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## Nata

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LumCAT: 3-1699-N  
Luminaire: 92.70.045.00+92.70.089.00  
Report No: NATA0100  
Test No: GC2018070212  
LampCAT: NICHIA NFCWD096B-V3  
Lamp flux(lm): 2246.0  
Number of Lamps: 1  
Length(mm): 79  
Phm Type: C

Voltage(V): 33.9000  
Current(A): 0.5000  
Power (W): 16.9500  
PF: 0.0000  
Ballast type: DC  
Width(mm): 79  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 1770.93  
Efficiency(%): 78.85%  
Lumens(lm)/Power(W): 104.48  
Central intensity(cd): 7693.719  
Maximum intensity(cd): 7693.719  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=22.5  
                                  [C90/270]Total=22.5  
Field angle(10%Imax): [C0/180]Total=45.0  
                                  [C90/270]Total=45.0  
Maximum s/h(1/2): C0\_180=0.38 C90\_270=0.38  
Maximum s/h(1/4): C0\_180=0.38 C90\_270=0.38  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 80.82%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 95.709%

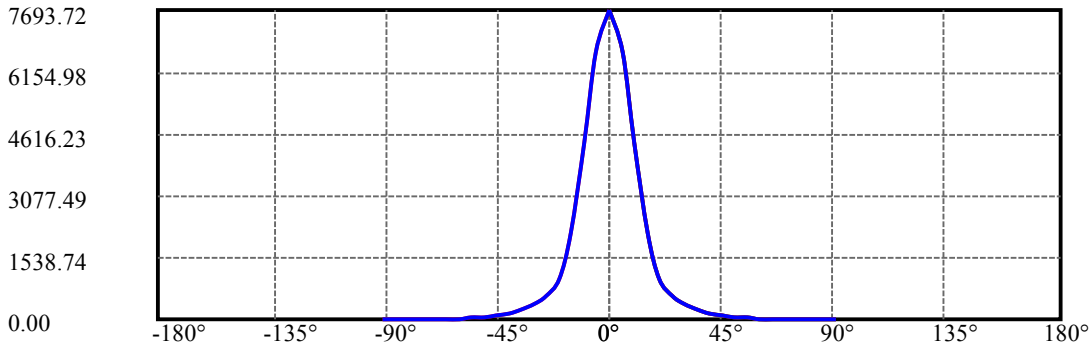
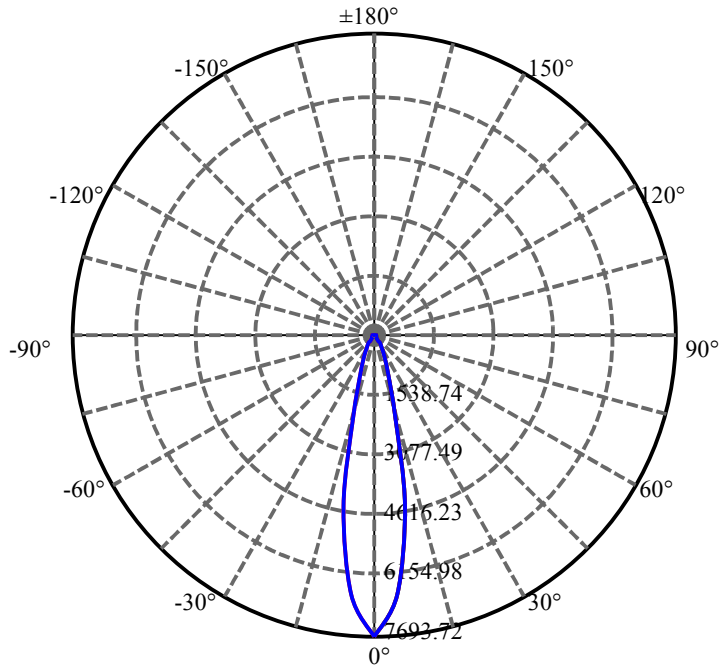
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7693.719	46.010	46.01	2.049%	2.598%
5.0	6634.021	316.929	362.939	14.111%	20.494%
10.0	4416.693	420.394	783.334	18.717%	44.233%
15.0	2161.996	306.719	1090.052	13.656%	61.553%
20.0	979.777	183.683	1273.735	8.178%	71.925%
25.0	558.465	129.370	1403.105	5.760%	79.230%
30.0	379.745	104.076	1507.181	4.634%	85.107%
35.0	262.385	82.494	1589.675	3.673%	89.765%
40.0	165.988	58.484	1648.158	2.604%	93.067%
45.0	101.235	39.238	1687.396	1.747%	95.283%
50.0	60.934	25.586	1712.982	1.139%	96.728%
55.0	33.984	15.259	1728.241	.679%	97.589%
60.0	19.228	9.128	1737.369	.406%	98.105%
65.0	15.258	7.580	1744.948	.337%	98.533%
70.0	13.606	7.008	1751.956	.312%	98.929%
75.0	12.126	6.420	1758.377	.286%	99.291%
80.0	10.557	5.699	1764.076	.254%	99.613%
85.0	8.837	4.825	1768.901	.215%	99.885%
90.0	7.405	2.030	1770.93	.090%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1507.18	67.11%	85.11%
0-40	1648.16	73.38%	93.07%
0-60	1737.37	77.35%	98.10%
0-90	1768.90	78.76%	99.89%
0-120	1768.90	78.76%	99.89%
0-180	1770.93	78.85%	100.00%
60-90	40.66	1.81%	2.30%
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%
0-25.66	1416.74	63.08%	80.00%

