
Nata

LumCAT: 1437-N	
Luminaire: 92.70.044.00+92.70.147.00	
Report No: NT2018011806	Voltage(V): 34.0000
Test No: nata-0100	Current(A): 0.3500
LampCAT: NICHIA NFCWL036B-V2	Power (W): 11.9000
Lamp flux(lm): 1460.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 46	Width(mm): 46
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1150.25
Efficiency(%): 78.78%
Lumens(lm)/Power(W): 96.66
Central intensity(cd): 2412.709
Maximum intensity(cd): 2412.709
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.7
[C90/270]Total=36.7
Field angle(10%Imax): [C0/180]Total=62.5
[C90/270]Total=62.5
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 79.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.793%

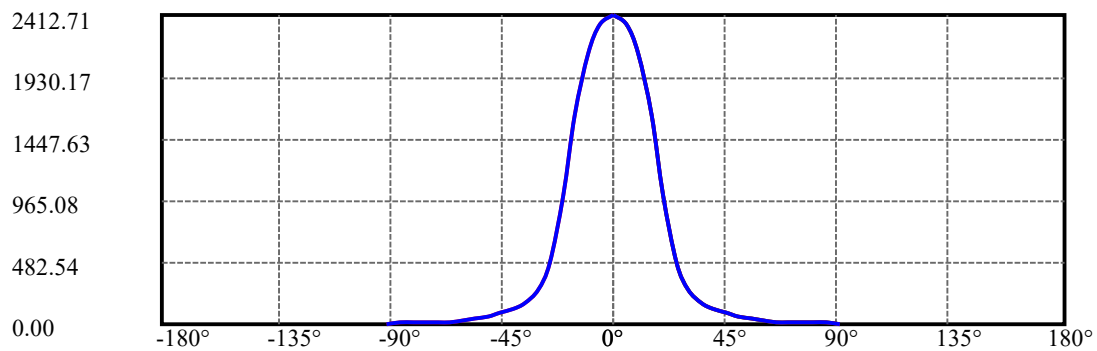
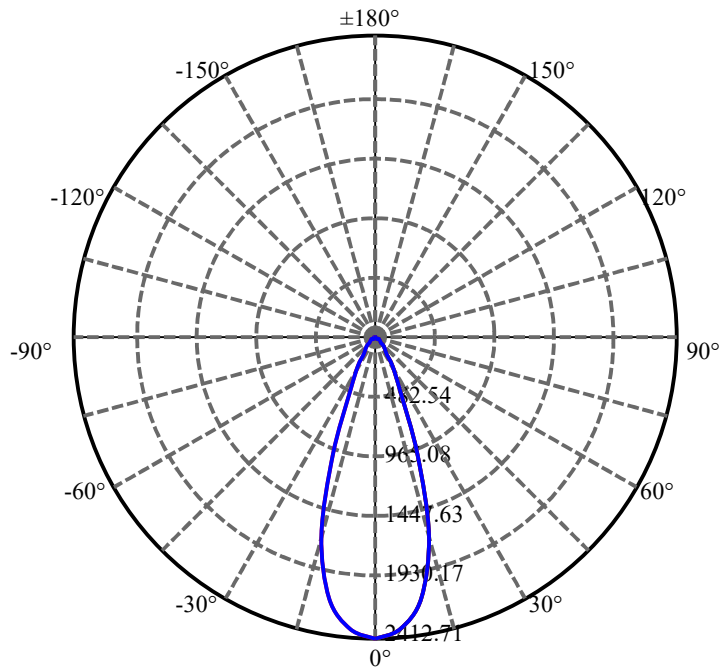
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2412.709	14.428	14.428	.988%	1.254%
5.0	2340.172	111.798	126.226	7.657%	10.974%
10.0	2115.680	201.377	327.603	13.793%	28.481%
15.0	1633.634	231.761	559.364	15.874%	48.630%
20.0	999.576	187.395	746.759	12.835%	64.921%
25.0	476.499	110.382	857.141	7.560%	74.518%
30.0	264.505	72.492	929.634	4.965%	80.820%
35.0	170.709	53.671	983.304	3.676%	85.486%
40.0	121.778	42.907	1026.211	2.939%	89.216%
45.0	85.275	33.052	1059.263	2.264%	92.090%
50.0	60.954	25.595	1084.858	1.753%	94.315%
55.0	39.888	17.910	1102.768	1.227%	95.872%
60.0	24.996	11.865	1114.633	.813%	96.903%
65.0	16.551	8.222	1122.856	.563%	97.618%
70.0	13.874	7.146	1130.002	.489%	98.239%
75.0	12.264	6.493	1136.495	.445%	98.804%
80.0	11.445	6.178	1142.673	.423%	99.341%
85.0	11.115	6.069	1148.742	.416%	99.869%
90.0	5.513	1.511	1150.253	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	929.63	63.67%	80.82%
0-40	1026.21	70.29%	89.22%
0-60	1114.63	76.34%	96.90%
0-90	1148.74	78.68%	99.87%
0-120	1148.74	78.68%	99.87%
0-180	1150.25	78.78%	100.00%
60-90	45.97	3.15%	4.00%
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%
0-29.35	920.20	63.03%	80.00%

