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NATA

LumCAT: 2-1611-A
Luminaire: 92.70.046.00+92.70.147.00
Report No: NATA0100
Test No: GC2018121304
LampCAT: CREE CXA1512
Lamp flux(lm): 2030.0
Number of Lamps: 1
Length(mm): 75
Phm Type: C

Voltage(V): 36.4000
Current(A): 0.4100
Power (W): 14.9240
PF: 1.0000
Ballast type: DC
Width(mm): 75
Height(mm): 0

Photometric Results

Lumens(lm): 1665.60
Efficiency(%): 82.05%
Lumens(lm)/Power(W): 112.49
Central intensity(cd): 2472.890
Maximum intensity(cd): 2472.890
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=46.5
 [C90/270]Total=46.5
Field angle(10%Imax): [C0/180]Total=76.6
 [C90/270]Total=76.6
Maximum s/h(1/2): C0_180=0.77 C90_270=0.77
Maximum s/h(1/4): C0_180=0.71 C90_270=0.71
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.538%

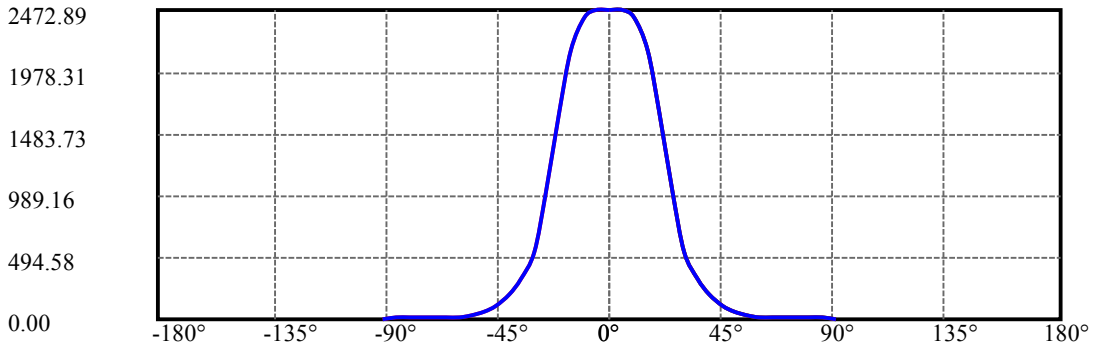
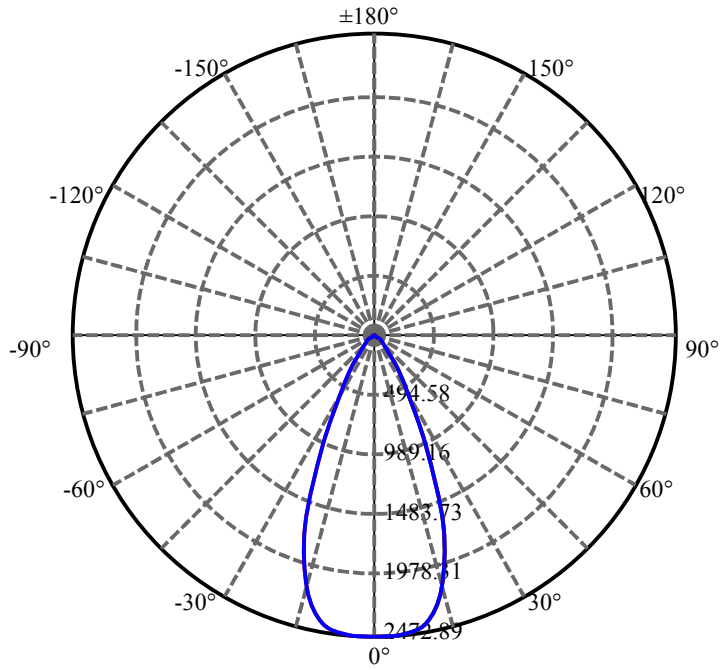
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2472.891	14.788	14.788	.728%	.888%
5.0	2466.773	117.846	132.634	5.805%	7.963%
10.0	2405.180	228.932	361.567	11.277%	21.708%
15.0	2146.570	304.530	666.097	15.002%	39.991%
20.0	1664.086	311.973	978.07	15.368%	58.722%
25.0	1006.938	233.260	1211.33	11.491%	72.726%
30.0	534.066	146.371	1357.701	7.210%	81.514%
35.0	324.759	102.104	1459.805	5.030%	87.644%
40.0	207.267	73.028	1532.832	3.597%	92.029%
45.0	111.087	43.056	1575.889	2.121%	94.614%
50.0	59.899	25.152	1601.04	1.239%	96.124%
55.0	27.668	12.423	1613.463	.612%	96.870%
60.0	15.216	7.223	1620.686	.356%	97.303%
65.0	13.774	6.843	1627.529	.337%	97.714%
70.0	14.217	7.323	1634.852	.361%	98.154%
75.0	15.778	8.354	1643.206	.412%	98.655%
80.0	19.793	10.684	1653.89	.526%	99.297%
85.0	17.852	9.748	1663.639	.480%	99.882%
90.0	7.165	1.964	1665.602	.097%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1357.70	66.88%	81.51%
0-40	1532.83	75.51%	92.03%
0-60	1620.69	79.84%	97.30%
0-90	1663.64	81.95%	99.88%
0-120	1663.64	81.95%	99.88%
0-180	1665.60	82.05%	100.00%
60-90	50.18	2.47%	3.01%
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%
0-29.14	1332.48	65.64%	80.00%

