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## Nata

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### Client:

LumCAT: 3-1549-A3

Luminaire: TE2213407+92.76.365.00

Report No: nata-0100

Test No:

LampCAT: BRIDGELUX V18B

Lamp flux(lm): 2960.0

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.6000

Power (W): 20.4000

PF: 0.0000

Ballast type: CC600mA

Width(mm): 78

Height(mm): 0

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## Photometric Results

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Lumens(lm): 2702.17, Efficiency(%): 91.29% , Luminous Efficacy(lm/W): 132.46

Central intensity(cd): 9057.054, Maximum intensity(cd): 9057.054

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

Beam Angle(50%Imax): [C0/180]Total=25.4

[C90/270]Total=25.4

Field angle(10%Imax): [C0/180]Total=62.8

[C90/270]Total=62.8

Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.43

Maximum s/h(1/4): C0\_180=0.45 C90\_270=0.45

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.36%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.539%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9057.053	2.167	2.167	.073%	.080%
1.0	9005.851	17.236	19.403	.582%	.718%
2.0	8846.187	33.855	53.258	1.144%	1.971%
3.0	8605.178	49.387	102.645	1.668%	3.799%
4.0	8312.415	63.586	166.231	2.148%	6.152%
5.0	7929.498	75.787	242.018	2.560%	8.956%
6.0	7542.727	86.460	328.478	2.921%	12.156%
7.0	7124.161	95.209	423.687	3.217%	15.680%
8.0	6675.726	101.884	525.571	3.442%	19.450%
9.0	6214.766	106.613	632.184	3.602%	23.395%
10.0	5762.065	109.724	741.907	3.707%	27.456%
11.0	5308.125	111.069	852.976	3.752%	31.566%
12.0	4853.359	110.656	963.632	3.738%	35.661%
13.0	4404.925	108.662	1072.294	3.671%	39.683%
14.0	3952.224	104.850	1177.144	3.542%	43.563%
15.0	3545.770	100.637	1277.781	3.400%	47.287%
16.0	3166.706	95.719	1373.5	3.234%	50.829%
17.0	2817.649	90.339	1463.839	3.052%	54.173%
18.0	2507.681	84.978	1548.817	2.871%	57.317%
19.0	2257.588	80.601	1629.417	2.723%	60.300%
20.0	2014.651	75.562	1704.979	2.553%	63.097%
21.0	1810.943	71.168	1776.147	2.404%	65.730%
22.0	1661.052	68.235	1844.383	2.305%	68.256%
23.0	1525.338	65.358	1909.74	2.208%	70.674%
24.0	1408.893	62.841	1972.581	2.123%	73.000%
25.0	1315.435	60.963	2033.545	2.060%	75.256%
26.0	1237.668	59.497	2093.042	2.010%	77.458%
27.0	1167.471	58.123	2151.165	1.964%	79.609%
28.0	1108.079	57.047	2208.212	1.927%	81.720%
29.0	1067.736	56.766	2264.977	1.918%	83.821%
30.0	1013.024	55.545	2320.522	1.877%	85.876%
31.0	942.373	53.225	2373.747	1.798%	87.846%
32.0	854.462	49.654	2423.401	1.677%	89.683%
33.0	761.554	45.484	2468.885	1.537%	91.367%
34.0	664.916	40.774	2509.659	1.377%	92.876%
35.0	563.778	35.461	2545.12	1.198%	94.188%
36.0	455.069	29.332	2574.452	.991%	95.273%
37.0	362.120	23.898	2598.35	.807%	96.158%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	279.797	18.890	2617.24	.638%	96.857%
39.0	180.791	12.477	2629.717	.422%	97.319%
40.0	113.581	8.006	2637.723	.270%	97.615%
41.0	59.874	4.308	2642.031	.146%	97.774%
42.0	33.392	2.450	2644.481	.083%	97.865%
43.0	24.913	1.863	2646.344	.063%	97.934%
44.0	19.889	1.515	2647.859	.051%	97.990%
45.0	15.127	1.173	2649.032	.040%	98.033%
46.0	13.296	1.049	2650.081	.035%	98.072%
47.0	12.842	1.030	2651.111	.035%	98.110%
48.0	12.649	1.031	2652.142	.035%	98.149%
49.0	12.401	1.026	2653.168	.035%	98.187%
50.0	12.236	1.028	2654.196	.035%	98.225%
51.0	12.112	1.032	2655.229	.035%	98.263%
52.0	11.989	1.036	2656.265	.035%	98.301%
53.0	11.851	1.038	2657.302	.035%	98.339%
54.0	11.755	1.043	2658.345	.035%	98.378%
55.0	11.686	1.050	2659.395	.035%	98.417%
56.0	11.603	1.055	2660.45	.036%	98.456%
57.0	11.548	1.062	2661.512	.036%	98.495%
58.0	11.493	1.069	2662.581	.036%	98.535%
59.0	11.410	1.073	2663.653	.036%	98.575%
60.0	11.355	1.078	2664.732	.036%	98.614%
61.0	11.300	1.084	2665.816	.037%	98.655%
62.0	11.259	1.090	2666.906	.037%	98.695%
63.0	11.232	1.097	2668.003	.037%	98.736%
64.0	11.383	1.122	2669.125	.038%	98.777%
65.0	11.755	1.168	2670.293	.039%	98.820%
66.0	12.525	1.255	2671.548	.042%	98.867%
67.0	12.856	1.298	2672.846	.044%	98.915%
68.0	13.007	1.323	2674.168	.045%	98.964%
69.0	13.337	1.365	2675.534	.046%	99.014%
70.0	13.420	1.383	2676.917	.047%	99.065%
71.0	13.365	1.386	2678.302	.047%	99.117%
72.0	13.406	1.398	2679.701	.047%	99.168%
73.0	13.599	1.426	2681.127	.048%	99.221%
74.0	13.461	1.419	2682.546	.048%	99.274%
75.0	13.448	1.424	2683.97	.048%	99.326%