ZONAL LUMEN SUMMARY

0-10	327.60
10-20	419.16
20-30	182.87
30-40	96.58
40-50	58.65
50-60	29.78
60-70	15.37
70-80	12.67
80-90	6.07
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:

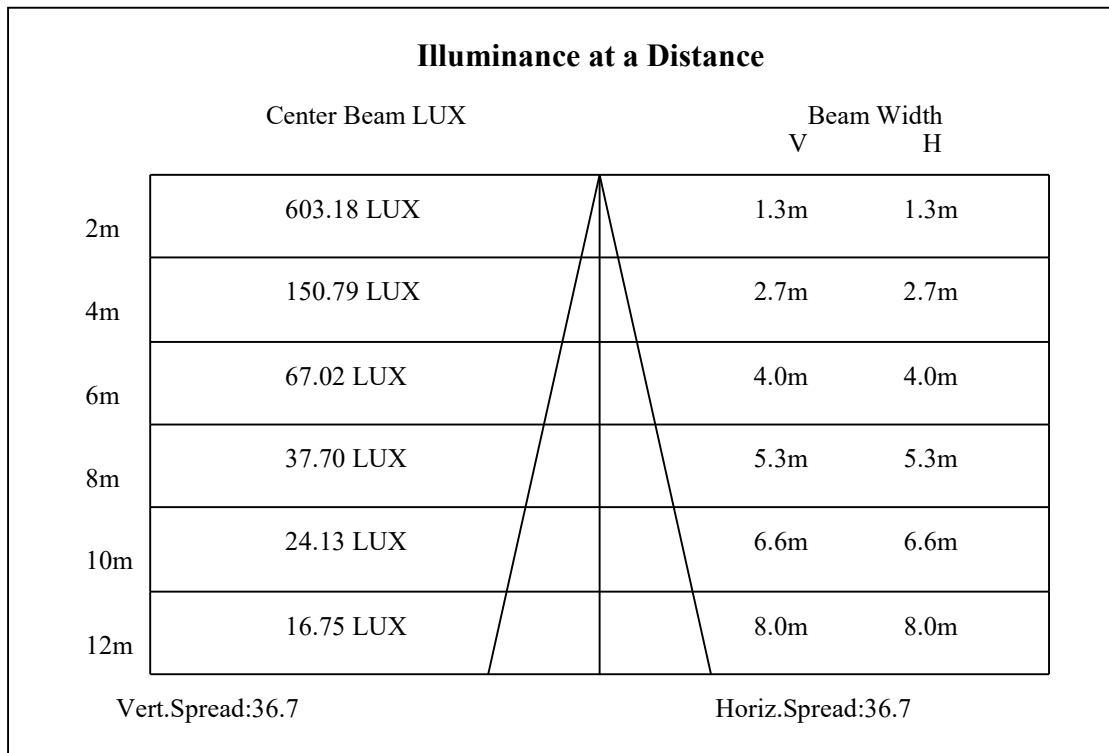
C90/C270:

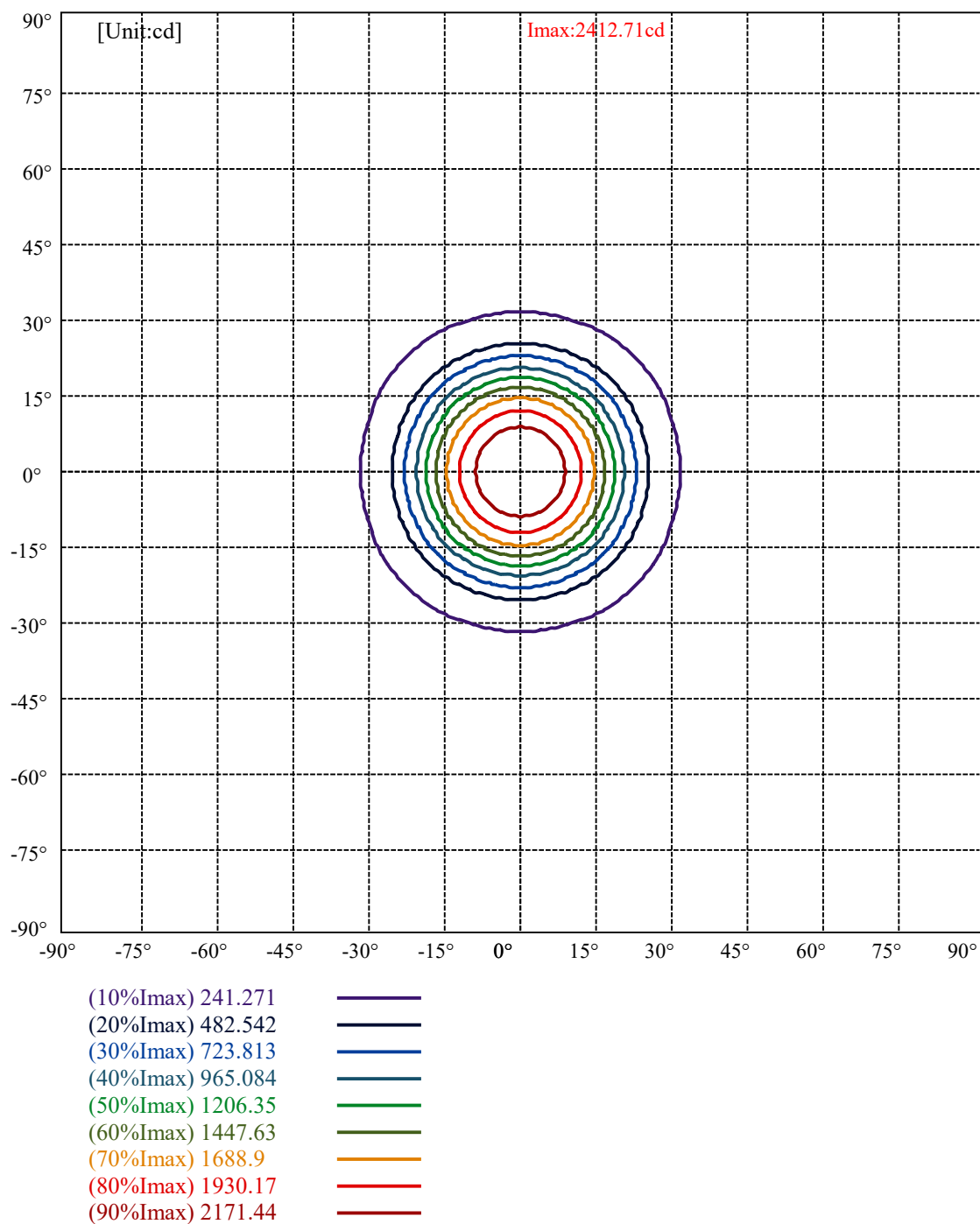
Field angle(10%Imax):C0/180Left:31.2 Right:31.2

