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NATA

Client:

LumCAT: 3-1545-A3

Luminaire: 92.70.365.00

Report No: NT2017122304

Test No: GC2017122304

LampCAT: PrevaLED Core G7 L15-H1

Lamp flux(lm): 3636.0

Number of Lamps: 1

Length(mm): 84

Phm Type: C

Voltage(V): 220.3000

Current(A): 0.1490

Power (W): 31.8000

PF: 0.9680

Ballast type: DC

Width(mm): 84

Height(mm): 00

Photometric Results

Lumens(lm): 3202.56, Efficiency(%): 88.08% , Luminous Efficacy(lm/W): 100.71

Central intensity(cd): 23653.540, Maximum intensity(cd): 23653.540

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.8

[C90/270]Total=14.8

Field angle(10%Imax): [C0/180]Total=29.8

[C90/270]Total=29.8

Maximum s/h(1/2): C0_180=0.26 C90_270=0.26

Maximum s/h(1/4): C0_180=0.26 C90_270=0.26

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.23%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.576%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	23653.549	5.659	5.659	.156%	.177%
1.0	23474.895	44.927	50.586	1.236%	1.580%
2.0	22969.098	87.905	138.492	2.418%	4.324%
3.0	22042.191	126.505	264.996	3.479%	8.275%
4.0	20593.826	157.534	422.53	4.333%	13.193%
5.0	18842.102	180.085	602.615	4.953%	18.817%
6.0	15956.671	182.906	785.521	5.030%	24.528%
7.0	13003.261	173.779	959.3	4.779%	29.954%
8.0	10222.749	156.018	1115.318	4.291%	34.826%
9.0	8512.380	146.028	1261.346	4.016%	39.386%
10.0	6631.595	126.282	1387.628	3.473%	43.329%
11.0	5142.163	107.596	1495.224	2.959%	46.688%
12.0	4081.093	93.048	1588.272	2.559%	49.594%
13.0	3235.740	79.820	1668.092	2.195%	52.086%
14.0	2716.951	72.079	1740.171	1.982%	54.337%
15.0	2344.738	66.549	1806.72	1.830%	56.415%
16.0	2172.639	65.672	1872.392	1.806%	58.465%
17.0	1914.718	61.389	1933.781	1.688%	60.382%
18.0	1764.592	59.797	1993.578	1.645%	62.249%
19.0	1656.124	59.127	2052.705	1.626%	64.096%
20.0	1597.830	59.929	2112.633	1.648%	65.967%
21.0	1549.338	60.887	2173.521	1.675%	67.868%
22.0	1514.478	62.214	2235.735	1.711%	69.811%
23.0	1483.387	63.560	2299.295	1.748%	71.795%
24.0	1457.459	65.007	2364.302	1.788%	73.825%
25.0	1431.648	66.349	2430.652	1.825%	75.897%
26.0	1404.038	67.495	2498.147	1.856%	78.005%
27.0	1371.787	68.294	2566.441	1.878%	80.137%
28.0	1339.595	68.966	2635.407	1.897%	82.291%
29.0	1302.588	69.252	2704.659	1.905%	84.453%
30.0	1258.447	69.001	2773.66	1.898%	86.607%
31.0	1183.865	66.864	2840.524	1.839%	88.695%
32.0	1084.754	63.037	2903.561	1.734%	90.664%
33.0	975.218	58.246	2961.806	1.602%	92.482%
34.0	899.210	55.141	3016.947	1.517%	94.204%
35.0	760.122	47.811	3064.758	1.315%	95.697%
36.0	610.013	39.320	3104.078	1.081%	96.925%
37.0	458.210	30.240	3134.317	.832%	97.869%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	328.831	22.201	3156.518	.611%	98.562%
39.0	213.299	14.720	3171.238	.405%	99.022%
40.0	162.864	11.480	3182.718	.316%	99.380%
41.0	55.533	3.995	3186.714	.110%	99.505%
42.0	18.712	1.373	3188.087	.038%	99.548%
43.0	11.027	0.825	3188.911	.023%	99.574%
44.0	8.005	0.610	3189.521	.017%	99.593%
45.0	6.090	0.472	3189.993	.013%	99.607%
46.0	5.000	0.394	3190.388	.011%	99.620%
47.0	4.472	0.359	3190.746	.010%	99.631%
48.0	4.205	0.343	3191.089	.009%	99.642%
49.0	3.962	0.328	3191.417	.009%	99.652%
50.0	3.782	0.318	3191.735	.009%	99.662%
51.0	3.625	0.309	3192.044	.008%	99.672%
52.0	3.498	0.302	3192.346	.008%	99.681%
53.0	3.353	0.294	3192.639	.008%	99.690%
54.0	3.213	0.285	3192.925	.008%	99.699%
55.0	3.092	0.278	3193.202	.008%	99.708%
56.0	2.964	0.269	3193.472	.007%	99.716%
57.0	2.865	0.264	3193.735	.007%	99.724%
58.0	2.755	0.256	3193.992	.007%	99.732%
59.0	2.680	0.252	3194.243	.007%	99.740%
60.0	2.604	0.247	3194.491	.007%	99.748%
61.0	2.529	0.243	3194.733	.007%	99.755%
62.0	2.477	0.240	3194.973	.007%	99.763%
63.0	2.425	0.237	3195.21	.007%	99.770%
64.0	2.390	0.236	3195.446	.006%	99.778%
65.0	2.367	0.235	3195.681	.006%	99.785%
66.0	2.338	0.234	3195.915	.006%	99.792%
67.0	2.303	0.232	3196.147	.006%	99.800%
68.0	2.309	0.235	3196.382	.006%	99.807%
69.0	2.280	0.233	3196.615	.006%	99.814%
70.0	2.274	0.234	3196.85	.006%	99.822%
71.0	2.268	0.235	3197.085	.006%	99.829%
72.0	2.251	0.235	3197.32	.006%	99.836%
73.0	2.216	0.232	3197.552	.006%	99.844%
74.0	2.210	0.233	3197.785	.006%	99.851%
75.0	2.198	0.233	3198.018	.006%	99.858%

