



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

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## Nata

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### Client:

LumCAT: 2-2183-M

Luminaire: BJB 47.360.5080

Report No: nt0100

Test No: GC2020031321

LampCAT: LUMILEDS LUXEON 1208

Lamp flux(lm): 1783.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.1110

Power (W): 23.4700

PF: 0.9580

Ballast type: AC

Width(mm): 0

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1354.49, Efficiency(%): 75.97% , Luminous Efficacy(lm/W): 57.71

Central intensity(cd): 9622.893, Maximum intensity(cd): 9665.537

Angle of maximum intensity: C=0.0  $\gamma=1.0$

Beam Angle(50%Imax): [C0/180]Total=18.4

[C90/270]Total=18.4

Field angle(10%Imax): [C0/180]Total=38.6

[C90/270]Total=38.6

Maximum s/h(1/2): C0\_180=0.32 C90\_270=0.32

Maximum s/h(1/4): C0\_180=0.34 C90\_270=0.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 75.97%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.885%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9622.893	0.000	0	.000%	.000%
1.0	9665.538	9.229	9.229	.518%	.681%
2.0	9335.587	27.272	36.501	1.530%	2.695%
3.0	9003.270	43.861	80.362	2.460%	5.933%
4.0	8591.498	58.895	139.257	3.303%	10.281%
5.0	8017.315	71.450	210.707	4.007%	15.556%
6.0	7282.866	80.407	291.114	4.510%	21.493%
7.0	6498.475	85.541	376.654	4.798%	27.808%
8.0	5713.505	87.399	464.053	4.902%	34.260%
9.0	4978.998	86.657	550.71	4.860%	40.658%
10.0	4307.715	84.041	634.751	4.713%	46.863%
11.0	3710.562	80.119	714.871	4.493%	52.778%
12.0	3187.481	75.405	790.276	4.229%	58.345%
13.0	2758.076	70.559	860.835	3.957%	63.554%
14.0	2430.758	66.417	927.251	3.725%	68.458%
15.0	2095.065	62.133	989.384	3.485%	73.045%
16.0	1733.246	56.095	1045.479	3.146%	77.186%
17.0	1525.127	50.742	1096.221	2.846%	80.933%
18.0	1281.701	46.278	1142.499	2.596%	84.349%
19.0	1016.001	39.975	1182.475	2.242%	87.301%
20.0	832.273	33.829	1216.303	1.897%	89.798%
21.0	686.717	29.168	1245.471	1.636%	91.952%
22.0	533.064	24.512	1269.983	1.375%	93.761%
23.0	396.099	19.496	1289.479	1.093%	95.201%
24.0	288.936	14.977	1304.457	.840%	96.306%
25.0	196.379	11.035	1315.492	.619%	97.121%
26.0	90.788	6.779	1322.27	.380%	97.622%
27.0	57.308	3.623	1325.894	.203%	97.889%
28.0	20.487	1.970	1327.863	.110%	98.034%
29.0	9.930	0.796	1328.659	.045%	98.093%
30.0	7.280	0.465	1329.124	.026%	98.128%
31.0	6.375	0.380	1329.504	.021%	98.156%
32.0	6.085	0.357	1329.861	.020%	98.182%
33.0	5.835	0.351	1330.212	.020%	98.208%
34.0	5.592	0.346	1330.557	.019%	98.233%
35.0	5.360	0.340	1330.898	.019%	98.258%
36.0	5.215	0.337	1331.234	.019%	98.283%
37.0	5.046	0.335	1331.569	.019%	98.308%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	4.901	0.332	1331.901	.019%	98.333%
39.0	4.785	0.331	1332.232	.019%	98.357%
40.0	4.658	0.329	1332.561	.018%	98.381%
41.0	4.565	0.328	1332.889	.018%	98.406%
42.0	4.478	0.329	1333.218	.018%	98.430%
43.0	4.397	0.329	1333.547	.018%	98.454%
44.0	4.321	0.329	1333.876	.018%	98.478%
45.0	4.258	0.330	1334.205	.018%	98.503%
46.0	4.211	0.331	1334.537	.019%	98.527%
47.0	4.165	0.333	1334.87	.019%	98.552%
48.0	4.112	0.335	1335.204	.019%	98.576%
49.0	4.072	0.336	1335.54	.019%	98.601%
50.0	4.037	0.338	1335.879	.019%	98.626%
51.0	4.008	0.340	1336.219	.019%	98.651%
52.0	3.979	0.343	1336.562	.019%	98.677%
53.0	3.927	0.344	1336.906	.019%	98.702%
54.0	3.909	0.345	1337.251	.019%	98.728%
55.0	3.904	0.349	1337.6	.020%	98.753%
56.0	3.875	0.351	1337.951	.020%	98.779%
57.0	3.875	0.354	1338.305	.020%	98.805%
58.0	3.857	0.358	1338.663	.020%	98.832%
59.0	3.857	0.361	1339.024	.020%	98.858%
60.0	3.892	0.366	1339.39	.021%	98.885%
61.0	3.991	0.376	1339.766	.021%	98.913%
62.0	4.095	0.390	1340.156	.022%	98.942%
63.0	4.252	0.406	1340.562	.023%	98.972%
64.0	4.478	0.428	1340.99	.024%	99.004%
65.0	4.762	0.457	1341.447	.026%	99.037%
66.0	5.157	0.495	1341.942	.028%	99.074%
67.0	5.580	0.540	1342.482	.030%	99.114%
68.0	6.212	0.597	1343.079	.034%	99.158%
69.0	6.821	0.665	1343.744	.037%	99.207%
70.0	7.506	0.736	1344.48	.041%	99.261%
71.0	8.144	0.809	1345.289	.045%	99.321%
72.0	8.625	0.872	1346.161	.049%	99.385%
73.0	8.933	0.918	1347.079	.051%	99.453%
74.0	8.950	0.940	1348.019	.053%	99.523%
75.0	8.631	0.929	1348.948	.052%	99.591%