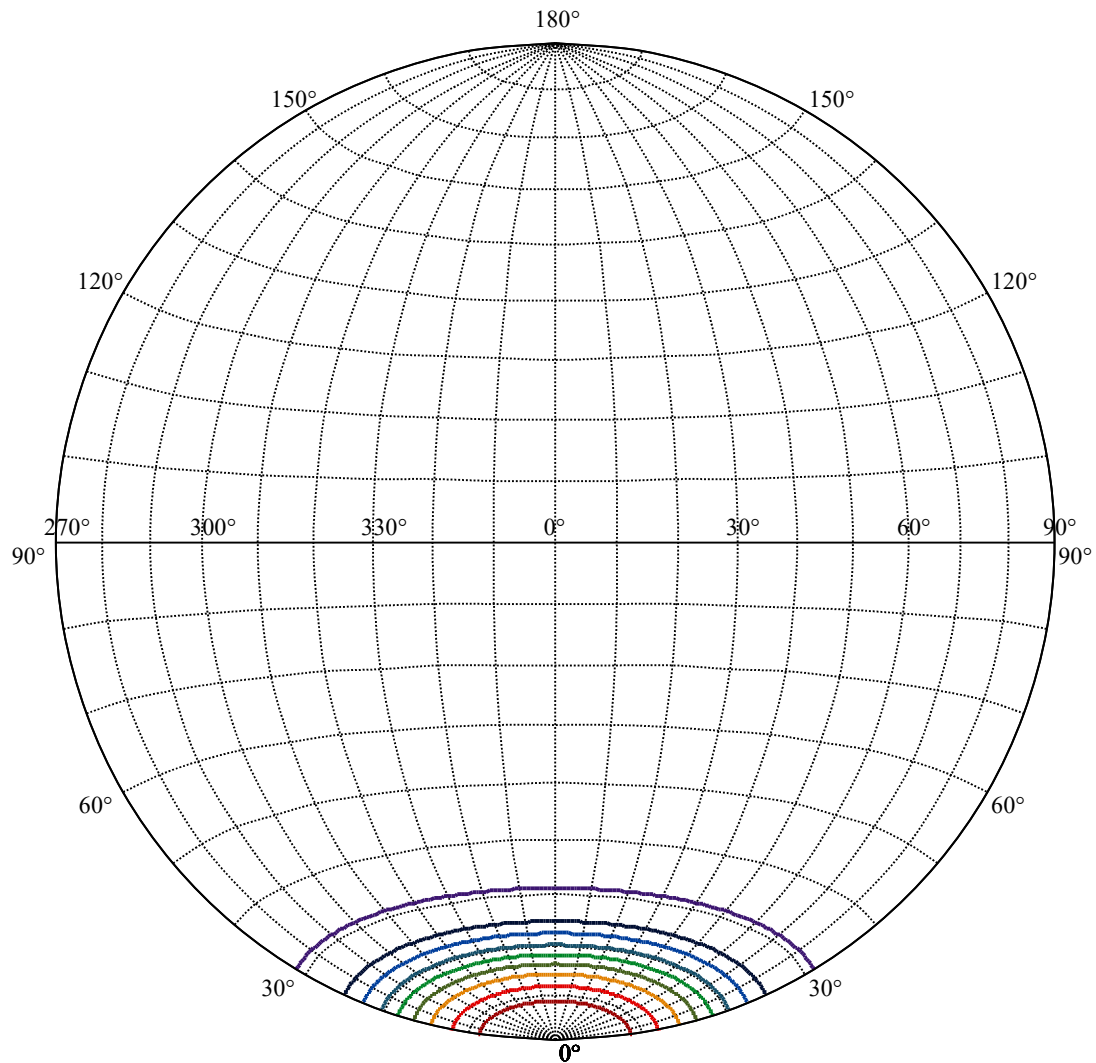
:C90/270Left:31.2 Right:31.2

Beam Angle(50%Imax):C0/180Left:18.4 Right:18.4

:C90/270Left:18.4 Right:18.4







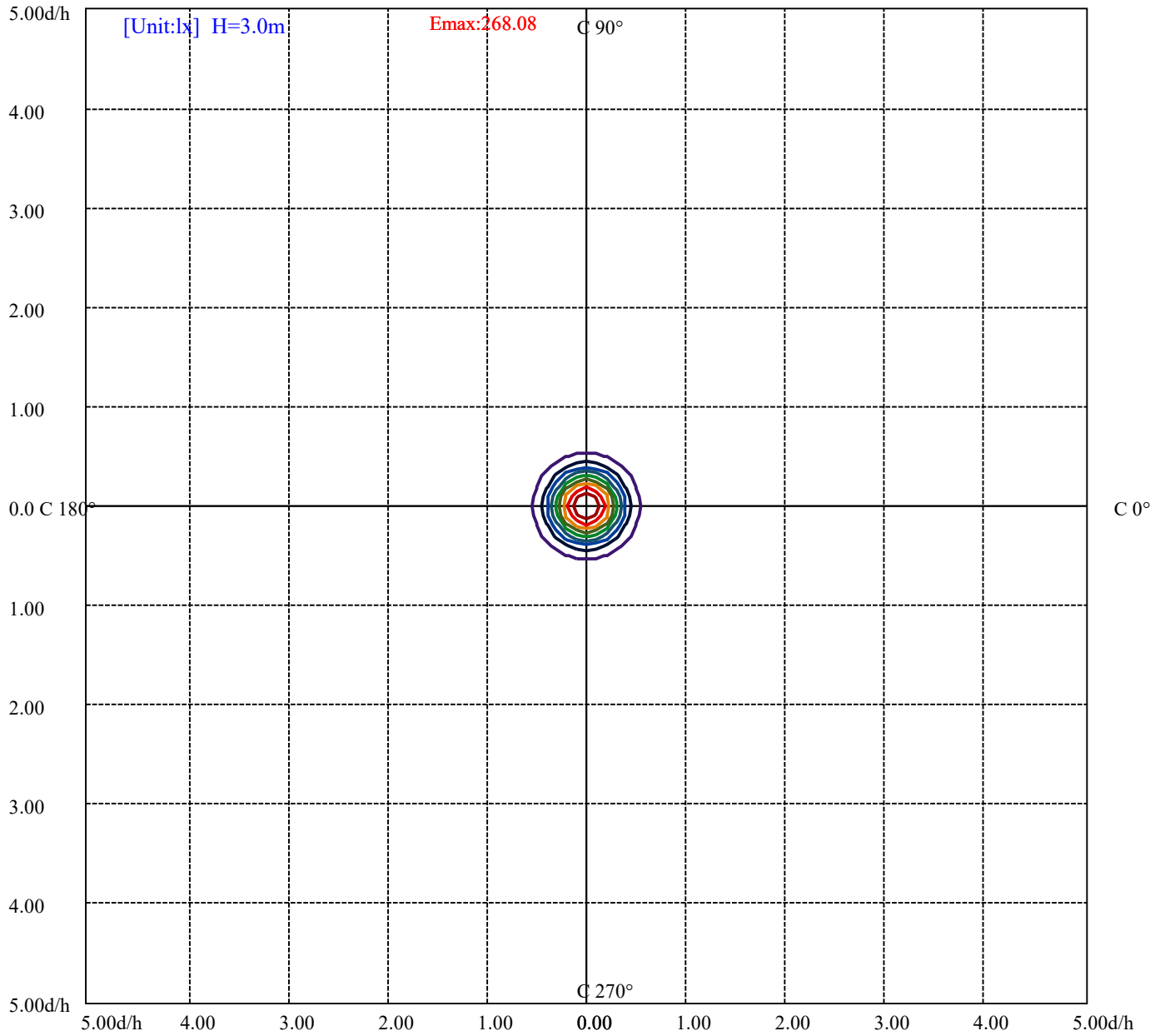
House

[Unit:cd]