ZONAL LUMEN SUMMARY

0-10	361.57
10-20	616.50
20-30	379.63
30-40	175.13
40-50	68.21
50-60	19.65
60-70	14.17
70-80	19.04
80-90	9.75
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: —————

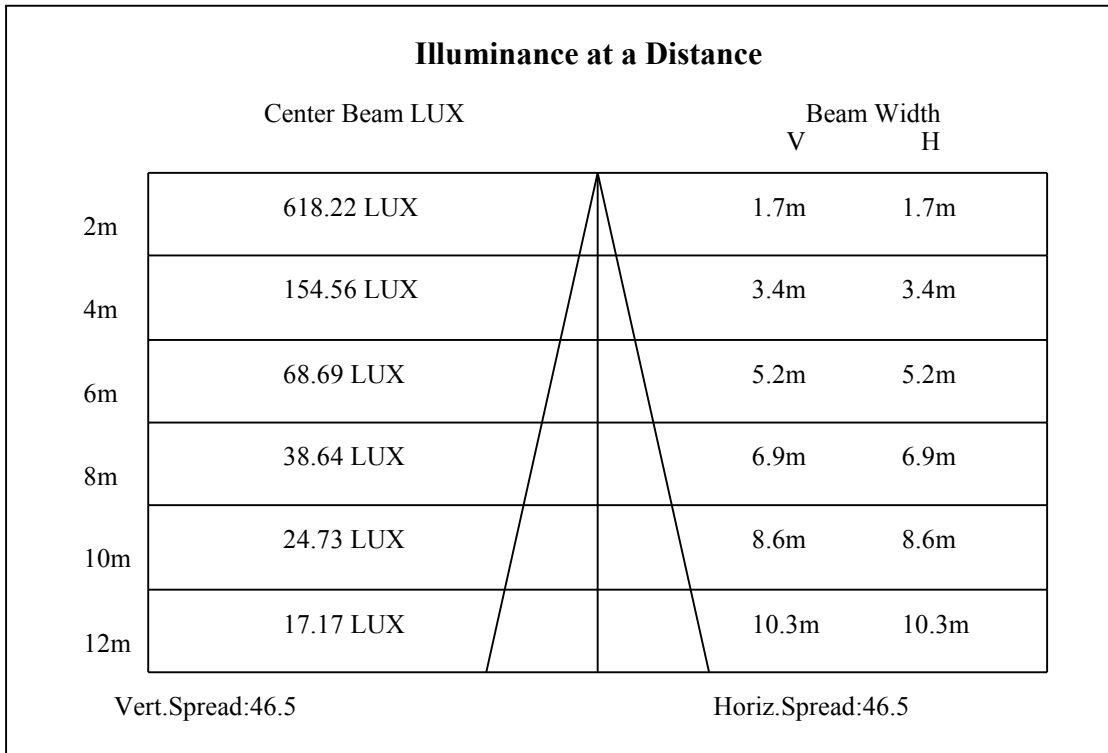