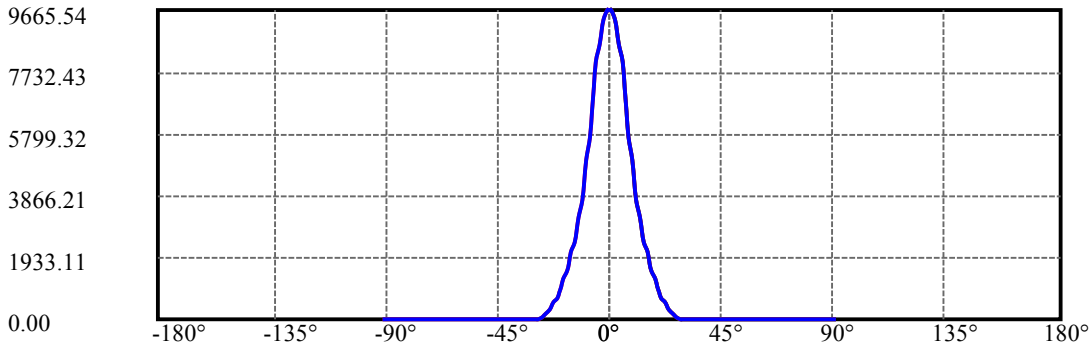
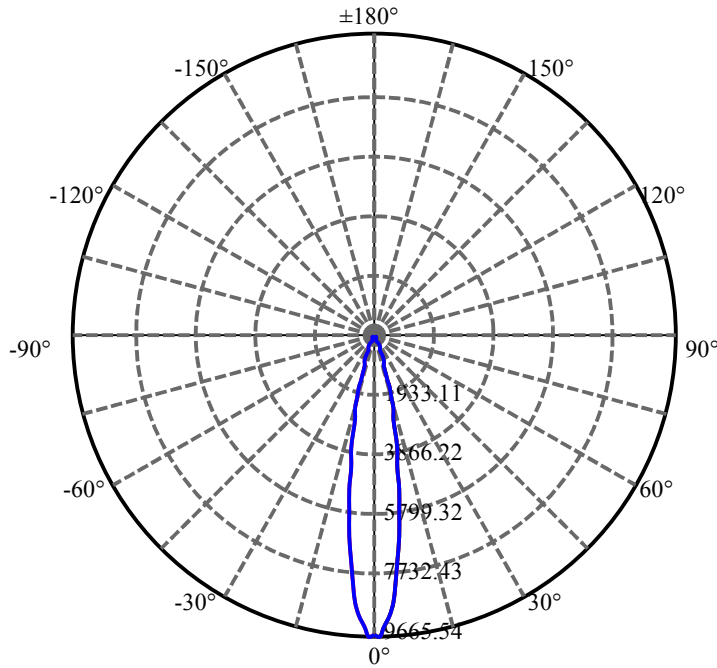
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.010	0.883	1349.831	.050%	99.656%
77.0	6.961	0.798	1350.63	.045%	99.715%
78.0	5.365	0.660	1351.289	.037%	99.764%
79.0	4.095	0.508	1351.798	.029%	99.802%
80.0	3.242	0.396	1352.193	.022%	99.831%
81.0	2.697	0.321	1352.514	.018%	99.854%
82.0	2.309	0.271	1352.786	.015%	99.874%
83.0	2.088	0.239	1353.025	.013%	99.892%
84.0	1.943	0.220	1353.245	.012%	99.908%
85.0	1.845	0.207	1353.451	.012%	99.924%
86.0	1.758	0.197	1353.648	.011%	99.938%
87.0	1.816	0.196	1353.844	.011%	99.953%
88.0	1.908	0.204	1354.048	.011%	99.968%
89.0	2.019	0.215	1354.263	.012%	99.984%
90.0	2.053	0.223	1354.486	.013%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1329.12	74.54%	98.13%
0-40	1332.56	74.74%	98.38%
0-60	1339.39	75.12%	98.89%
0-90	1354.26	75.95%	99.98%
0-120	1354.26	75.95%	99.98%
0-180	1354.49	75.97%	100.00%
60-90	15.24	0.85%	1.13%
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%
0-16.75	1083.59	60.77%	80.00%

ZONAL LUMEN SUMMARY

0-10	634.75
10-20	581.55
20-30	112.82
30-40	3.44
40-50	3.32
50-60	3.51
60-70	5.09
70-80	7.71
80-90	2.07
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