ZONAL LUMEN SUMMARY

0-10	783.33
10-20	490.40
20-30	233.45
30-40	140.98
40-50	64.82
50-60	24.39
60-70	14.59
70-80	12.12
80-90	4.83
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



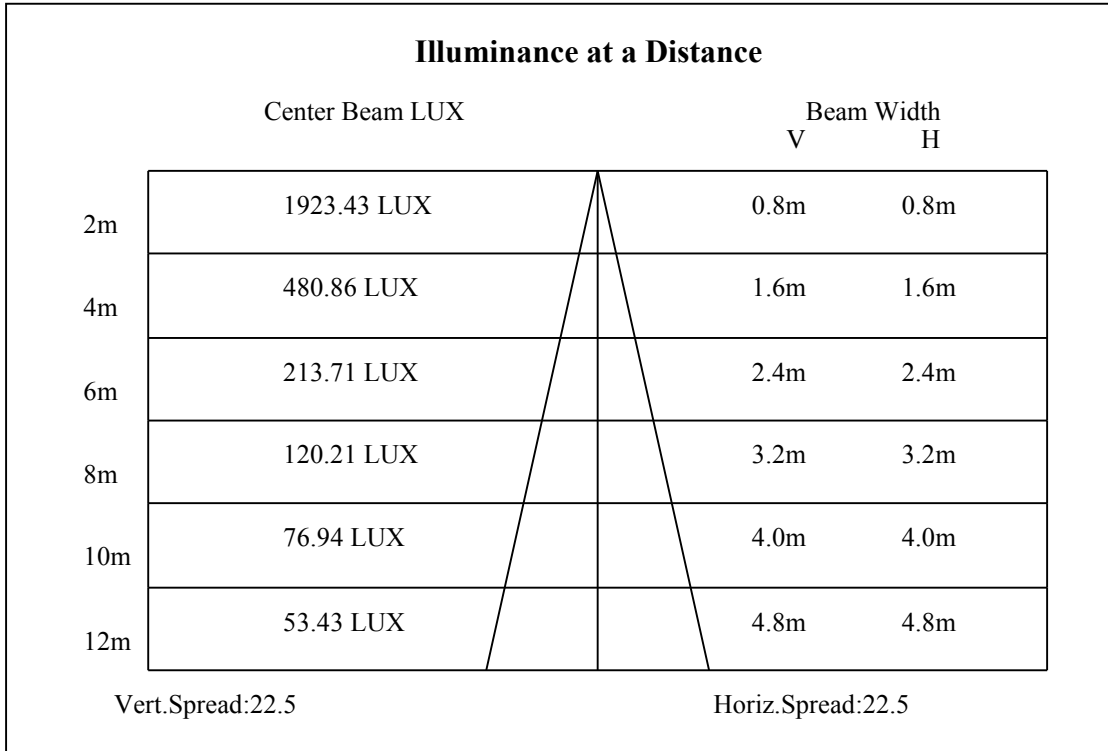