C90/C270: —————

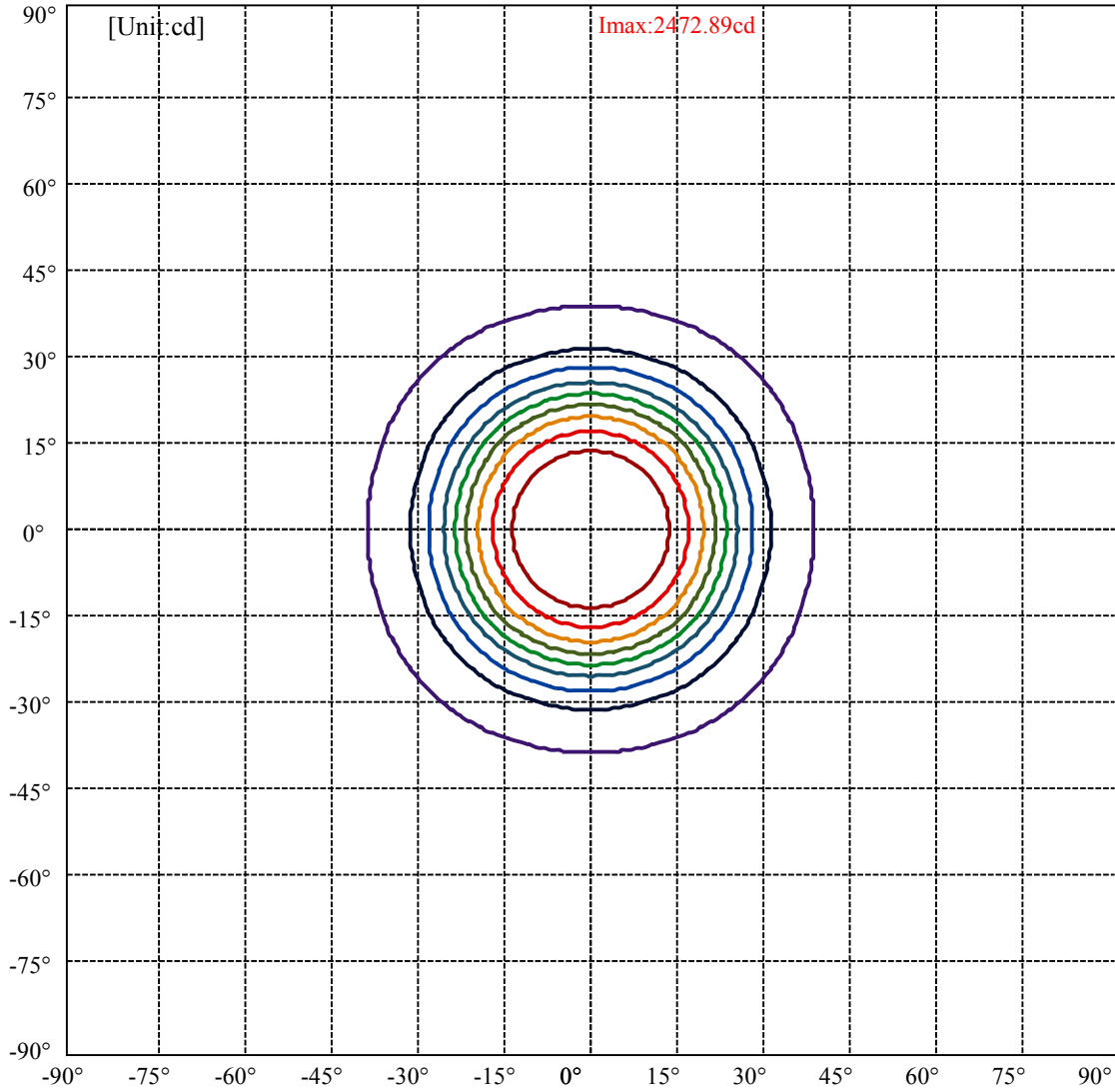
Field angle(10%Imax):C0/180Left:38.3 Right:38.3

:C90/270Left:38.3 Right:38.3

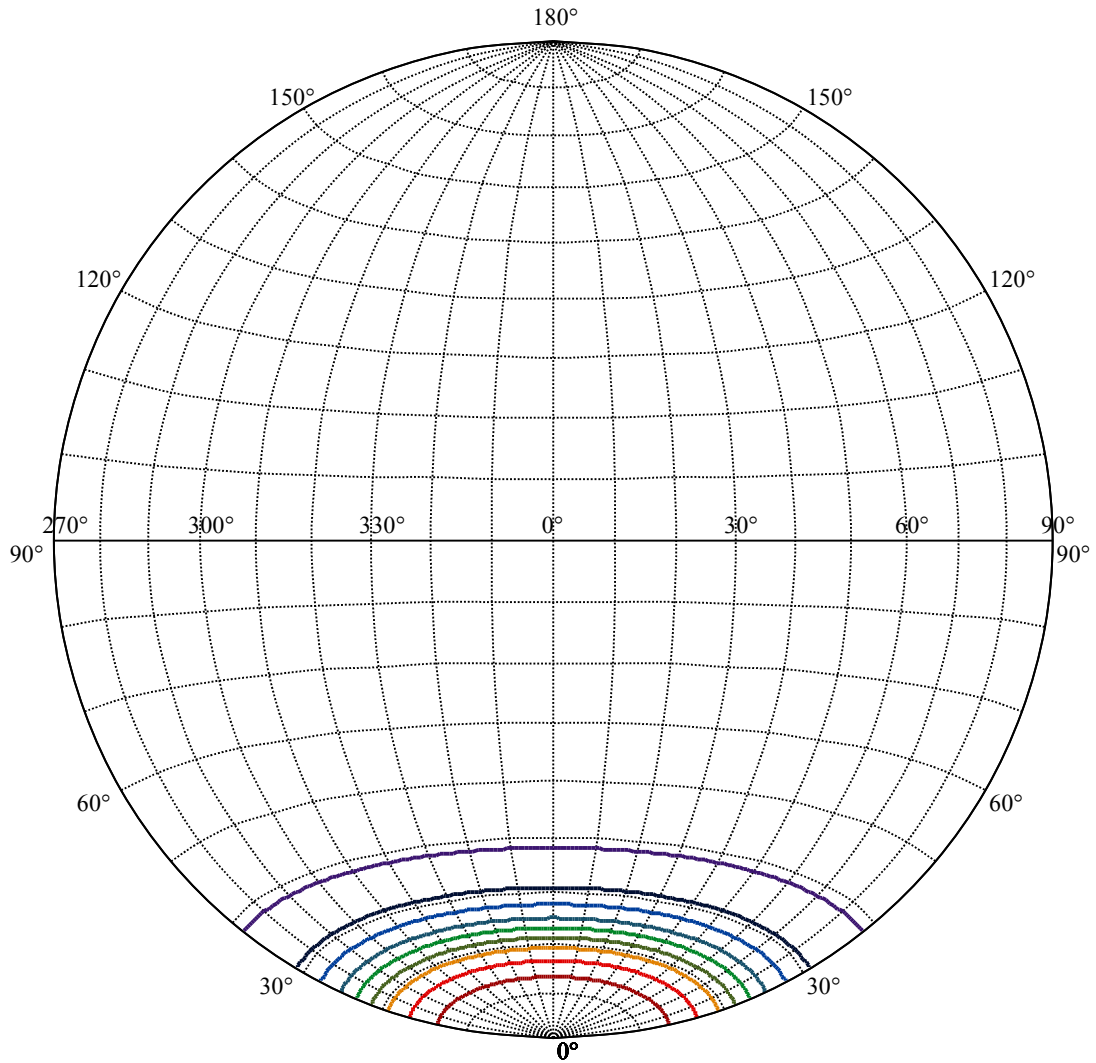
Beam Angle(50%Imax):C0/180Left:23.3 Right:23.3