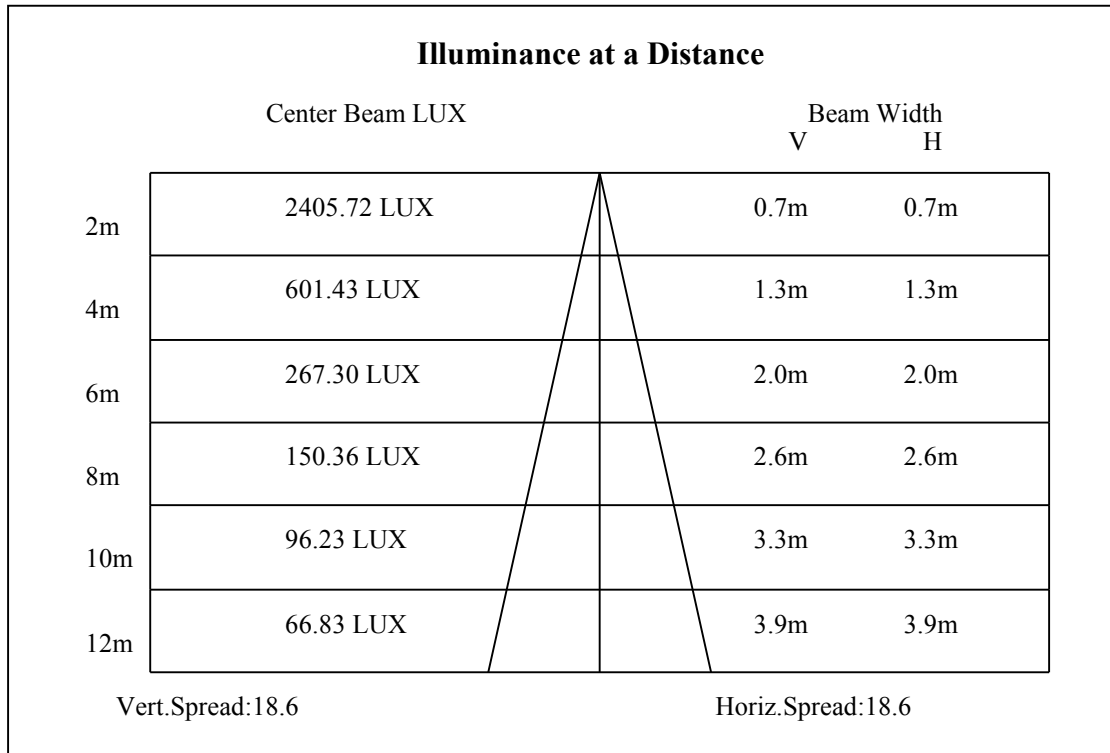
C0(Max): —————

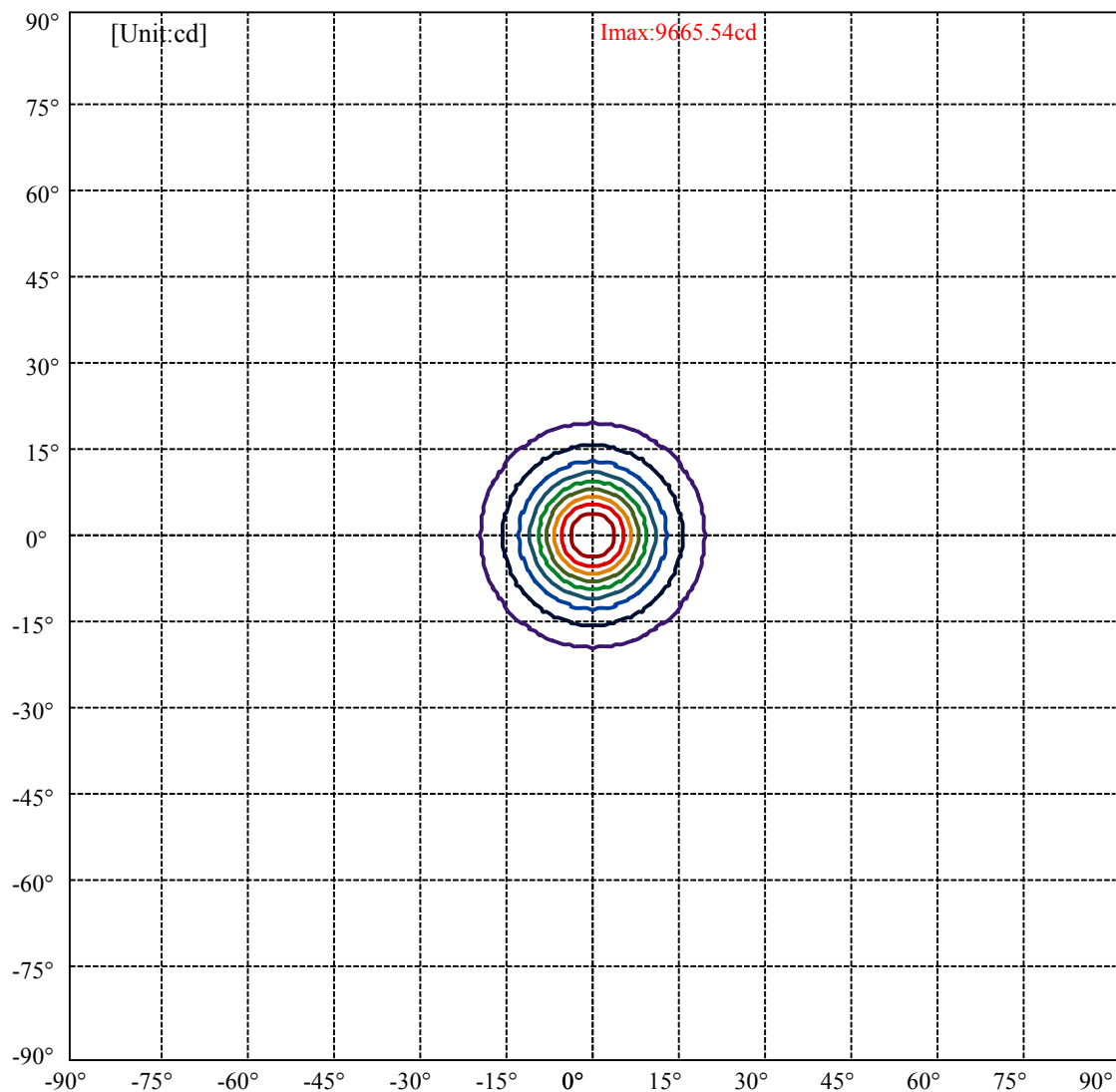
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:19.3 Right:19.3  
:C90/270Left:19.3 Right:19.3

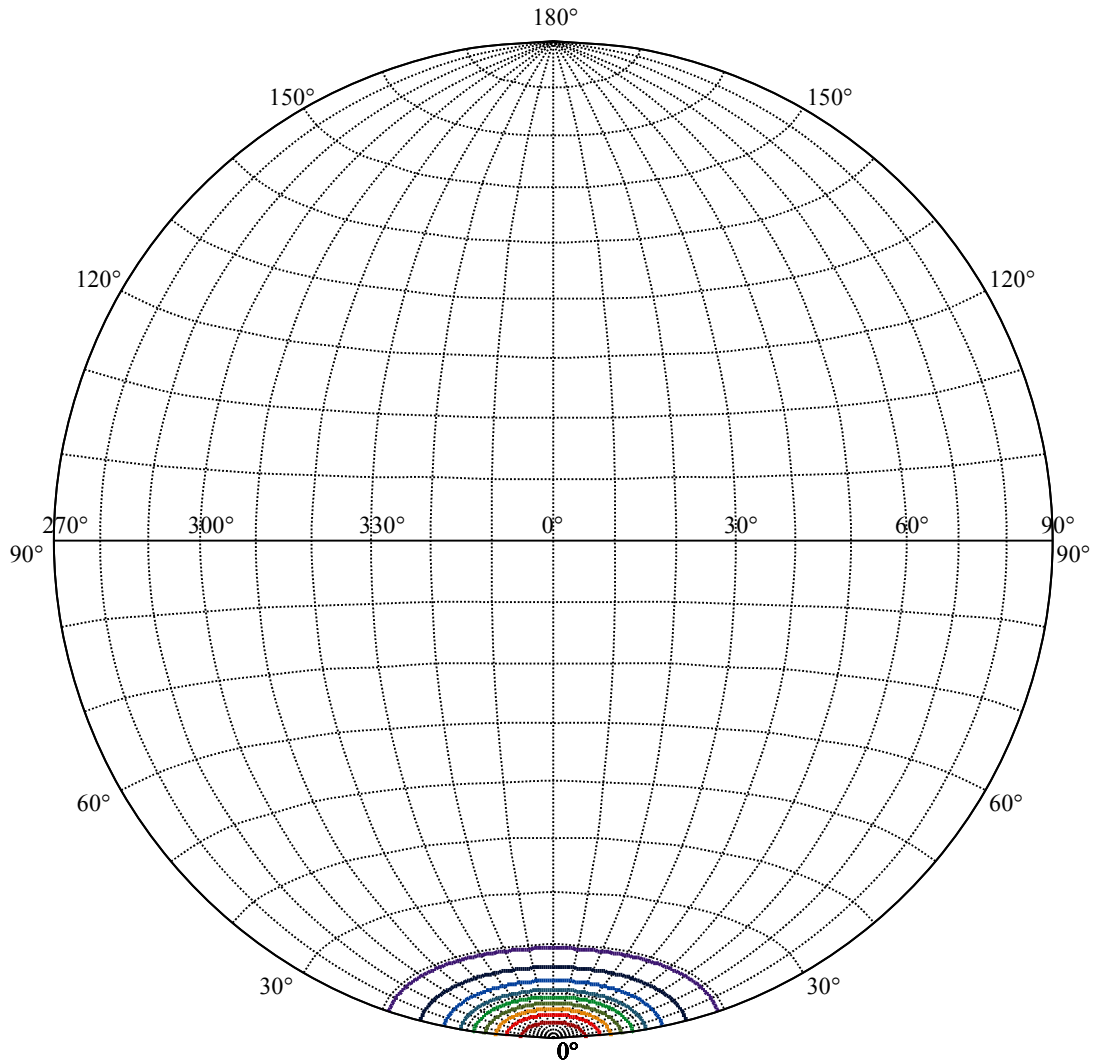
Beam Angle(50%Imax):C0/180Left:9.2 Right:9.2  
:C90/270Left:9.2 Right:9.2





