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Nata

LumCAT: 1-0920-M
Luminaire: 92.70.124.00
Report No: NATA0100
Test No: GC2019091818
LampCAT: CITIZEN CLU028
Lamp flux(lm): 1018.0
Number of Lamps: 1
Length(mm): 39
Phm Type: C

Voltage(V): 35.4900
Current(A): 0.3000
Power (W): 10.6470
PF: 0.0000
Ballast type: DC
Width(mm): 39
Height(mm): 0

Photometric Results

Lumens(lm): 781.04
Efficiency(%): 76.72%
Lumens(lm)/Power(W): 73.36
Central intensity(cd): 2486.813
Maximum intensity(cd): 2486.813
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.3
[C90/270]Total=33.3
Field angle(10%Imax): [C0/180]Total=50.5
[C90/270]Total=50.5
Maximum s/h(1/2): C0_180=0.56 C90_270=0.56
Maximum s/h(1/4): C0_180=0.53 C90_270=0.53
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 76.72%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.572%

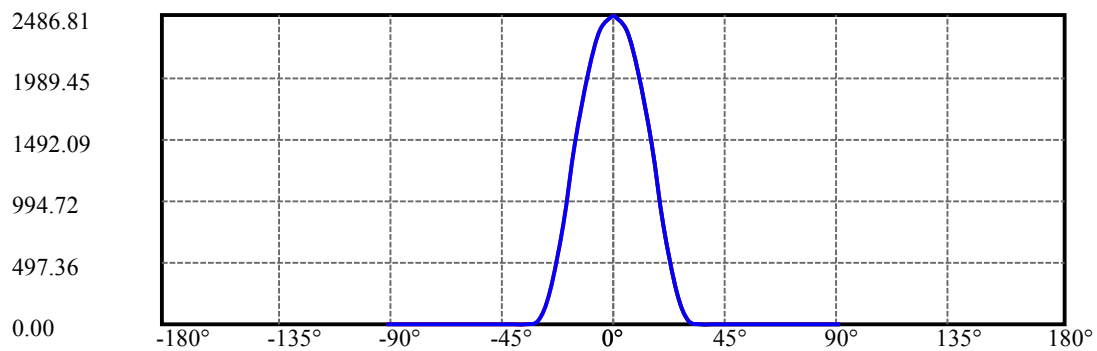
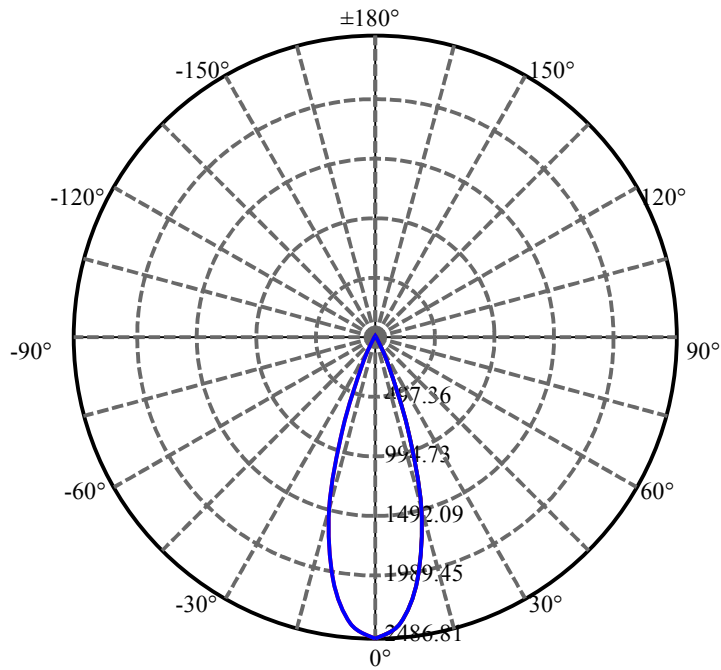
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2486.813	0.000	0	.000%	.000%
5.0	2366.859	58.024	58.024	5.700%	7.429%
10.0	2021.414	156.982	215.007	15.421%	27.528%
15.0	1459.329	206.475	421.482	20.282%	53.964%
20.0	806.077	186.701	608.183	18.340%	77.868%
25.0	259.214	111.729	719.913	10.975%	92.173%
30.0	26.191	36.118	756.031	3.548%	96.797%
35.0	7.130	4.907	760.938	.482%	97.426%
40.0	5.161	2.051	762.988	.201%	97.688%
45.0	4.409	1.772	764.76	.174%	97.915%
50.0	4.022	1.703	766.464	.167%	98.133%
55.0	3.804	1.702	768.165	.167%	98.351%
60.0	3.670	1.728	769.893	.170%	98.572%
65.0	3.600	1.767	771.66	.174%	98.799%
70.0	3.572	1.816	773.476	.178%	99.031%
75.0	3.523	1.854	775.331	.182%	99.269%
80.0	3.523	1.885	777.216	.185%	99.510%
85.0	3.523	1.914	779.13	.188%	99.755%
90.0	3.466	1.914	781.044	.188%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	756.03	74.27%	96.80%
0-40	762.99	74.95%	97.69%
0-60	769.89	75.63%	98.57%
0-90	779.13	76.54%	99.75%
0-120	779.13	76.54%	99.75%
0-180	781.04	76.72%	100.00%
60-90	10.96	1.08%	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%
0-20.75	624.84	61.38%	80.00%