:C90/270Left:23.3 Right:23.3





(10%Imax) 247.289	—
(20%Imax) 494.578	—
(30%Imax) 741.867	—
(40%Imax) 989.156	—
(50%Imax) 1236.45	—
(60%Imax) 1483.73	—
(70%Imax) 1731.02	—
(80%Imax) 1978.31	—
(90%Imax) 2225.6	—



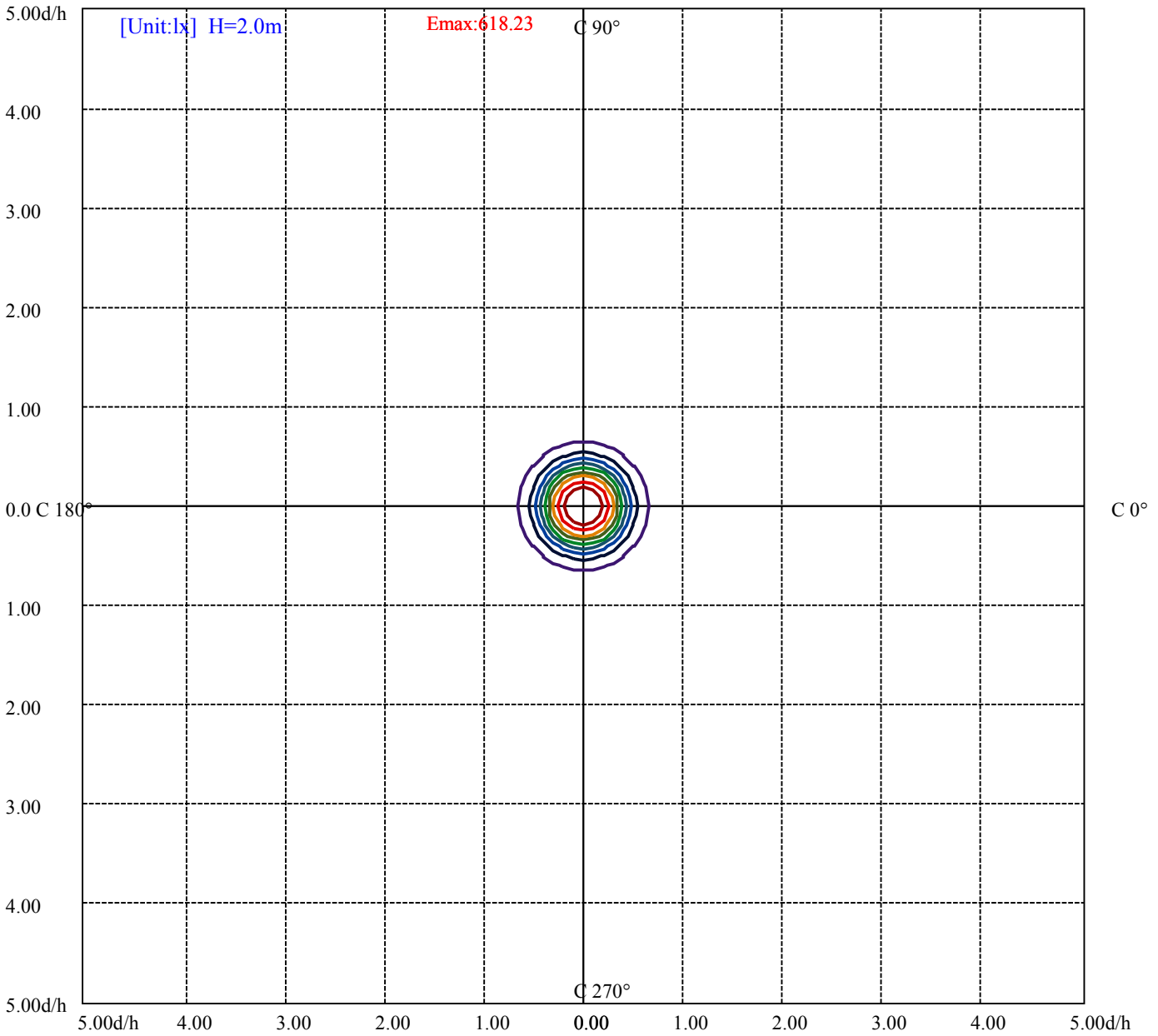