(10%Imax) 966.554	—
(20%Imax) 1933.11	—
(30%Imax) 2899.66	—
(40%Imax) 3866.21	—
(50%Imax) 4832.77	—
(60%Imax) 5799.32	—
(70%Imax) 6765.88	—
(80%Imax) 7732.43	—
(90%Imax) 8698.98	—





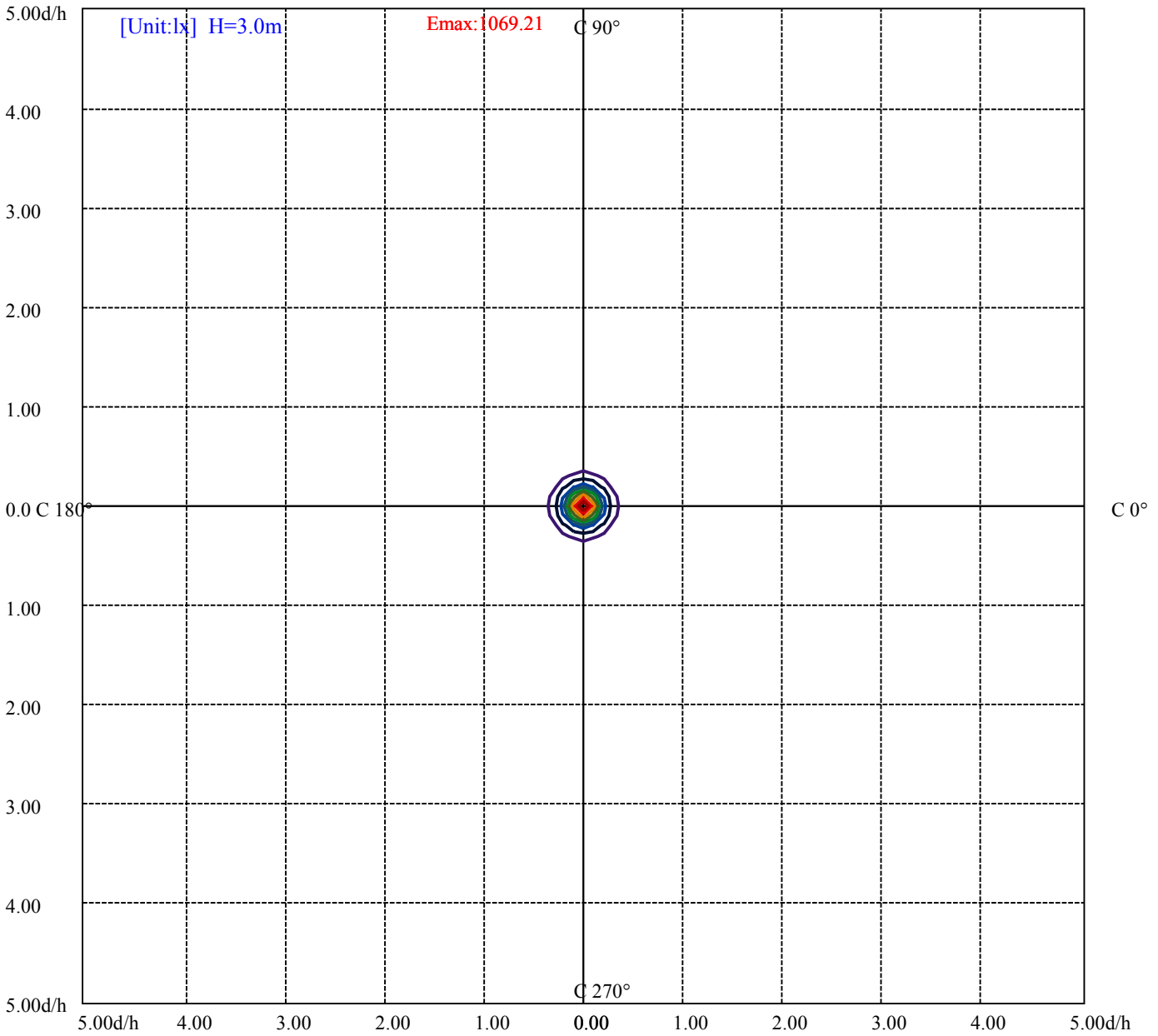
House

[Unit:cd]

