
Nata

Client:

LumCAT: 1658-S

Luminaire: 92.70.123.00

Report No: nata0100

Test No: GC2018050301

LampCAT: CREE CXA1310

Lamp flux(lm): 632.9

Number of Lamps: 1

Length(mm): 47

Phm Type: C

Voltage(V): 18.1000

Current(A): 0.3500

Power (W): 6.3350

PF: 0.0000

Ballast type: DC

Width(mm): 47

Height(mm): 0

Photometric Results

Lumens(lm): 551.65, Efficiency(%): 87.17% , Luminous Efficacy(lm/W): 87.08

Central intensity(cd): 1607.096, Maximum intensity(cd): 1607.096

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=30.2

[C90/270]Total=30.2

Field angle(10%Imax): [C0/180]Total=62.6

[C90/270]Total=62.6

Maximum s/h(1/2): C0_180=0.50 C90_270=0.50

Maximum s/h(1/4): C0_180=0.52 C90_270=0.52

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.60%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.223%

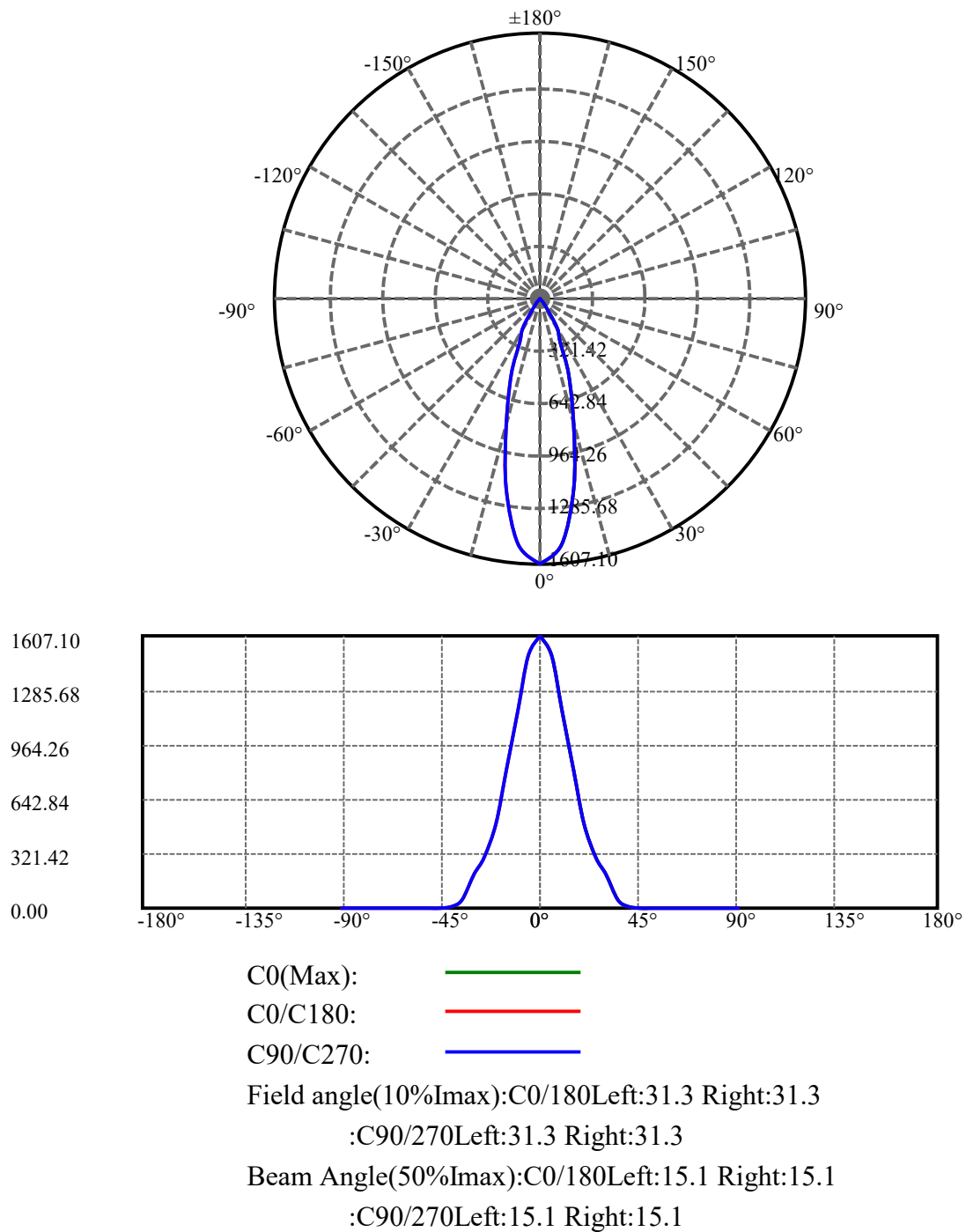
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1607.096	9.611	9.611	1.519%	1.742%
5.0	1489.620	71.164	80.775	11.245%	14.642%
10.0	1166.962	111.075	191.85	17.552%	34.778%
15.0	808.200	114.658	306.508	18.118%	55.562%
20.0	494.558	92.717	399.225	14.651%	72.369%
25.0	295.584	68.473	467.698	10.820%	84.782%
30.0	200.660	54.995	522.692	8.690%	94.751%
35.0	50.948	16.018	538.71	2.531%	97.654%
40.0	5.753	2.027	540.737	.320%	98.022%
45.0	2.966	1.150	541.887	.182%	98.230%
50.0	2.595	1.089	542.976	.172%	98.428%
55.0	2.416	1.085	544.061	.171%	98.624%
60.0	2.319	1.101	545.162	.174%	98.824%
65.0	2.271	1.128	546.29	.178%	99.029%
70.0	2.250	1.159	547.449	.183%	99.239%
75.0	2.230	1.181	548.63	.187%	99.453%
80.0	2.216	1.196	549.826	.189%	99.670%
85.0	2.237	1.221	551.047	.193%	99.891%
90.0	2.195	0.602	551.649	.095%	100.000%