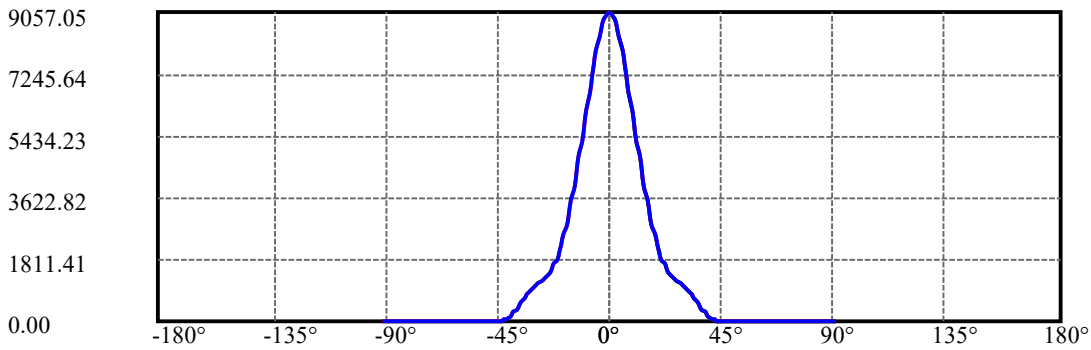
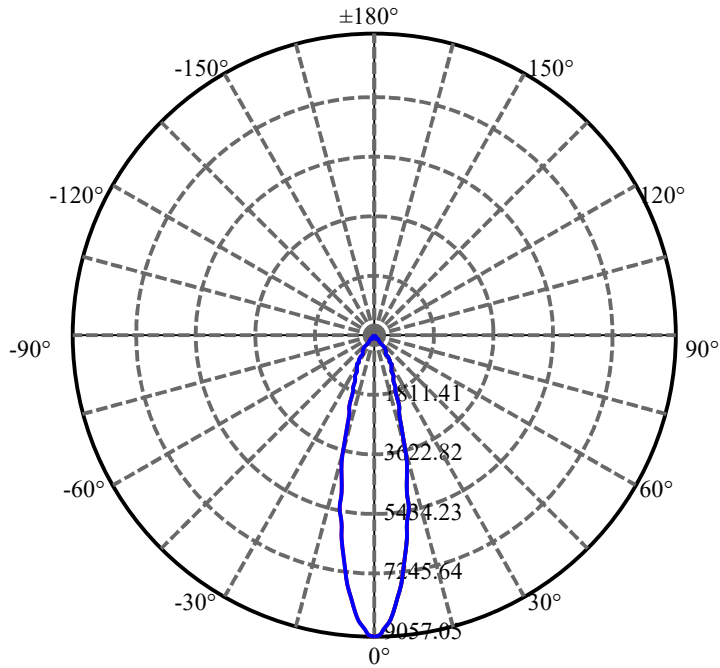
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.214	1.406	2685.376	.047%	99.378%
77.0	13.035	1.393	2686.769	.047%	99.430%
78.0	12.704	1.363	2688.132	.046%	99.480%
79.0	12.457	1.341	2689.472	.045%	99.530%
80.0	12.209	1.318	2690.791	.045%	99.579%
81.0	11.796	1.278	2692.069	.043%	99.626%
82.0	11.589	1.259	2693.327	.043%	99.673%
83.0	11.218	1.221	2694.548	.041%	99.718%
84.0	11.011	1.201	2695.749	.041%	99.762%
85.0	10.929	1.194	2696.943	.040%	99.806%
86.0	10.722	1.173	2698.116	.040%	99.850%
87.0	10.598	1.161	2699.276	.039%	99.893%
88.0	10.571	1.159	2700.435	.039%	99.936%
89.0	10.571	1.159	2701.594	.039%	99.979%
90.0	10.543	0.578	2702.172	.020%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2320.52	78.40%	85.88%
0-40	2637.72	89.11%	97.61%
0-60	2664.73	90.02%	98.61%
0-90	2701.59	91.27%	99.98%
0-120	2701.59	91.27%	99.98%
0-180	2702.17	91.29%	100.00%
60-90	37.94	1.28%	1.40%
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%
0-27.19	2161.74	73.03%	80.00%

## ZONAL LUMEN SUMMARY

0-10	741.91
10-20	963.07
20-30	615.54
30-40	317.20
40-50	16.47
50-60	10.54
60-70	12.18
70-80	13.87
80-90	10.80
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: —————