ZONAL LUMEN SUMMARY

0-10	215.01
10-20	393.18
20-30	147.85
30-40	6.96
40-50	3.48
50-60	3.43
60-70	3.58
70-80	3.74
80-90	1.91
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: —————

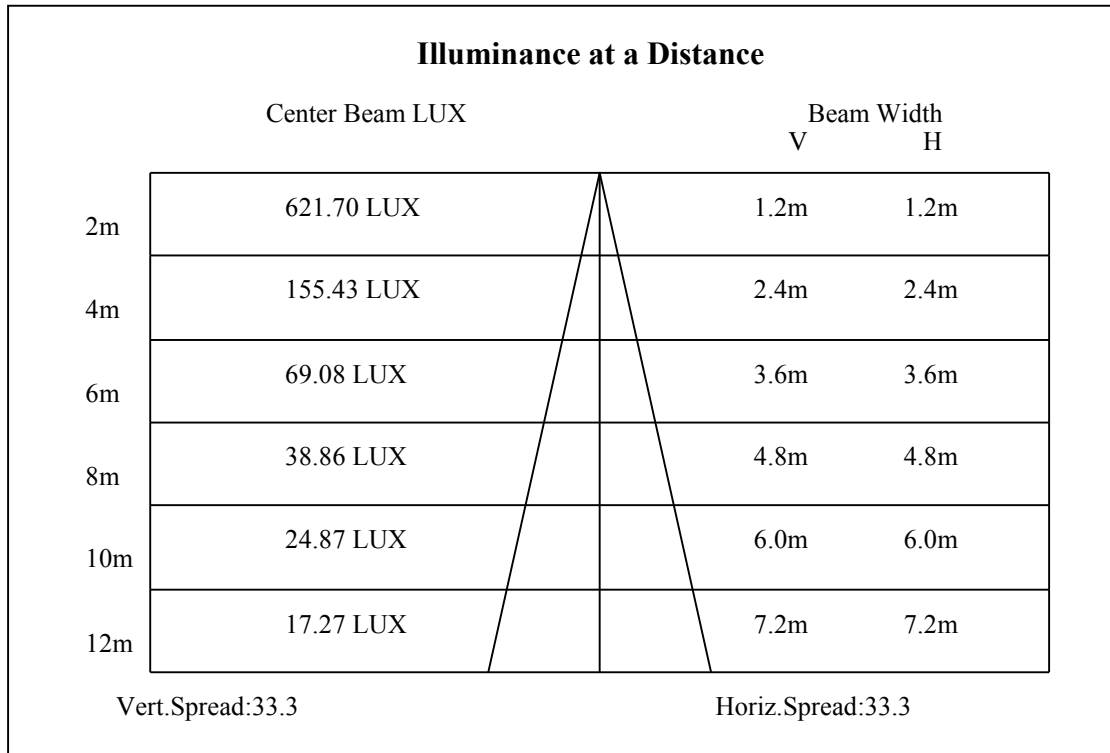
C90/C270: —————

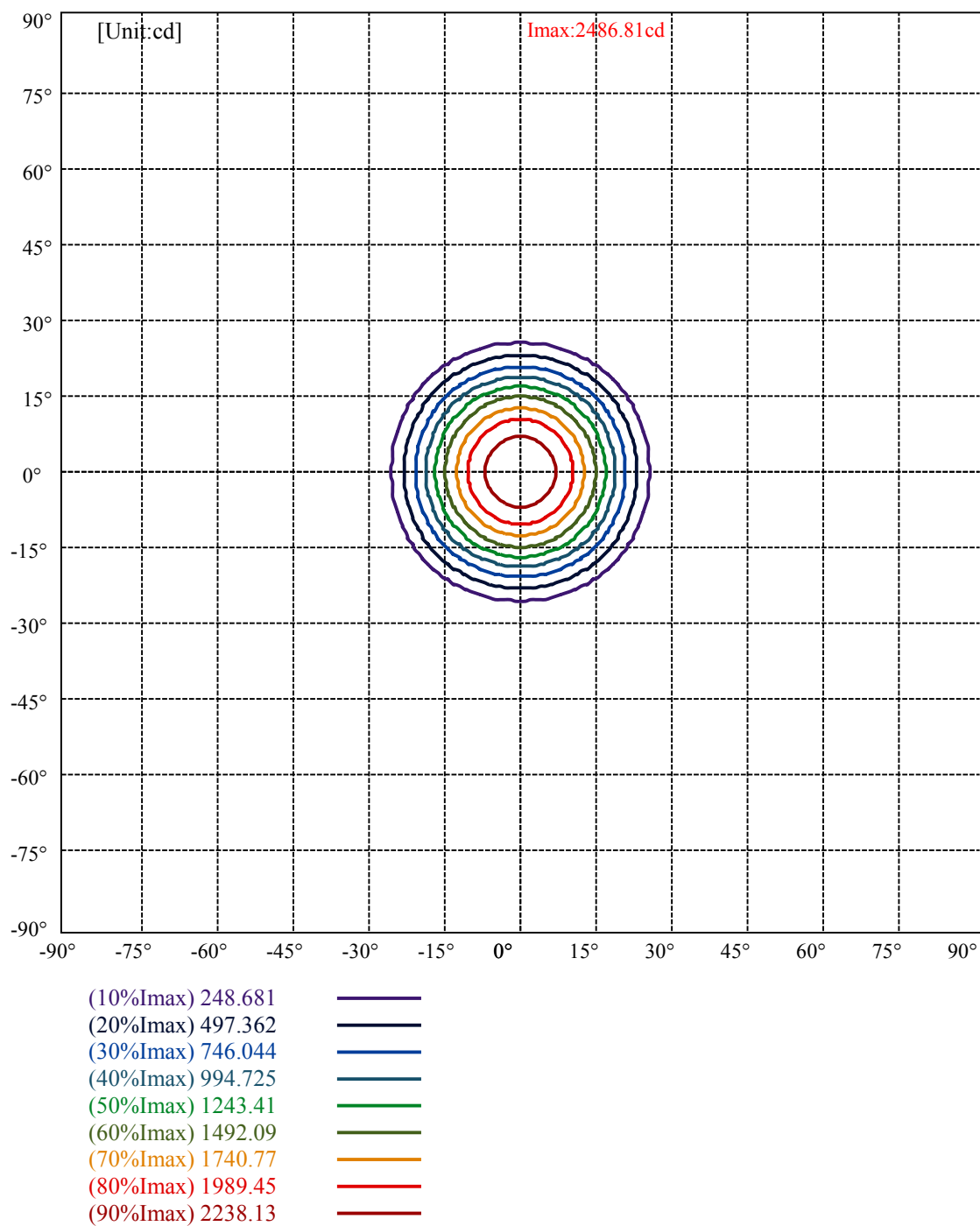
Field angle(10%Imax):C0/180Left:25.2 Right:25.2