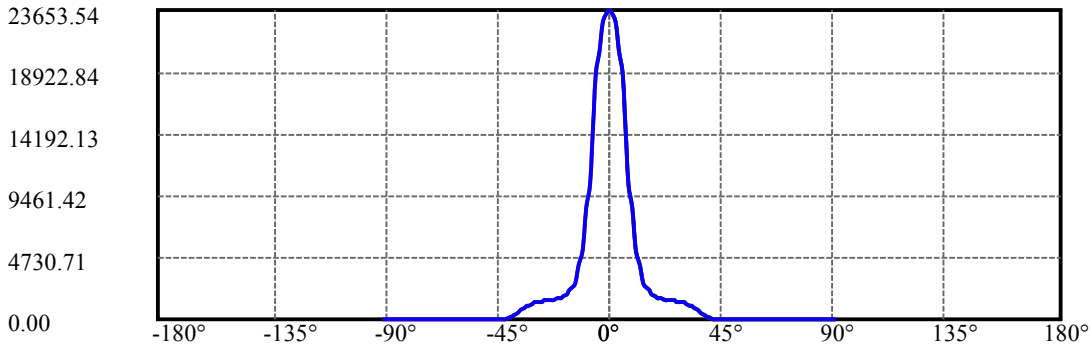
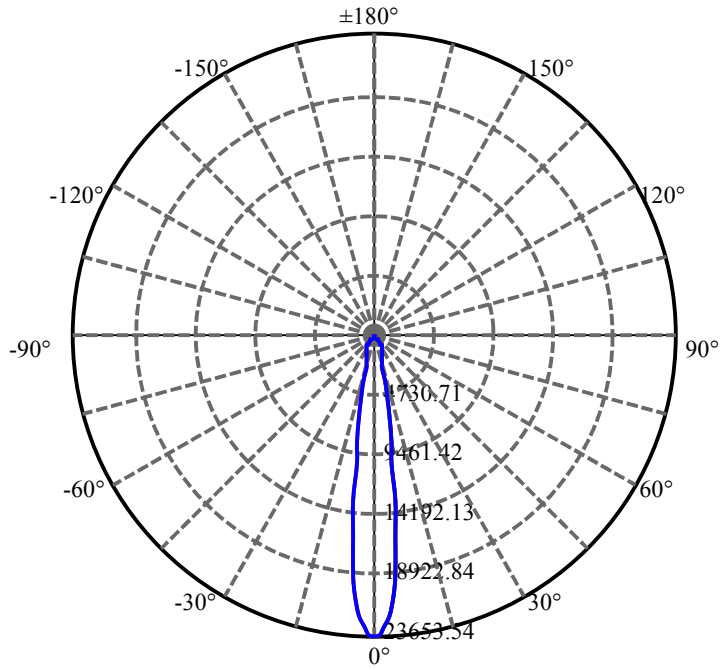
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.204	0.235	3198.252	.006%	99.865%
77.0	2.390	0.255	3198.508	.007%	99.873%
78.0	2.720	0.292	3198.8	.008%	99.882%
79.0	3.254	0.350	3199.15	.010%	99.893%
80.0	4.072	0.440	3199.59	.012%	99.907%
81.0	4.594	0.498	3200.087	.014%	99.923%
82.0	4.797	0.521	3200.608	.014%	99.939%
83.0	4.200	0.457	3201.065	.013%	99.953%
84.0	2.628	0.287	3201.352	.008%	99.962%
85.0	2.204	0.241	3201.592	.007%	99.970%
86.0	2.135	0.234	3201.826	.006%	99.977%
87.0	2.053	0.225	3202.051	.006%	99.984%
88.0	1.949	0.214	3202.264	.006%	99.991%
89.0	1.839	0.202	3202.466	.006%	99.997%
90.0	1.787	0.098	3202.564	.003%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2773.66	76.28%	86.61%
0-40	3182.72	87.53%	99.38%
0-60	3194.49	87.86%	99.75%
0-90	3202.47	88.08%	100.00%
0-120	3202.47	88.08%	100.00%
0-180	3202.56	88.08%	100.00%
60-90	8.22	0.23%	0.26%
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%
0-26.94	2562.05	70.46%	80.00%

ZONAL LUMEN SUMMARY

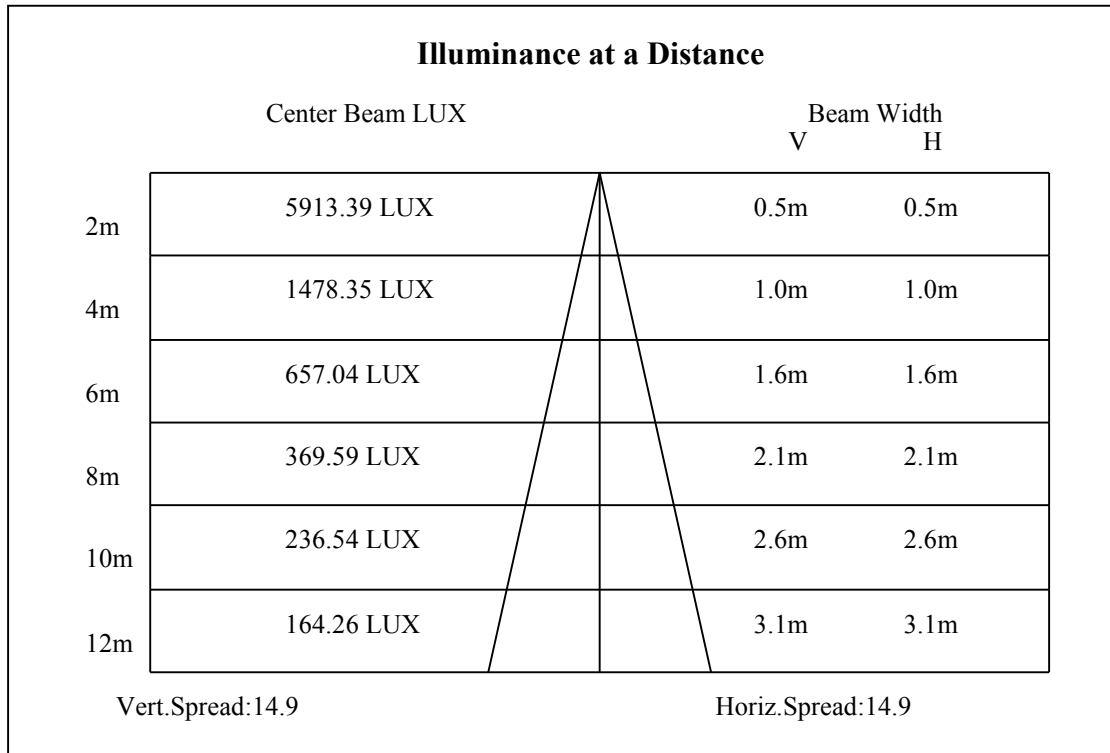
0-10	1387.63
10-20	725.01
20-30	661.03
30-40	409.06
40-50	9.02
50-60	2.76
60-70	2.36
70-80	2.74
80-90	2.88
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