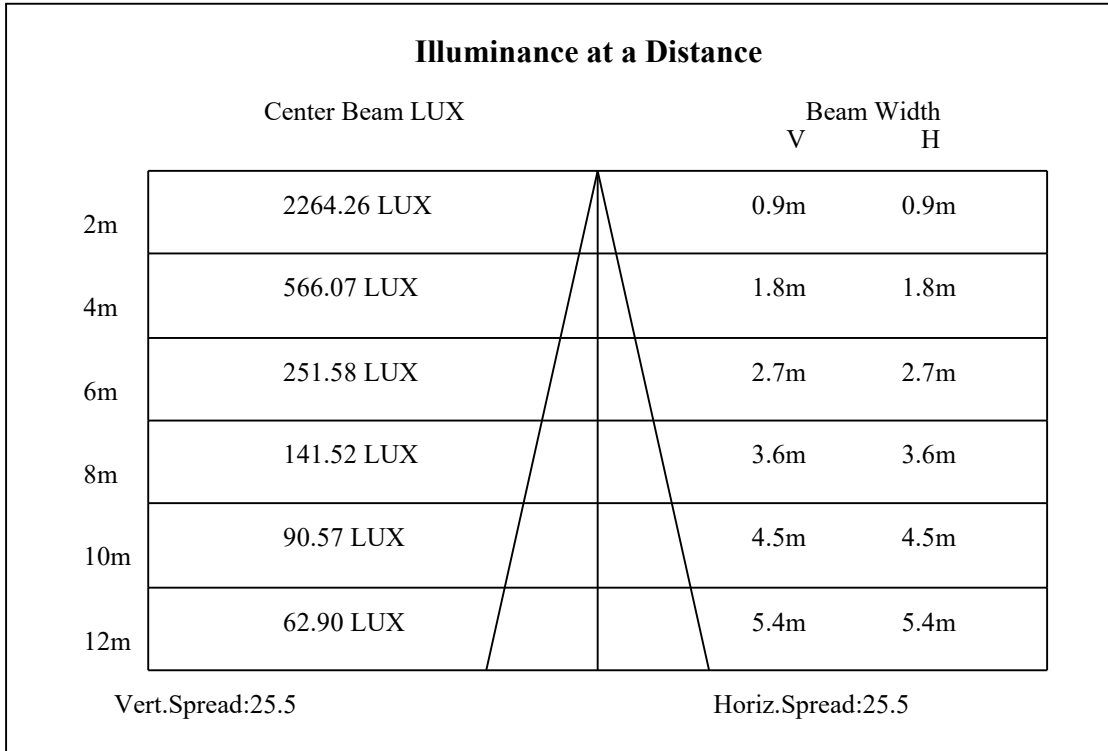
C90/C270: —————

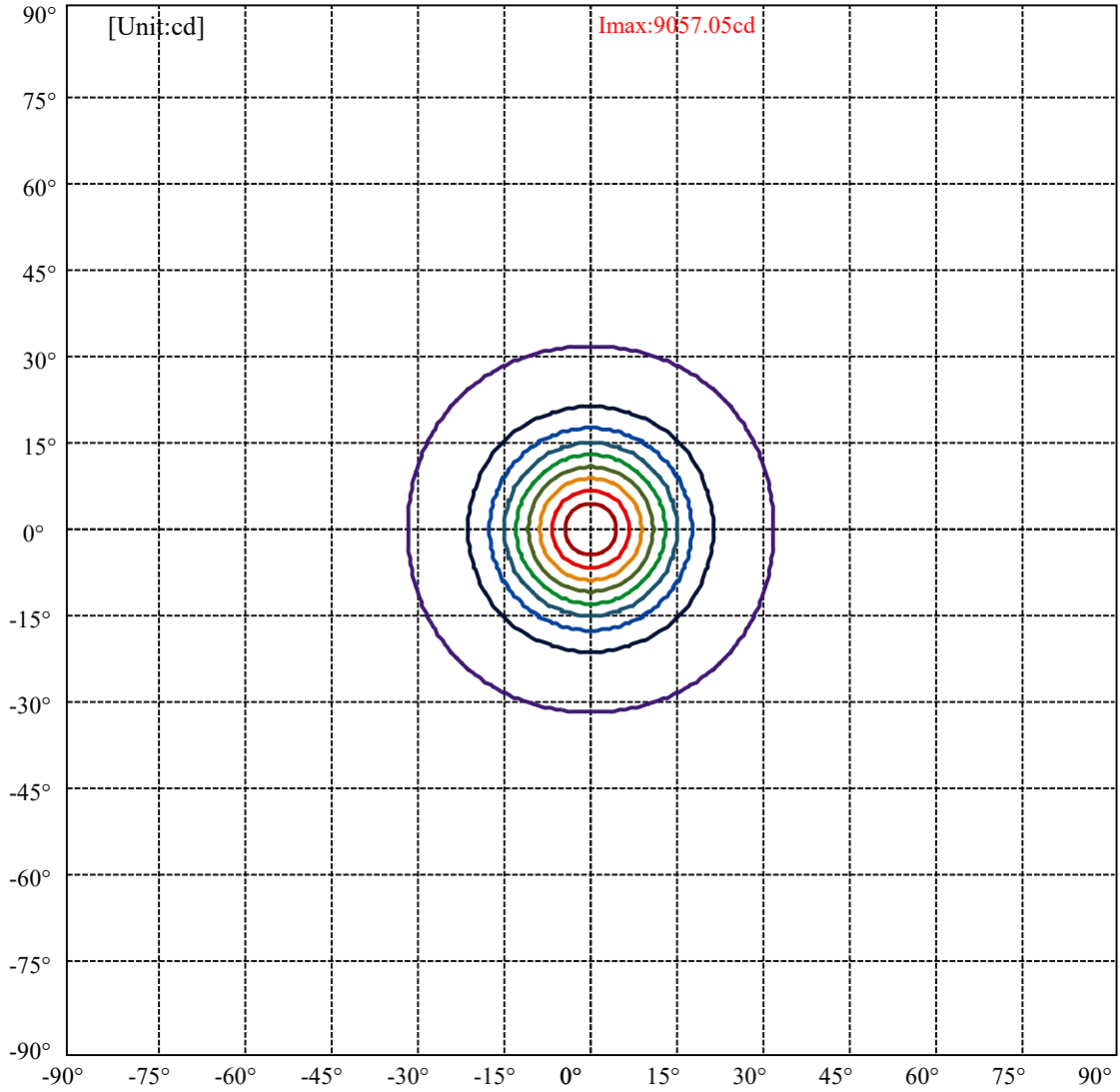
Field angle(10%Imax):C0/180Left:31.4 Right:31.4