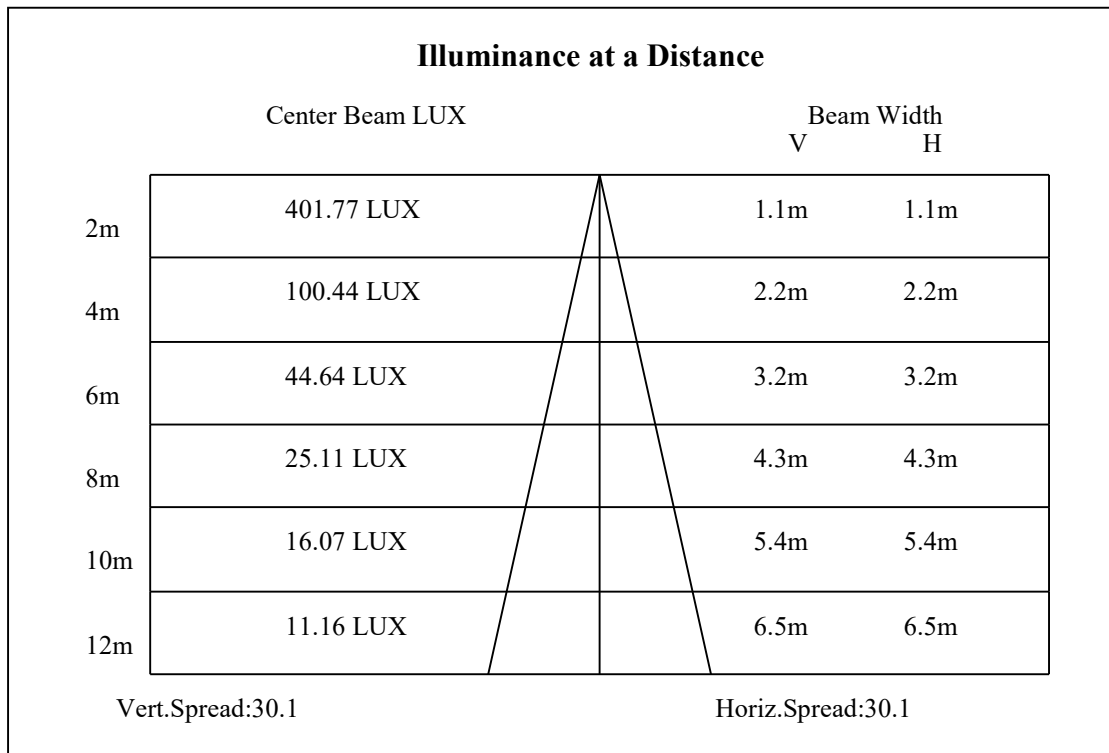
ZONAL LUMEN SUMMARY

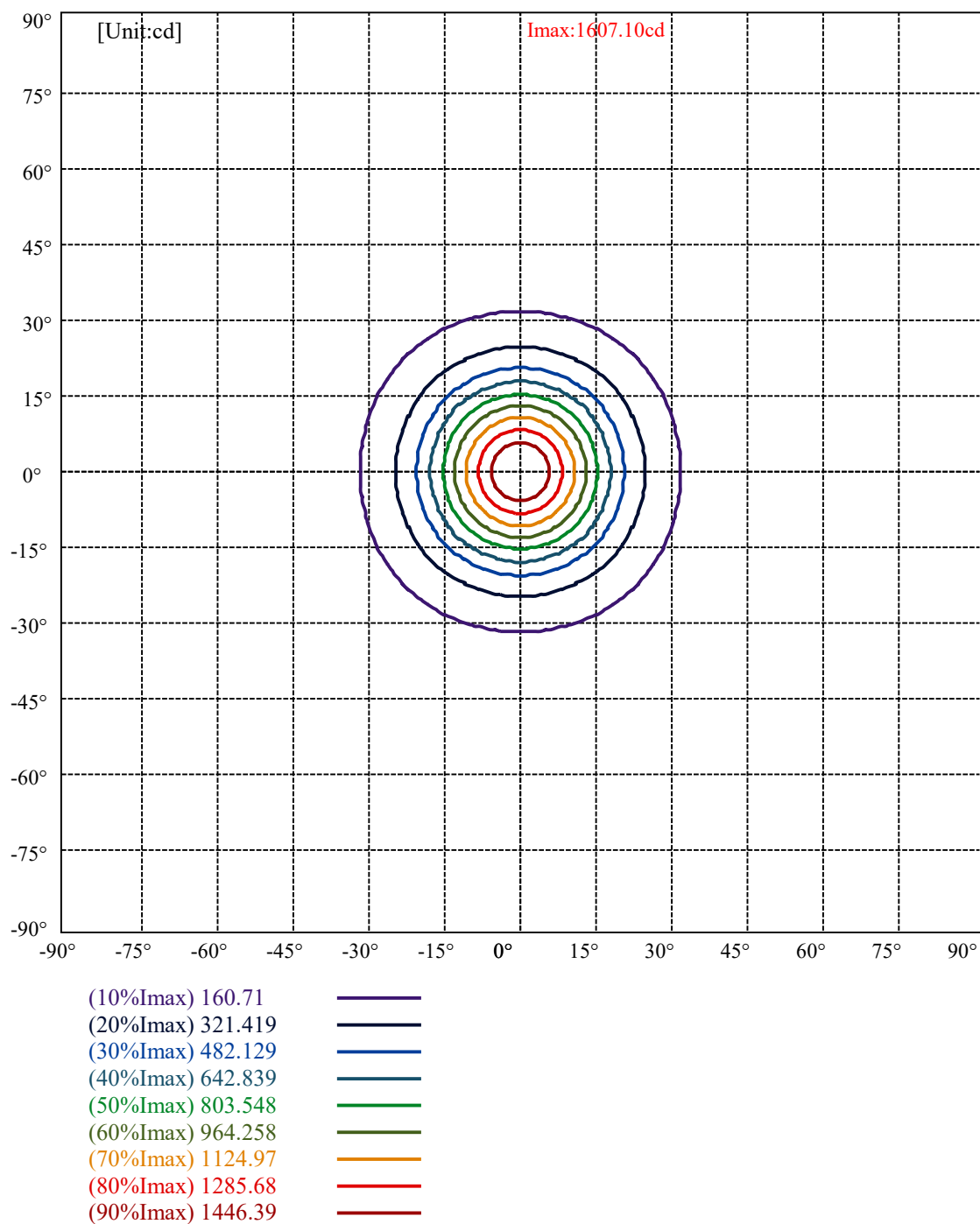
Zone	Lumens	%Lamp	%Fixt
0-30	522.69	82.59%	94.75%
0-40	540.74	85.44%	98.02%
0-60	545.16	86.14%	98.82%
0-90	551.05	87.07%	99.89%
0-120	551.05	87.07%	99.89%
0-180	551.65	87.17%	100.00%
60-90	6.99	1.10%	1.27%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.07	441.32	69.74%	80.00%