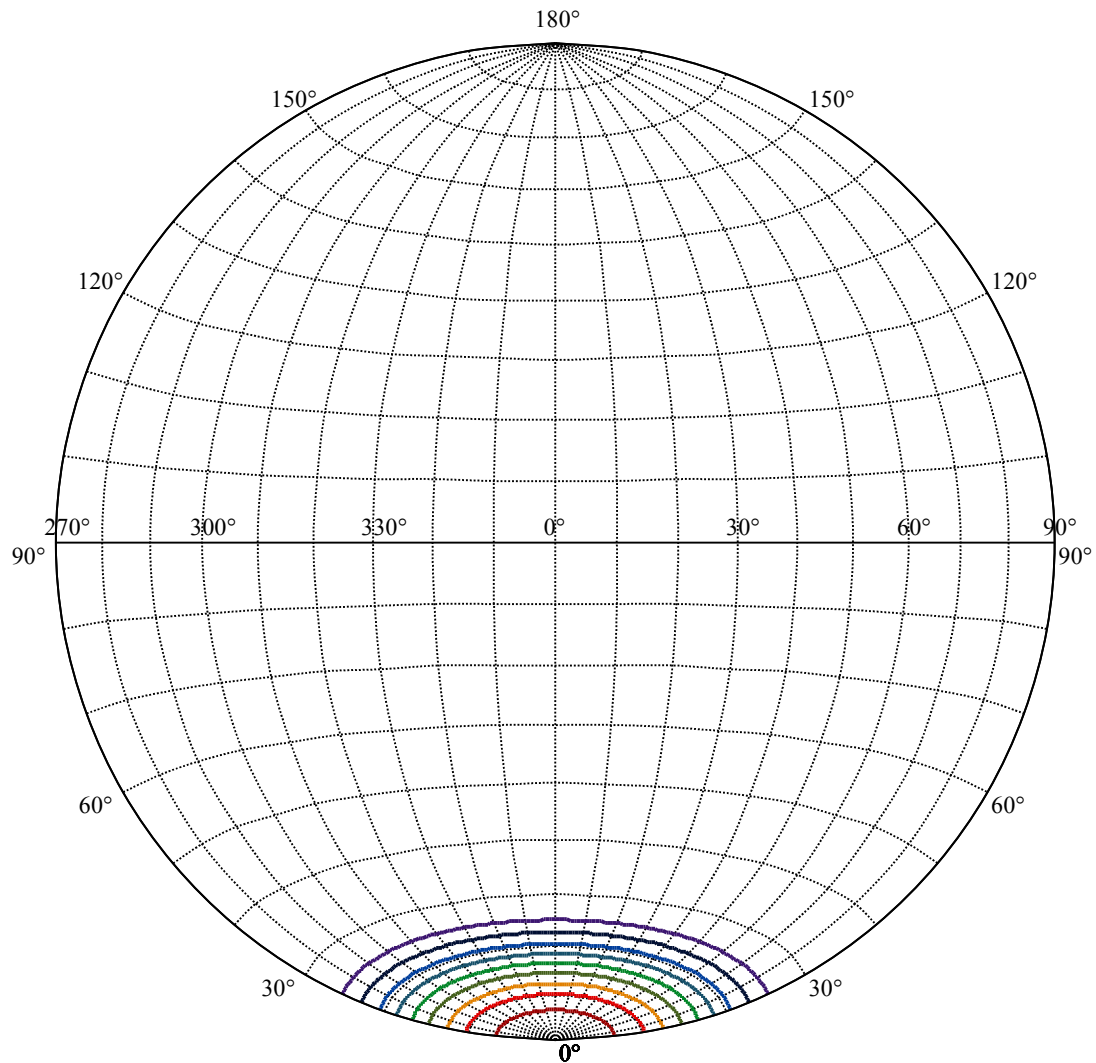
:C90/270Left:25.2 Right:25.2

Beam Angle(50%Imax):C0/180Left:16.7 Right:16.7