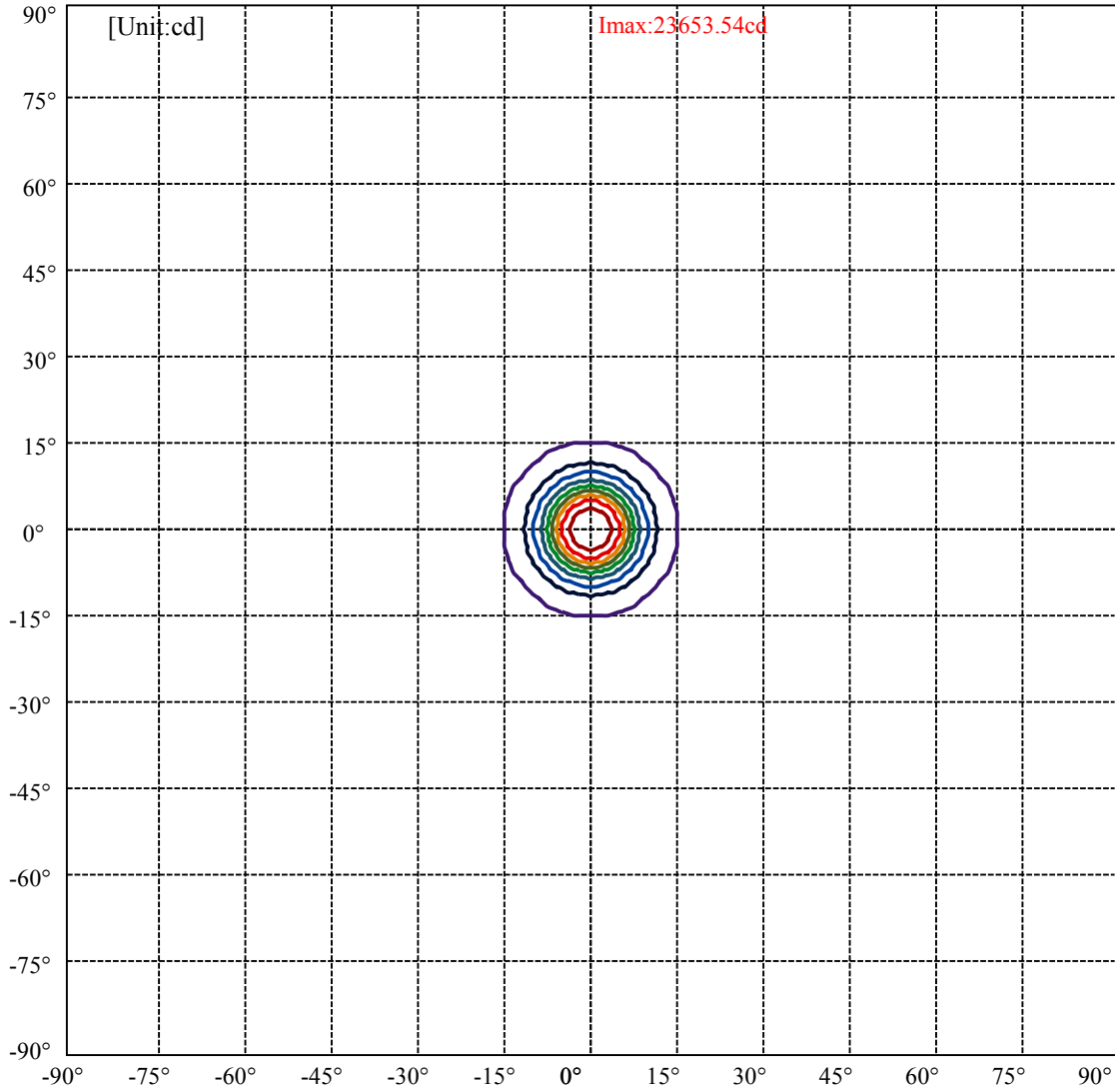


C0(Max): —————
C0/C180: —————
C90/C270: —————

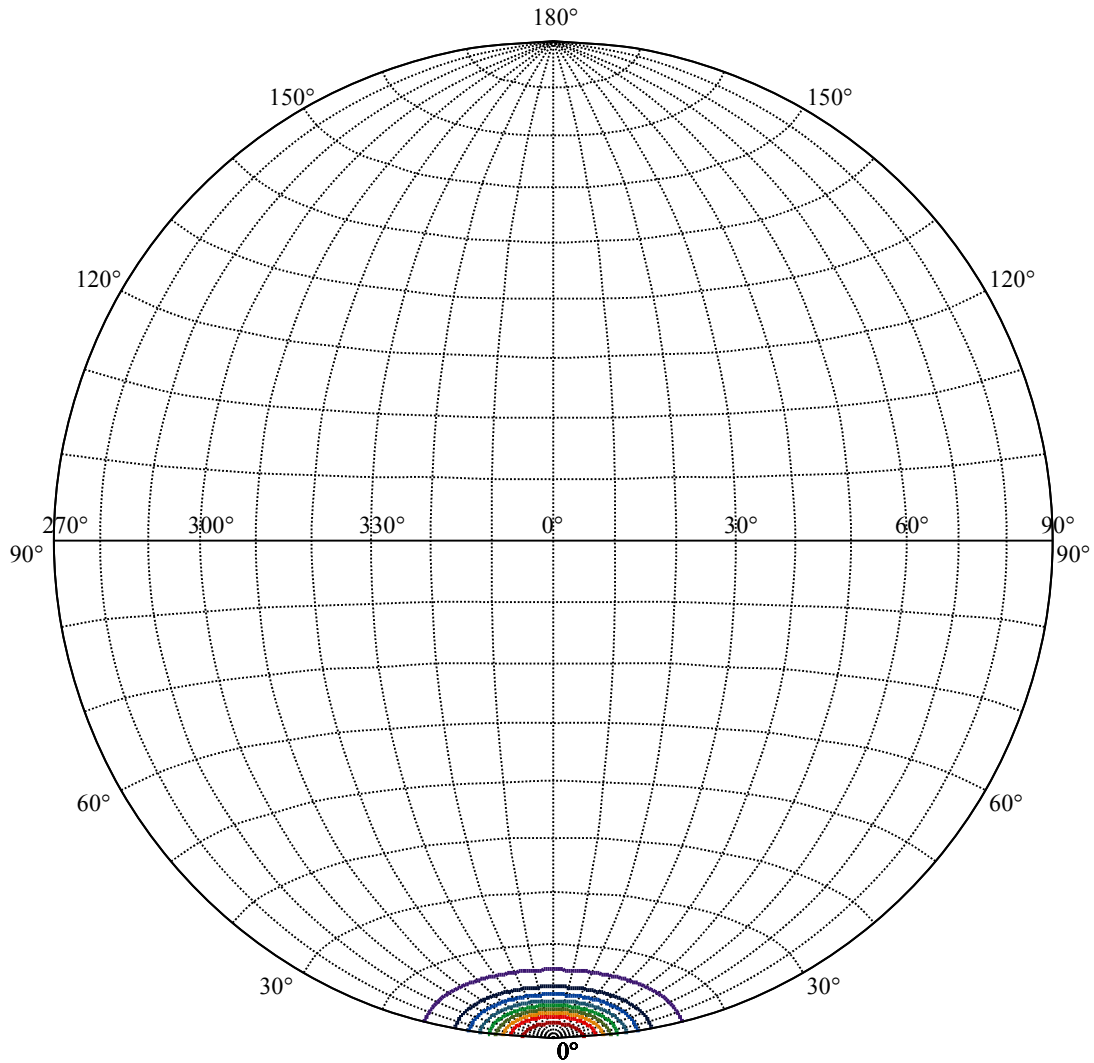
Field angle(10%Imax):C0/180Left:14.9 Right:14.9
:C90/270Left:14.9 Right:14.9