C0(Max): —————

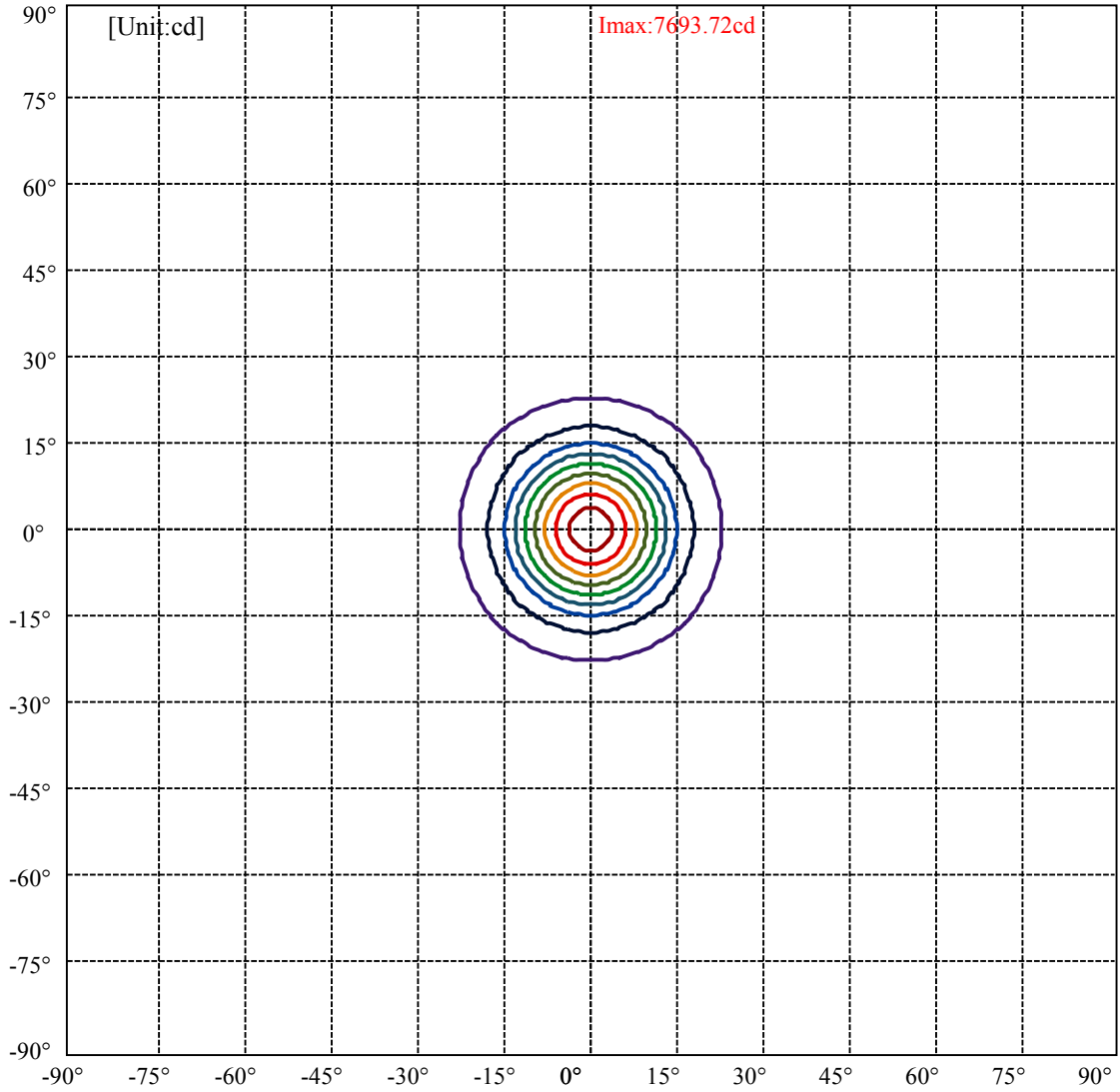
C0/C180: —————

C90/C270: —————

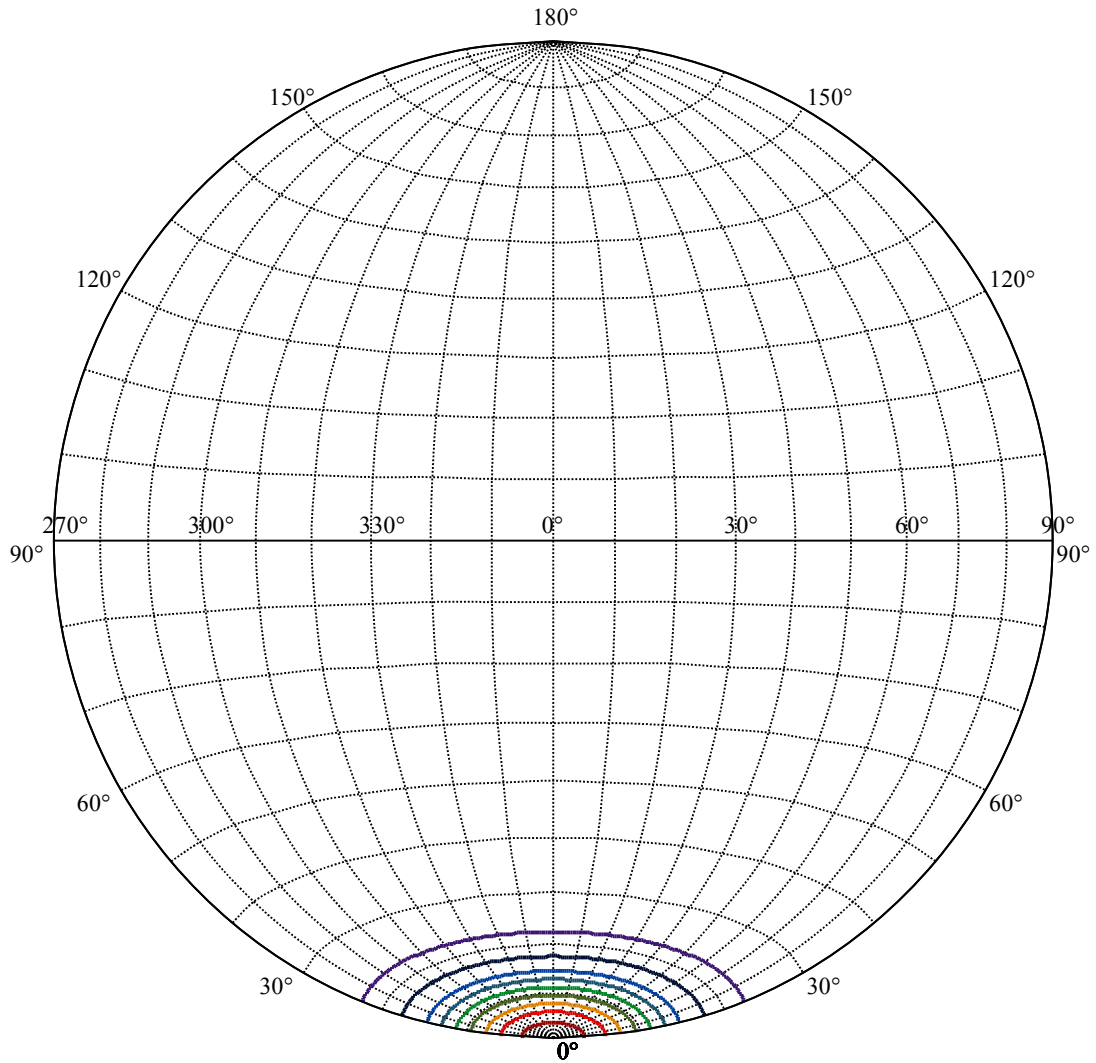
Field angle(10%Imax):C0/180Left:22.5 Right:22.5  
:C90/270Left:22.5 Right:22.5