:C90/270Left:31.4 Right:31.4

Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7

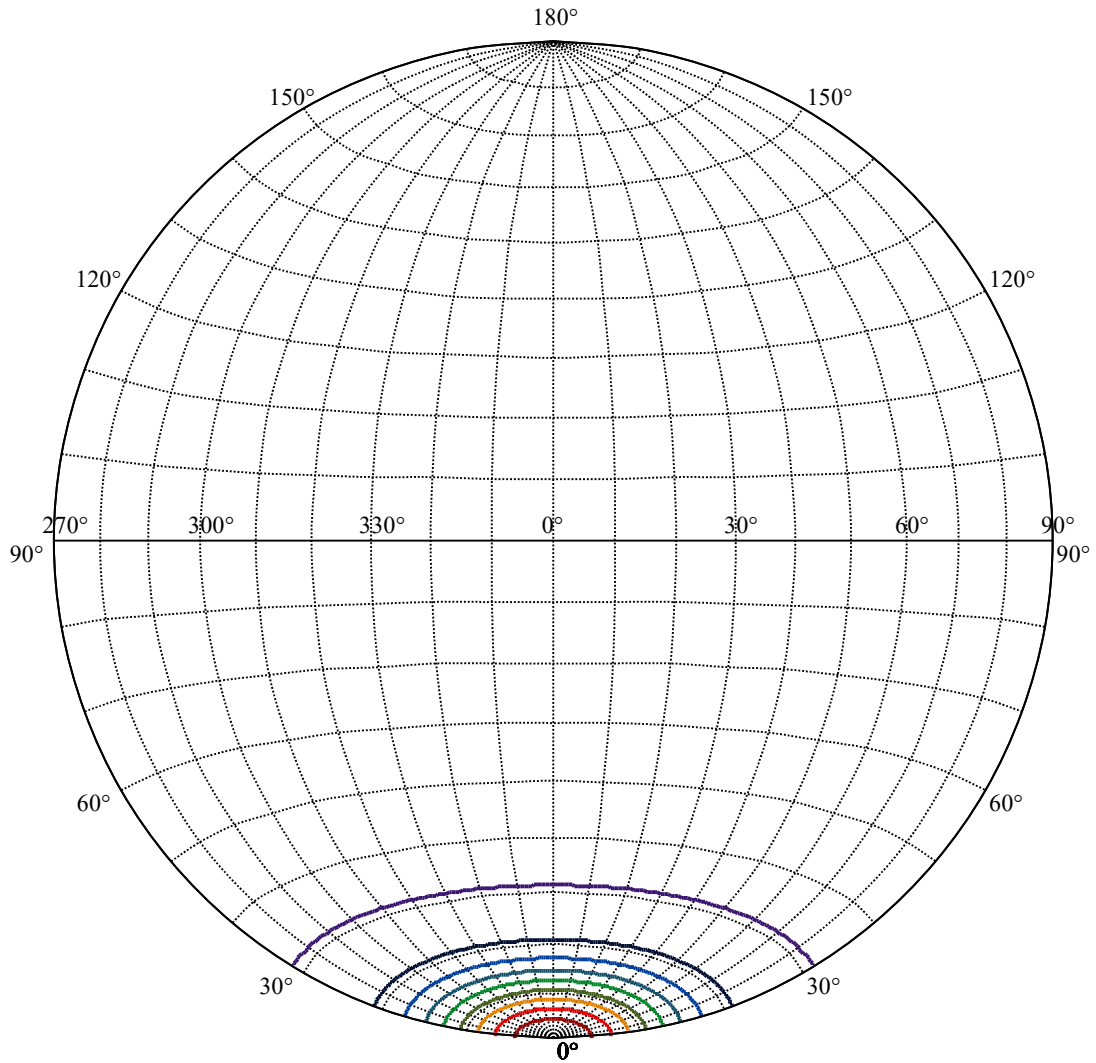
:C90/270Left:12.7 Right:12.7





(10%Imax) 905.705	—
(20%Imax) 1811.41	—
(30%Imax) 2717.12	—
(40%Imax) 3622.82	—
(50%Imax) 4528.53	—
(60%Imax) 5434.23	—
(70%Imax) 6339.94	—
(80%Imax) 7245.64	—
(90%Imax) 8151.35	—





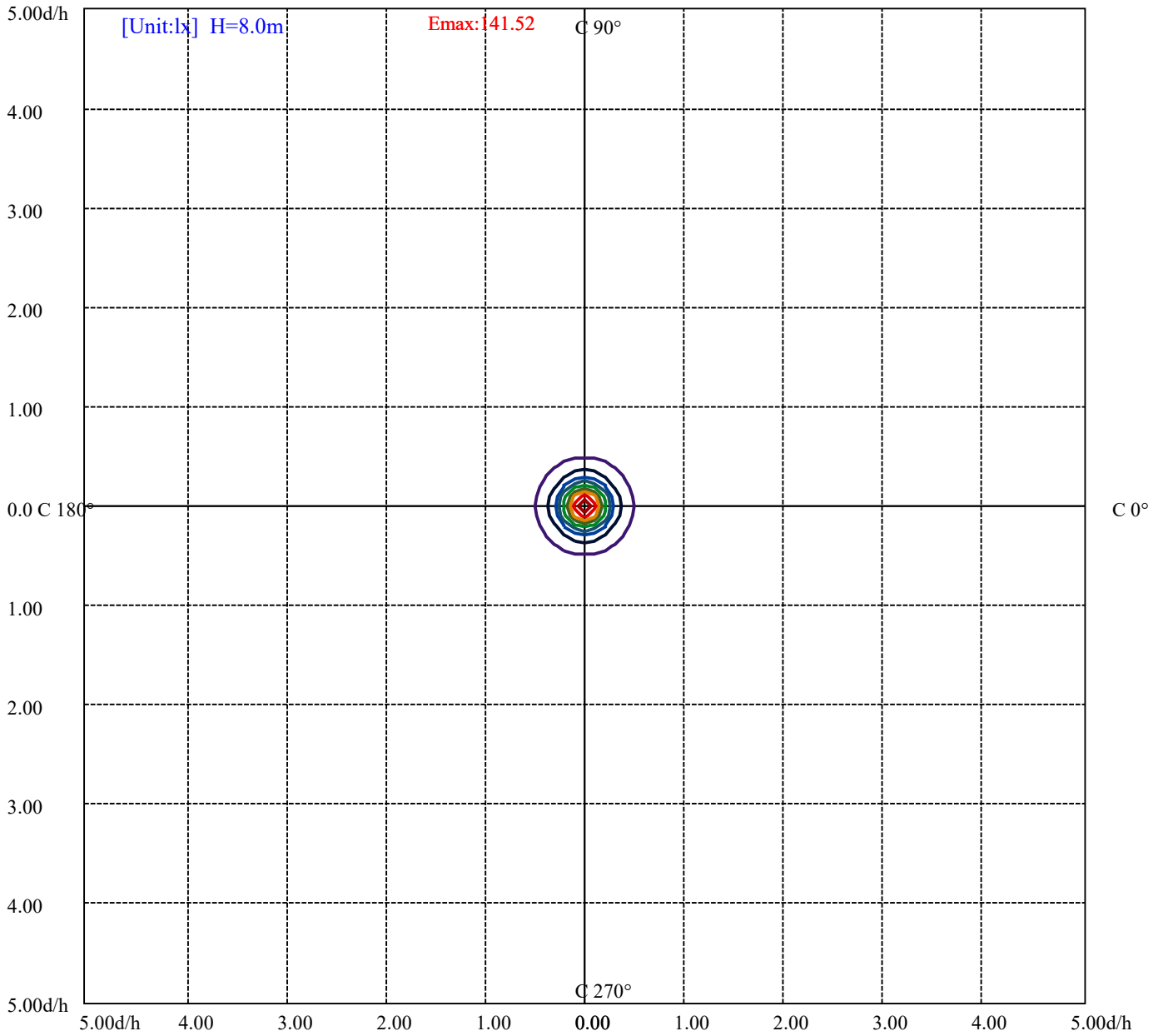
House

[Unit:cd]