Beam Angle(50%Imax):C0/180Left:7.4 Right:7.4
:C90/270Left:7.4 Right:7.4





(10%Imax) 2365.35	—
(20%Imax) 4730.71	—
(30%Imax) 7096.06	—
(40%Imax) 9461.42	—
(50%Imax) 11826.8	—
(60%Imax) 14192.1	—
(70%Imax) 16557.5	—
(80%Imax) 18922.8	—
(90%Imax) 21288.2	—



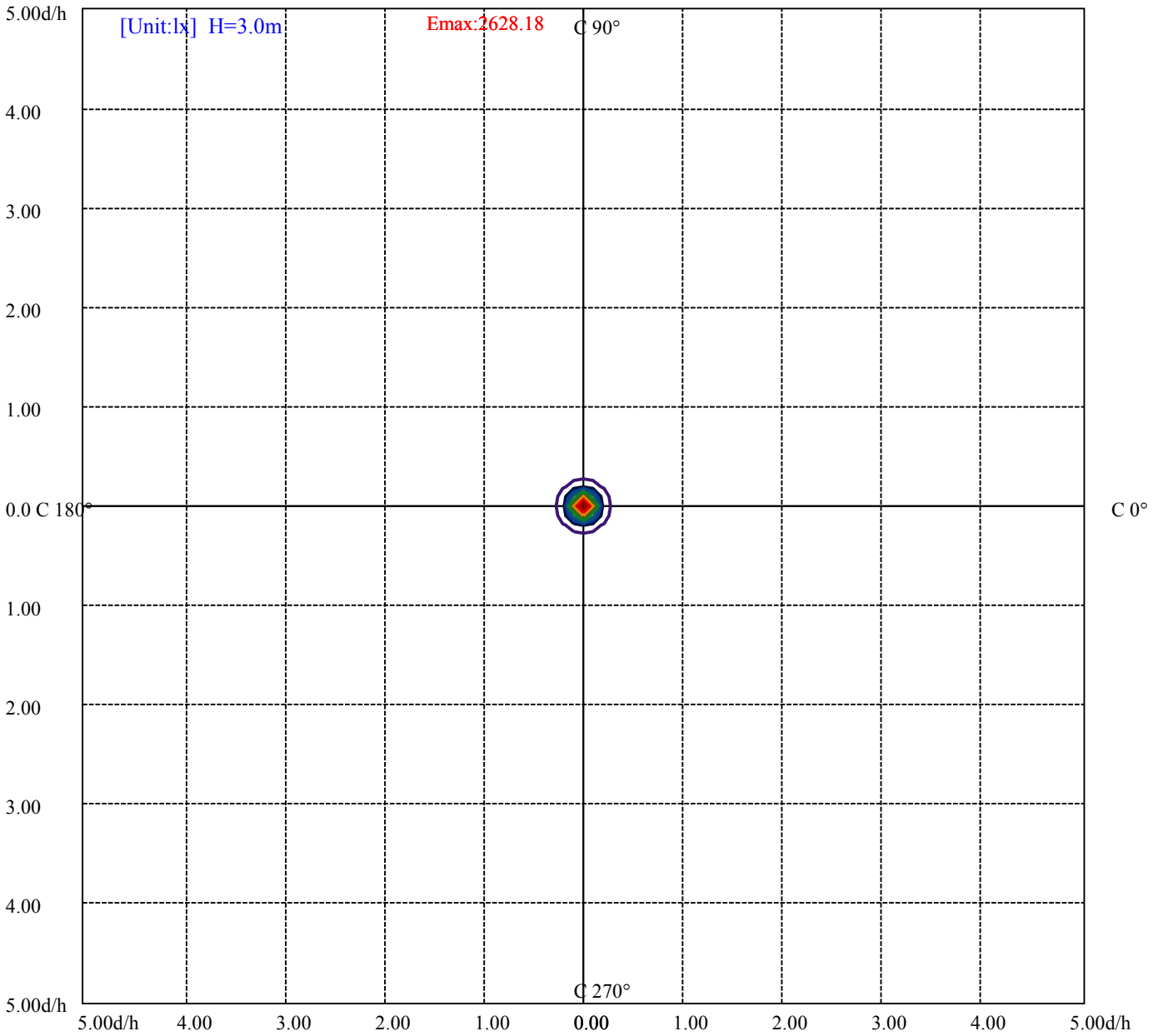
House

[Unit:cd]