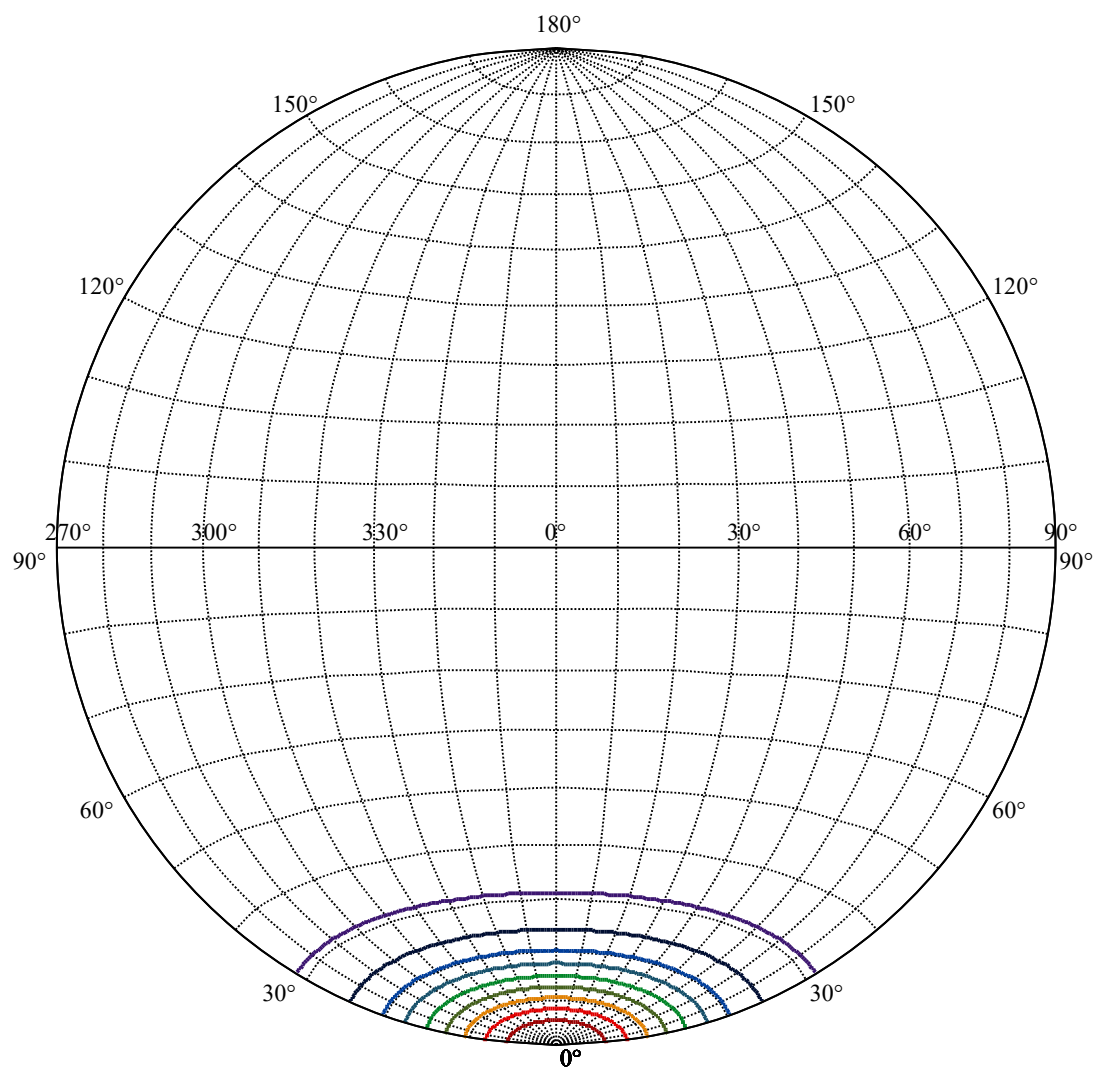
ZONAL LUMEN SUMMARY

0-10	191.85
10-20	207.37
20-30	123.47
30-40	18.05
40-50	2.24
50-60	2.19
60-70	2.29