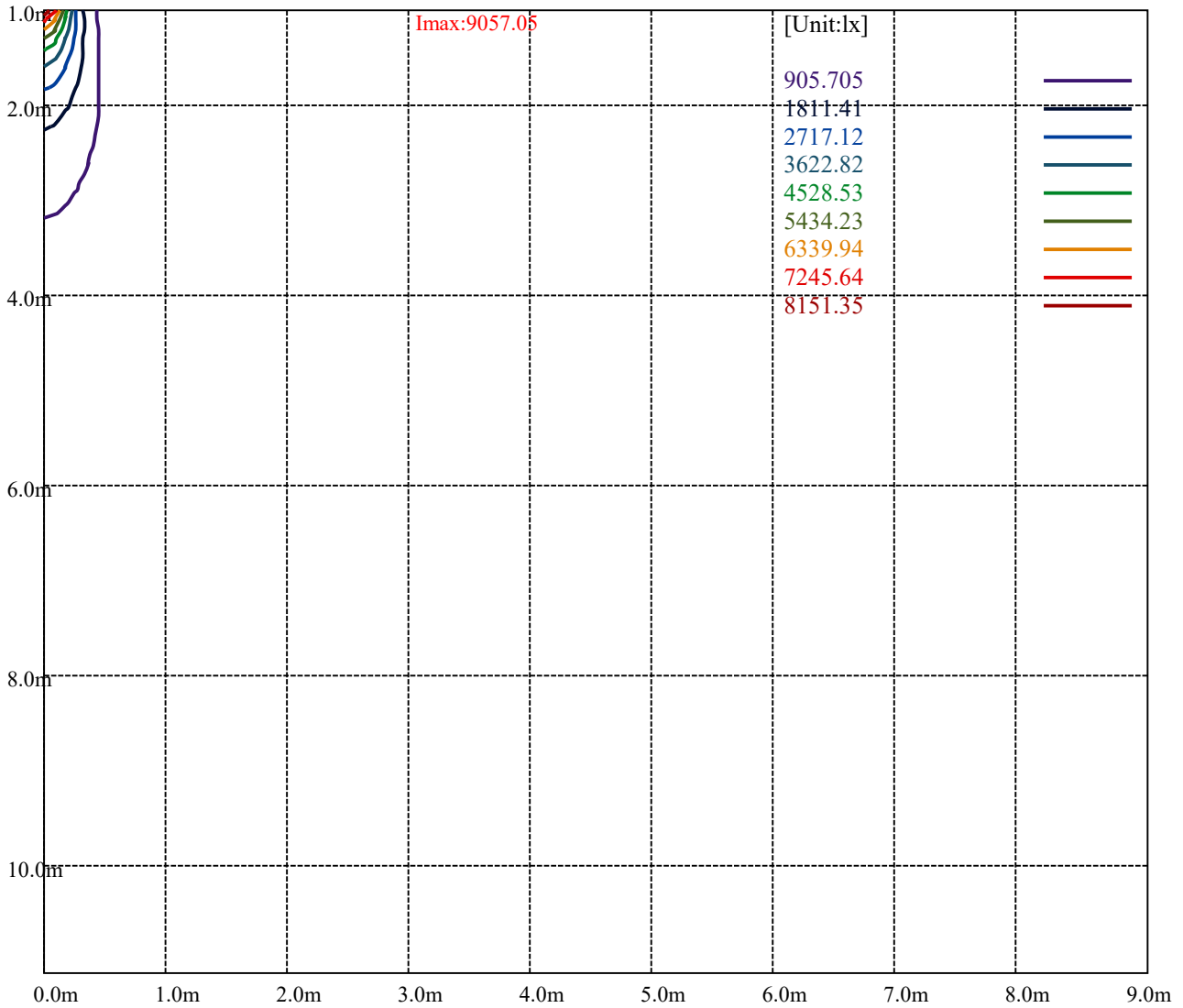
Road

Imax:9057.05

(10%Imax)	905.705	—
(20%Imax)	1811.41	—
(30%Imax)	2717.12	—
(40%Imax)	3622.82	—
(50%Imax)	4528.53	—
(60%Imax)	5434.23	—
(70%Imax)	6339.94	—
(80%Imax)	7245.64	—
(90%Imax)	8151.35	—



(10%E <sub>max</sub> ) 14.15164	—
(20%E <sub>max</sub> ) 28.30328	—
(30%E <sub>max</sub> ) 42.45485	—
(40%E <sub>max</sub> ) 56.60656	—
(50%E <sub>max</sub> ) 70.75813	—
(60%E <sub>max</sub> ) 84.90984	—
(70%E <sub>max</sub> ) 99.06141	—
(80%E <sub>max</sub> ) 113.2131	—
(90%E <sub>max</sub> ) 127.3647	—



Luminance Table

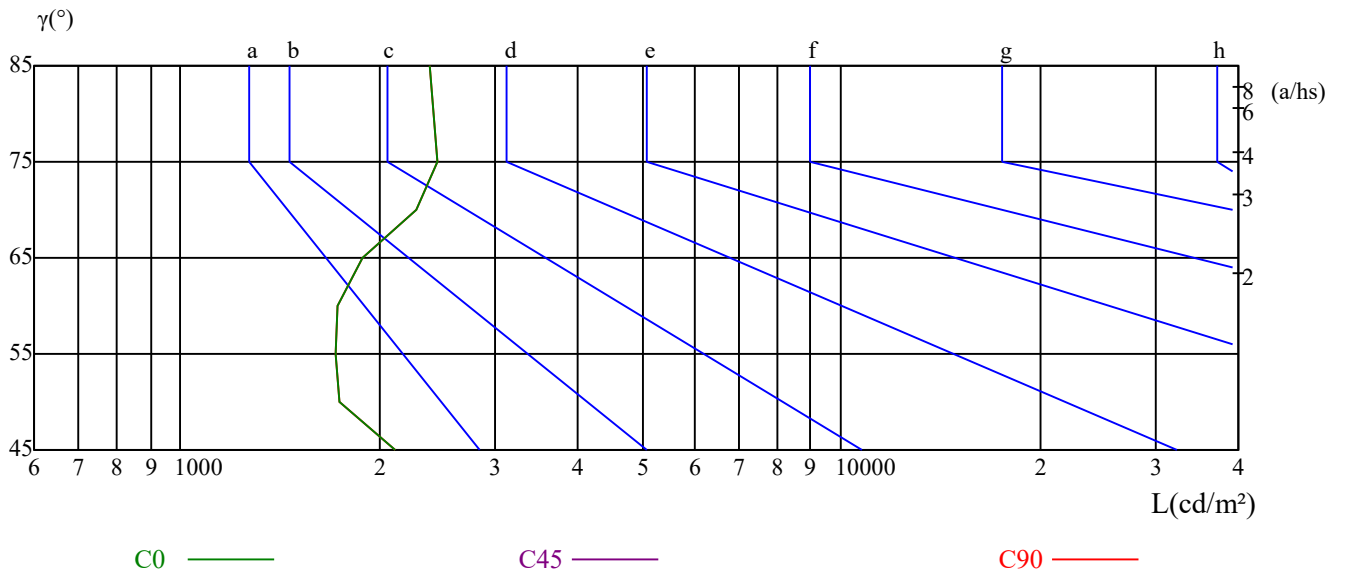
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2110	1744	1715	1732	1882	2278	2448	2417	2391
C45	0	0	0	0	0	0	0	0	0
C90	2110	1744	1715	1732	1882	2278	2448	2417	2391