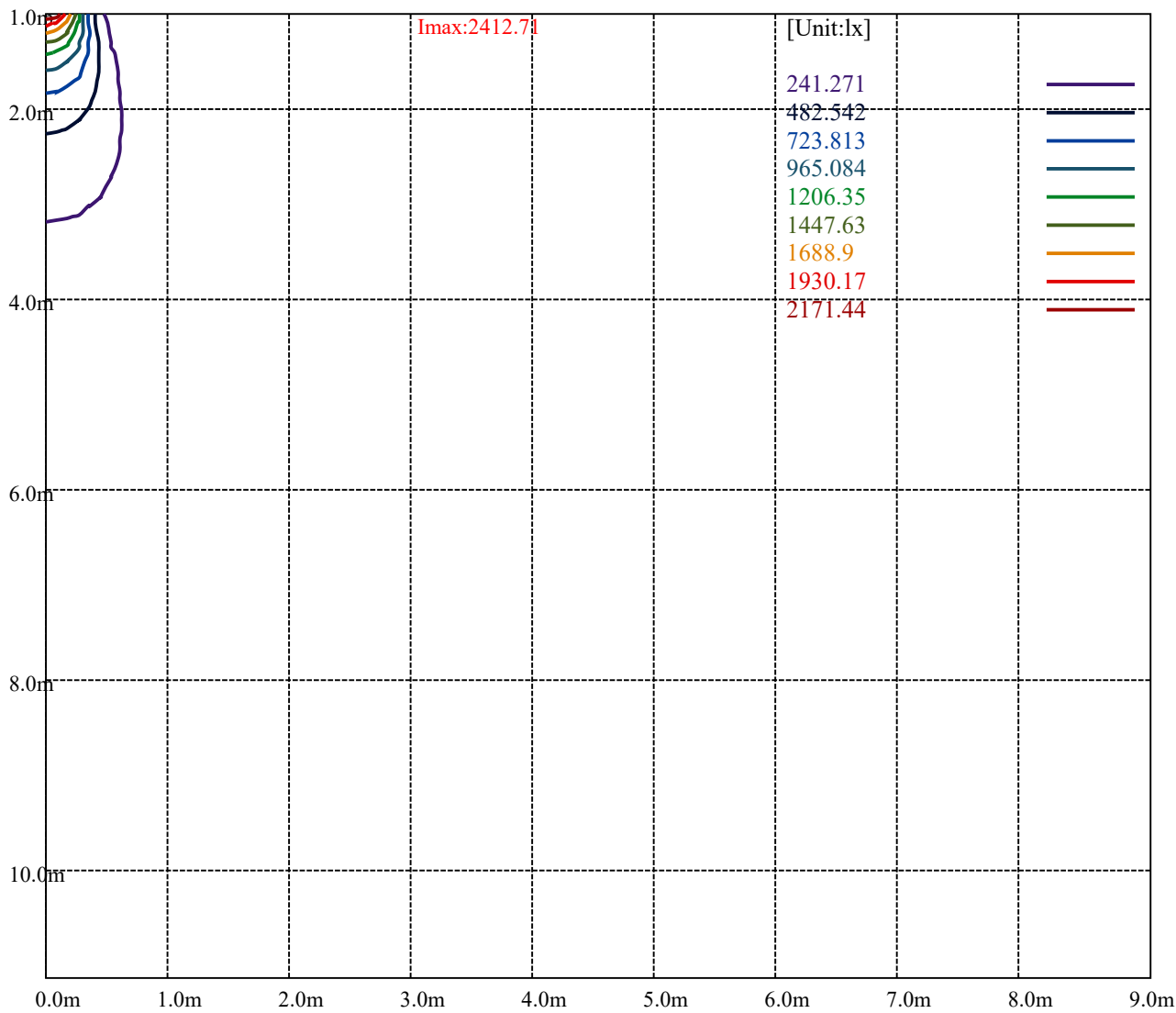
Road

Imax:2412.71

(10%Imax)	241.271	—
(20%Imax)	482.542	—
(30%Imax)	723.813	—
(40%Imax)	965.084	—
(50%Imax)	1206.35	—
(60%Imax)	1447.63	—
(70%Imax)	1688.9	—
(80%Imax)	1930.17	—
(90%Imax)	2171.44	—