70-80	2.38
80-90	1.22
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









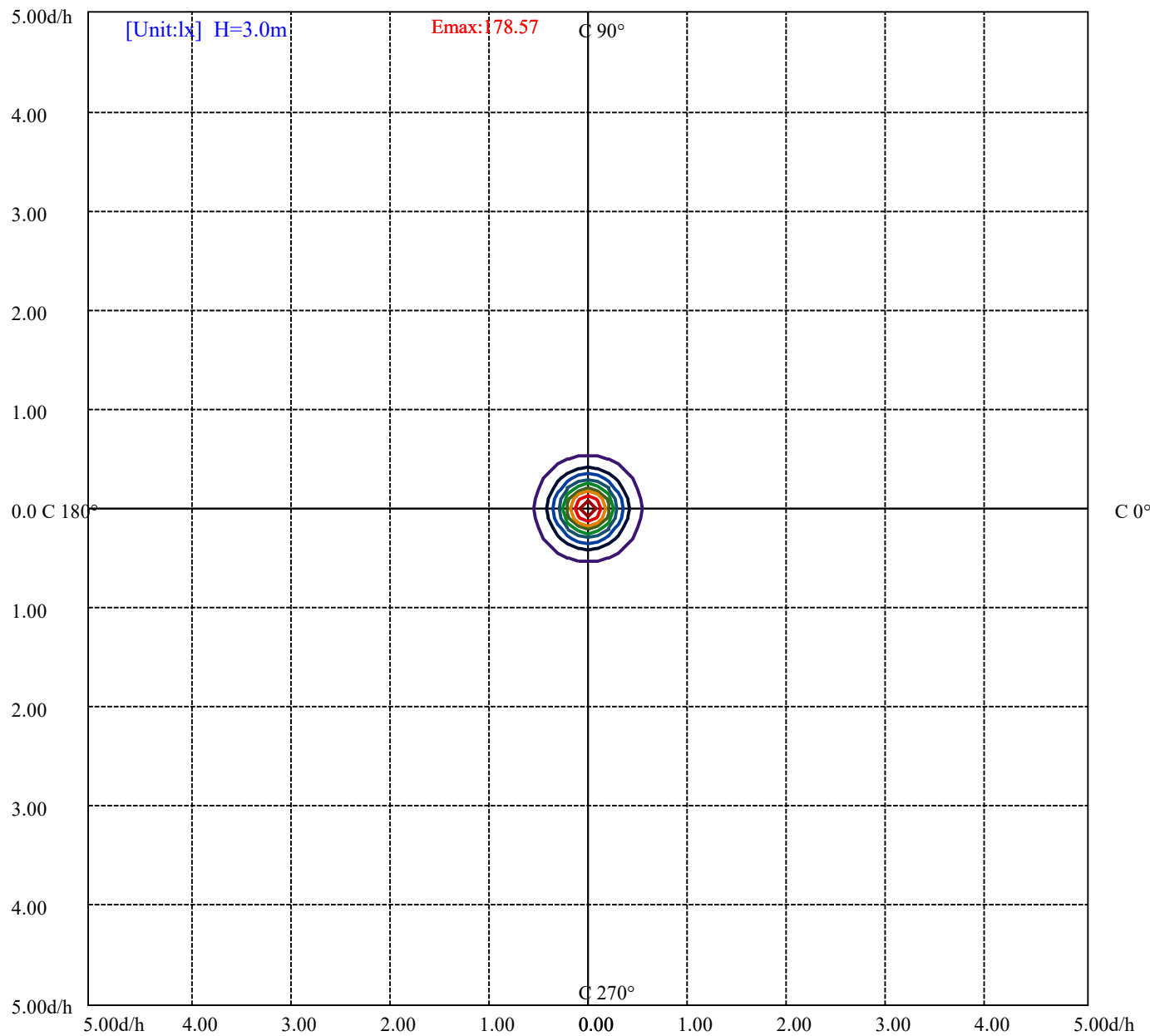
House

[Unit:cd]