:C90/270Left:16.7 Right:16.7







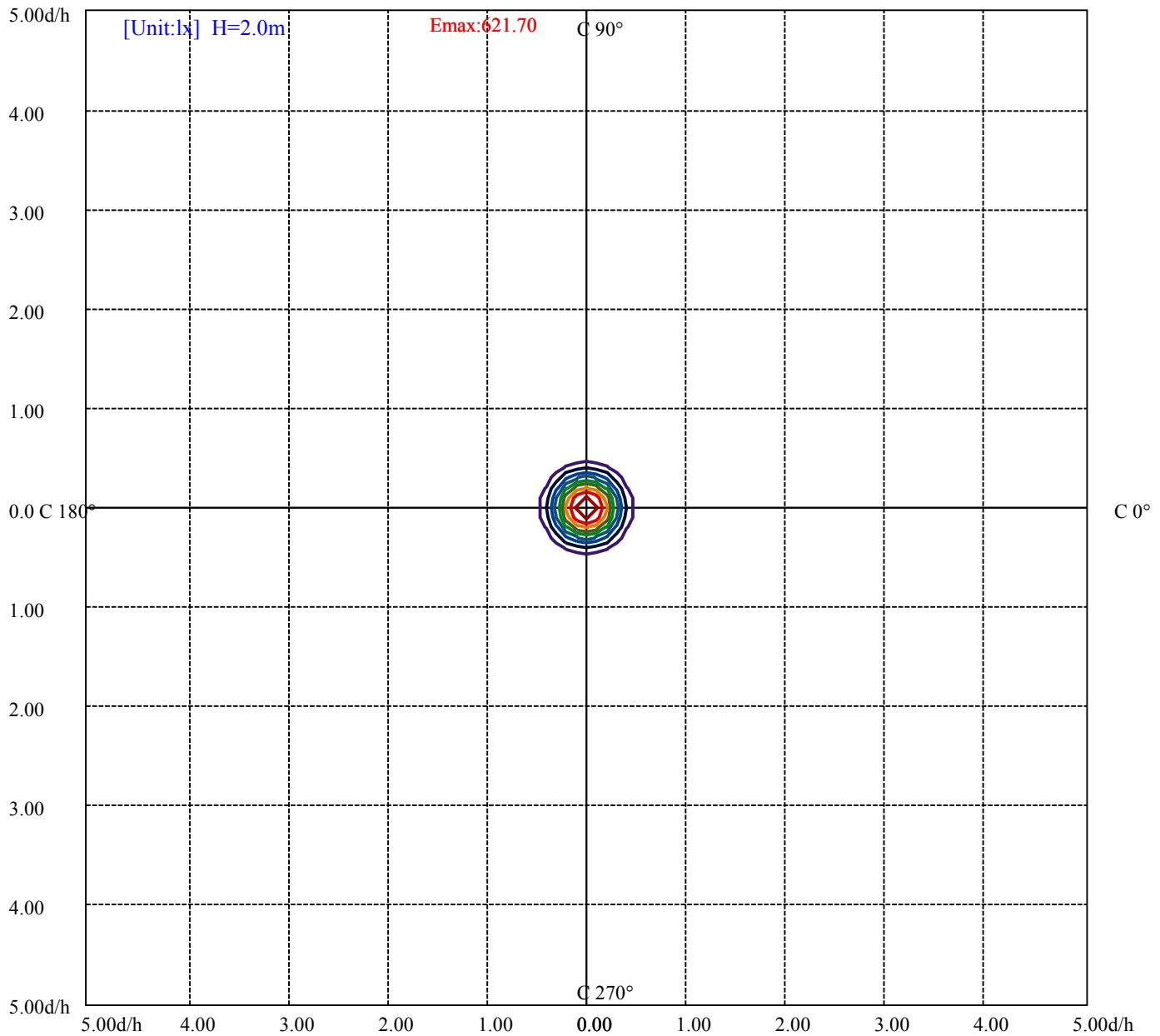
House

[Unit:cd]