Beam Angle(50%Imax):C0/180Left:11.3 Right:11.3  
:C90/270Left:11.3 Right:11.3





(10%Imax) 769.372	—
(20%Imax) 1538.74	—
(30%Imax) 2308.12	—
(40%Imax) 3077.49	—
(50%Imax) 3846.86	—
(60%Imax) 4616.23	—
(70%Imax) 5385.6	—
(80%Imax) 6154.98	—
(90%Imax) 6924.35	—



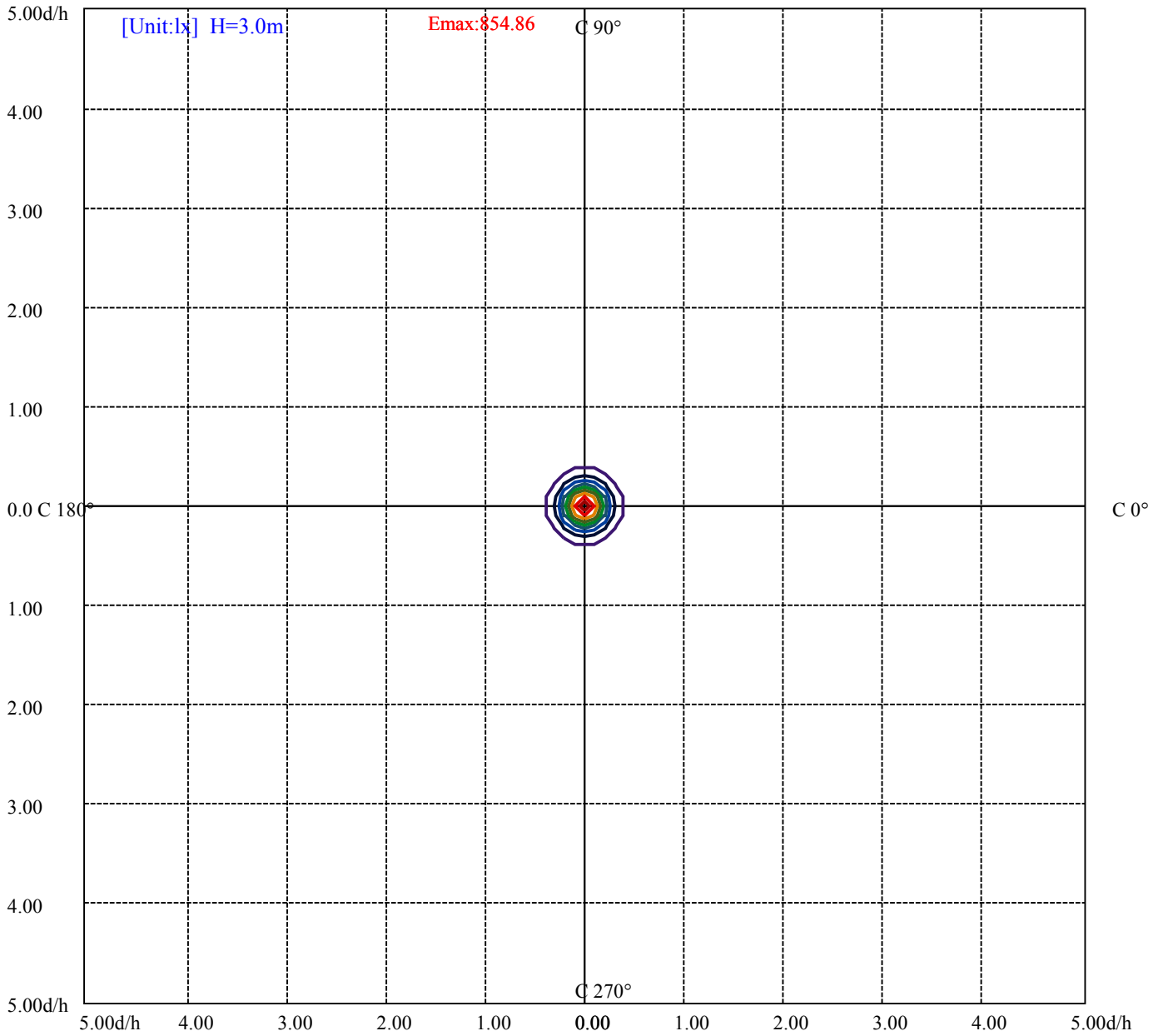
House

[Unit:cd]