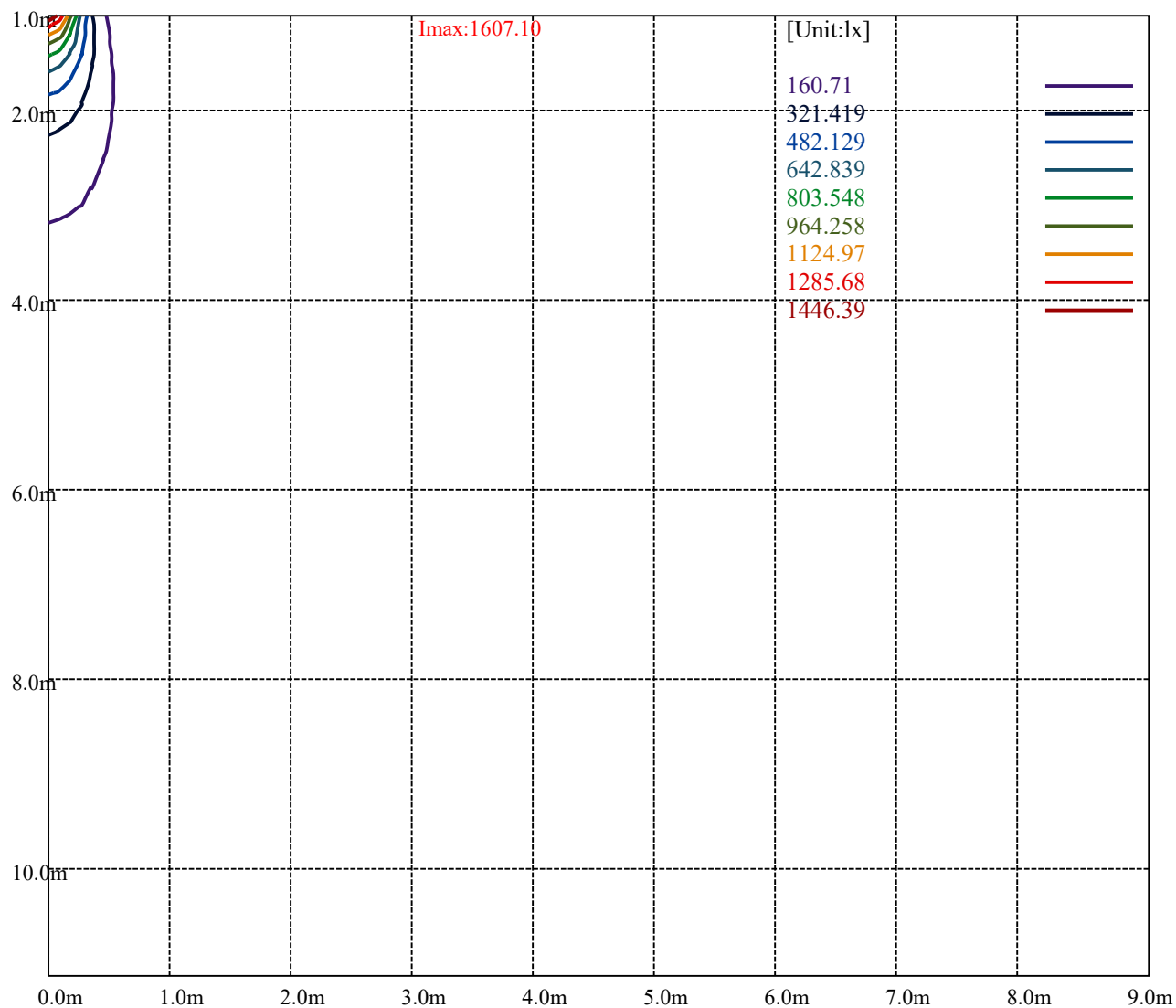
Road

Imax:1607.10

(10%Imax)	160.71	—
(20%Imax)	321.419	—
(30%Imax)	482.129	—
(40%Imax)	642.839	—
(50%Imax)	803.548	—
(60%Imax)	964.258	—
(70%Imax)	1124.97	—
(80%Imax)	1285.68	—
(90%Imax)	1446.39	—



(10%Emax)	17.85656	
(20%Emax)	35.71322	
(30%Emax)	53.56978	
(40%Emax)	71.42633	
(50%Emax)	89.28289	
(60%Emax)	107.1396	
(70%Emax)	124.9967	
(80%Emax)	142.8522	
(90%Emax)	160.7089	