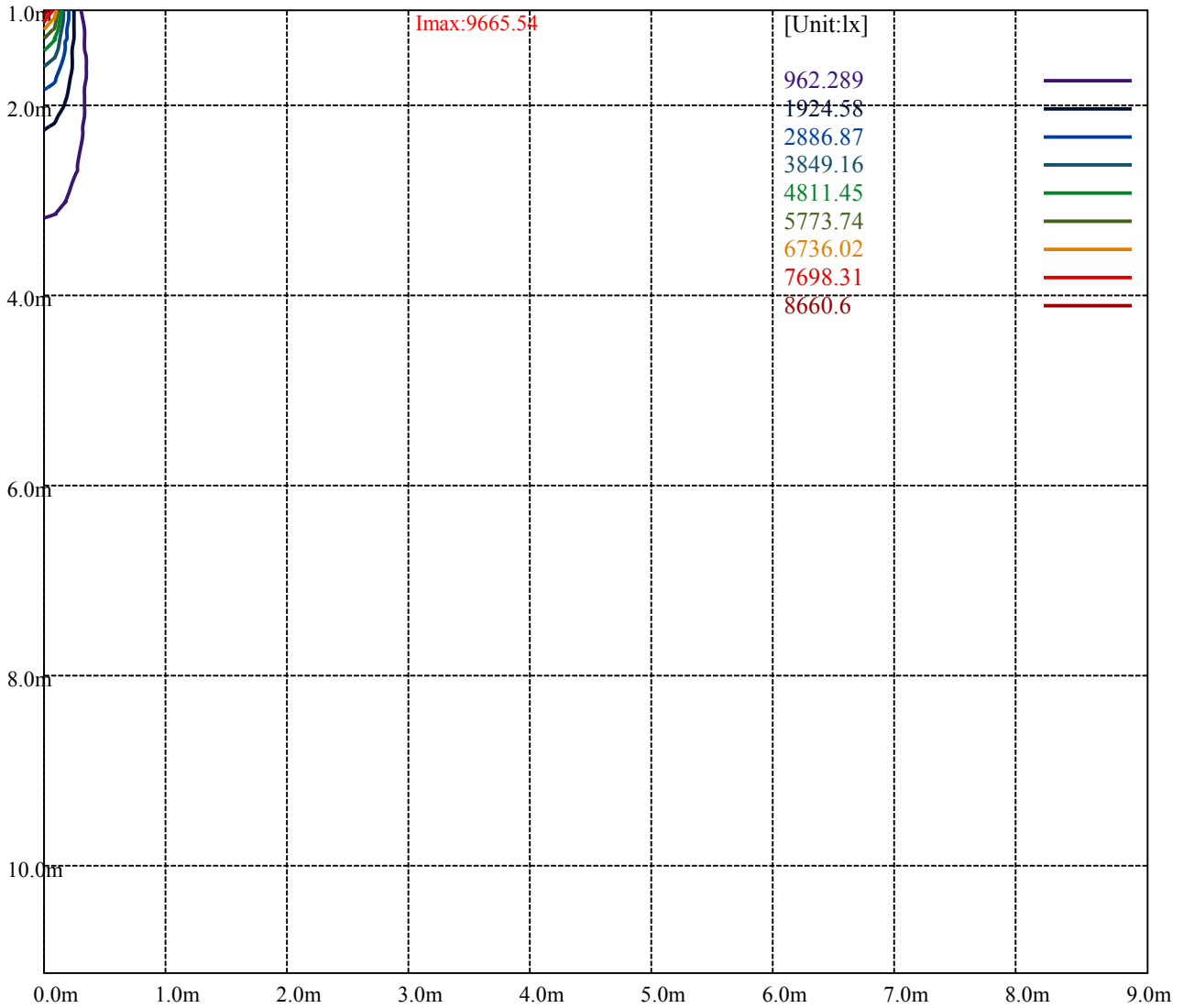
Road

Imax:9665.54

(10%Imax)	966.554	—
(20%Imax)	1933.11	—
(30%Imax)	2899.66	—
(40%Imax)	3866.21	—
(50%Imax)	4832.77	—
(60%Imax)	5799.32	—
(70%Imax)	6765.88	—
(80%Imax)	7732.43	—
(90%Imax)	8698.98	—



(10%Emax) 106.9211	—
(20%Emax) 213.8422	—
(30%Emax) 320.7633	—
(40%Emax) 427.6844	—
(50%Emax) 534.6056	—
(60%Emax) 641.5267	—
(70%Emax) 748.4478	—
(80%Emax) 855.3689	—
(90%Emax) 962.29	—



Luminance Table

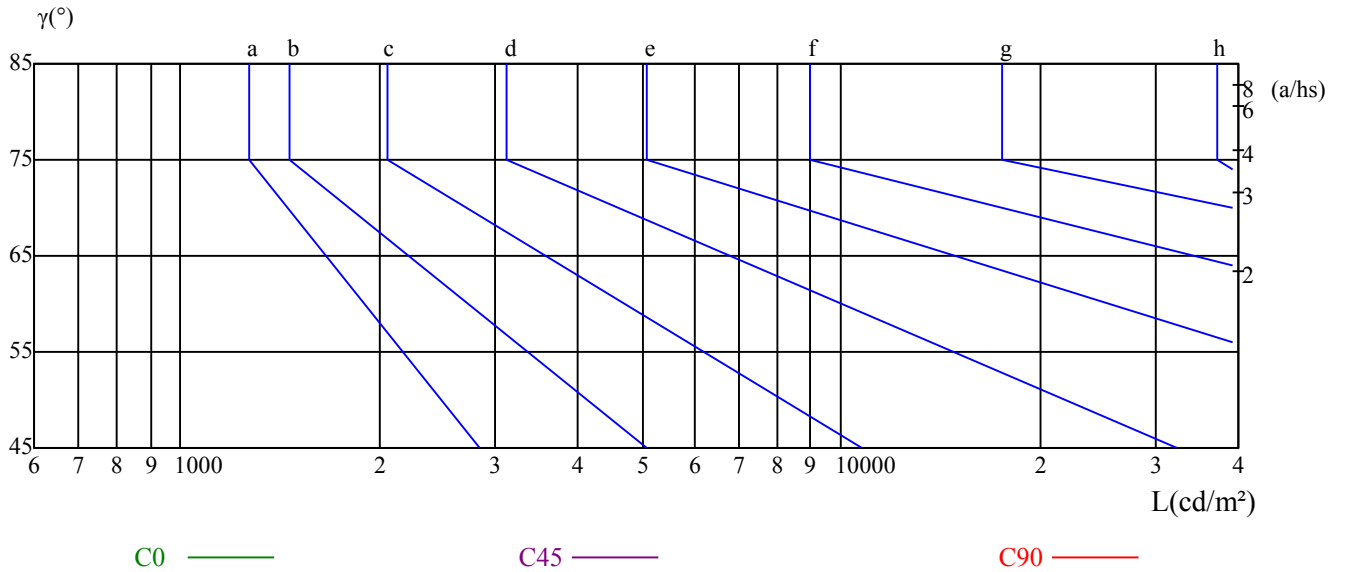
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

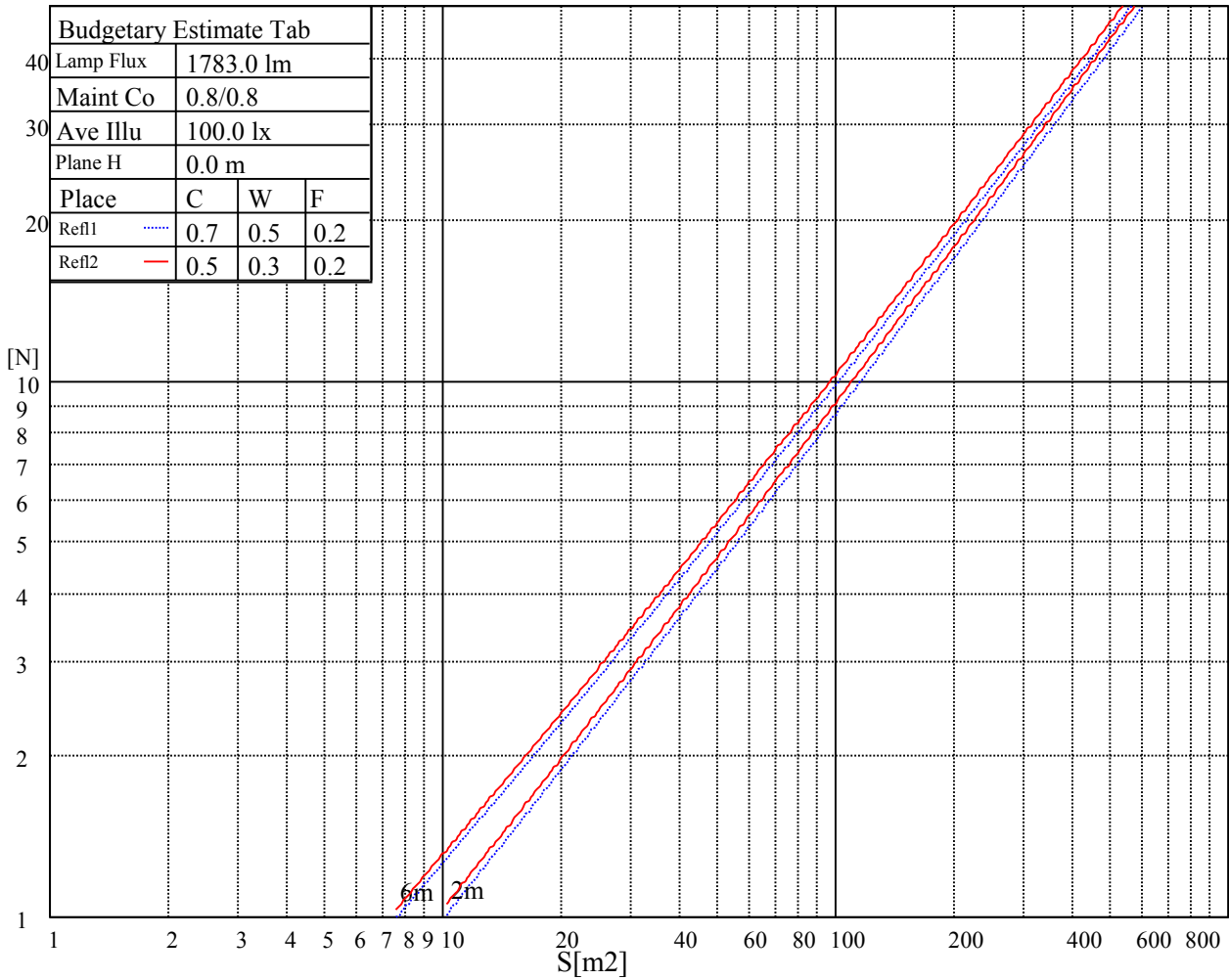
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

