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Nata

Client:

LumCAT: 3-1546-A3

Luminaire: TE2213407+92.76.365.00

Report No: nata-0100

Test No: 2017050608

LampCAT: BRIDGELUX V18B

Lamp flux(lm): 2960.0

Number of Lamps: 1

Length(mm): 85

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.6000

Power (W): 20.4000

PF: 0.0000

Ballast type:

Width(mm): 85

Height(mm): 0

Photometric Results

Lumens(lm): 2702.11, Efficiency(%): 91.29% , Luminous Efficacy(lm/W): 132.46

Central intensity(cd): 7654.216, Maximum intensity(cd): 7654.216

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=65.8

[C90/270]Total=65.8

Maximum s/h(1/2): C0_180=0.51 C90_270=0.51

Maximum s/h(1/4): C0_180=0.49 C90_270=0.49

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.35%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.534%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7654.216	1.831	1.831	.062%	.068%
1.0	7652.702	14.646	16.477	.495%	.610%
2.0	7636.323	29.225	45.702	.987%	1.691%
3.0	7601.224	43.625	89.327	1.474%	3.306%
4.0	7537.634	57.660	146.987	1.948%	5.440%
5.0	7437.019	71.080	218.067	2.401%	8.070%
6.0	7282.172	83.473	301.54	2.820%	11.159%
7.0	7060.983	94.365	395.905	3.188%	14.652%
8.0	6806.623	103.882	499.787	3.510%	18.496%
9.0	6485.782	111.262	611.049	3.759%	22.614%
10.0	6103.002	116.216	727.265	3.926%	26.915%
11.0	5714.028	119.562	846.826	4.039%	31.340%
12.0	5292.021	120.657	967.483	4.076%	35.805%
13.0	4821.702	118.943	1086.427	4.018%	40.207%
14.0	4320.000	114.607	1201.034	3.872%	44.448%
15.0	3855.600	109.431	1310.464	3.697%	48.498%
16.0	3377.710	102.097	1412.561	3.449%	52.276%
17.0	2939.874	94.257	1506.819	3.184%	55.765%
18.0	2562.462	86.834	1593.653	2.934%	58.978%
19.0	2242.172	80.050	1673.703	2.704%	61.941%
20.0	1944.867	72.945	1746.648	2.464%	64.640%
21.0	1713.493	67.338	1813.986	2.275%	67.132%
22.0	1539.102	63.226	1877.212	2.136%	69.472%
23.0	1400.497	60.008	1937.221	2.027%	71.693%
24.0	1287.356	57.420	1994.641	1.940%	73.818%
25.0	1209.204	56.040	2050.681	1.893%	75.892%
26.0	1156.886	55.614	2106.295	1.879%	77.950%
27.0	1107.184	55.121	2161.416	1.862%	79.990%
28.0	1078.472	55.523	2216.939	1.876%	82.045%
29.0	1040.841	55.336	2272.275	1.869%	84.093%
30.0	996.920	54.662	2326.936	1.847%	86.116%
31.0	936.014	52.866	2379.802	1.786%	88.072%
32.0	848.323	49.297	2429.099	1.665%	89.897%
33.0	758.347	45.293	2474.392	1.530%	91.573%
34.0	661.337	40.554	2514.946	1.370%	93.074%
35.0	549.133	34.540	2549.486	1.167%	94.352%
36.0	439.694	28.341	2577.827	.957%	95.401%
37.0	344.681	22.747	2600.575	.768%	96.243%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	258.146	17.428	2618.003	.589%	96.888%
39.0	159.884	11.034	2629.037	.373%	97.296%
40.0	115.123	8.115	2637.152	.274%	97.596%
41.0	60.824	4.376	2641.528	.148%	97.758%
42.0	35.250	2.587	2644.114	.087%	97.854%
43.0	23.798	1.780	2645.894	.060%	97.920%
44.0	19.091	1.454	2647.348	.049%	97.974%
45.0	15.595	1.209	2648.558	.041%	98.018%
46.0	13.916	1.098	2649.655	.037%	98.059%
47.0	12.704	1.019	2650.674	.034%	98.097%
48.0	12.388	1.010	2651.684	.034%	98.134%
49.0	12.195	1.009	2652.693	.034%	98.171%
50.0	12.071	1.014	2653.707	.034%	98.209%
51.0	11.961	1.019	2654.726	.034%	98.247%
52.0	11.878	1.026	2655.753	.035%	98.285%
53.0	11.796	1.033	2656.786	.035%	98.323%
54.0	11.727	1.040	2657.826	.035%	98.361%
55.0	11.658	1.047	2658.874	.035%	98.400%
56.0	11.589	1.054	2659.927	.036%	98.439%
57.0	11.507	1.058	2660.985	.036%	98.478%
58.0	11.465	1.066	2662.052	.036%	98.518%
59.0	11.438	1.075	2663.127	.036%	98.557%
60.0	11.383	1.081	2664.208	.037%	98.597%
61.0	11.300	1.084	2665.292	.037%	98.638%
62.0	11.245	1.089	2666.381	.037%	98.678%
63.0	11.176	1.092	2667.473	.037%	98.718%
64.0	11.108	1.095	2668.567	.037%	98.759%
65.0	11.066	1.100	2669.667	.037%	98.800%
66.0	11.025	1.104	2670.772	.037%	98.840%
67.0	11.011	1.112	2671.883	.038%	98.882%
68.0	11.011	1.120	2673.003	.038%	98.923%
69.0	11.878	1.216	2674.219	.041%	98.968%
70.0	13.076	1.347	2675.566	.046%	99.018%
71.0	13.379	1.387	2676.954	.047%	99.069%
72.0	14.315	1.493	2678.446	.050%	99.124%
73.0	14.686	1.540	2679.987	.052%	99.181%
74.0	14.755	1.555	2681.542	.053%	99.239%
75.0	14.879	1.576	2683.118	.053%	99.297%