House

[Unit:cd]

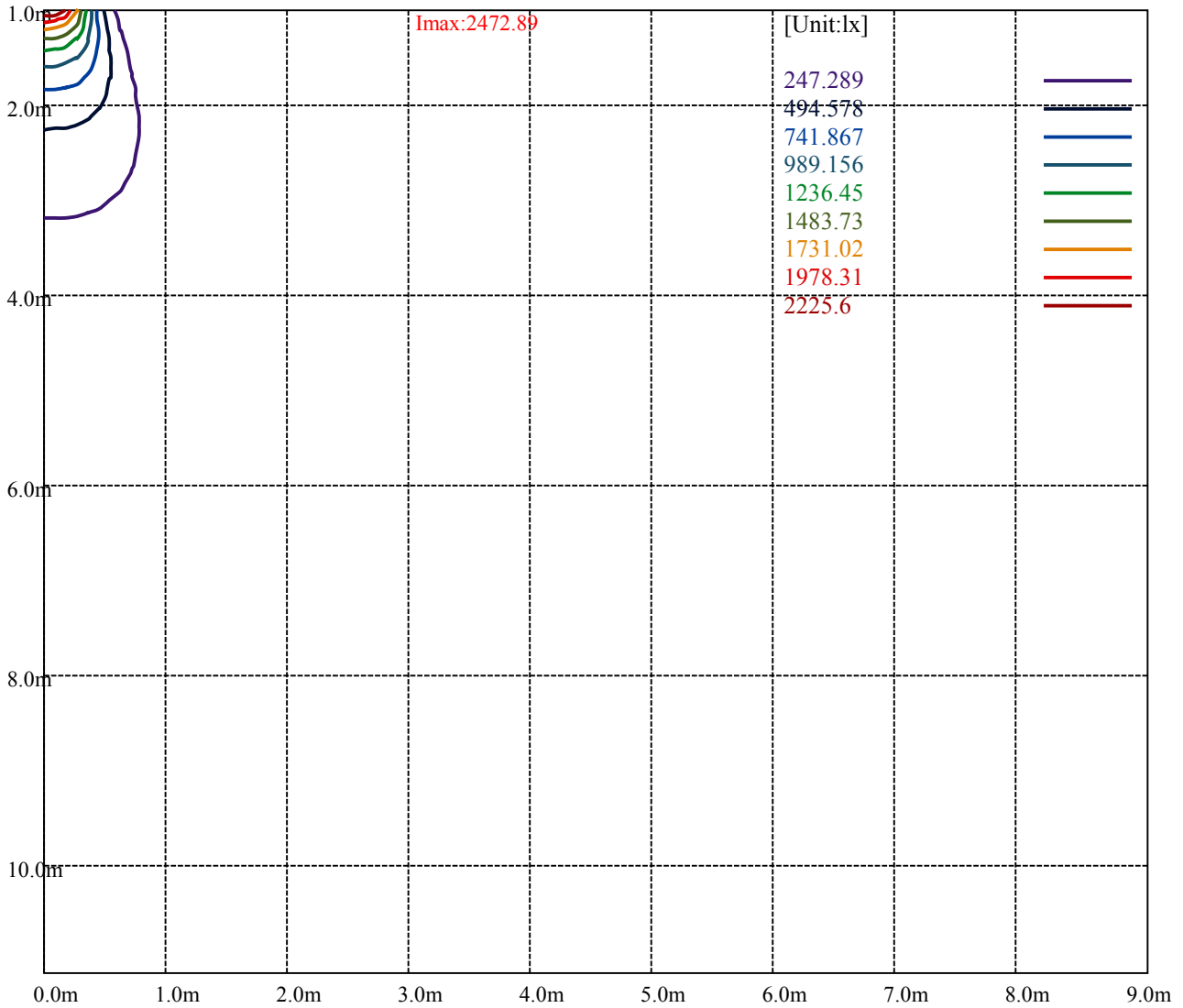
Road

Imax:2472.89

(10%Imax) 247.289	—
(20%Imax) 494.578	—
(30%Imax) 741.867	—
(40%Imax) 989.156	—
(50%Imax) 1236.45	—
(60%Imax) 1483.73	—
(70%Imax) 1731.02	—
(80%Imax) 1978.31	—
(90%Imax) 2225.6	—