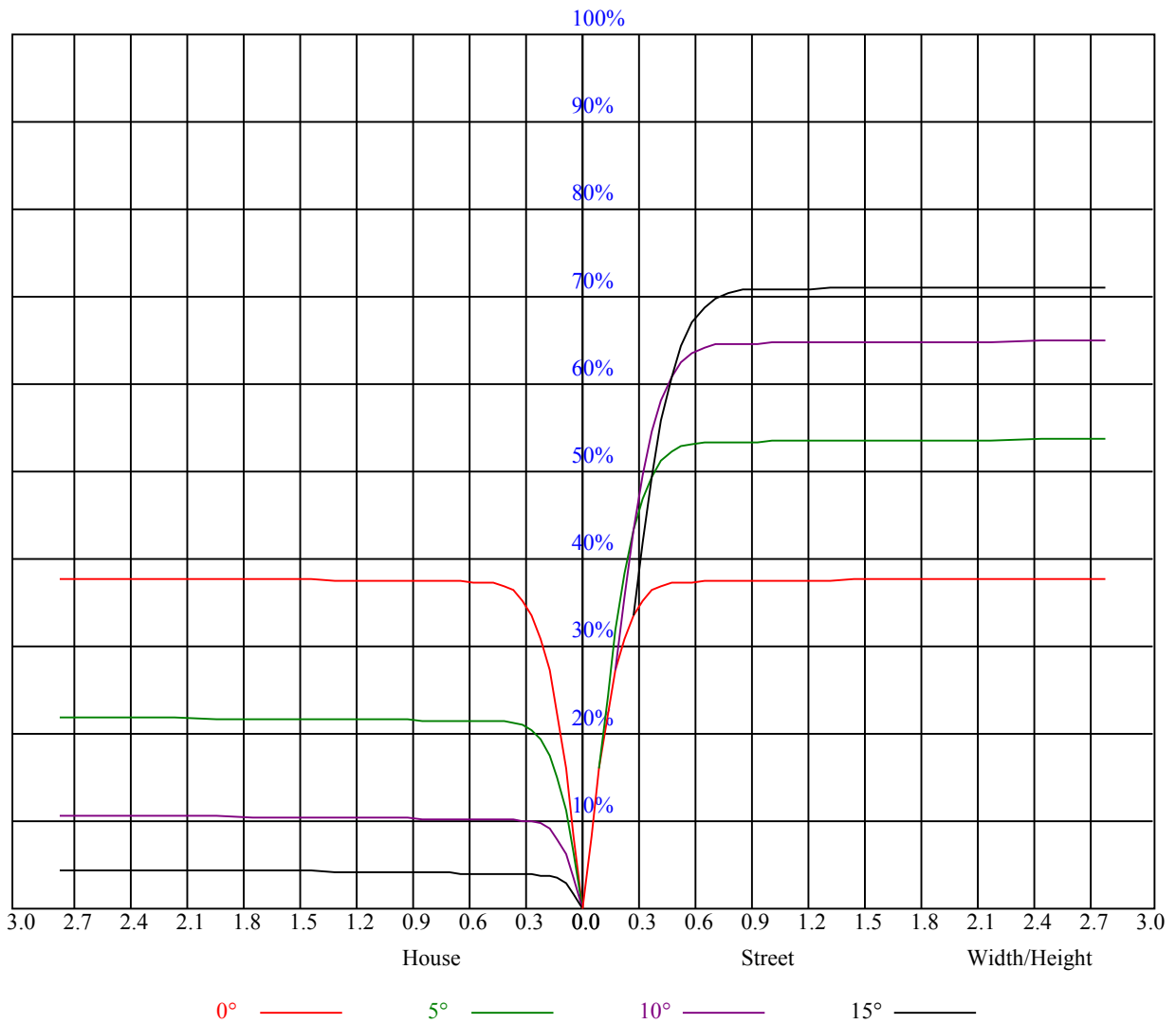
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