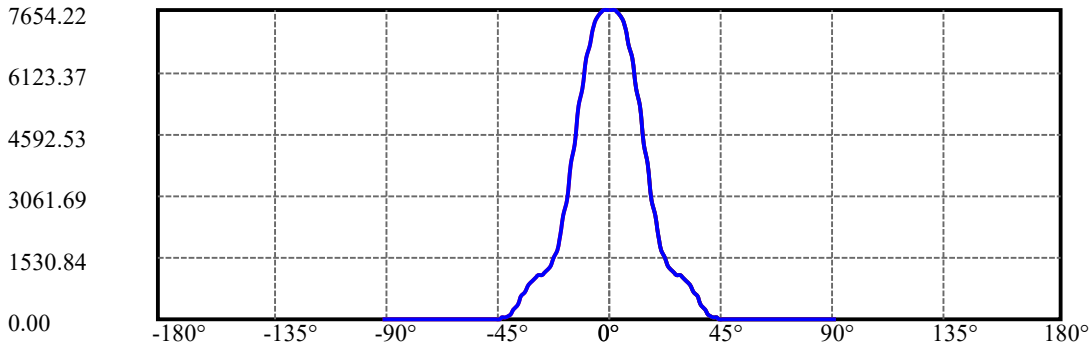
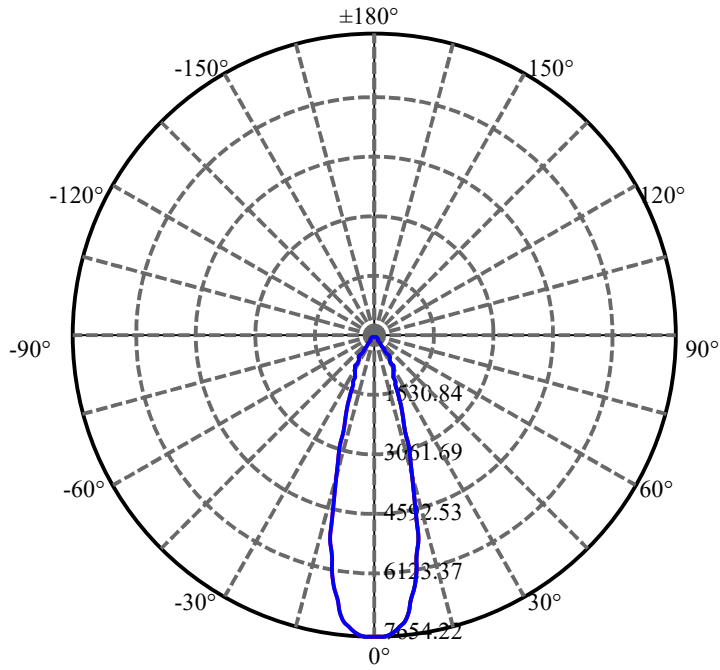
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.549	1.548	2684.666	.052%	99.355%
77.0	14.480	1.547	2686.213	.052%	99.412%
78.0	14.012	1.503	2687.716	.051%	99.467%
79.0	13.420	1.445	2689.161	.049%	99.521%
80.0	12.952	1.399	2690.56	.047%	99.573%
81.0	12.622	1.367	2691.927	.046%	99.623%
82.0	12.195	1.324	2693.251	.045%	99.672%
83.0	11.686	1.272	2694.523	.043%	99.719%
84.0	11.135	1.214	2695.737	.041%	99.764%
85.0	10.819	1.182	2696.919	.040%	99.808%
86.0	10.681	1.168	2698.088	.039%	99.851%
87.0	10.640	1.165	2699.253	.039%	99.894%
88.0	10.433	1.143	2700.396	.039%	99.937%
89.0	10.392	1.139	2701.536	.038%	99.979%
90.0	10.392	0.570	2702.105	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2326.94	78.61%	86.12%
0-40	2637.15	89.09%	97.60%
0-60	2664.21	90.01%	98.60%
0-90	2701.54	91.27%	99.98%
0-120	2701.54	91.27%	99.98%
0-180	2702.11	91.29%	100.00%
60-90	38.41	1.30%	1.42%
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%
0-27.00	2161.68	73.03%	80.00%

ZONAL LUMEN SUMMARY

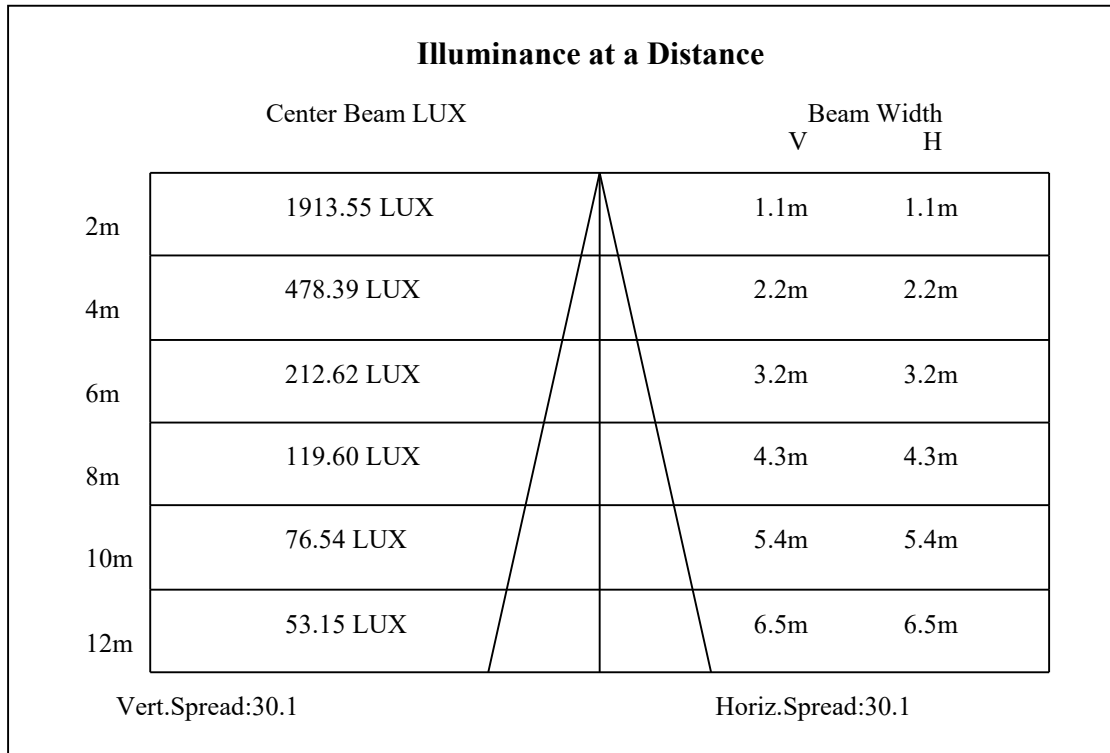
0-10	727.26
10-20	1019.38
20-30	580.29
30-40	310.22
40-50	16.56
50-60	10.50
60-70	11.36
70-80	14.99
80-90	10.98
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