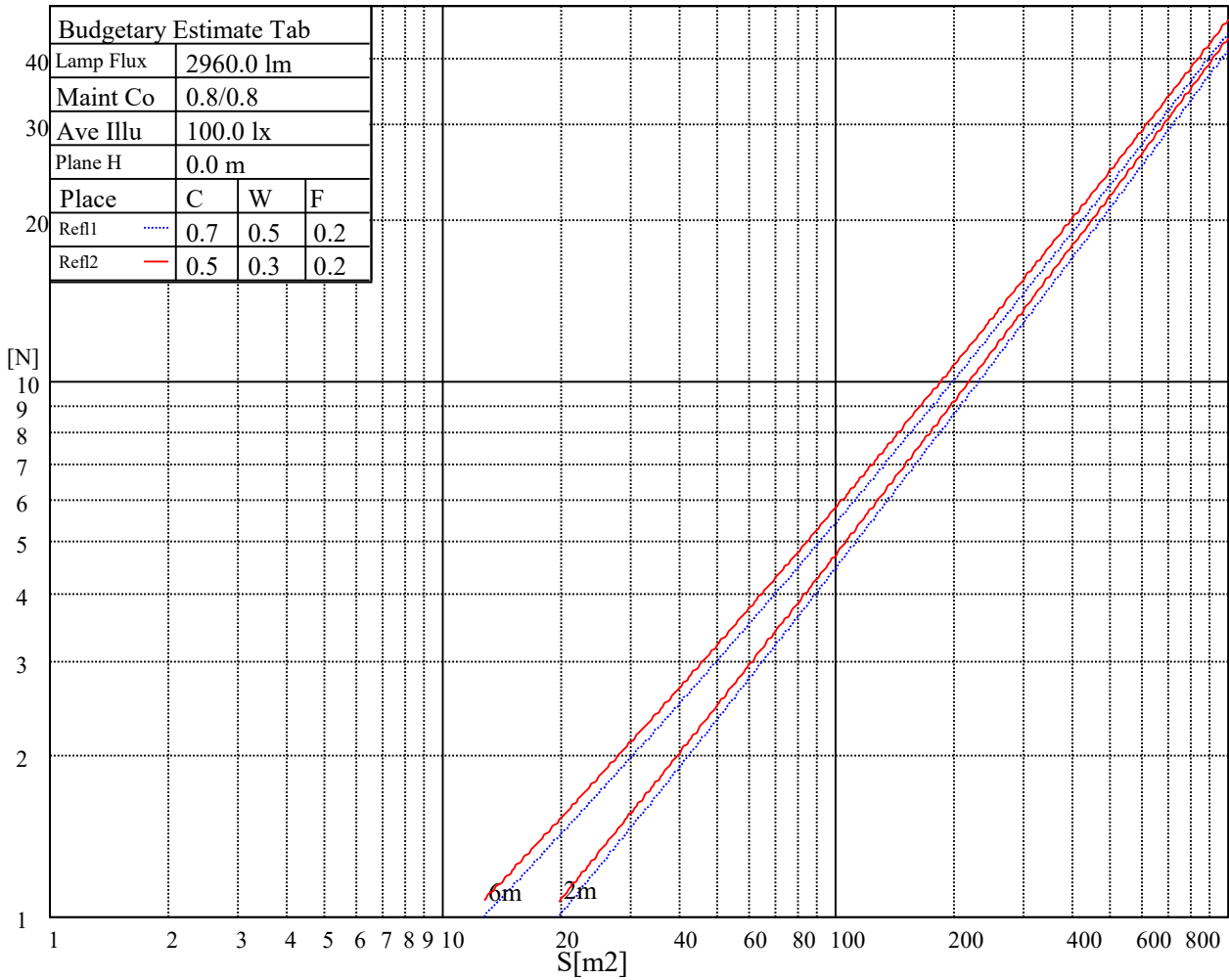
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4572	4572	0	8540	8540	0	20610	20610	0

Glare Table

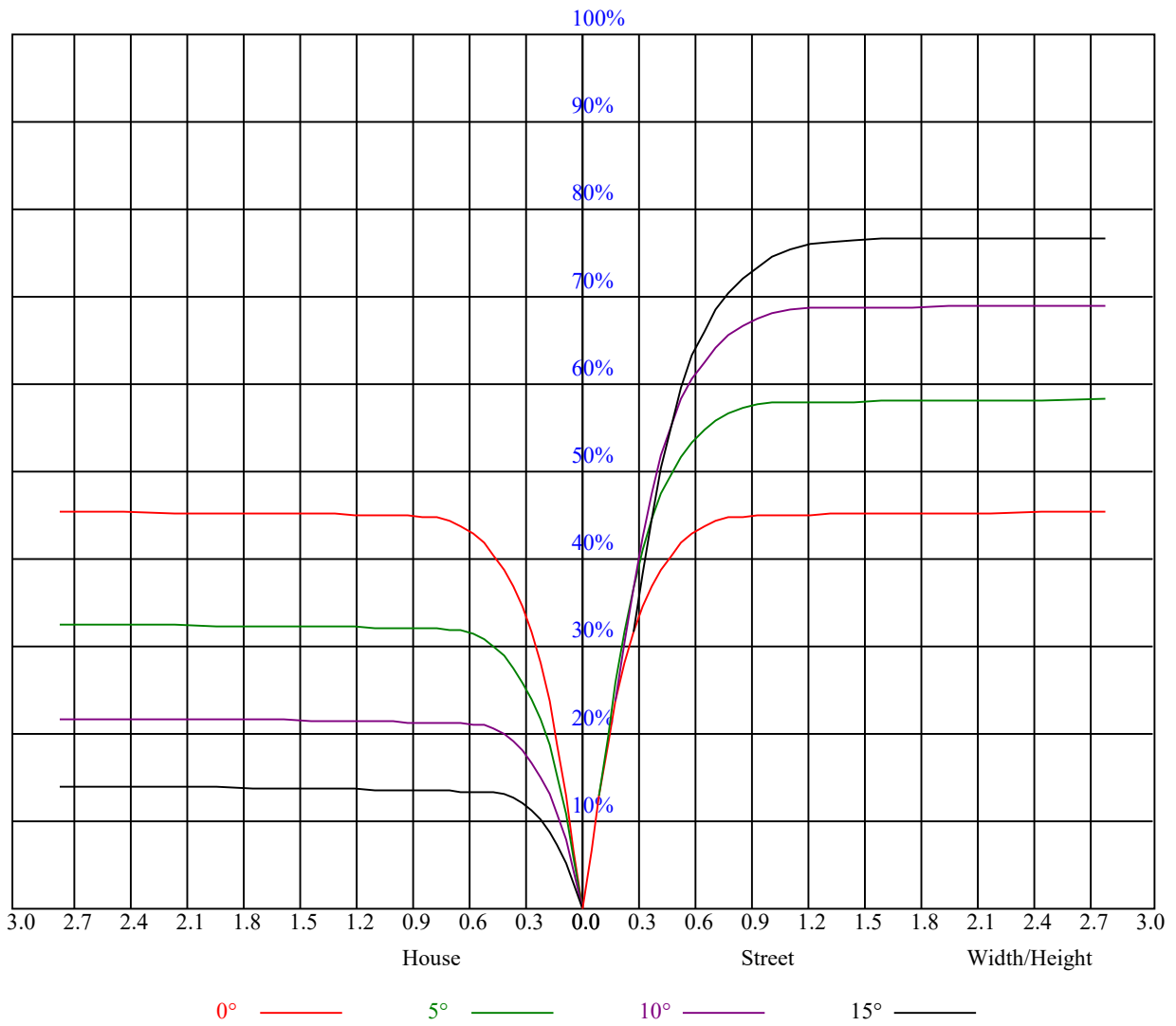
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