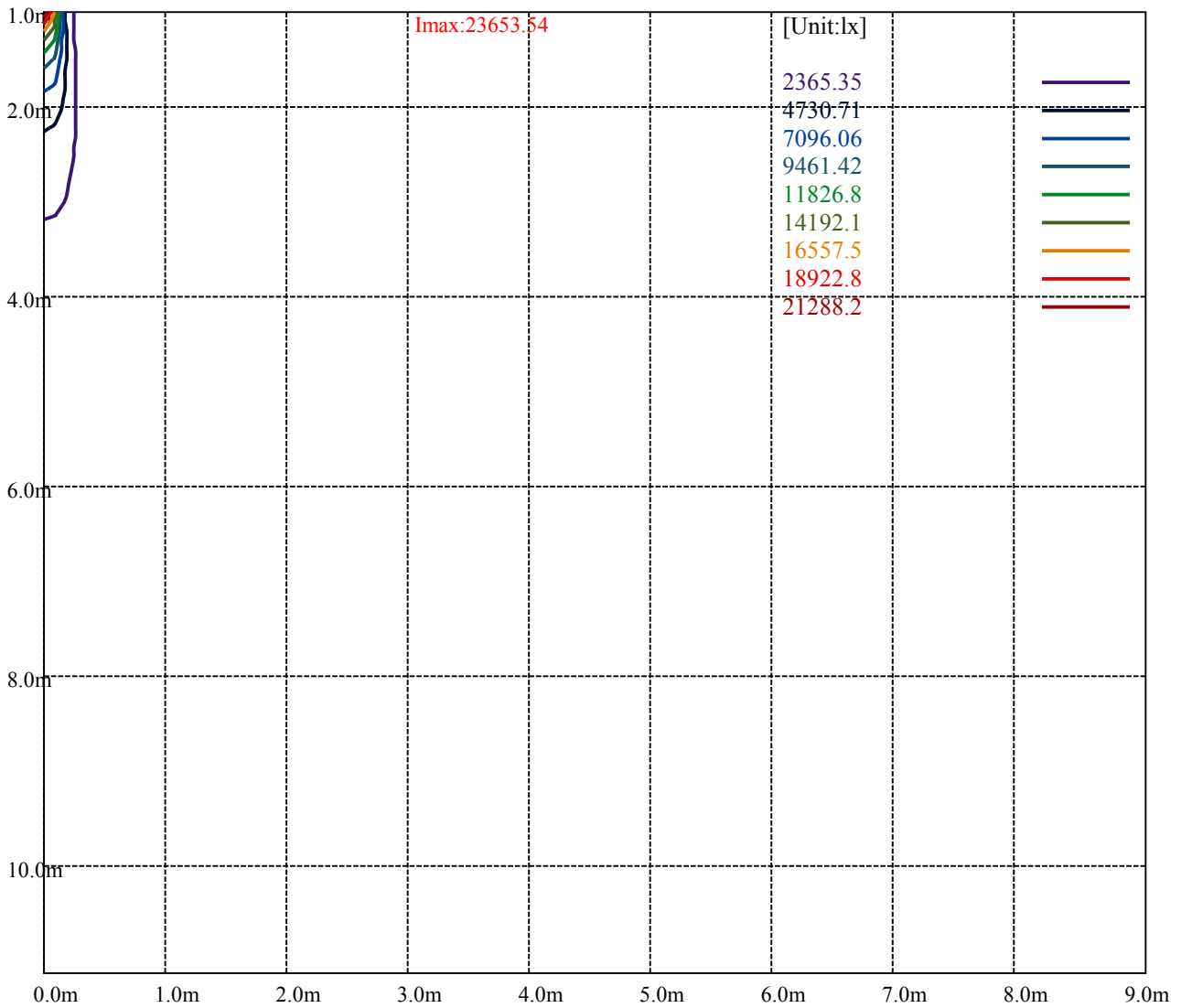
Road

Imax:23653.54

(10%Imax)	2365.35	—
(20%Imax)	4730.71	—
(30%Imax)	7096.06	—
(40%Imax)	9461.42	—
(50%Imax)	11826.8	—
(60%Imax)	14192.1	—
(70%Imax)	16557.5	—
(80%Imax)	18922.8	—
(90%Imax)	21288.2	—



(10%Emax) 262.8167	—
(20%Emax) 525.6334	—
(30%Emax) 788.4511	—
(40%Emax) 1051.268	—
(50%Emax) 1314.089	—
(60%Emax) 1576.9	—
(70%Emax) 1839.722	—
(80%Emax) 2102.533	—
(90%Emax) 2365.355	—



Luminance Table

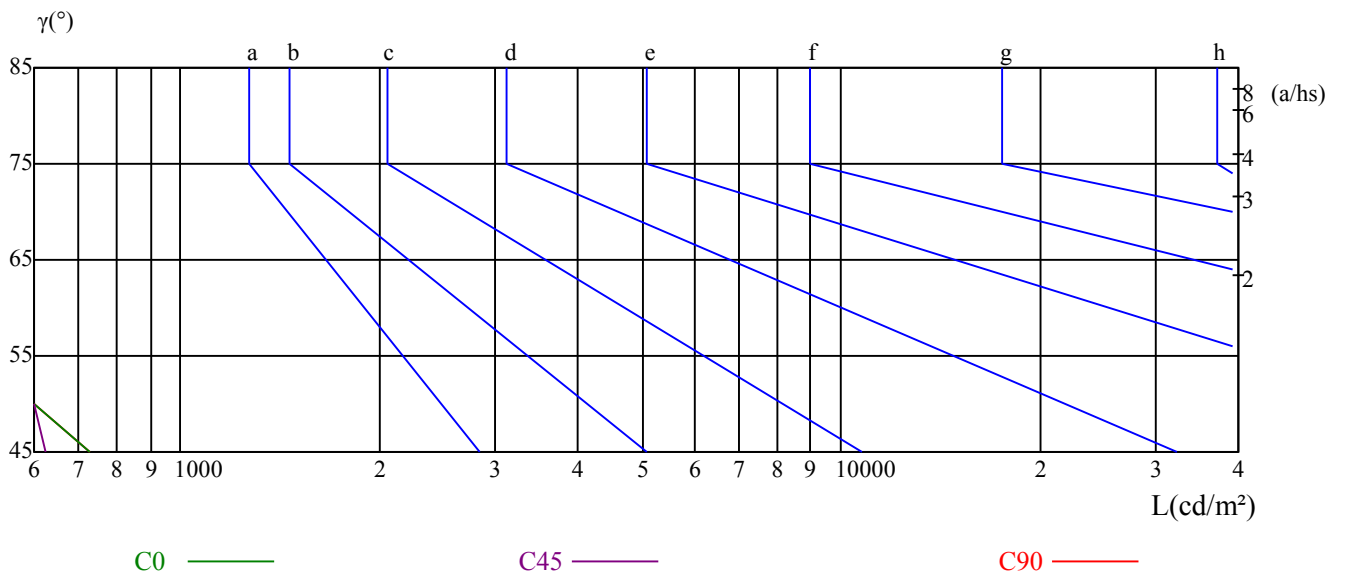
γ	45	50	55	60	65	70	75	80	85
C0	727	461	388	339	323	329	341	685	409
C45	623	389	322	277	260	259	263	516	299
C90	727	461	388	339	323	329	341	685	409