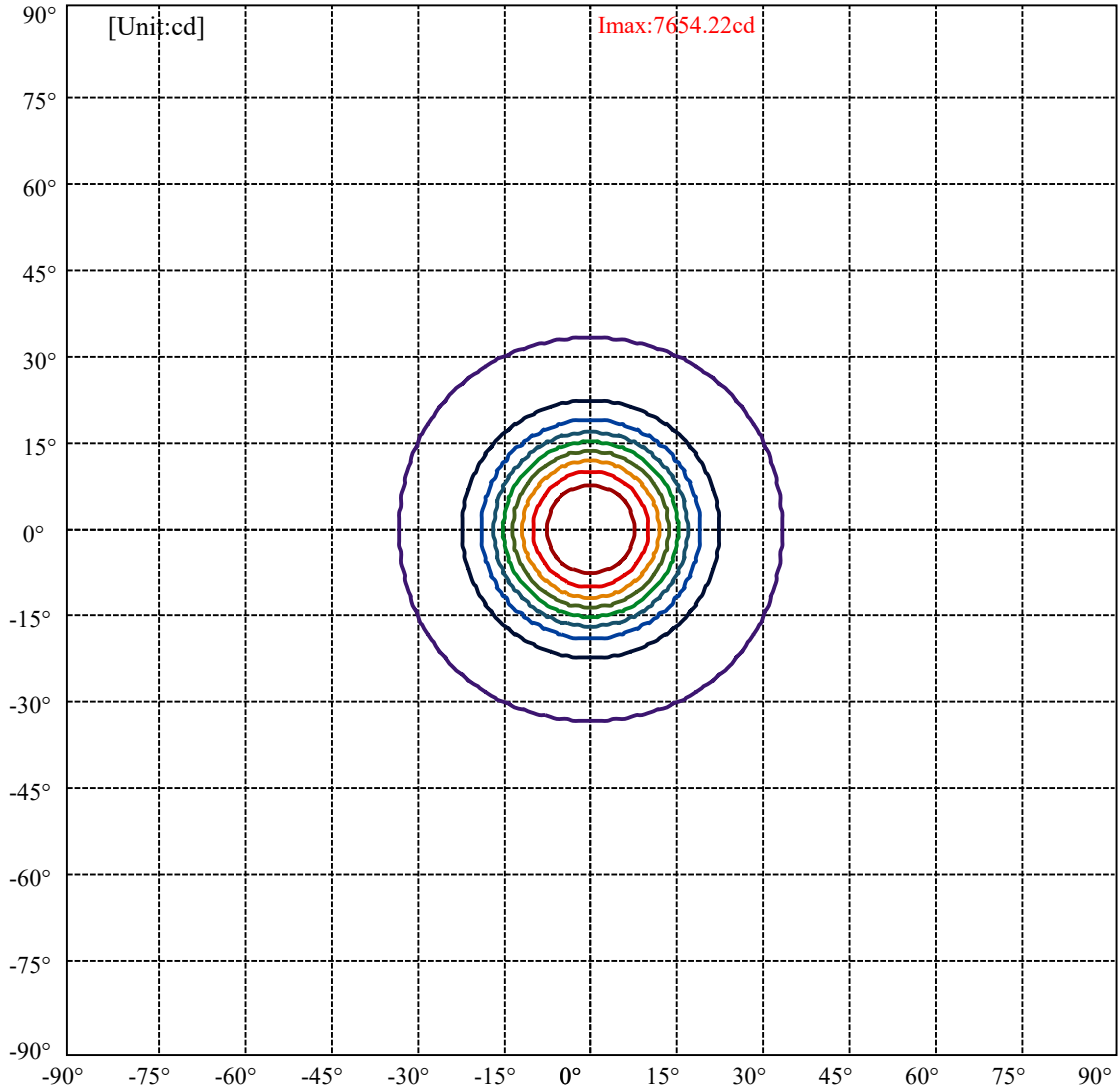


C0(Max): —————
 C0/C180: —————
 C90/C270: —————

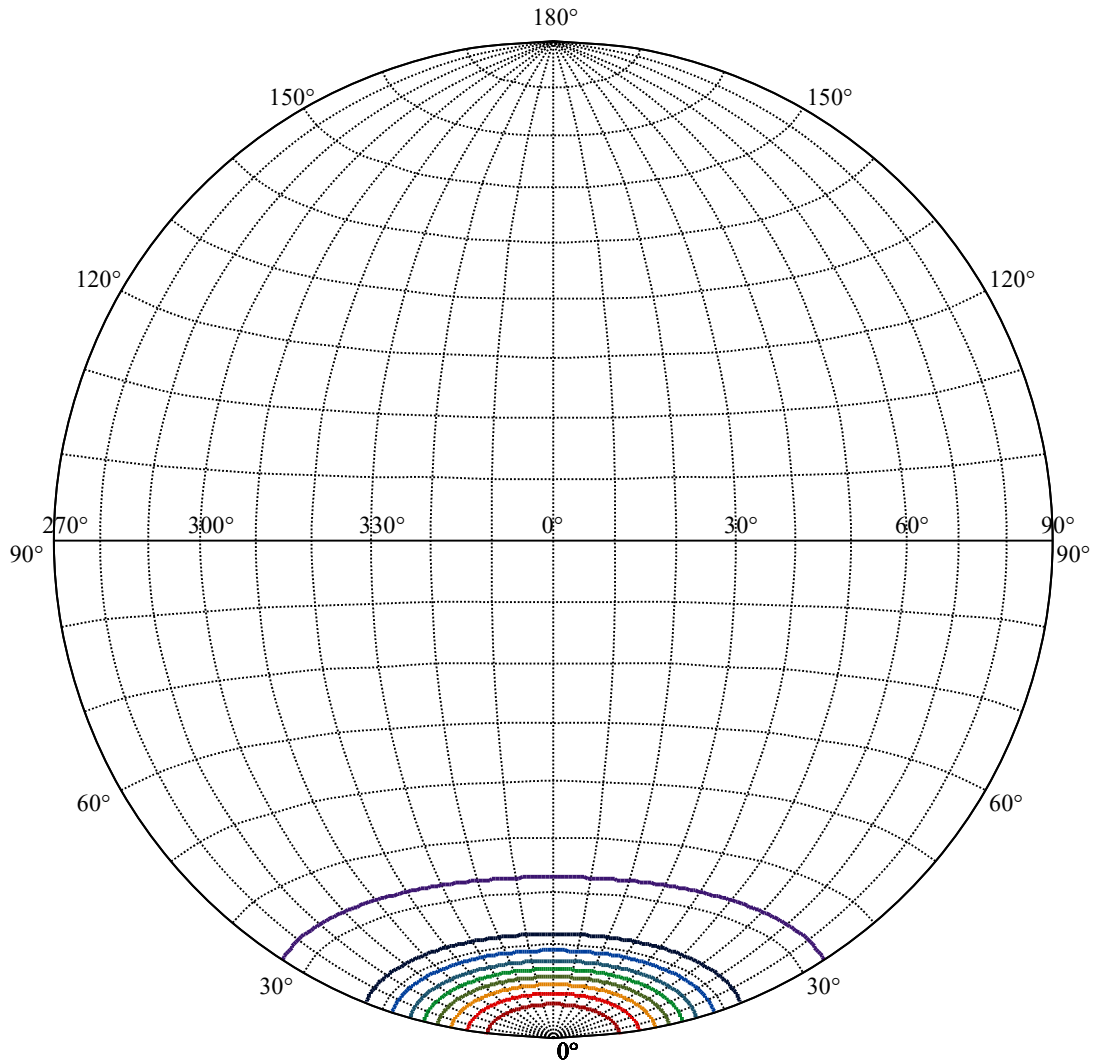
Field angle(10%Imax):C0/180Left:32.9 Right:32.9
 :C90/270Left:32.9 Right:32.9

Beam Angle(50%Imax):C0/180Left:15.1 Right:15.1