Luminance Table

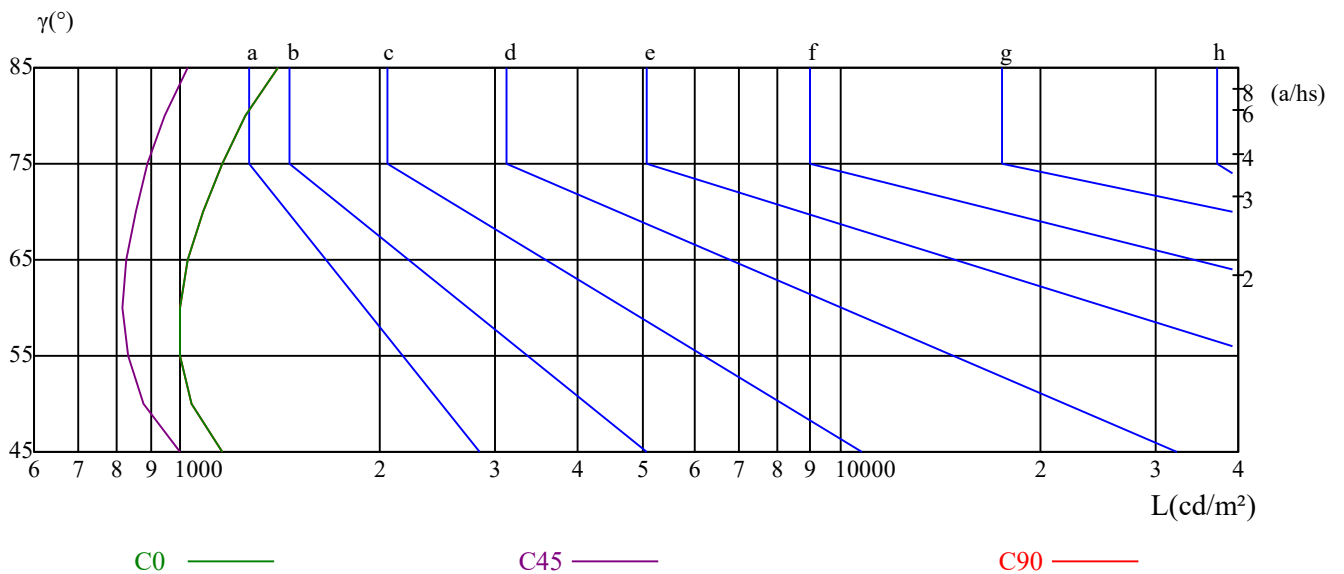
γ	45	50	55	60	65	70	75	80	85
C0	1159	1038	997	997	1027	1082	1153	1250	1400
C45	998	880	833	819	829	856	893	944	1026
C90	1159	1038	997	997	1027	1082	1153	1250	1400

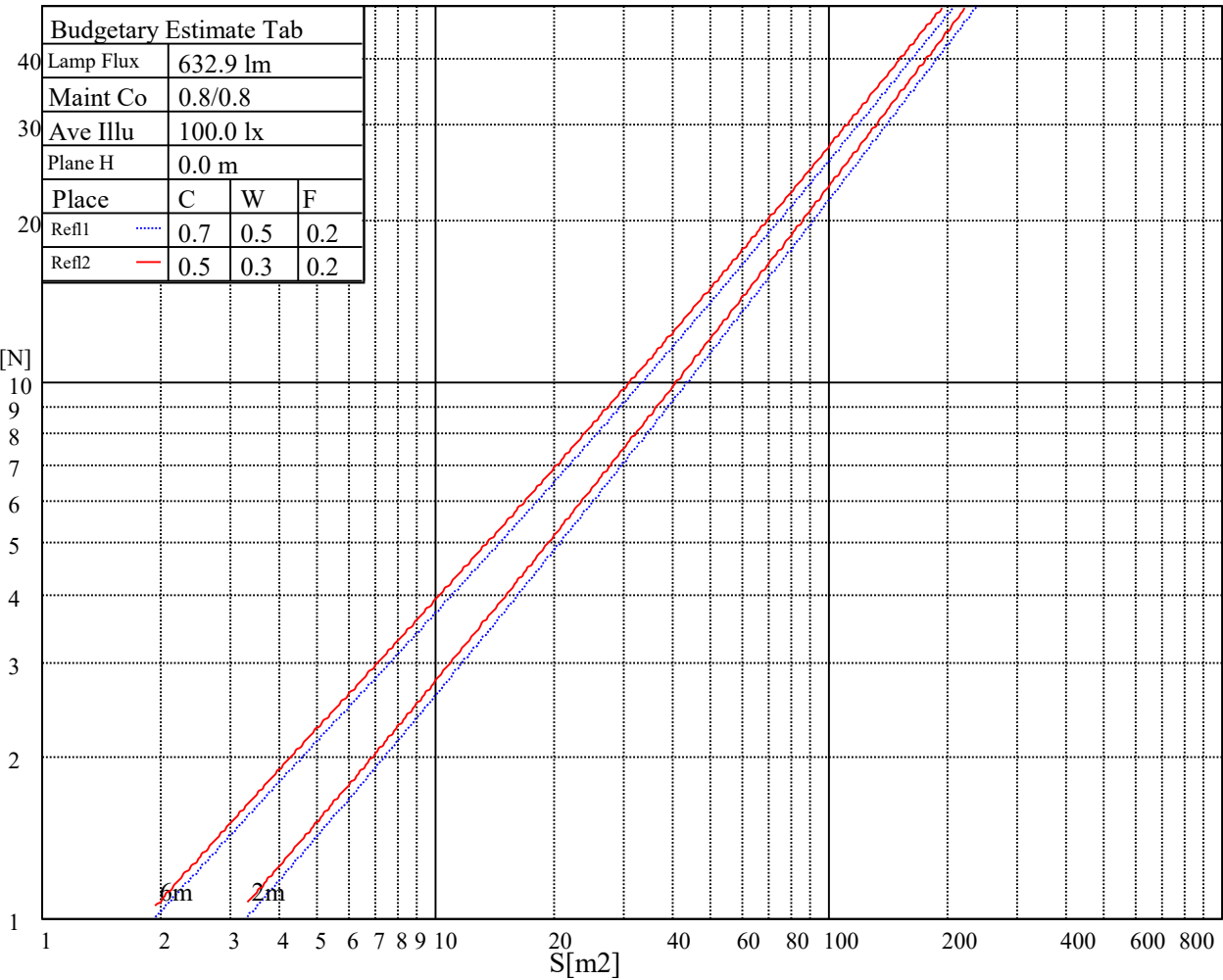
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2433	2433	2433	3900	3900	3900	11617	11617	11617