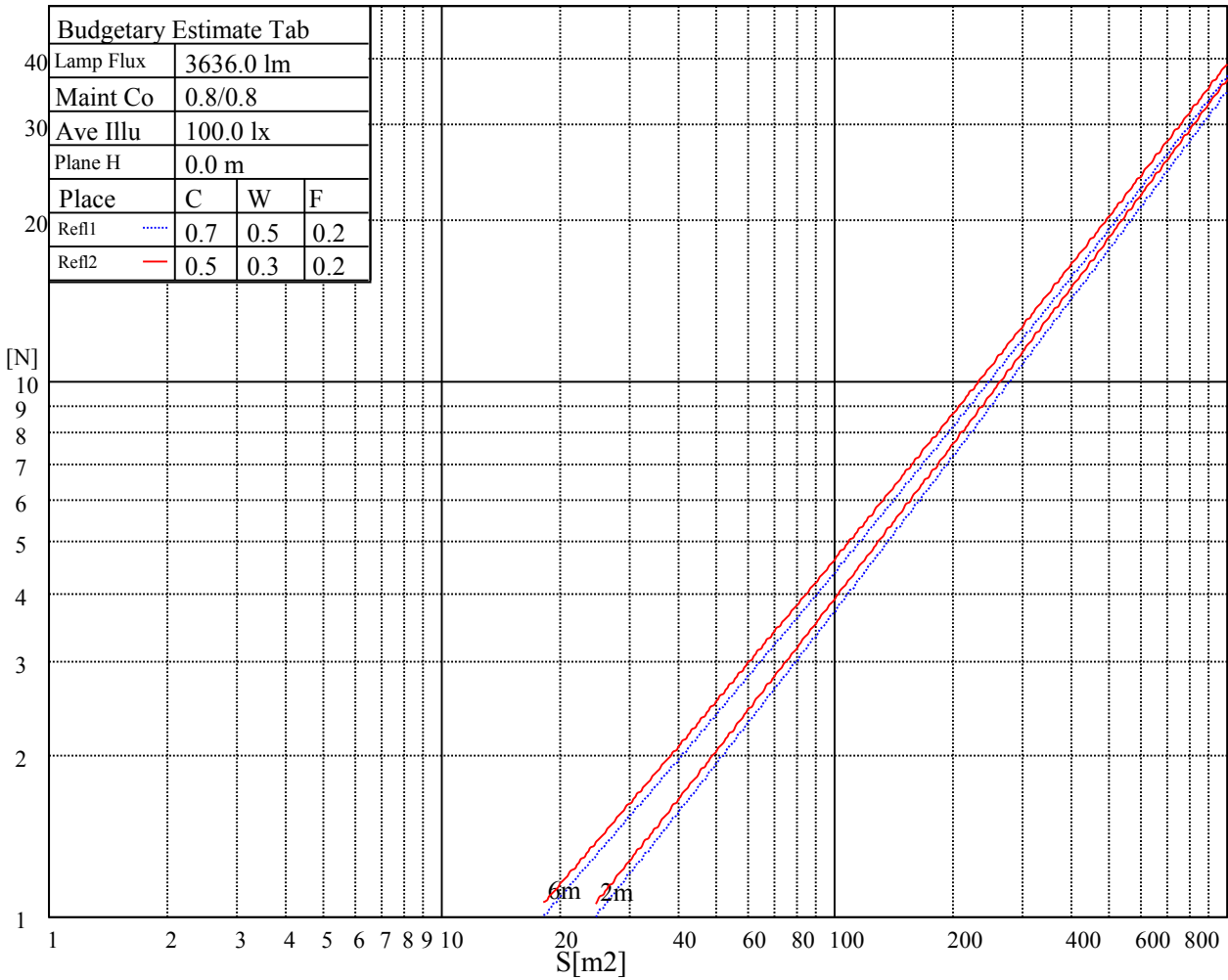
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
794	794	794	1204	1204	1204	3584	3584	3584

Glare Table

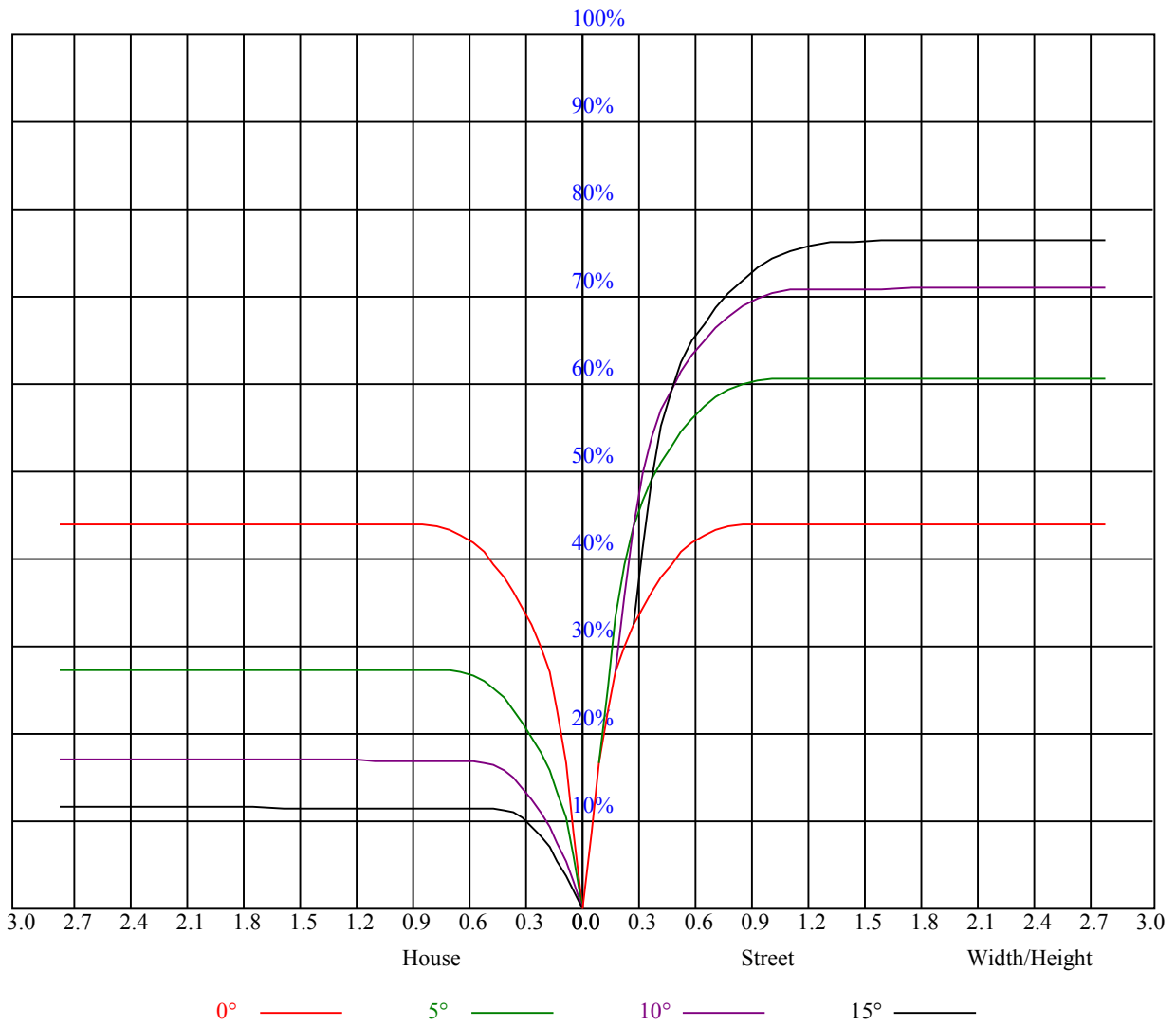
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