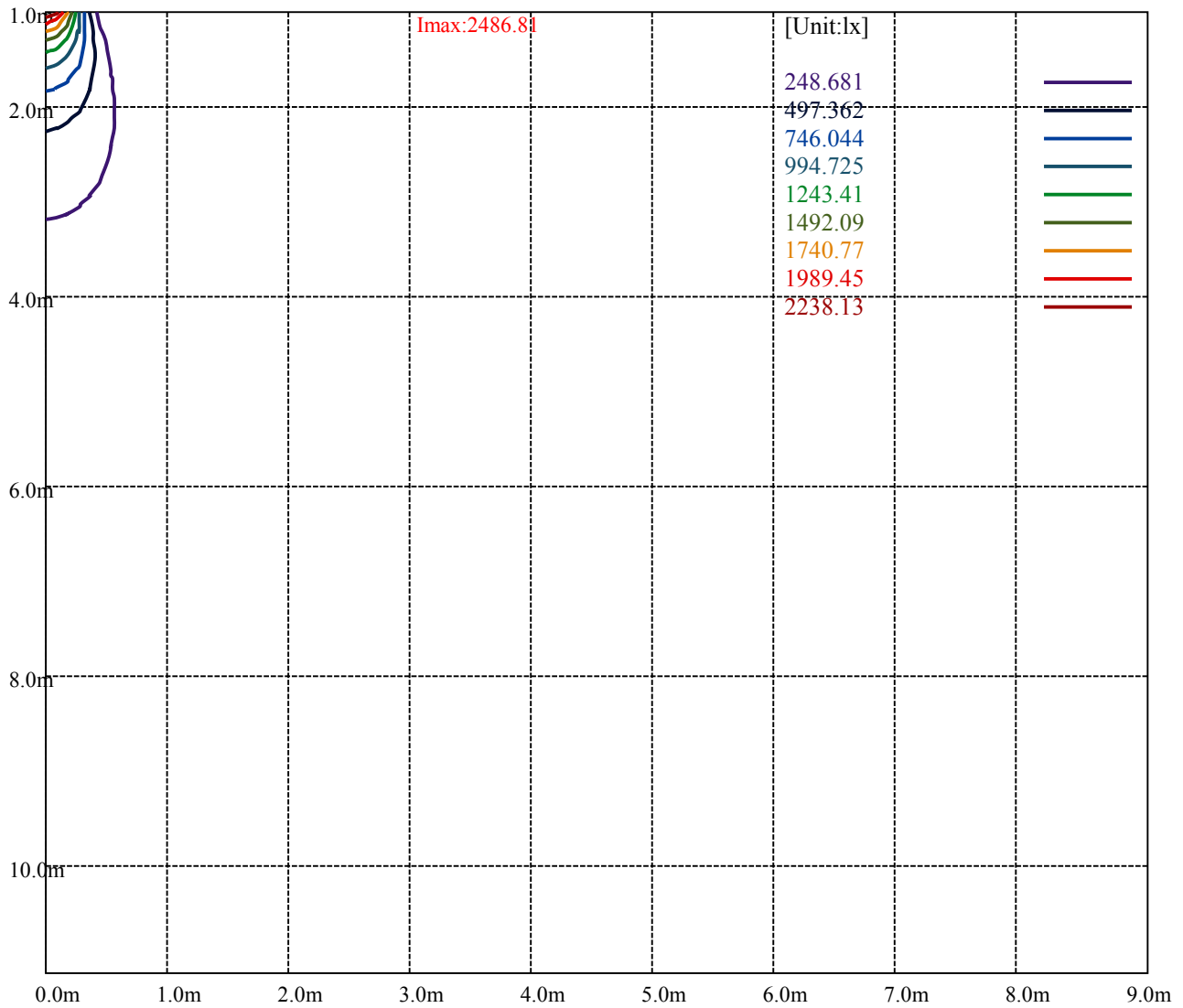
Road

Imax:2486.81

(10%Imax)	248.681	—
(20%Imax)	497.362	—
(30%Imax)	746.044	—
(40%Imax)	994.725	—
(50%Imax)	1243.41	—
(60%Imax)	1492.09	—
(70%Imax)	1740.77	—
(80%Imax)	1989.45	—
(90%Imax)	2238.13	—



(10%Emax) 62.17025	—
(20%Emax) 124.3405	—
(30%Emax) 186.5108	—
(40%Emax) 248.681	—