 :C90/270Left:15.1 Right:15.1





(10%Imax) 765.422	—
(20%Imax) 1530.84	—
(30%Imax) 2296.26	—
(40%Imax) 3061.69	—
(50%Imax) 3827.11	—
(60%Imax) 4592.53	—
(70%Imax) 5357.95	—
(80%Imax) 6123.37	—
(90%Imax) 6888.79	—



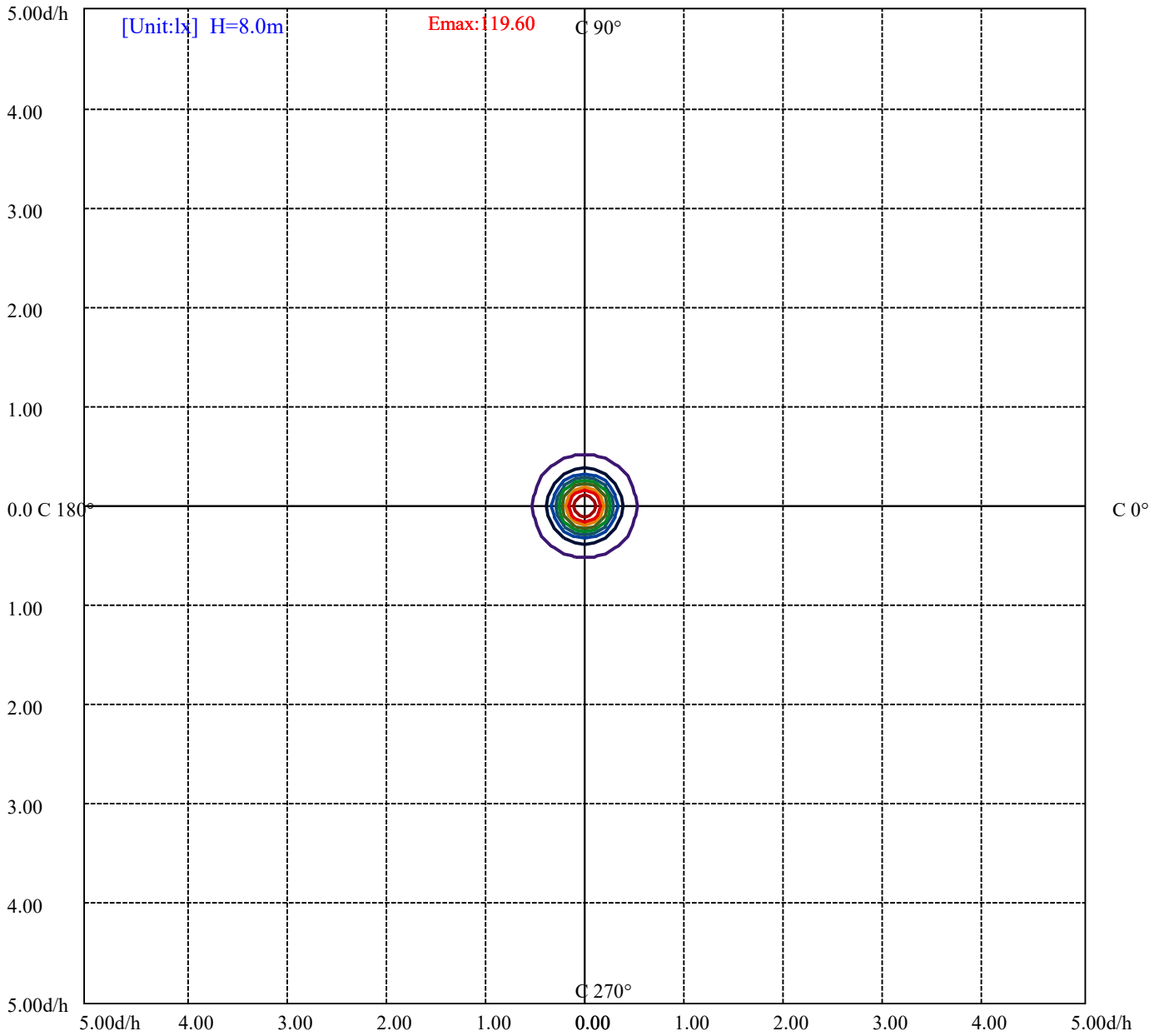
House

[Unit:cd]