Road

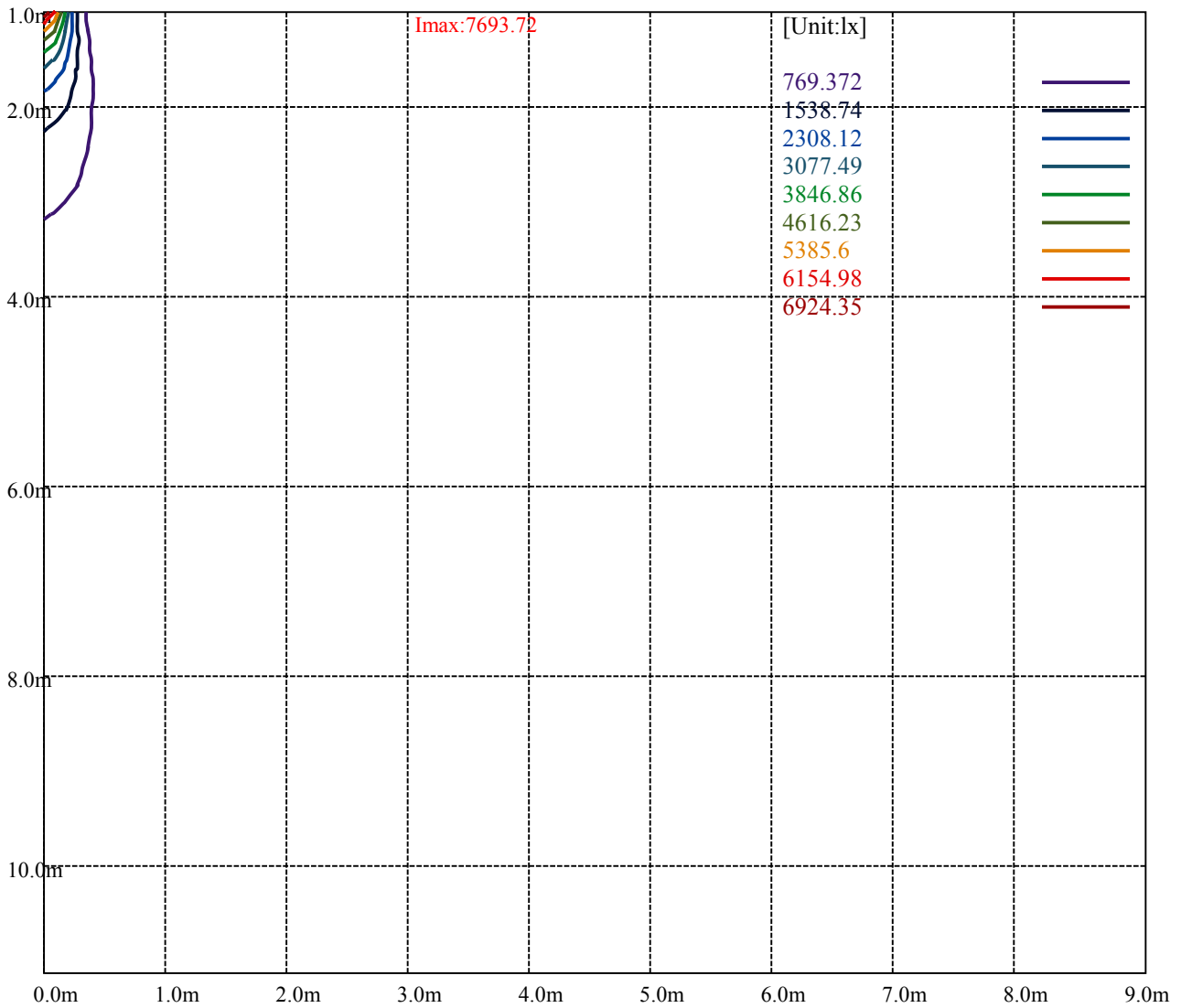
**Imax:7693.72**

(10%Imax) 769.372	—
(20%Imax) 1538.74	—
(30%Imax) 2308.12	—
(40%Imax) 3077.49	—
(50%Imax) 3846.86	—
(60%Imax) 4616.23	—
(70%Imax) 5385.6	—
(80%Imax) 6154.98	—
(90%Imax) 6924.35	—



- (10%Emax) 85.48544
- (20%Emax) 170.9711
- (30%Emax) 256.4567
- (40%Emax) 341.9422
- (50%Emax) 427.4267