(10%Emax) 26.80789	—
(20%Emax) 53.61567	—
(30%Emax) 80.42355	—
(40%Emax) 107.2314	—
(50%Emax) 134.0389	—
(60%Emax) 160.8467	—
(70%Emax) 187.6544	—
(80%Emax) 214.4633	—
(90%Emax) 241.2711	—



Luminance Table

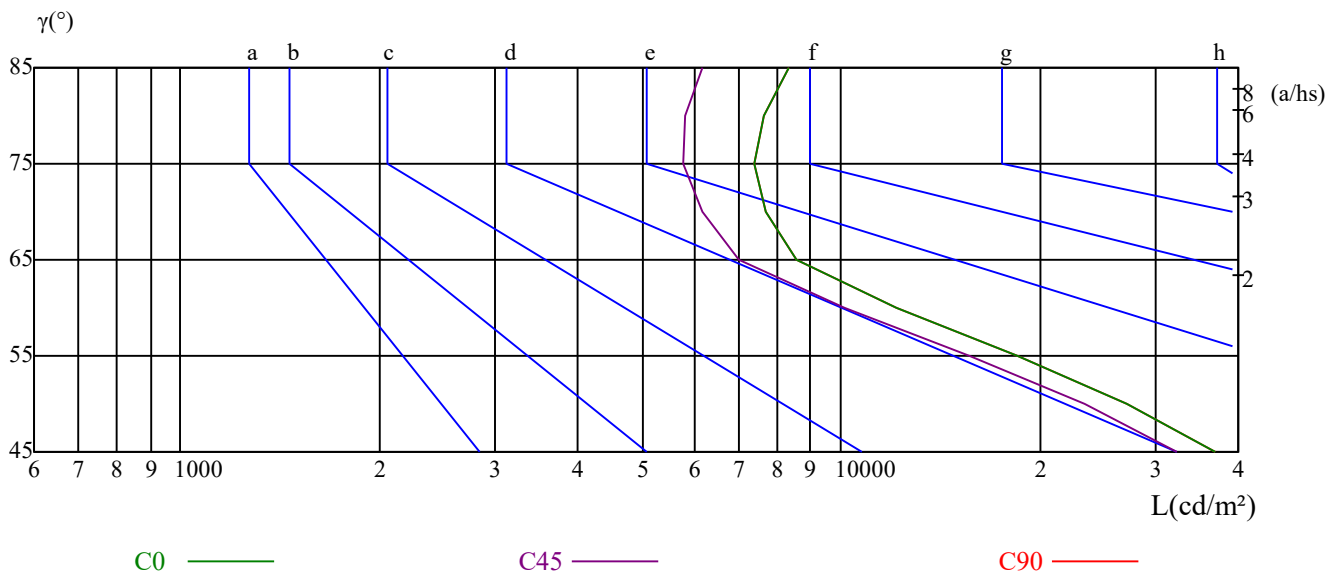
γ	45	50	55	60	65	70	75	80	85
C0	36925	27199	18504	12170	8547	7689	7395	7630	8356
C45	32225	23390	15668	10134	6989	6161	5789	5812	6159
C90	36925	27199	18504	12170	8547	7689	7395	7630	8356