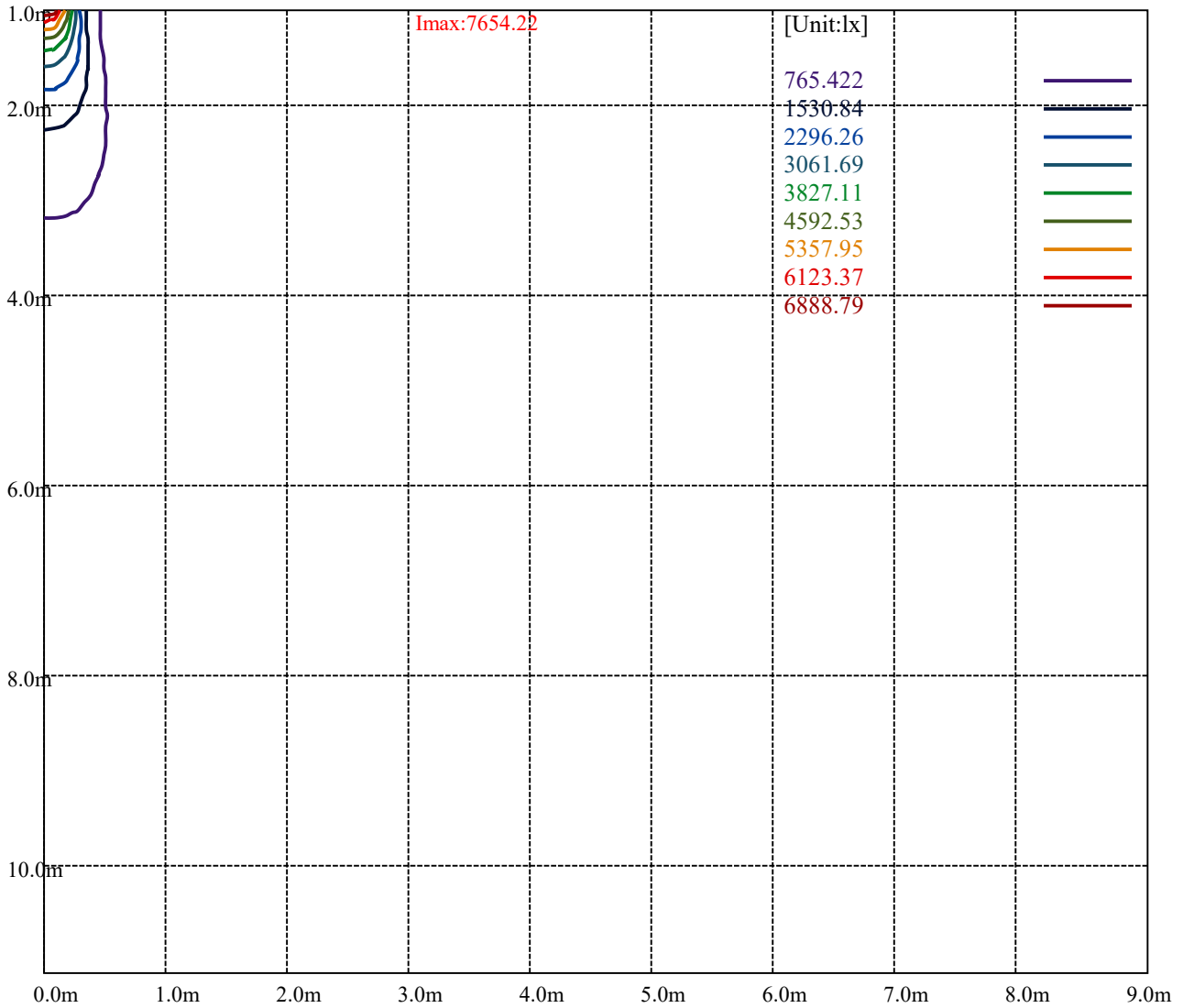
Road

Imax:7654.22

(10%Imax)	765.422	—
(20%Imax)	1530.84	—
(30%Imax)	2296.26	—
(40%Imax)	3061.69	—
(50%Imax)	3827.11	—
(60%Imax)	4592.53	—
(70%Imax)	5357.95	—
(80%Imax)	6123.37	—
(90%Imax)	6888.79	—



- (10%E_{max}) 11.95972
- (20%E_{max}) 23.91937
- (30%E_{max}) 35.87906
- (40%E_{max}) 47.83891
- (50%E_{max}) 59.7986
- (60%E_{max}) 71.75828
- (70%E_{max}) 83.71797
- (80%E_{max}) 95.67766
- (90%E_{max}) 107.6373



Luminance Table

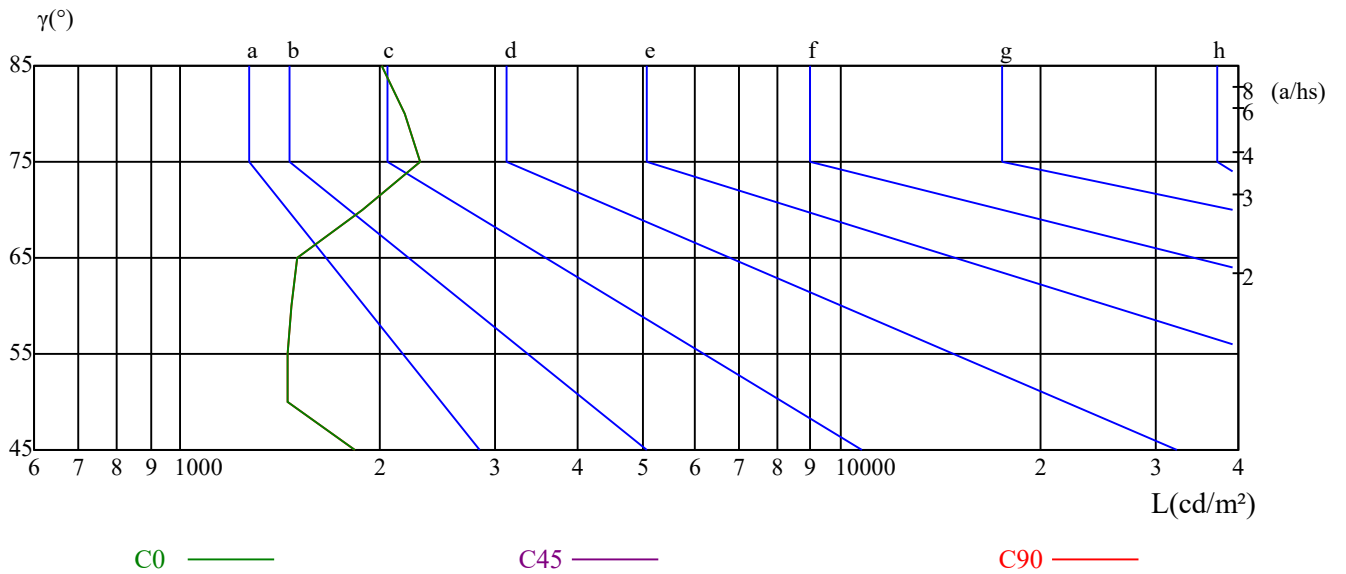
γ	45	50	55	60	65	70	75	80	85
C0	1840	1456	1449	1472	1502	1883	2300	2180	2014
C45	0	0	0	0	0	0	0	0	0
C90	1840	1456	1449	1472	1502	1883	2300	2180	2014