- (60%Emax) 512.9122
- (70%Emax) 598.3978
- (80%Emax) 683.8834
- (90%Emax) 769.3689





Luminance Table

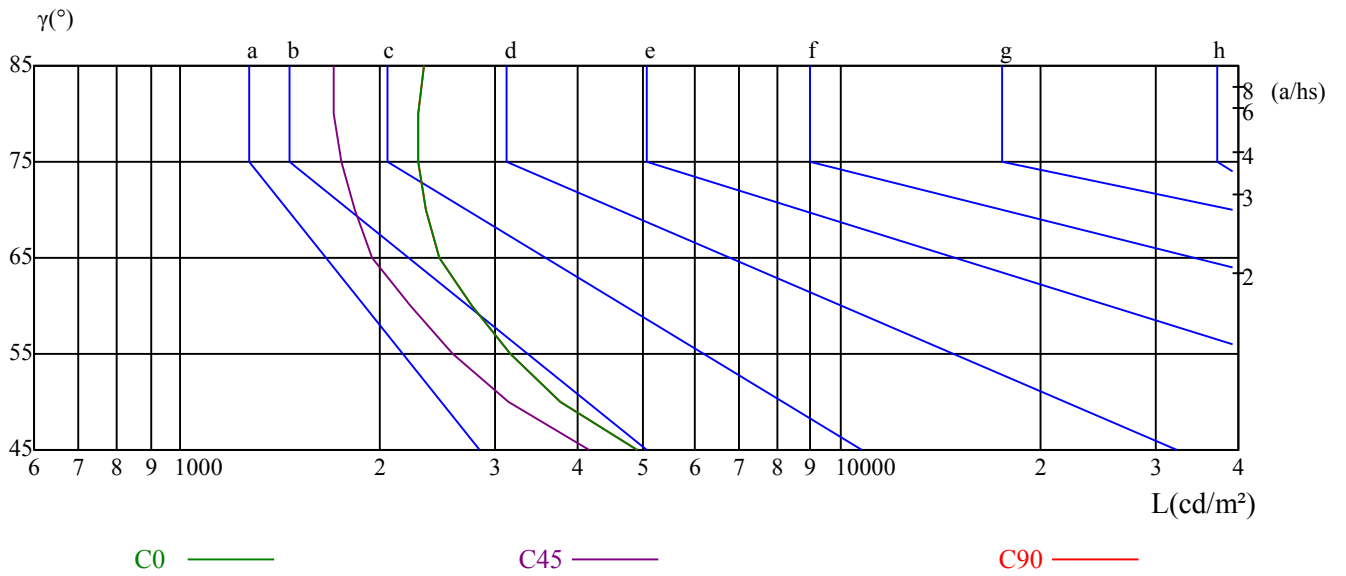
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4917	3770	3151	2759	2462	2351	2291	2290	2335
C45	4161	3142	2586	2228	1955	1832	1750	1711	1701
C90	4917	3770	3151	2759	2462	2351	2291	2290	2335