(50%Emax) 310.85	—
(60%Emax) 373.0225	—
(70%Emax) 435.1925	—
(80%Emax) 497.3625	—
(90%Emax) 559.5325	—



Luminance Table

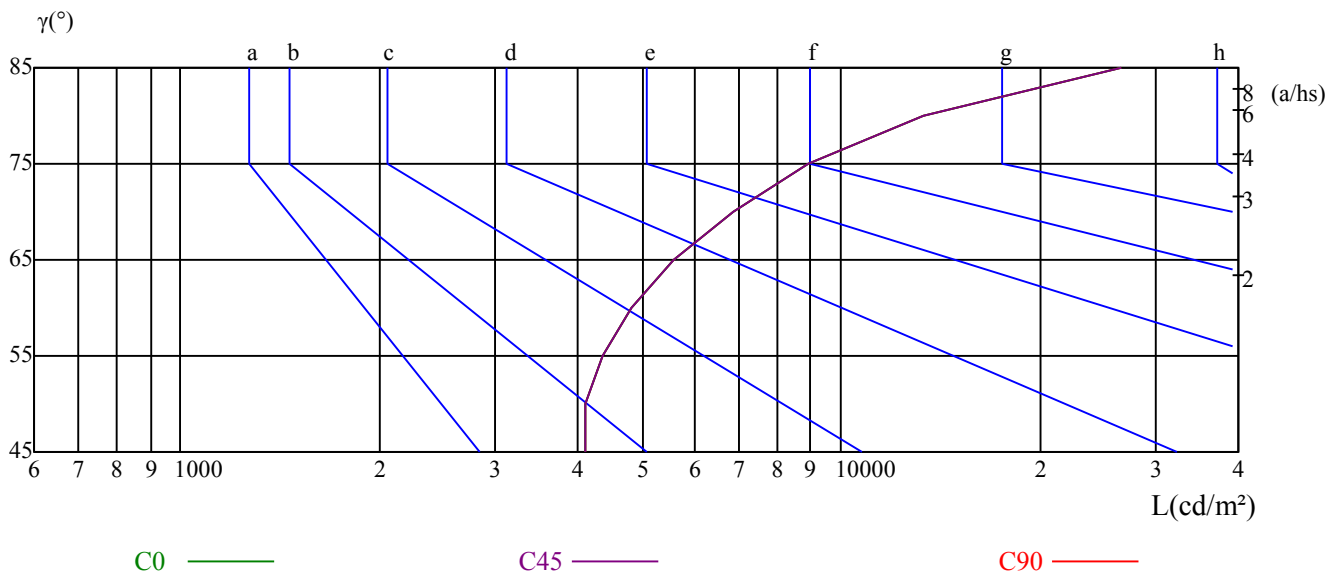
γ	45	50	55	60	65	70	75	80	85
C0	4099	4114	4360	4826	5600	6866	8948	13337	26573
C45	4099	4114	4360	4826	5600	6866	8948	13337	26573
C90	4099	4114	4360	4826	5600	6866	8948	13337	26573