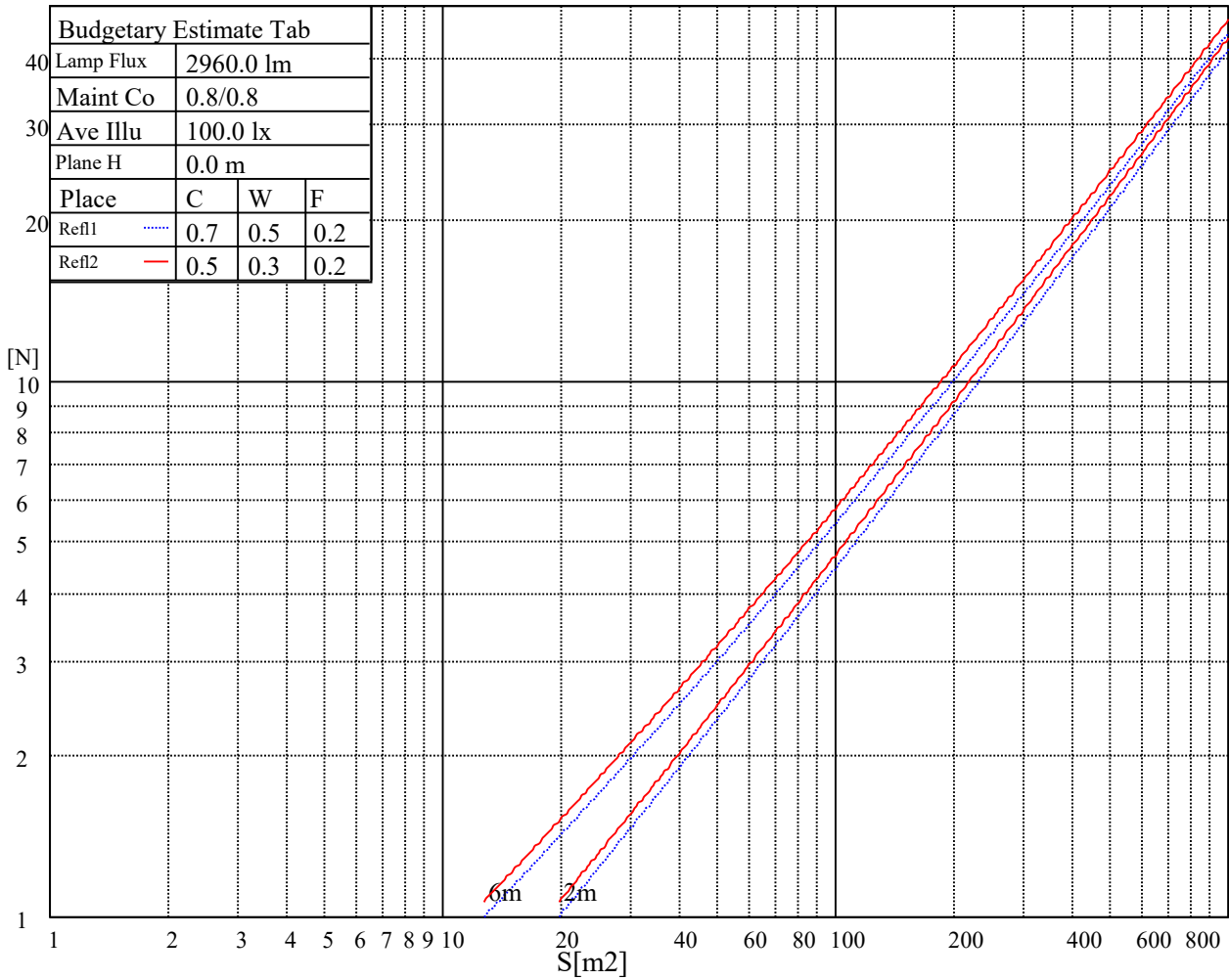
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3624	3624	0	7957	7957	0	17181	17181	0