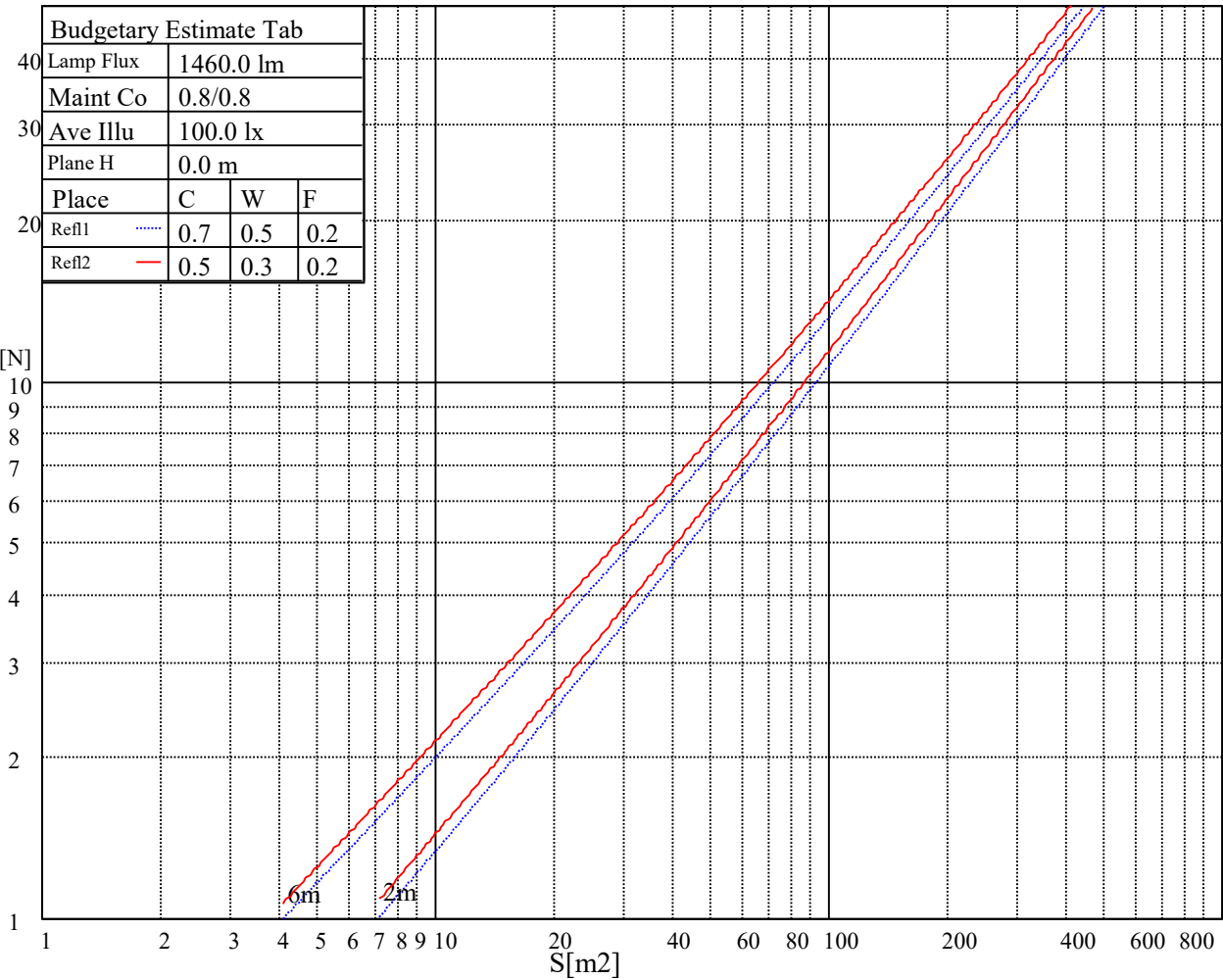
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
18508	18508	18508	22393	22393	22393	60267	60267	60267

