4.22	4.11	4.05	3.94	3.88	3.88	3.77	3.71	3.71		
90.0	4.05	3.99	3.94	3.88	3.83	3.77	3.71	3.71	3.66		
135.0	4.22	4.11	4.05	3.99	3.94	3.88	3.83	3.77	3.71		
180.0	4.22	4.16	4.11	4.05	3.94	3.88	3.83	3.77	3.77		
225.0	4.39	4.28	4.16	4.05	3.99	3.94	3.88	3.83	3.77		
270.0	4.50	4.39	4.28	4.22	4.11	4.05	3.94	3.88	3.83		
315.0	4.33	4.28	4.16	4.11	3.99	3.94	3.83	3.83	3.77		
360.0	4.28	4.16	4.11	4.05	3.94	3.88	3.83	3.77	3.77		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	3.71	3.71	3.66	3.66	3.66	3.60	3.60	3.54	3.54		
45.0	3.71	3.66	3.60	3.60	3.60	3.60	3.54	3.54	3.54		
90.0	3.66	3.60	3.60	3.54	3.60	3.54	3.54	3.49	3.49		
135.0	3.71	3.66	3.66	3.66	3.60	3.60	3.54	3.54	3.54		
180.0	3.71	3.66	3.66	3.60	3.60	3.60	3.60	3.54	3.54		
225.0	3.71	3.71	3.66	3.66	3.60	3.60	3.54	3.54	3.54		
270.0	3.83	3.77	3.71	3.66	3.66	3.66	3.60	3.54	3.54		
315.0	3.71	3.71	3.66	3.66	3.60	3.60	3.54	3.54	3.54		
360.0	3.71	3.71	3.66	3.66	3.66	3.60	3.60	3.54	3.54		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	3.54	3.54	3.54	3.54	3.54	3.49	3.49	3.49	3.49		
45.0	3.54	3.54	3.54	3.54	3.49	3.49	3.54	3.49	3.49		
90.0	3.49	3.49	3.49	3.49	3.43	3.43	3.43	3.43	3.43		
135.0	3.54	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49		
180.0	3.54	3.54	3.49	3.49	3.49	3.49	3.49	3.49	3.43		
225.0	3.54	3.49	3.49	3.49	3.49	3.49	3.49	3.43	3.43		
270.0	3.54	3.54	3.49	3.49	3.49	3.49	3.49	3.43	3.43		
315.0	3.54	3.49	3.49	3.49	3.49	3.49	3.49	3.43	3.43		
360.0	3.54	3.54	3.54	3.54	3.54	3.49	3.49	3.49	3.49		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	3.49	3.49	3.43	3.43	3.49	3.43	3.43	3.43	3.43		
45.0	3.49	3.49	3.54	3.54	3.54	3.54	3.54	3.38	3.38		
90.0	3.43	3.43	3.38	3.43	3.43	3.38	3.38	3.38	3.38		
135.0	3.43	3.43	3.43	3.43	3.43	3.38	3.43	3.43	3.43		
180.0	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43		
225.0	3.49	3.43	3.43	3.38	3.38	3.38	3.38	3.38	3.38		
270.0	3.49	3.43	3.43	3.43	3.43	3.38	3.38	3.38	3.43		
315.0	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43		
360.0	3.49	3.49	3.43	3.43	3.49	3.43	3.43	3.43	3.43		

Intensity data(cd)

Appendix Page: 19 Total:19

C/ γ (°)	90.0
0.0	3.43
45.0	3.38
90.0	3.38
135.0	3.43
180.0	3.43
225.0	3.38
270.0	3.38
315.0	3.43
360.0	3.43