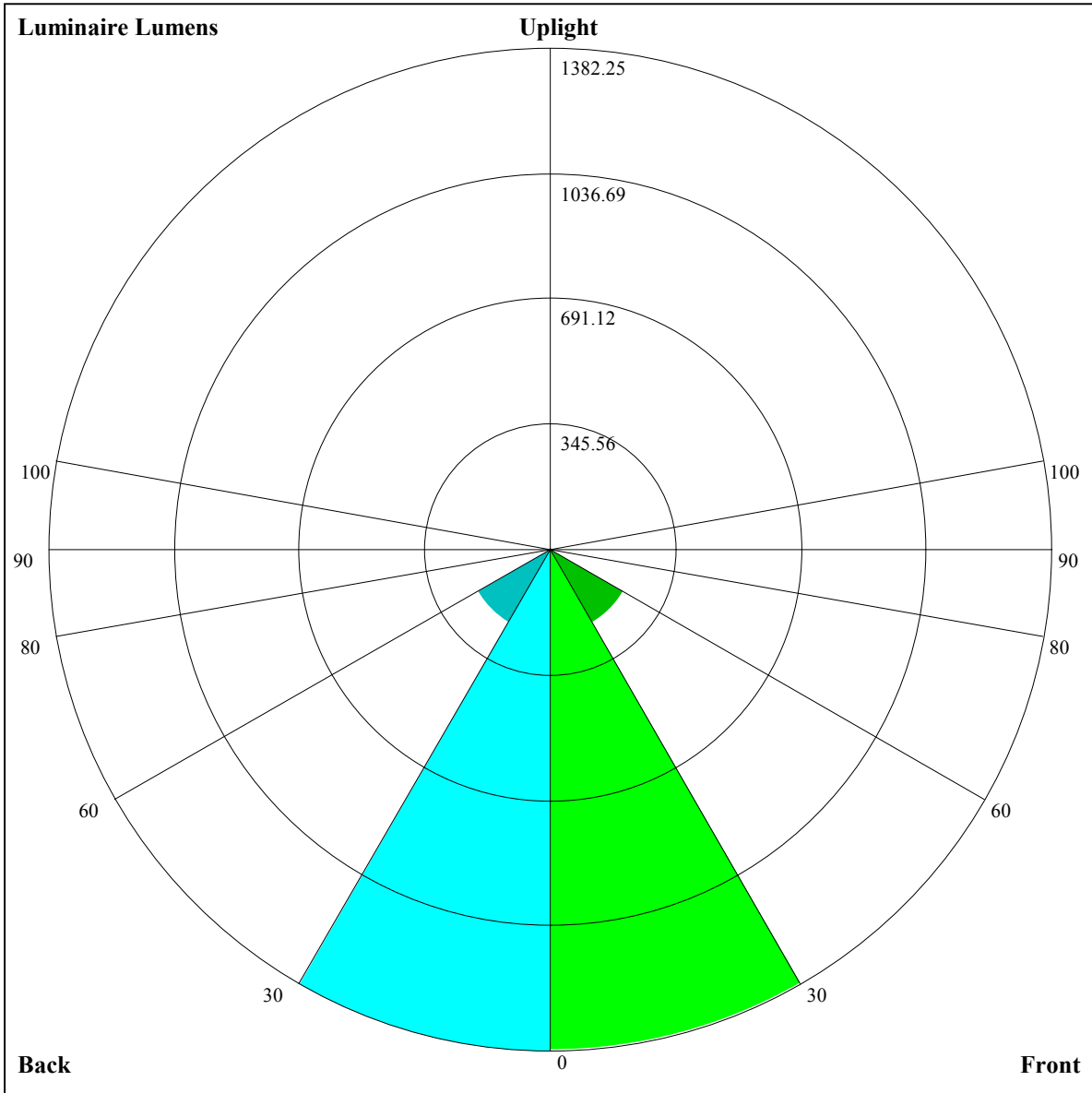
Luminance Limiting Curve





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	1.05	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	0.88
1	0.99	0.97	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	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.83	0.81
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.86	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.78	0.80	0.78	0.77	0.76
5	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.77	0.73	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
9	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.65
10	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63





Luminaire Lumens:

FL=1381.64,FM=229.74,FH=2.56,FVH=1.59

BL=1382.25,BM=230.25,BH=2.55,BVH=1.54

UL=1.95,UH=9.28

BUG Rating:B3-U1-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	23592.06	23332.20	22798.57	21754.49	20186.06	18970.29	15606.05	9096.96	8163.79
45.0	23601.34	23629.19	23202.28	22515.51	21234.77	19425.04	17077.03	14441.32	11708.17
90.0	23582.78	22956.34	21916.90	20255.66	18079.35	15503.96	8944.75	8944.75	7189.32
135.0	23838.00	23749.83	23239.40	22487.66	21141.97	19239.43	16831.10	14135.06	11392.62
180.0	23592.06	23401.81	22979.54	22107.16	20701.14	18728.99	16306.74	13633.91	10914.67
225.0	23601.34	23262.60	22974.90	21536.40	19800.91	18506.26	16014.40	11782.41	8451.95
270.0	23582.78	23810.16	23684.87	23276.52	22589.75	21304.38	20232.46	18019.02	15457.56
315.0	23838.00	23657.03	22956.34	22404.14	21016.68	19058.46	16640.84	13972.65	8503.92
360.0	23592.06	23332.20	22798.57	21754.49	20186.06	18970.29	15606.05	9096.96	8163.79
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8163.79	6216.70	4810.68	3812.55	3098.86	2597.24	2240.40	1994.93	1826.48
45.0	9109.58	6951.82	5336.99	4204.75	3392.69	2821.93	2408.94	2408.94	2093.30
90.0	5518.33	4329.94	3792.13	2881.23	2451.54	2261.75	2021.38	1852.47	1733.21
135.0	8835.80	6738.37	5174.58	4084.10	3309.16	2756.96	2367.17	2367.17	1863.14
180.0	8394.97	6394.98	4910.08	4246.51	3146.75	2631.67	2399.66	2399.66	1867.78
225.0	7985.13	6038.51	4637.60	3658.95	2974.96	2498.40	2171.72	1950.84	1798.64
270.0	11587.52	9968.04	7568.99	5731.42	4413.56	3499.42	2863.69	2422.86	2288.29
315.0	8503.92	6414.38	4906.27	4029.25	3098.40	2668.24	2284.95	1984.25	1846.90
360.0	8163.79	6216.70	4810.68	3812.55	3098.86	2597.24	2240.40	1994.93	1826.48
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1710.47	1632.52	1581.47	1544.81	1513.26	1485.42	1457.58	1441.33	1413.49
45.0	1795.86	1658.50	1617.67	1566.62	1527.64	1495.63	1467.32	1439.01	1412.10
90.0	1645.97	1584.26	1540.17	1504.44	1473.82	1445.51	1416.74	1386.58	1355.95
135.0	1740.17	1683.10	1610.71	1557.81	1519.29	1477.99	1462.68	1437.16	1410.24
180.0	1737.39	1647.37	1585.18	1542.96	1509.55	1481.24	1454.33	1426.95	1399.57
225.0	1711.40	1630.20	1573.12	1530.89	1497.02	1469.64	1443.65	1416.74	1388.90
270.0	2051.54	1772.65	1691.45	1605.14	1567.09	1531.82	1503.51	1477.53	1451.08
315.0	1723.93	1640.40	1582.86	1542.03	1508.16	1479.85	1453.86	1427.88	1400.96
360.0	1710.47	1632.52	1581.47	1544.81	1513.26	1485.42	1457.58	1441.33	1413.49
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1369.87	1349.92	1309.08	1266.39	1221.38	1138.32	888.21	888.21	739.39
45.0	1381.47	1349.92	1311.87	1270.11	1226.49	1161.52	1052.01	919.30	832.52
90.0	1322.08	1281.24	1257.11	1193.54	911.50	853.36	853.36	707.00	558.19
135.0	1380.08	1346.67	1308.16	1266.39	1224.17	1151.31	1035.31	899.34	748.07
180.0	1368.02	1335.07	1297.02	1257.11	1214.42	1173.12	1005.61	924.87	776.84
225.0	1358.74	1325.79	1285.88	1243.66	1193.54	913.54	885.65	885.65	735.73
270.0	1424.63	1395.39	1361.98	1325.79	1282.17	1235.77	1174.05	1061.75	925.79
315.0	1369.41	1332.75	1289.60	1244.58	1197.25	1051.08	907.56	907.56	764.45
360.0	1369.87	1349.92	1309.08	1266.39	1221.38	1138.32	888.21	888.21	739.39
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	588.12	467.05	296.42	174.06	92.30	21.67	14.94	10.63	7.98
45.0	684.50	478.00	389.83	255.26	255.26	36.52	15.82	10.77	7.47
90.0	410.58	273.73	151.60	59.26	18.24	12.20	8.26	6.08	5.01
135.0	595.40	445.52	357.82	252.48	252.48	31.04	15.45	10.72	7.70
180.0	627.42	476.61	335.08	254.80	254.80	31.55	16.15	11.23	8.21
225.0	582.59	434.29	298.23	176.75	78.56	22.78	14.71	10.35	7.29
270.0	779.62	628.81	479.86	341.11	262.23	262.23	49.33	17.77	12.62
315.0	611.87	461.67	321.81	192.67	89.05	26.26	15.03	10.67	7.75
360.0	588.12	467.05	296.42	174.06	92.30	21.67	14.94	10.63	7.98