(10%Emax) 61.82225	—
(20%Emax) 123.6445	—
(30%Emax) 185.4668	—
(40%Emax) 247.289	—
(50%Emax) 309.1125	—
(60%Emax) 370.9325	—
(70%Emax) 432.755	—
(80%Emax) 494.5775	—
(90%Emax) 556.4	—



Luminance Table

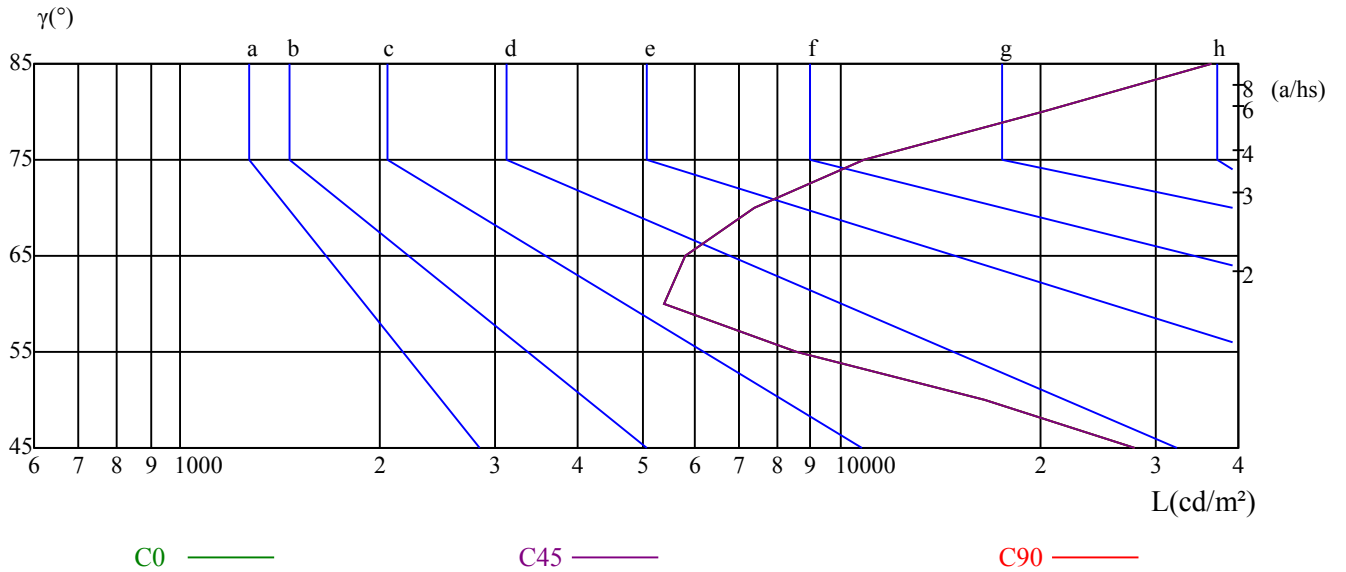
γ	45	50	55	60	65	70	75	80	85
C0	27929	16567	8576	5410	5794	7390	10838	20264	36415
C45	27929	16567	8576	5410	5794	7390	10838	20264	36415
C90	27929	16567	8576	5410	5794	7390	10838	20264	36415