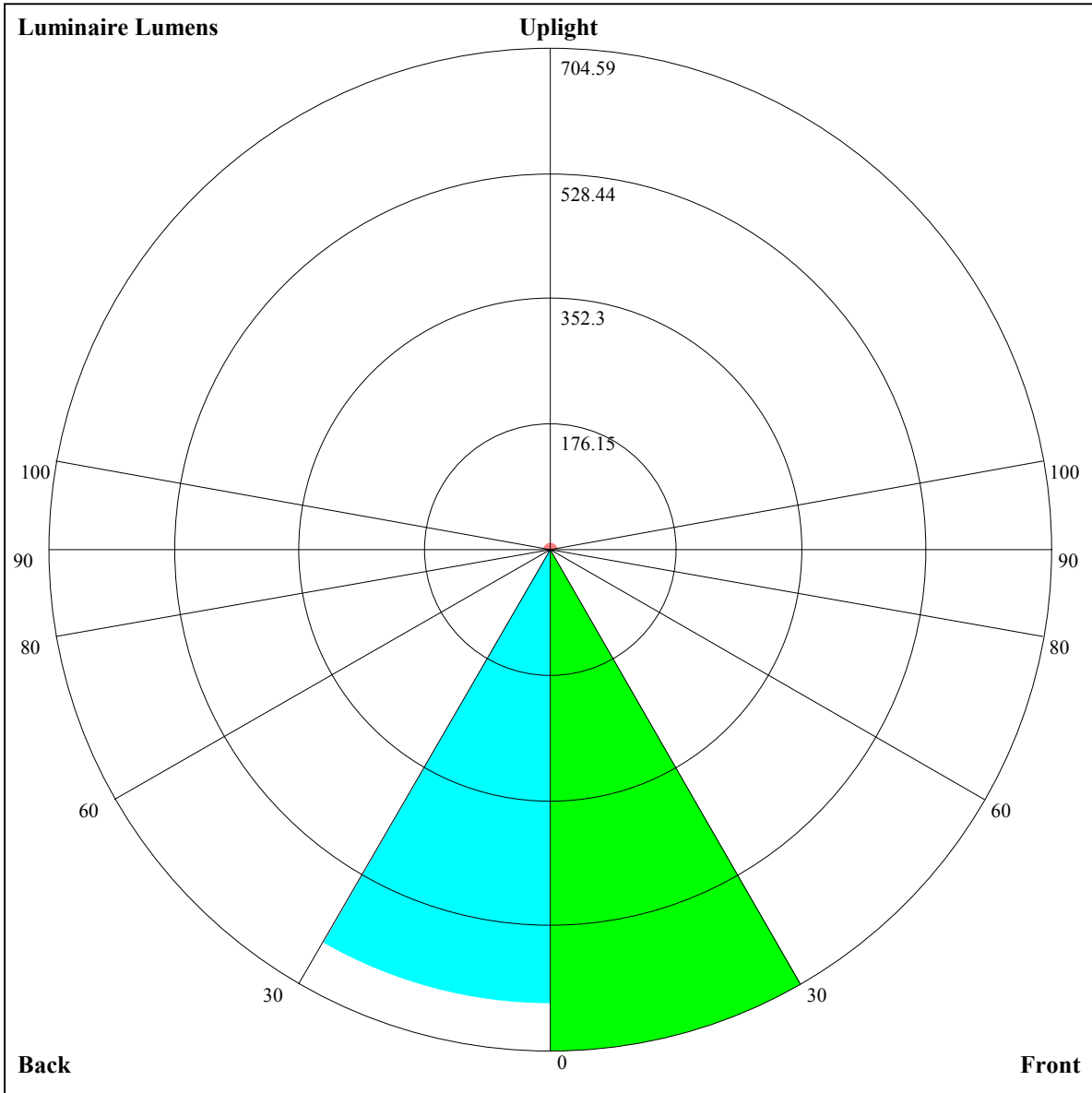
Luminance Limiting Curve





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	0.90	0.90	0.90	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.86	0.85	0.83	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74
2	0.82	0.80	0.79	0.81	0.79	0.78	0.79	0.77	0.76	0.77	0.75	0.74	0.75	0.74	0.73	0.72
3	0.79	0.77	0.75	0.78	0.76	0.74	0.77	0.75	0.73	0.75	0.73	0.72	0.73	0.72	0.71	0.70
4	0.77	0.74	0.72	0.76	0.74	0.72	0.75	0.72	0.71	0.73	0.71	0.70	0.72	0.70	0.69	0.68
5	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.68	0.67
6	0.73	0.70	0.68	0.72	0.69	0.67	0.71	0.69	0.67	0.70	0.68	0.67	0.69	0.68	0.66	0.66
7	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.65	0.64
8	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.67	0.65	0.64	0.63
9	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.63	0.66	0.64	0.62	0.62
10	0.66	0.63	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.65	0.63	0.61	0.64	0.63	0.61	0.61





Luminaire Lumens:

FL=704.59,FM=4.75,FH=5.5,FVH=1.11

BL=637.52,BM=5.53,BH=6.71,BVH=1.21

UL=2.24,UH=10.66

BUG Rating:B2-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	9791.71	9736.02	9017.14	9017.14	8907.63	8274.69	7516.92	6672.38	5823.20
45.0	9796.35	9740.67	9550.41	9230.23	8719.79	8060.86	7281.29	6441.39	5624.69
90.0	9107.17	9107.17	8614.36	7880.73	7057.07	6199.53	5397.22	4685.39	4051.52
135.0	9796.35	9610.74	9234.87	8650.19	7930.93	7118.88	6251.13	5439.08	4719.82
180.0	9791.71	9759.23	9582.89	9202.39	8626.98	7935.58	7146.72	6311.46	5490.12
225.0	9796.35	9736.02	8985.59	8985.59	8624.57	7929.91	7141.06	6305.80	5484.92
270.0	9107.17	9787.07	9870.59	9852.03	9763.87	9517.93	9049.26	8404.25	7633.95
315.0	9796.35	9847.39	9828.83	9207.86	9101.13	9101.13	8479.33	7728.06	6879.81
360.0	9791.71	9736.02	9017.14	9017.14	8907.63	8274.69	7516.92	6672.38	5823.20
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5063.12	4391.66	3794.45	3261.27	2800.02	2408.84	2137.85	1787.04	1525.32
45.0	4900.80	4260.43	3675.75	3160.67	2715.20	2334.69	2334.69	2065.46	1581.01
90.0	3484.94	2988.42	2566.62	2202.81	1890.98	1617.67	1374.51	885.61	885.61
135.0	4074.82	3499.42	2988.98	2557.43	2404.30	2404.30	1669.64	1414.88	1190.76
180.0	4761.59	4107.30	3522.62	3002.90	2562.07	2404.30	2046.90	1661.75	1411.64
225.0	4751.75	4096.07	3509.53	2997.24	2553.62	2174.97	1977.29	1582.86	1433.45
270.0	6794.05	5926.31	5132.81	4436.76	3810.32	3253.48	2780.16	2371.81	2371.81
315.0	6000.93	5192.12	4493.75	3880.76	3328.09	2847.82	2439.47	2096.55	1801.42
360.0	5063.12	4391.66	3794.45	3261.27	2800.02	2408.84	2137.85	1787.04	1525.32
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1337.39	859.90	859.90	748.95	576.52	420.04	282.50	174.75	94.20
45.0	1342.50	1124.86	928.58	742.04	569.42	415.82	282.64	282.64	75.13
90.0	848.25	671.04	510.16	361.11	232.43	132.76	62.92	18.79	7.24
135.0	990.76	804.22	627.88	467.79	325.80	275.68	251.55	59.07	17.63
180.0	1103.52	983.80	794.47	618.14	466.40	323.94	272.43	248.30	47.61
225.0	1093.31	852.57	779.90	609.55	449.88	312.29	194.66	109.47	48.96
270.0	2000.96	1532.28	1294.70	1083.56	890.99	707.70	539.25	391.69	260.83
315.0	1536.93	1299.34	862.59	862.59	753.08	580.55	425.52	286.31	174.71
360.0	1337.39	859.90	859.90	748.95	576.52	420.04	282.50	174.75	94.20
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	36.80	8.40	6.87	6.50	6.08	5.80	5.61	5.24	4.97
45.0	24.83	6.91	6.22	5.80	5.57	5.29	5.06	4.83	4.59
90.0	6.77	6.40	6.13	5.89	5.66	5.48	5.29	5.15	5.06
135.0	8.63	8.31	7.89	7.52	7.19	7.01	6.73	6.50	6.31
180.0	13.87	8.58	8.17	7.80	7.42	7.15	6.87	6.68	6.50
225.0	13.41	7.29	6.82	6.59	6.03	5.80	5.57	5.38	5.06
270.0	260.83	79.67	27.80	11.23	6.54	5.99	5.80	5.48	5.20
315.0	93.32	38.33	9.56	6.91	6.50	6.17	5.75	5.48	5.20
360.0	36.80	8.40	6.87	6.50	6.08	5.80	5.61	5.24	4.97
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	4.92	4.69	4.45	4.41	4.22	4.08	4.04	3.94	3.81
45.0	4.41	4.32	4.13	3.99	3.90	3.81	3.67	3.57	3.57
90.0	4.97	4.87	4.83	4.69	4.64	4.59	4.59	4.50	4.45
135.0	6.17	5.99	5.85	5.75	5.71	5.66	5.57	5.48	5.48
180.0	6.31	6.08	5.99	5.85	5.66	5.52	5.38	5.34	5.20
225.0	4.92	4.78	4.73	4.55	4.41	4.36	4.32	4.22	4.13
270.0	5.01	4.83	4.64	4.50	4.36	4.27	4.08	4.04	3.99
315.0	5.01	4.83	4.59	4.55	4.36	4.22	4.18	4.08	3.94
360.0	4.92	4.69	4.45	4.41	4.22	4.08	4.04	3.94	3.81