Glare Table

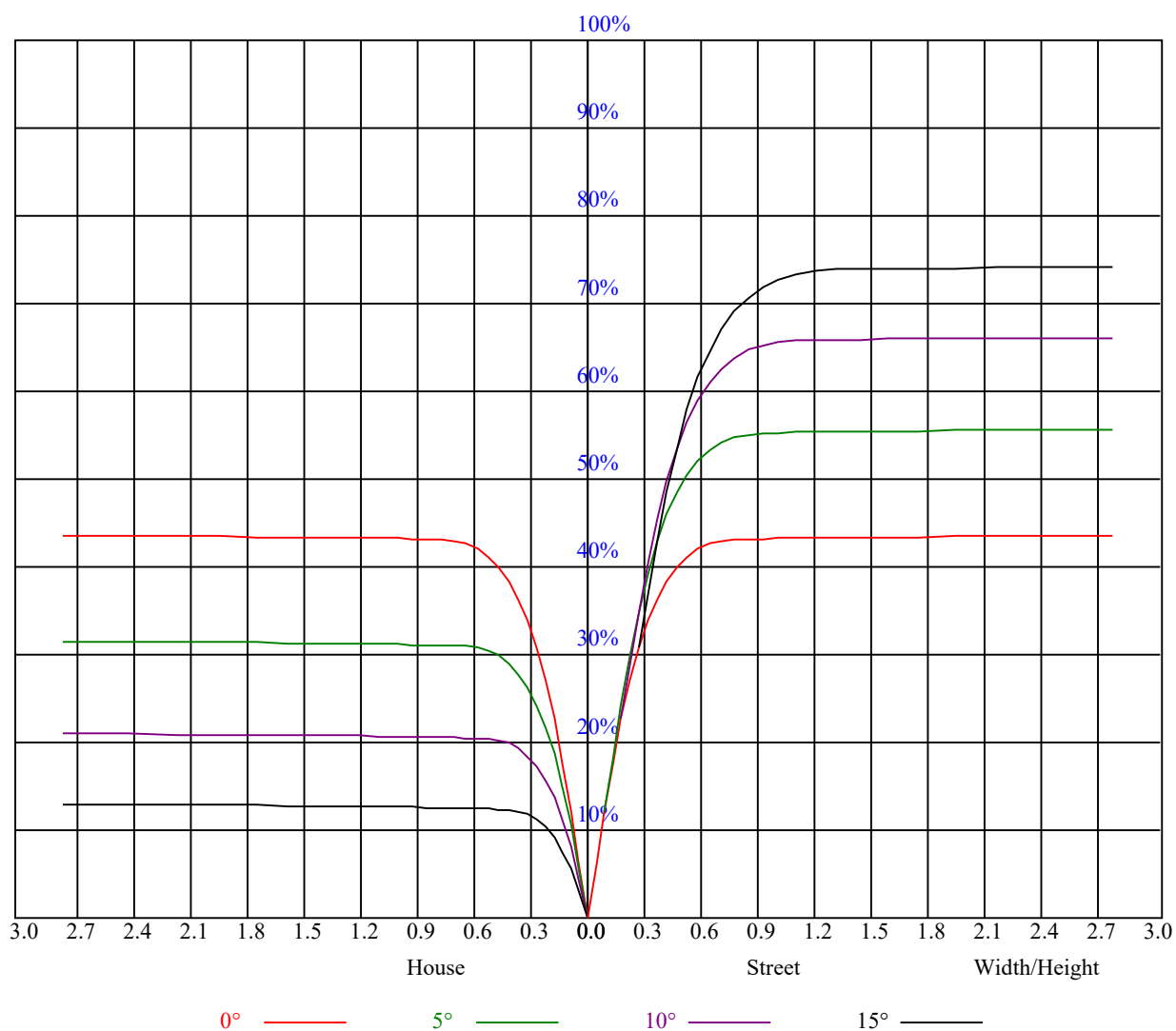
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