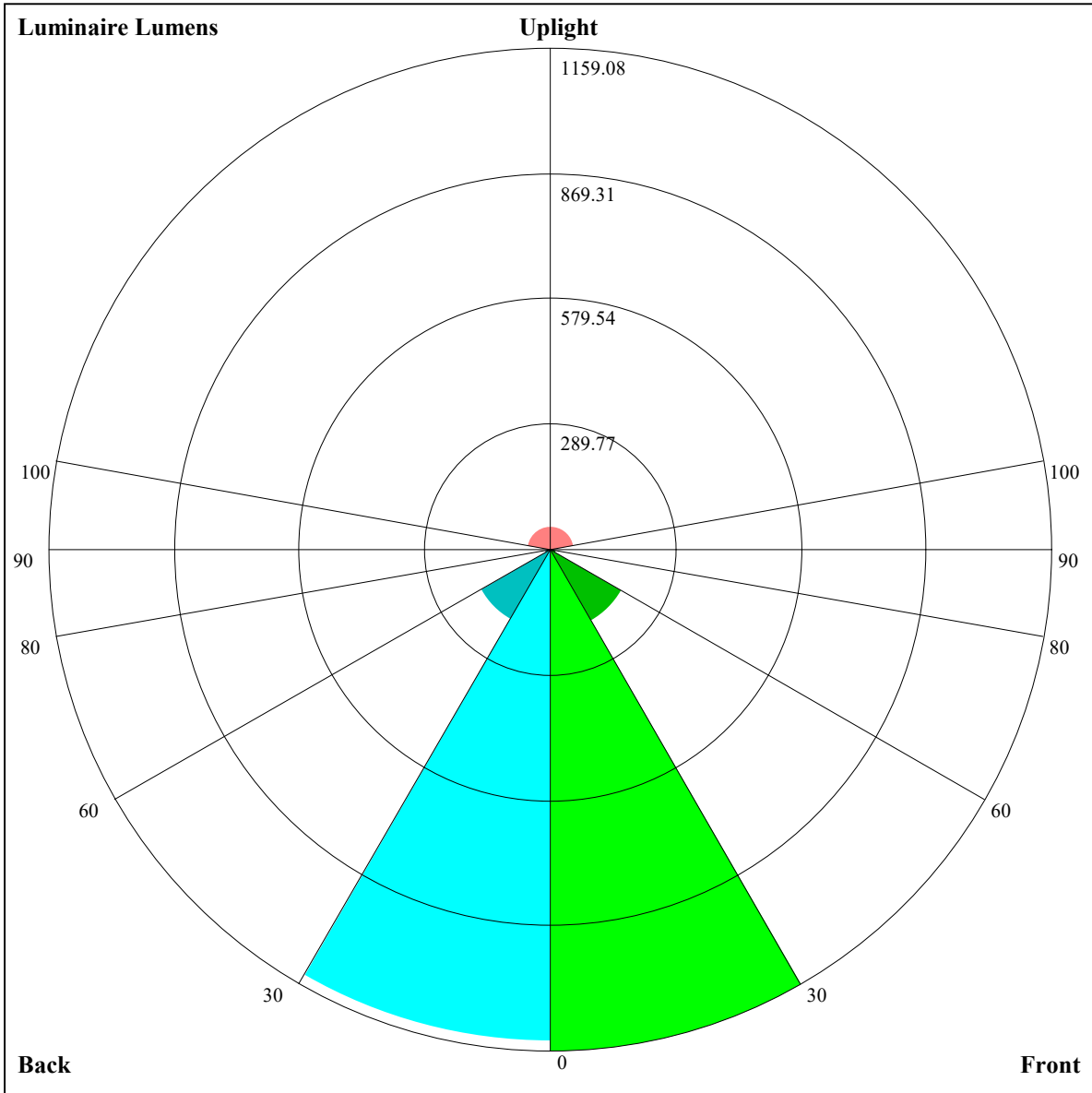
Luminance Limiting Curve





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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	1.00	0.98	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.93	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.86	0.87	0.85	0.84	0.83
3	0.91	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.77	0.75
5	0.83	0.79	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.79	0.75	0.72	0.79	0.75	0.72	0.78	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	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.59





Luminaire Lumens:

FL=1159.08,FM=188.64,FH=13.1,FVH=6.08

BL=1137.93,BM=185.25,BH=12.78,BVH=6.03

UL=11.5,UH=54.74

BUG Rating:B3-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	9022.09	9025.95	8900.42	8697.26	8426.38	8099.90	7660.00	7270.75	6860.03
90.0	9092.01	8964.28	8689.55	8388.39	8046.49	7583.47	7195.32	6790.66	6318.27
180.0	9022.09	8912.53	8728.09	8448.96	8143.94	7756.35	7391.87	6946.47	6485.09
270.0	9092.01	9120.64	9066.69	8886.10	8632.84	8278.28	7923.72	7488.77	7039.51
360.0	9022.09	9025.95	8900.42	8697.26	8426.38	8099.90	7660.00	7270.75	6860.03
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6333.69	5909.75	5492.43	5019.49	4543.80	4134.19	3684.37	3259.34	2920.19
90.0	5846.99	5424.16	4992.51	4507.47	4035.63	3648.59	3247.23	2888.81	2572.79
180.0	6054.55	5571.71	5090.51	4662.73	4245.95	3754.30	3382.11	3038.56	2695.56
270.0	6623.84	6142.64	5657.05	5223.75	4794.31	4271.83	3869.36	3480.12	3082.06
360.0	6333.69	5909.75	5492.43	5019.49	4543.80	4134.19	3684.37	3259.34	2920.19
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2588.20	2325.58	2067.92	1852.65	1694.64	1564.15	1423.76	1331.26	1251.98
90.0	2317.32	2091.04	1875.77	1696.29	1563.05	1436.42	1328.51	1248.13	1187.57
180.0	2391.10	2157.11	1936.88	1748.04	1609.30	1479.92	1383.02	1292.17	1214.54
270.0	2734.10	2456.62	2178.03	1946.79	1777.22	1620.86	1500.29	1390.17	1296.58
360.0	2588.20	2325.58	2067.92	1852.65	1694.64	1564.15	1423.76	1331.26	1251.98
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1170.50	1118.75	1078.00	1029.00	957.98	879.25	784.00	683.25	587.45
90.0	1119.85	1078.00	1042.77	965.14	882.00	812.08	698.67	594.06	509.27
180.0	1156.73	1095.35	1060.33	1010.62	942.73	840.44	751.80	660.46	555.30
270.0	1222.80	1140.22	1089.84	1047.34	986.78	886.08	811.75	721.90	603.09
360.0	1170.50	1118.75	1078.00	1029.00	957.98	879.25	784.00	683.25	587.45
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	478.44	384.29	284.64	191.87	122.06	68.32	31.16	24.39	20.26
90.0	388.15	297.86	278.59	131.31	75.81	39.42	27.09	22.08	17.40
180.0	446.78	351.98	253.59	169.52	107.03	54.40	32.65	26.04	19.93
270.0	506.90	414.35	302.37	230.47	149.42	77.35	42.67	27.14	21.97
360.0	478.44	384.29	284.64	191.87	122.06	68.32	31.16	24.39	20.26
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	15.97	13.93	13.65	13.43	12.94	12.61	12.50	12.39	12.22
90.0	13.05	12.77	12.55	12.39	12.28	12.17	12.06	11.95	11.78
180.0	13.76	12.72	12.44	12.28	12.11	12.06	11.95	11.84	11.73
270.0	17.73	13.76	12.72	12.50	12.28	12.11	11.95	11.78	11.67
360.0	15.97	13.93	13.65	13.43	12.94	12.61	12.50	12.39	12.22
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.11	12.06	11.95	11.89	11.84	11.78	11.67	11.62	11.56
90.0	11.73	11.62	11.56	11.45	11.40	11.29	11.23	11.23	11.18
180.0	11.62	11.56	11.51	11.51	11.45	11.34	11.34	11.23	11.23
270.0	11.56	11.51	11.40	11.34	11.29	11.23	11.18	11.12	11.07
360.0	12.11	12.06	11.95	11.89	11.84	11.78	11.67	11.62	11.56
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.51	11.45	11.51	12.72	13.32	13.76	14.37	14.42	14.31
90.0	11.23	11.89	13.27	14.42	14.87	14.92	15.20	15.20	15.03
180.0	11.18	11.18	11.23	11.95	12.22	12.28	12.66	12.94	12.99
270.0	11.01	11.01	11.01	11.01	11.01	11.07	11.12	11.12	11.12
360.0	11.51	11.45	11.51	12.72	13.32	13.76	14.37	14.42	14.31

Intensity data(cd)

<b>C/γ(°)</b>	<b>72.0</b>	<b>73.0</b>	<b>74.0</b>	<b>75.0</b>	<b>76.0</b>	<b>77.0</b>	<b>78.0</b>	<b>79.0</b>	<b>80.0</b>
<b>0.0</b>	<b>14.59</b>	<b>14.53</b>	<b>14.37</b>	<b>14.26</b>	<b>13.82</b>	<b>13.60</b>	<b>13.21</b>	<b>12.77</b>	<b>12.11</b>
<b>90.0</b>	<b>14.98</b>	<b>15.42</b>	<b>15.20</b>	<b>15.14</b>	<b>15.20</b>	<b>15.03</b>	<b>14.53</b>	<b>14.26</b>	<b>14.15</b>
<b>180.0</b>	<b>12.94</b>	<b>13.38</b>	<b>13.16</b>	<b>13.32</b>	<b>12.77</b>	<b>12.39</b>	<b>12.00</b>	<b>11.73</b>	<b>11.56</b>
<b>270.0</b>	<b>11.12</b>	<b>11.07</b>	<b>11.12</b>	<b>11.07</b>	<b>11.07</b>	<b>11.12</b>	<b>11.07</b>	<b>11.07</b>	<b>11.01</b>
<b>360.0</b>	<b>14.59</b>	<b>14.53</b>	<b>14.37</b>	<b>14.26</b>	<b>13.82</b>	<b>13.60</b>	<b>13.21</b>	<b>12.77</b>	<b>12.11</b>
<b>C/γ(°)</b>	<b>81.0</b>	<b>82.0</b>	<b>83.0</b>	<b>84.0</b>	<b>85.0</b>	<b>86.0</b>	<b>87.0</b>	<b>88.0</b>	<b>89.0</b>
<b>0.0</b>	<b>11.62</b>	<b>11.51</b>	<b>11.34</b>	<b>11.23</b>	<b>11.07</b>	<b>10.90</b>	<b>10.74</b>	<b>10.68</b>	<b>10.68</b>
<b>90.0</b>	<b>13.38</b>	<b>12.94</b>	<b>11.78</b>	<b>11.12</b>	<b>11.07</b>	<b>10.57</b>	<b>10.52</b>	<b>10.52</b>	<b>10.52</b>
<b>180.0</b>	<b>11.23</b>	<b>10.96</b>	<b>10.85</b>	<b>10.85</b>	<b>10.79</b>	<b>10.68</b>	<b>10.57</b>	<b>10.57</b>	<b>10.63</b>
<b>270.0</b>	<b>10.96</b>	<b>10.96</b>	<b>10.90</b>	<b>10.85</b>	<b>10.79</b>	<b>10.74</b>	<b>10.57</b>	<b>10.52</b>	<b>10.46</b>
<b>360.0</b>	<b>11.62</b>	<b>11.51</b>	<b>11.34</b>	<b>11.23</b>	<b>11.07</b>	<b>10.90</b>	<b>10.74</b>	<b>10.68</b>	<b>10.68</b>
<b>C/γ(°)</b>	<b>90.0</b>								
<b>0.0</b>	<b>10.63</b>								
<b>90.0</b>	<b>10.52</b>								
<b>180.0</b>	<b>10.57</b>								
<b>270.0</b>	<b>10.46</b>								
<b>360.0</b>	<b>10.63</b>								