Glare Table

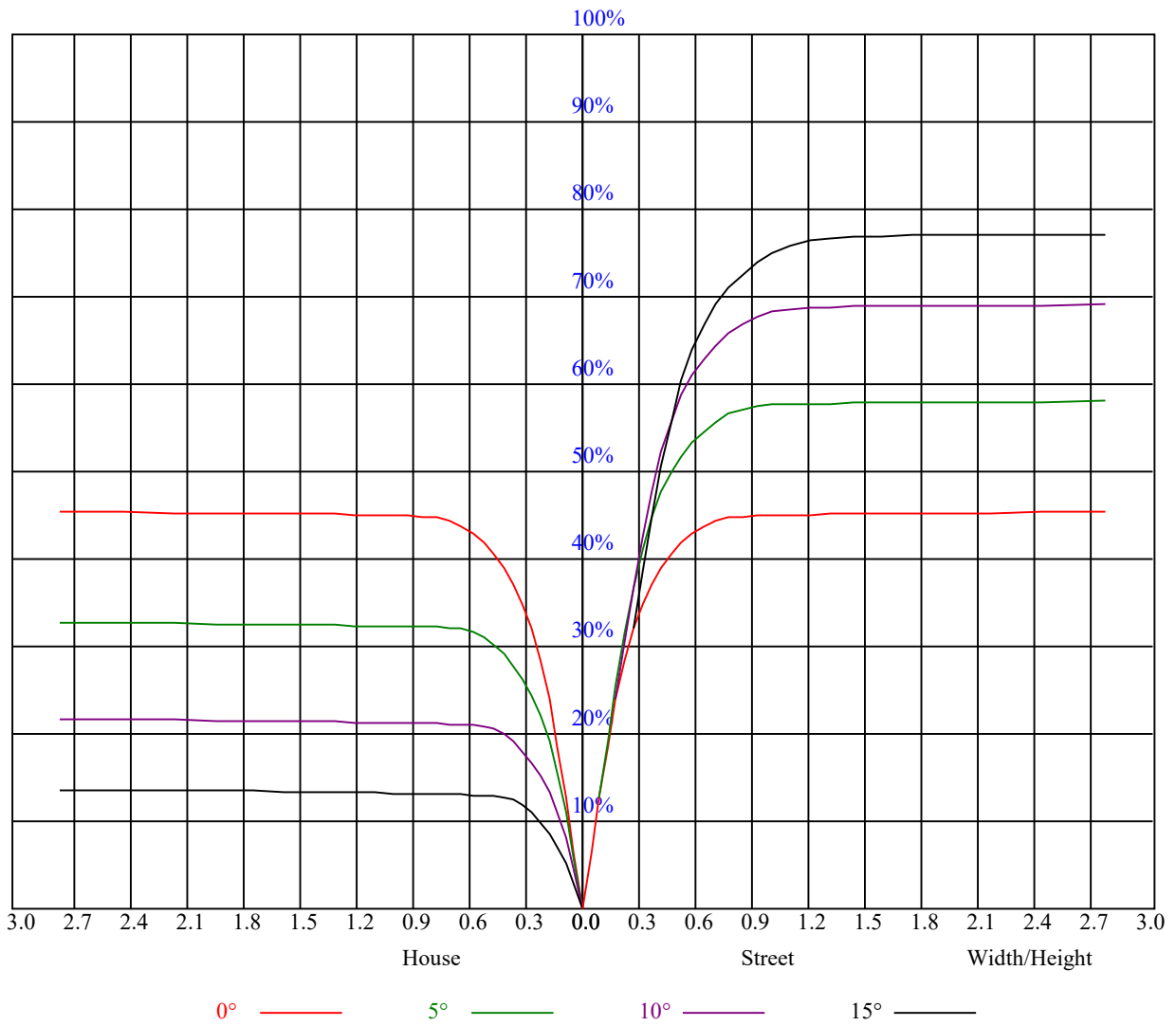
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

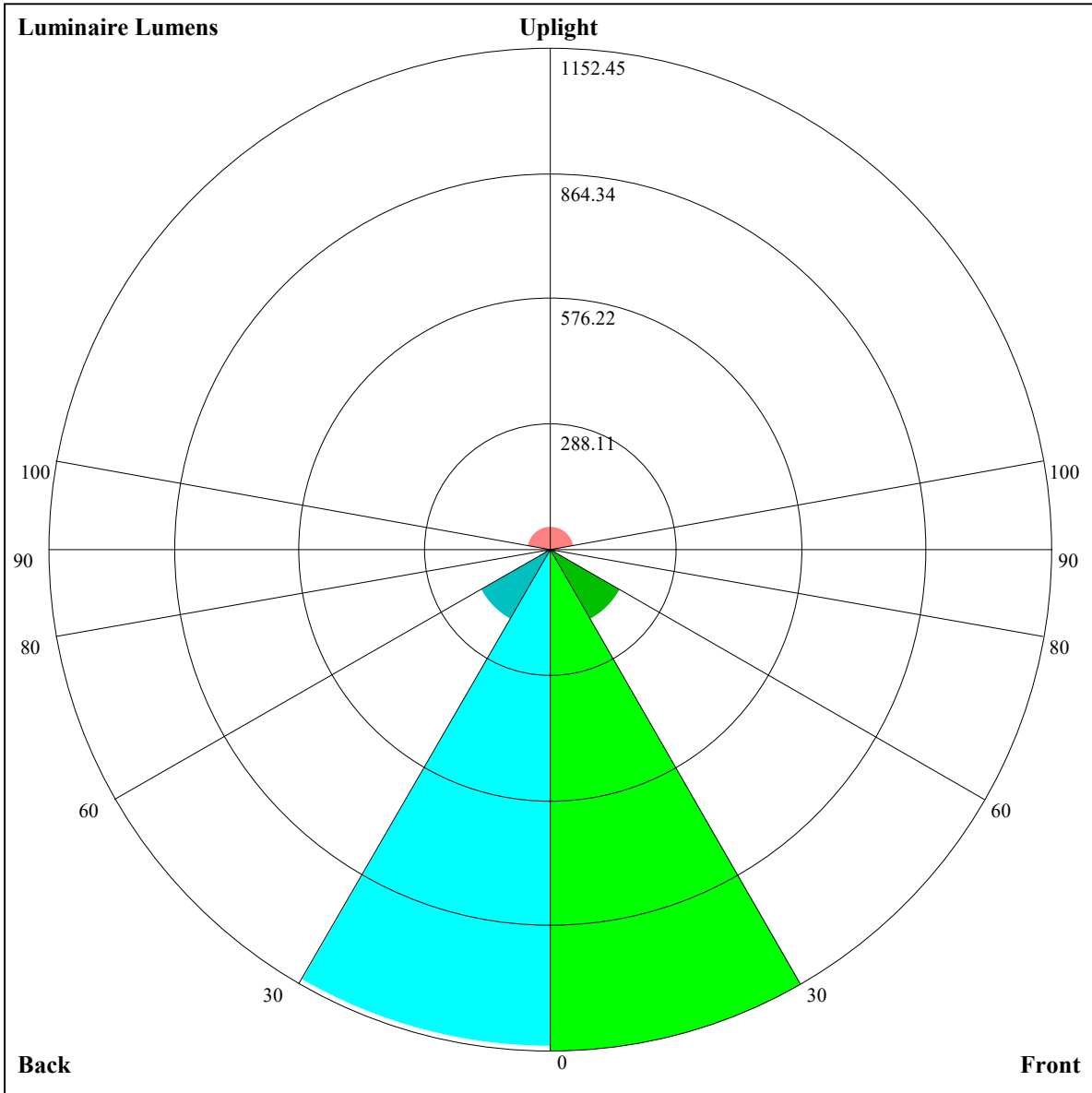
Luminance Limiting Curve





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	1.01	1.01	1.01	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	0.79	0.77	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.70	0.69
7	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.67
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	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	0.67	0.63	0.61	0.66	0.63	0.61	0.60