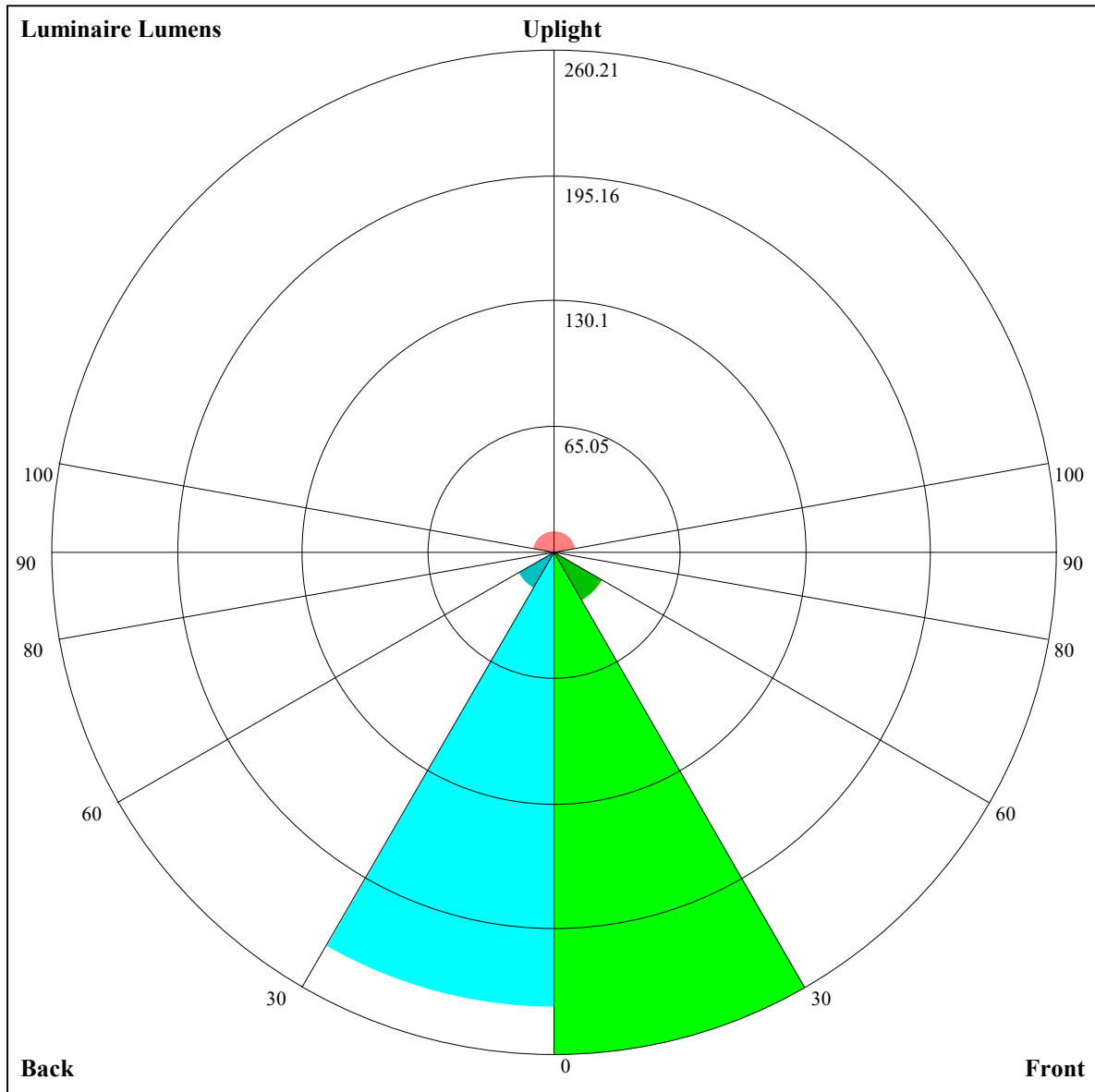
Luminance Limiting Curve





RHOC	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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.98	0.95	0.93	0.96	0.94	0.92	0.92	0.90	0.89	0.89	0.87	0.86	0.86	0.85	0.84	0.82
2	0.93	0.89	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.80	0.79
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.80	0.78	0.81	0.79	0.77	0.76
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
5	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69
7	0.76	0.71	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
10	0.69	0.65	0.62	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61





Luminaire Lumens:

FL=260.21,FM=28.75,FH=2.31,FVH=1.2

BL=235.45,BM=21.74,BH=2.31,BVH=1.22

UL=2.4,UH=11.4

BUG Rating:B1-U2-G0

Nata 1658-S

Intensity data(cd)										Appendix Page: 15 Total:15
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	
0.0	1599.94	1573.51	1325.76	925.50	584.15	352.36	236.74	95.47	7.54	
45.0	1603.79	1556.44	1308.14	946.42	598.46	346.86	251.61	101.14	7.60	
90.0	1610.40	1484.87	1088.74	831.74	506.85	302.65	212.63	58.64	6.06	
135.0	1614.25	1494.78	1202.43	828.60	499.91	290.15	208.00	55.99	5.84	
180.0	1599.94	1405.59	1071.07	681.82	394.53	246.05	159.28	16.24	4.13	
225.0	1603.79	1423.76	1070.41	684.30	414.41	250.95	151.29	14.42	4.35	
270.0	1610.40	1492.03	1188.12	792.81	482.84	283.54	190.22	36.67	5.12	
315.0	1614.25	1485.97	1081.03	774.42	475.30	292.13	195.51	29.01	5.40	
360.0	1599.94	1573.51	1325.76	925.50	584.15	352.36	236.74	95.47	7.54	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	3.41	2.64	2.48	2.37	2.31	2.26	2.20	2.20	2.20	
45.0	3.19	2.70	2.48	2.31	2.31	2.26	2.26	2.20	2.20	
90.0	2.92	2.64	2.42	2.31	2.26	2.26	2.20	2.20	2.20	
135.0	2.97	2.64	2.42	2.31	2.26	2.26	2.26	2.20	2.26	
180.0	2.75	2.59	2.42	2.31	2.26	2.26	2.26	2.26	2.37	
225.0	2.75	2.53	2.37	2.31	2.26	2.26	2.20	2.26	2.26	
270.0	2.86	2.53	2.37	2.31	2.26	2.26	2.26	2.20	2.20	
315.0	2.86	2.48	2.37	2.31	2.26	2.20	2.20	2.20	2.20	
360.0	3.41	2.64	2.48	2.37	2.31	2.26	2.20	2.20	2.20	
C/γ(°)	90.0									
0.0	2.20									
45.0	2.20									
90.0	2.20									
135.0	2.15									
180.0	2.20									
225.0	2.20									
270.0	2.20									
315.0	2.20									
360.0	2.20									