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	3.71	3.67	3.62	3.48	3.43	3.43	3.34	3.29	3.25
45.0	3.48	3.39	3.29	3.34	3.25	3.16	3.20	3.16	3.06
90.0	4.45	4.45	4.41	4.36	4.41	4.41	4.36	4.41	4.41
135.0	5.43	5.43	5.43	5.48	5.48	5.48	5.48	5.43	5.38
180.0	5.06	5.01	5.01	4.87	4.78	4.73	4.69	4.64	4.55
225.0	4.08	4.04	3.90	3.85	3.85	3.76	3.67	3.67	3.57
270.0	3.94	3.81	3.81	3.81	3.67	3.62	3.62	3.57	3.48
315.0	3.90	3.90	3.85	3.71	3.71	3.71	3.71	3.67	3.71
360.0	3.71	3.67	3.62	3.48	3.43	3.43	3.34	3.29	3.25
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.20	3.20	3.11	3.11	3.11	3.06	3.02	3.06	3.11
45.0	3.06	2.97	2.92	2.92	2.92	2.83	2.78	2.83	2.78
90.0	4.36	4.41	4.32	4.36	4.27	4.32	4.32	4.32	4.45
135.0	5.34	5.38	5.43	5.38	5.34	5.48	5.80	6.36	7.05
180.0	4.55	4.50	4.50	4.50	4.45	4.45	4.55	4.64	4.73
225.0	3.53	3.53	3.43	3.39	3.39	3.34	3.25	3.25	3.25
270.0	3.43	3.39	3.43	3.43	3.39	3.39	3.43	3.48	3.39
315.0	3.81	3.85	3.85	3.90	3.99	3.99	3.99	3.99	3.99
360.0	3.20	3.20	3.11	3.11	3.11	3.06	3.02	3.06	3.11
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.11	3.16	3.25	3.39	3.48	3.67	4.32	5.43	6.87
45.0	2.74	2.69	2.69	2.64	2.60	2.60	2.60	2.55	2.46
90.0	4.73	5.06	5.38	5.80	6.26	6.68	6.96	7.29	7.52
135.0	7.93	8.96	10.07	11.23	11.97	13.74	14.48	15.55	16.01
180.0	4.83	4.97	5.34	6.17	7.38	9.05	10.90	12.44	13.78
225.0	3.16	3.11	3.11	3.11	3.06	2.97	3.02	3.02	2.97
270.0	3.39	3.48	3.39	3.34	3.39	3.43	3.48	3.62	3.94
315.0	4.13	4.41	4.87	5.57	6.50	7.56	8.82	10.16	11.60
360.0	3.11	3.16	3.25	3.39	3.48	3.67	4.32	5.43	6.87
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.45	9.84	10.81	11.04	10.02	8.91	5.94	3.43	2.51
45.0	2.46	2.51	2.46	2.37	2.37	2.37	2.37	2.18	2.04
90.0	7.56	7.38	7.15	6.64	5.89	4.69	4.04	2.74	2.41
135.0	15.82	15.31	14.39	13.04	11.00	8.63	6.17	4.13	3.25
180.0	14.71	15.17	14.85	14.11	13.50	10.95	6.17	4.59	2.88
225.0	2.97	3.06	3.06	3.06	3.02	2.97	2.97	2.69	2.37
270.0	4.18	4.41	4.83	5.01	5.38	5.48	5.20	4.83	4.41
315.0	12.85	13.78	14.06	13.78	12.90	11.69	10.07	8.17	6.08
360.0	8.45	9.84	10.81	11.04	10.02	8.91	5.94	3.43	2.51
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.09	1.95	1.90	1.86	1.72	1.62	1.62	1.67	1.86
45.0	1.95	1.76	1.58	1.53	1.53	1.44	1.44	1.44	1.58
90.0	2.09	1.72	1.58	1.53	1.58	1.48	1.53	1.72	1.72
135.0	2.69	2.32	2.09	2.09	2.04	2.13	2.46	2.74	2.97
180.0	2.60	2.46	2.41	2.46	2.41	2.41	2.64	2.92	3.16
225.0	2.13	1.86	1.67	1.58	1.62	1.53	1.62	1.67	1.86
270.0	4.08	3.39	2.92	2.46	2.04	1.76	1.53	1.48	1.39
315.0	3.94	3.02	2.55	2.04	1.81	1.67	1.67	1.62	1.62
360.0	2.09	1.95	1.90	1.86	1.72	1.62	1.62	1.67	1.86

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>2.09</b>
<b>45.0</b>	<b>1.67</b>
<b>90.0</b>	<b>1.62</b>
<b>135.0</b>	<b>2.92</b>
<b>180.0</b>	<b>3.20</b>
<b>225.0</b>	<b>1.95</b>
<b>270.0</b>	<b>1.39</b>
<b>315.0</b>	<b>1.58</b>
<b>360.0</b>	<b>2.09</b>