Glare Table

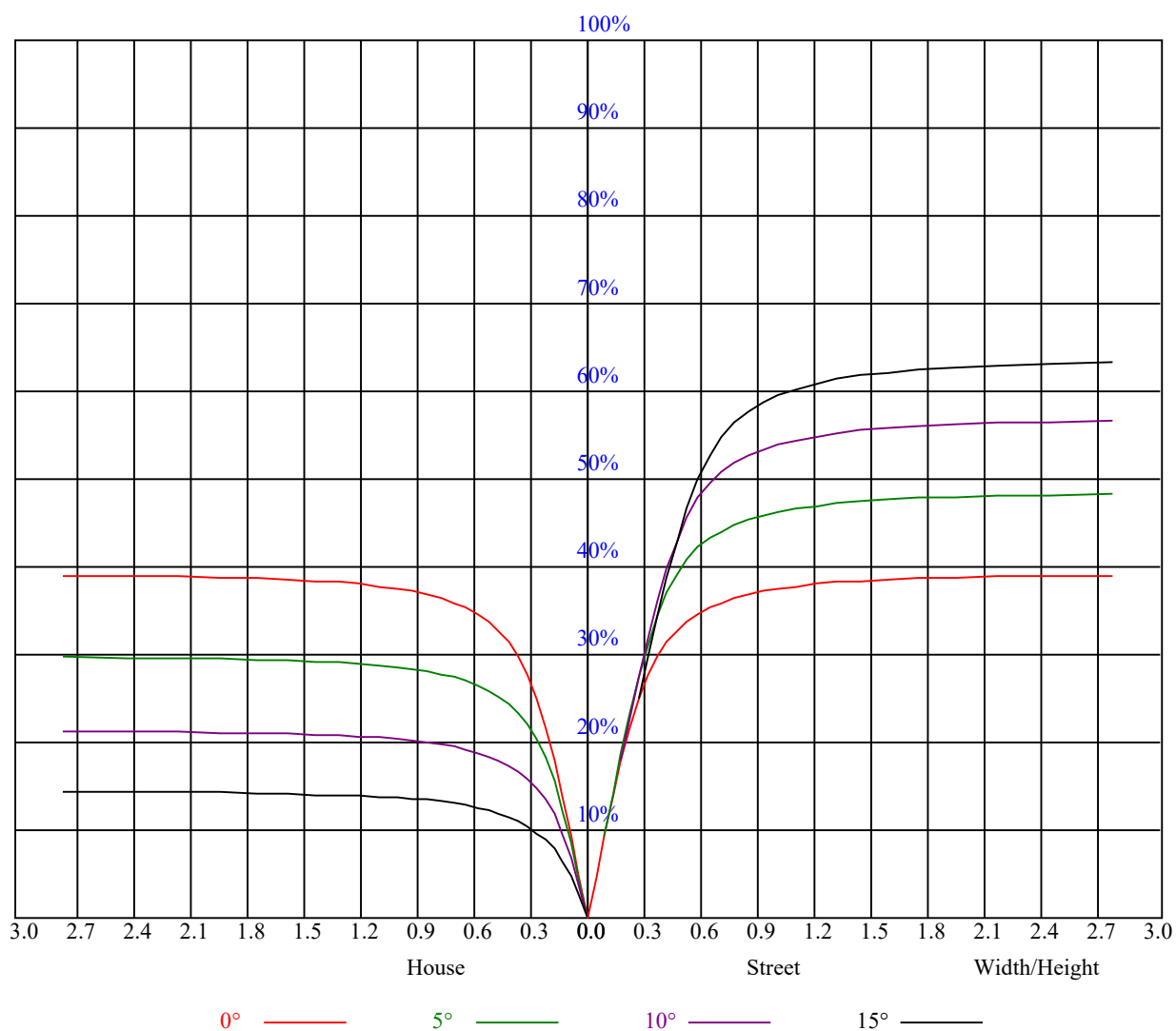
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.80
1	0.87	0.85	0.83	0.86	0.84	0.82	0.82	0.81	0.79	0.79	0.78	0.77	0.77	0.76	0.75	0.73
2	0.82	0.79	0.76	0.81	0.78	0.75	0.78	0.76	0.73	0.76	0.74	0.72	0.73	0.72	0.70	0.69
3	0.77	0.73	0.70	0.76	0.73	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.70	0.68	0.67	0.65
4	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.67	0.65	0.69	0.66	0.64	0.68	0.65	0.63	0.62
5	0.70	0.66	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.66	0.63	0.61	0.65	0.63	0.61	0.59
6	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
7	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.55
8	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53
9	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	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	0.52	0.50	0.55	0.52	0.50	0.55	0.52	0.50	0.49



Nata 1437-N

Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	2401.56	2423.03	2294.20	1971.02	1370.90	664.53	347.41	210.04	147.72		
45.0	2416.98	2412.57	2247.40	1864.76	1124.80	539.00	290.15	178.44	126.63		
90.0	2414.77	2320.63	2061.31	1547.08	838.62	383.69	231.46	154.71	109.84		
135.0	2417.53	2298.60	2012.86	1487.07	839.06	378.79	221.44	152.73	111.05		
180.0	2401.56	2247.40	1924.77	1087.14	694.48	339.26	206.46	140.78	102.79		
225.0	2416.98	2277.13	2034.33	1526.71	854.20	403.56	231.46	148.71	102.90		
270.0	2414.77	2370.73	2168.67	1803.10	1178.21	553.32	294.55	186.64	132.25		
315.0	2417.53	2371.28	2181.89	1782.18	1096.34	549.85	293.12	193.63	141.05		
360.0	2401.56	2423.03	2294.20	1971.02	1370.90	664.53	347.41	210.04	147.72		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	106.75	75.32	49.66	31.16	18.88	14.59	12.55	11.45	10.96		
45.0	82.53	58.30	38.70	25.49	16.19	13.27	11.62	10.41	10.63		
90.0	77.90	55.28	35.24	21.75	15.36	13.27	11.84	10.90	10.08		
135.0	80.16	57.86	36.78	22.35	15.97	13.82	12.44	11.84	10.57		
180.0	73.61	52.58	33.86	20.37	15.03	13.16	12.06	12.11	11.23		
225.0	72.12	51.92	34.52	22.35	15.53	13.21	11.78	10.90	11.89		
270.0	90.40	64.47	43.88	27.91	17.45	14.65	12.77	11.73	11.73		
315.0	98.72	71.90	46.47	28.57	18.00	15.03	13.05	12.22	11.84		
360.0	106.75	75.32	49.66	31.16	18.88	14.59	12.55	11.45	10.96		
C/γ(°)	90.0										
0.0	6.28										
45.0	5.18										
90.0	5.12										
135.0	5.12										
180.0	5.18										
225.0	5.23										
270.0	5.95										
315.0	6.06										
360.0	6.28										