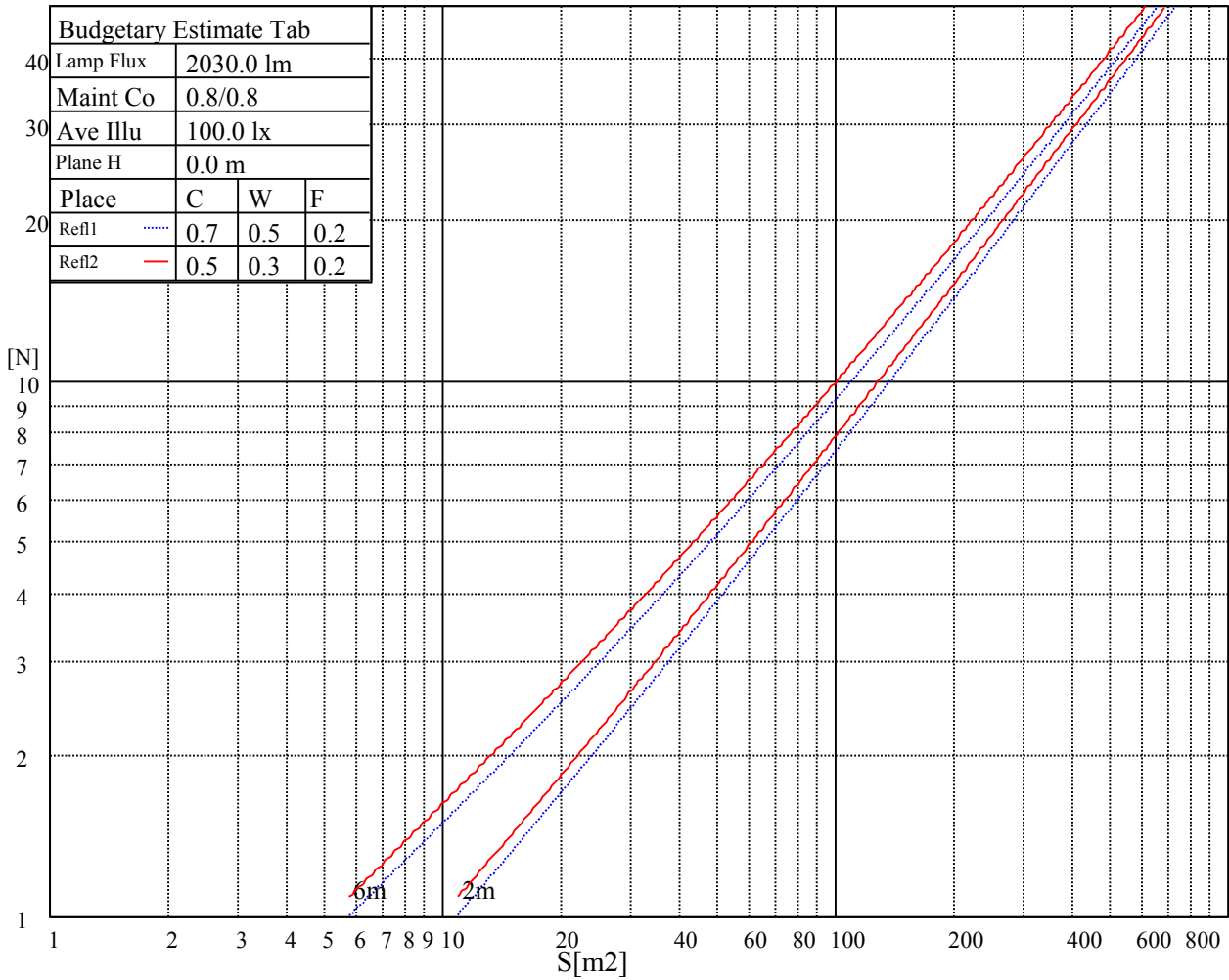
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5794	5794	5794	10838	10838	10838	36415	36415	36415