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	6.03	5.01	4.50	4.27	4.08	3.90	3.76	3.57	3.43
45.0	5.71	4.83	4.45	4.27	3.94	3.85	3.71	3.57	3.43
90.0	4.55	4.27	4.04	3.85	3.71	3.57	3.39	3.34	3.20
135.0	5.94	4.83	4.45	4.22	4.08	3.85	3.67	3.53	3.39
180.0	6.17	4.92	4.45	4.27	4.08	3.85	3.67	3.57	3.43
225.0	5.43	4.50	4.13	3.94	3.76	3.57	3.43	3.34	3.16
270.0	8.91	6.64	5.15	4.50	4.04	3.85	3.71	3.53	3.39
315.0	5.99	5.01	4.59	4.32	3.99	3.81	3.67	3.53	3.39
360.0	6.03	5.01	4.50	4.27	4.08	3.90	3.76	3.57	3.43
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.29	3.16	3.02	2.92	2.78	2.74	2.64	2.55	2.51
45.0	3.29	3.16	3.02	2.92	2.83	2.78	2.69	2.60	2.55
90.0	3.06	2.92	2.88	2.78	2.69	2.64	2.55	2.55	2.51
135.0	3.34	3.20	3.02	2.97	2.83	2.78	2.74	2.64	2.60
180.0	3.25	3.16	3.02	2.92	2.78	2.69	2.64	2.60	2.51
225.0	3.02	2.92	2.83	2.69	2.60	2.51	2.46	2.37	2.32
270.0	3.25	3.16	3.02	2.88	2.78	2.69	2.60	2.51	2.46
315.0	3.20	3.06	2.92	2.83	2.74	2.60	2.51	2.41	2.37
360.0	3.29	3.16	3.02	2.92	2.78	2.74	2.64	2.55	2.51
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.46	2.46	2.41	2.41	2.37	2.37	2.37	2.32	2.32
45.0	2.51	2.46	2.46	2.51	2.51	2.55	2.51	2.51	2.55
90.0	2.46	2.51	2.51	2.51	2.46	2.46	2.41	2.46	2.46
135.0	2.51	2.51	2.51	2.46	2.41	2.41	2.41	2.41	2.37
180.0	2.51	2.46	2.41	2.37	2.37	2.37	2.32	2.32	2.32
225.0	2.27	2.23	2.18	2.13	2.09	2.09	2.09	2.09	2.04
270.0	2.37	2.27	2.23	2.13	2.09	2.09	2.04	2.00	2.00
315.0	2.32	2.23	2.23	2.18	2.13	2.13	2.09	2.09	2.09
360.0	2.46	2.46	2.41	2.41	2.37	2.37	2.37	2.32	2.32
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.27	2.27	2.23	2.23	2.18	2.18	2.41	3.02	5.06
45.0	2.55	2.51	2.51	2.51	2.46	2.46	2.51	3.20	4.64
90.0	2.46	2.41	2.41	2.41	2.55	3.76	5.15	6.59	7.84
135.0	2.37	2.37	2.37	2.32	2.32	2.69	3.25	3.94	4.83
180.0	2.27	2.23	2.27	2.23	2.23	2.23	2.69	3.62	4.55
225.0	2.04	2.04	2.00	2.00	2.00	2.00	1.95	1.90	1.86
270.0	1.95	1.90	1.90	1.90	1.90	1.86	1.90	1.86	1.86
315.0	2.09	2.00	2.00	2.00	2.00	1.95	1.90	1.90	1.95
360.0	2.27	2.27	2.23	2.23	2.18	2.18	2.41	3.02	5.06
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.99	5.99	4.73	2.46	2.27	2.18	2.09	2.00	1.86
45.0	5.85	7.01	6.73	3.62	2.69	2.55	2.46	2.18	2.04
90.0	8.58	7.61	3.76	2.64	2.37	2.23	2.09	1.90	1.81
135.0	5.57	5.71	5.99	3.94	2.32	2.27	2.18	2.09	1.95
180.0	4.87	5.71	5.75	2.64	2.37	2.23	2.13	2.04	1.90
225.0	1.86	2.00	2.04	1.95	1.90	1.86	1.81	1.76	1.76
270.0	1.86	1.81	1.81	1.81	1.76	1.81	1.76	1.76	1.72
315.0	2.18	2.55	2.78	1.95	1.95	1.95	1.90	1.86	1.67
360.0	5.99	5.99	4.73	2.46	2.27	2.18	2.09	2.00	1.86

Intensity data(cd)

C/γ(°)	90.0
0.0	1.81
45.0	1.90
90.0	1.76
135.0	1.90
180.0	1.81
225.0	1.76
270.0	1.72
315.0	1.62
360.0	1.81