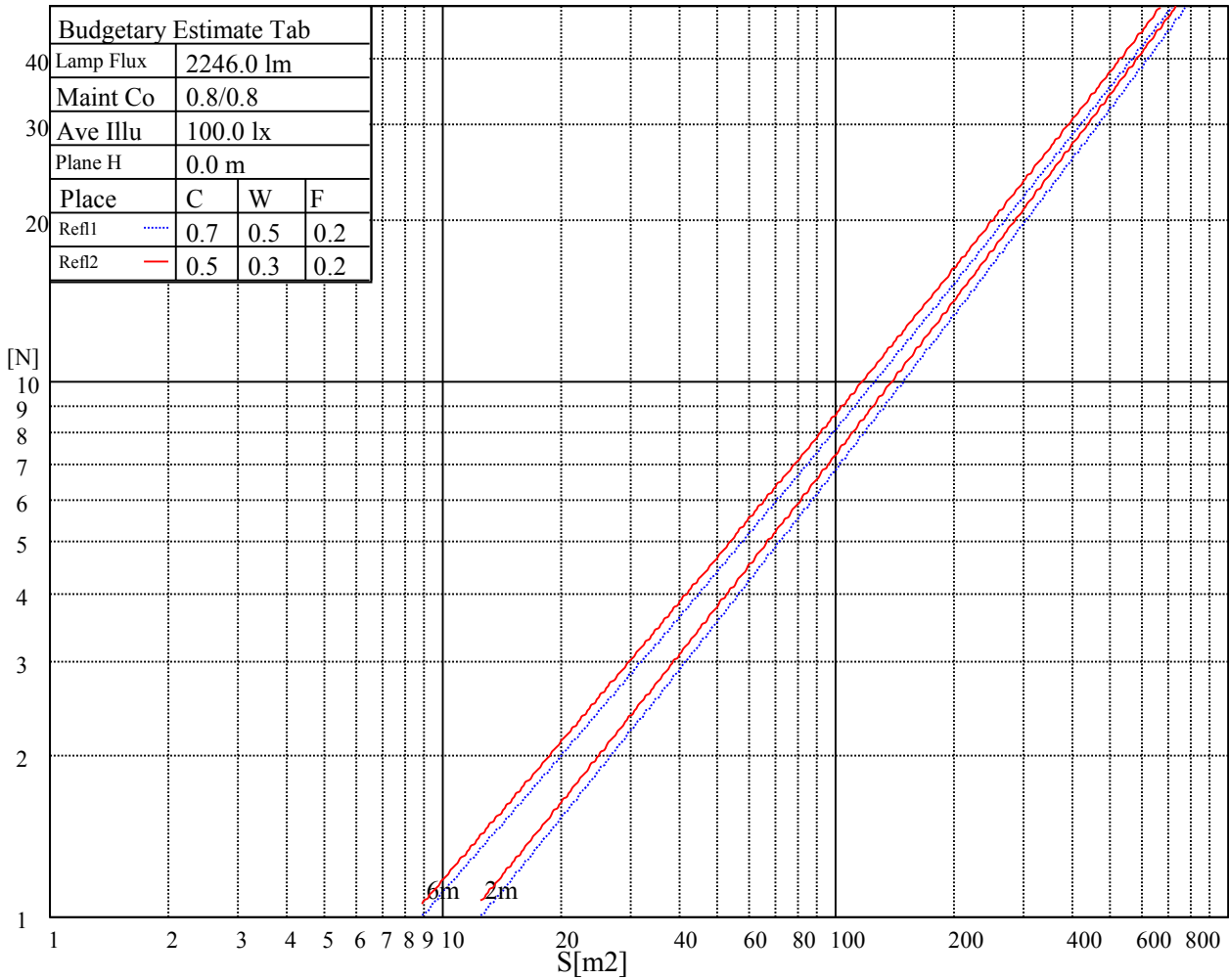
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6594	6594	6594	8981	8981	8981	23219	23219	23219