Glare Table

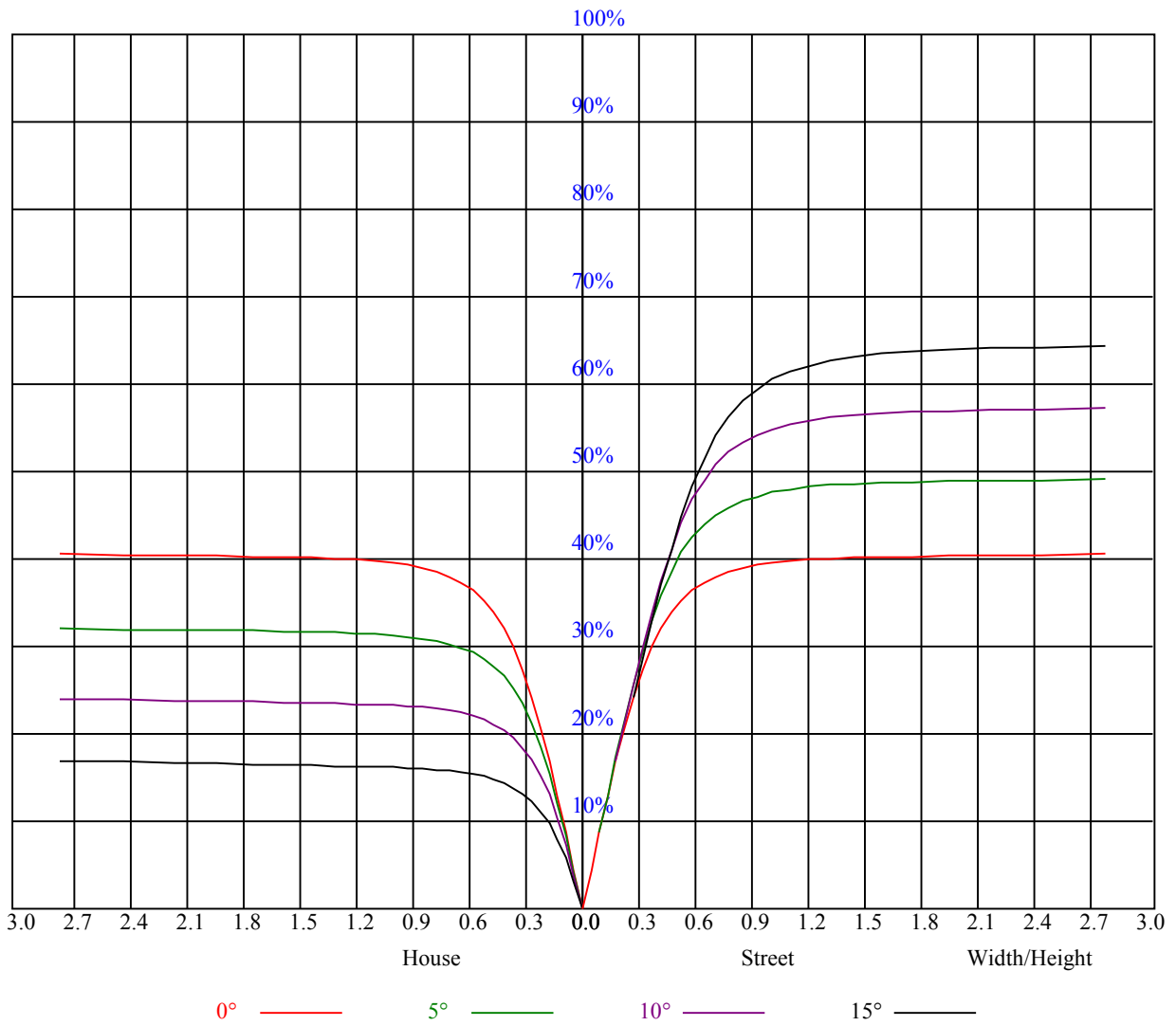
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.83
1	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.83	0.81	0.80	0.80	0.79	0.78	0.76
2	0.85	0.82	0.79	0.84	0.81	0.78	0.81	0.79	0.76	0.79	0.77	0.75	0.76	0.75	0.73	0.72
3	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.68
4	0.76	0.72	0.68	0.75	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.66	0.70	0.68	0.66	0.64
5	0.72	0.68	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.61
6	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.62	0.60	0.64	0.62	0.59	0.58
7	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56
8	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.54	0.60	0.57	0.54	0.53
9	0.60	0.55	0.53	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.56	0.52	0.50	0.55	0.52	0.50	0.49



NATA 2-1611-A

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	2470.50	2441.25	2378.25	2106.56	1600.31	925.88	496.13	311.06	190.91
45.0	2476.69	2471.63	2404.13	2108.25	1573.31	916.88	479.81	302.06	189.90
90.0	2477.81	2489.63	2390.63	2057.63	1538.44	845.66	443.31	284.79	175.28
135.0	2466.56	2501.44	2460.94	2238.19	1793.81	1112.63	624.94	354.38	223.54
180.0	2470.50	2484.56	2456.44	2226.94	1755.00	1117.41	571.39	339.86	213.81
225.0	2476.69	2469.38	2441.81	2243.81	1794.38	1109.59	597.26	351.62	228.21
270.0	2477.81	2451.38	2388.94	2175.75	1774.13	1136.25	588.38	365.63	249.86
315.0	2466.56	2424.94	2320.31	2015.44	1483.31	891.23	471.32	288.68	186.64
360.0	2470.50	2441.25	2378.25	2106.56	1600.31	925.88	496.13	311.06	190.91

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	100.24	53.78	24.24	13.67	12.26	12.26	12.99	21.60	14.91
45.0	99.28	51.36	23.23	13.73	12.83	12.88	15.13	20.14	16.99
90.0	91.01	49.22	22.78	15.75	15.36	15.64	17.21	17.61	17.89
135.0	125.44	65.76	30.66	15.98	14.57	15.53	17.55	20.25	24.47
180.0	119.53	63.79	29.03	14.40	12.49	12.99	13.89	23.18	18.34
225.0	127.01	71.04	31.95	15.41	13.44	15.08	17.49	18.34	17.49
270.0	127.91	73.35	35.16	18.79	16.31	16.48	16.82	17.78	17.21
315.0	98.27	50.91	24.30	14.01	12.94	12.88	15.13	19.46	15.53
360.0	100.24	53.78	24.24	13.67	12.26	12.26	12.99	21.60	14.91

C/ γ (°)	90.0
0.0	7.03
45.0	7.14
90.0	7.09
135.0	7.09
180.0	7.31
225.0	7.31
270.0	7.14
315.0	7.20
360.0	7.03