Luminaire Lumens:

FL=1152.45,FM=187.3,FH=12.31,FVH=6.03

BL=1141.78,BM=184.79,BH=13.79,BVH=6.25

UL=11.34,UH=53.96

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	7655.04	7650.64	7643.48	7618.70	7577.96	7507.49	7351.13	7177.15	6943.71
90.0	7653.39	7652.29	7639.08	7631.92	7610.45	7572.46	7509.69	7394.07	7204.13
180.0	7655.04	7669.36	7669.36	7654.49	7593.38	7506.39	7334.06	7065.39	6840.21
270.0	7653.39	7638.52	7593.38	7499.78	7368.75	7161.74	6933.80	6607.32	6238.44
360.0	7655.04	7650.64	7643.48	7618.70	7577.96	7507.49	7351.13	7177.15	6943.71
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6594.66	6273.68	5922.42	5481.97	4994.72	4534.45	4001.50	3487.82	3071.60
90.0	6943.16	6663.48	6290.74	5929.02	5495.73	5029.40	4587.30	4078.03	3574.26
180.0	6534.09	6066.66	5738.53	5325.06	4836.15	4315.87	3846.79	3338.07	2877.25
270.0	5871.21	5408.19	4904.42	4432.04	3960.21	3400.28	2986.81	2606.92	2236.39
360.0	6594.66	6273.68	5922.42	5481.97	4994.72	4534.45	4001.50	3487.82	3071.60
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2656.47	2330.54	2014.51	1755.75	1571.31	1421.01	1281.71	1205.18	1150.13
90.0	3146.47	2762.73	2346.50	2065.17	1831.18	1620.86	1452.94	1340.07	1250.33
180.0	2518.83	2170.87	1912.11	1674.82	1490.93	1369.80	1268.50	1195.27	1150.13
270.0	1928.08	1704.55	1506.34	1358.24	1262.99	1190.32	1146.27	1096.28	1076.96
360.0	2656.47	2330.54	2014.51	1755.75	1571.31	1421.01	1281.71	1205.18	1150.13
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1100.03	1068.09	1040.02	1003.13	935.96	856.68	755.92	661.23	550.01
90.0	1185.36	1142.42	1107.18	1078.55	1048.27	995.97	927.70	835.21	729.50
180.0	1095.51	1081.97	1053.50	1009.29	942.51	836.31	741.94	642.23	513.57
270.0	1047.83	1021.41	962.66	896.70	817.31	704.34	607.82	506.68	403.45
360.0	1100.03	1068.09	1040.02	1003.13	935.96	856.68	755.92	661.23	550.01
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	435.50	333.64	285.74	141.33	78.84	40.52	26.10	21.25	16.85
90.0	630.95	530.74	401.36	310.52	279.69	142.98	68.60	38.26	30.39
180.0	411.00	316.46	218.96	132.69	73.00	36.34	28.02	22.08	16.02
270.0	281.34	197.87	126.52	55.00	28.96	23.45	18.28	13.60	13.10
360.0	435.50	333.64	285.74	141.33	78.84	40.52	26.10	21.25	16.85
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	13.05	12.61	12.39	12.17	12.00	11.84	11.73	11.62	11.56
90.0	23.12	17.29	13.05	12.77	12.44	12.33	12.17	12.06	11.95
180.0	13.38	13.16	12.94	12.33	12.17	12.11	12.06	12.06	12.00
270.0	12.83	12.61	12.44	12.28	12.17	12.00	11.89	11.78	11.67
360.0	13.05	12.61	12.39	12.17	12.00	11.84	11.73	11.62	11.56
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.51	11.45	11.40	11.29	11.23	11.23	11.18	11.12	11.07
90.0	11.89	11.84	11.73	11.67	11.62	11.56	11.56	11.51	11.45
180.0	11.95	11.89	11.84	11.78	11.73	11.73	11.62	11.51	11.45
270.0	11.56	11.45	11.40	11.29	11.29	11.23	11.18	11.07	11.01
360.0	11.51	11.45	11.40	11.29	11.23	11.23	11.18	11.12	11.07
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.01	10.96	10.90	10.90	10.85	10.79	10.74	10.74	10.79
90.0	11.34	11.23	11.18	11.12	11.12	11.07	11.01	10.96	10.96
180.0	11.34	11.29	11.23	11.18	11.18	11.18	12.77	16.41	17.56
270.0	11.01	10.96	10.96	10.90	10.90	11.01	12.99	14.20	14.20
360.0	11.01	10.96	10.90	10.90	10.85	10.79	10.74	10.74	10.79

Nata 3-1546-A3

Intensity data(cd)

C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.01	11.01	11.01	10.90	10.90	10.90	10.85	10.79	10.74
90.0	11.89	13.32	14.20	13.71	13.65	13.76	13.43	13.27	13.27
180.0	19.55	19.77	19.32	20.04	19.05	18.83	17.45	15.53	14.31
270.0	14.81	14.65	14.48	14.87	14.59	14.42	14.31	14.09	13.49
360.0	11.01	11.01	11.01	10.90	10.90	10.90	10.85	10.79	10.74
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.74	10.74	10.68	10.63	10.63	10.41	10.41	10.41	10.35
90.0	12.94	12.50	11.95	11.51	11.12	11.01	10.90	10.52	10.46
180.0	13.76	13.54	13.10	11.45	11.01	10.90	10.85	10.41	10.41
270.0	13.05	12.00	11.01	10.96	10.52	10.41	10.41	10.41	10.35
360.0	10.74	10.74	10.68	10.63	10.63	10.41	10.41	10.41	10.35
C/ γ (°)	90.0								
0.0	10.35								
90.0	10.46								
180.0	10.35								
270.0	10.41								
360.0	10.35								