Glare Table

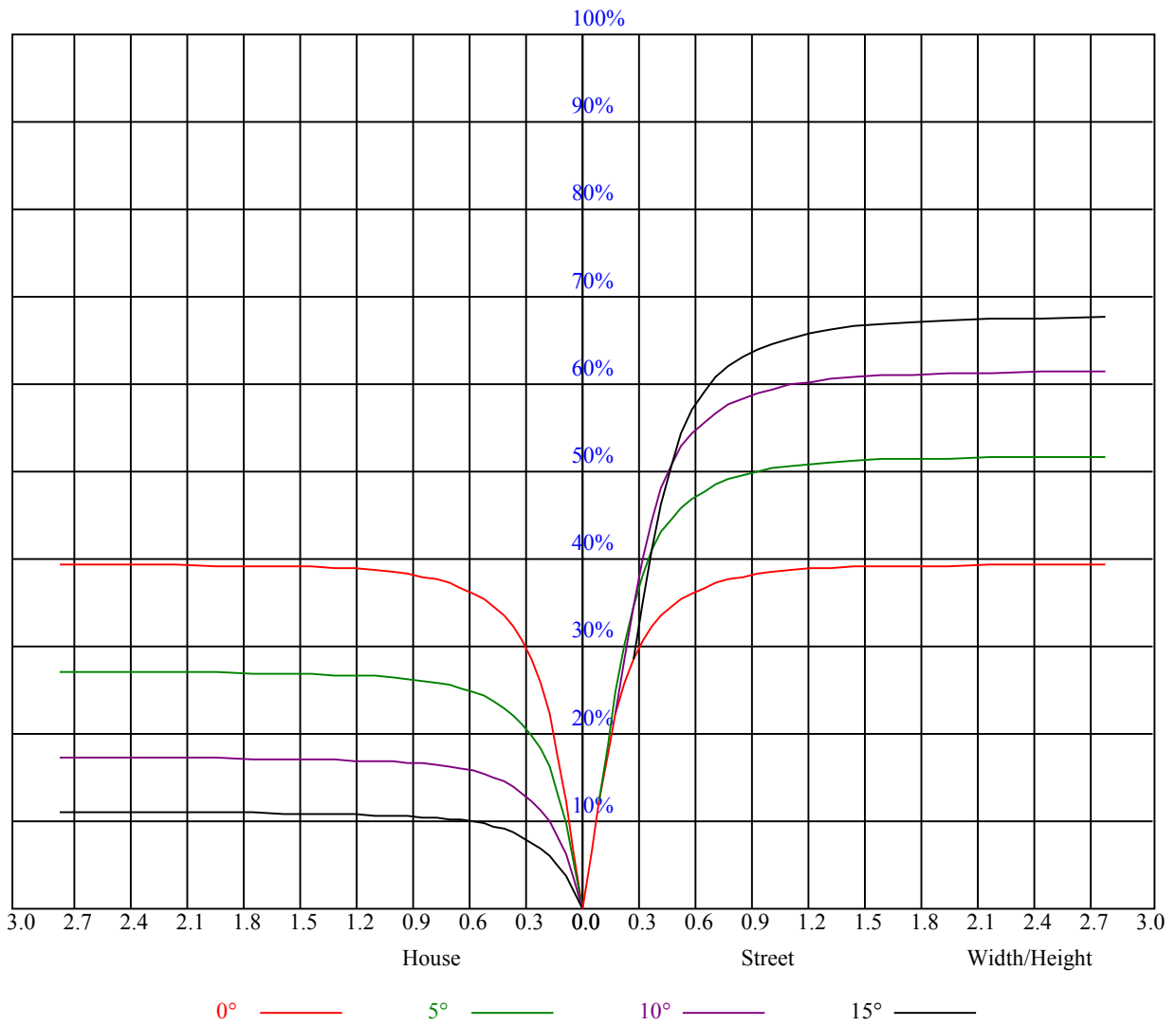
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.82	0.82	0.82	0.81
1	0.88	0.86	0.83	0.86	0.84	0.82	0.83	0.81	0.80	0.80	0.78	0.77	0.77	0.76	0.75	0.73
2	0.83	0.80	0.77	0.82	0.79	0.76	0.79	0.77	0.75	0.77	0.75	0.73	0.75	0.73	0.72	0.70
3	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.72	0.70	0.69	0.67
4	0.76	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.70	0.68	0.66	0.65
5	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.69	0.67	0.64	0.68	0.66	0.64	0.63
6	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.66	0.64	0.62	0.61
7	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.59
8	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
9	0.64	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56
10	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.57	0.55	0.60	0.57	0.55	0.54



Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	7695.78	6466.37	4229.98	2126.83	939.26	535.70	378.79	283.54	156.20
45.0	7702.39	6647.51	4565.83	2235.84	975.05	543.96	372.18	283.54	160.60
90.0	7683.12	6410.77	3992.69	1947.34	882.72	517.36	357.37	234.60	155.81
135.0	7693.58	6878.20	4767.88	2385.04	1098.93	602.87	406.87	282.99	181.30
180.0	7695.78	6808.82	4525.09	2234.19	1046.51	601.77	409.51	262.45	180.14
225.0	7702.39	6570.43	4358.82	2085.54	934.69	561.74	376.15	247.09	168.20
270.0	7683.12	6841.86	4832.30	2463.22	1085.16	594.61	404.66	279.14	175.46
315.0	7693.58	6448.21	4060.96	1817.96	875.89	509.71	332.43	225.73	150.19
360.0	7695.78	6466.37	4229.98	2126.83	939.26	535.70	378.79	283.54	156.20

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	96.29	58.14	32.59	18.61	15.09	13.43	11.95	10.52	8.64
45.0	99.60	60.34	33.75	19.66	15.25	13.54	12.22	10.74	9.03
90.0	94.97	56.32	30.78	18.33	15.42	13.82	12.28	10.79	8.97
135.0	110.39	69.10	37.16	20.15	15.58	13.82	12.28	10.74	9.08
180.0	107.80	62.82	35.13	19.32	15.31	13.71	12.11	10.46	8.86
225.0	101.52	59.57	31.66	18.66	15.03	13.38	11.95	10.35	8.59
270.0	108.41	64.75	38.98	20.98	15.64	13.93	12.39	10.74	8.92
315.0	90.90	56.43	31.82	18.11	14.76	13.21	11.84	10.13	8.59
360.0	96.29	58.14	32.59	18.61	15.09	13.43	11.95	10.52	8.64

C/γ(°)	90.0
0.0	7.38
45.0	7.38
90.0	7.38
135.0	7.43
180.0	7.38
225.0	7.38
270.0	7.49
315.0	7.43
360.0	7.38