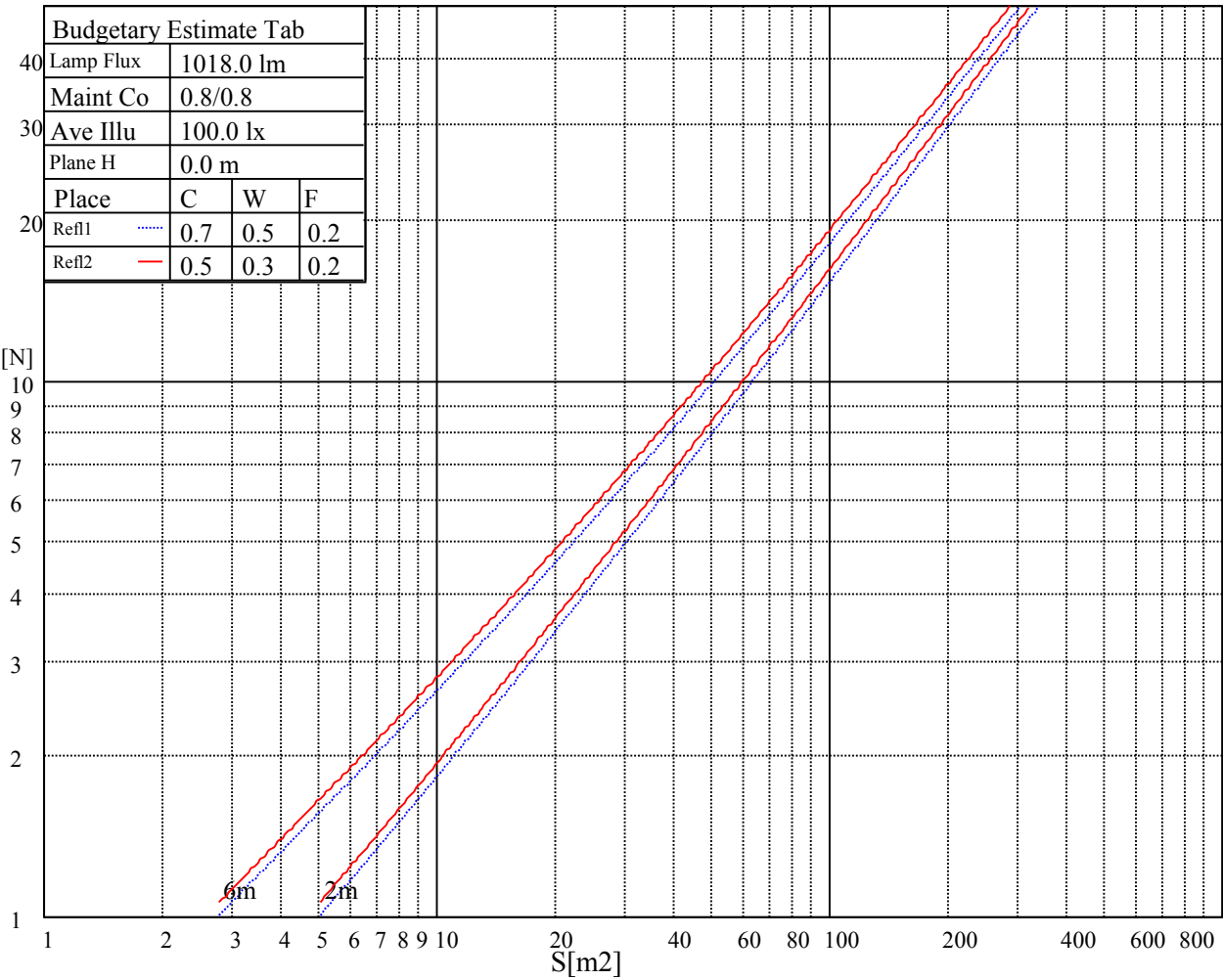
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5600	5600	5600	8948	8948	8948	26573	26573	26573

Glare Table

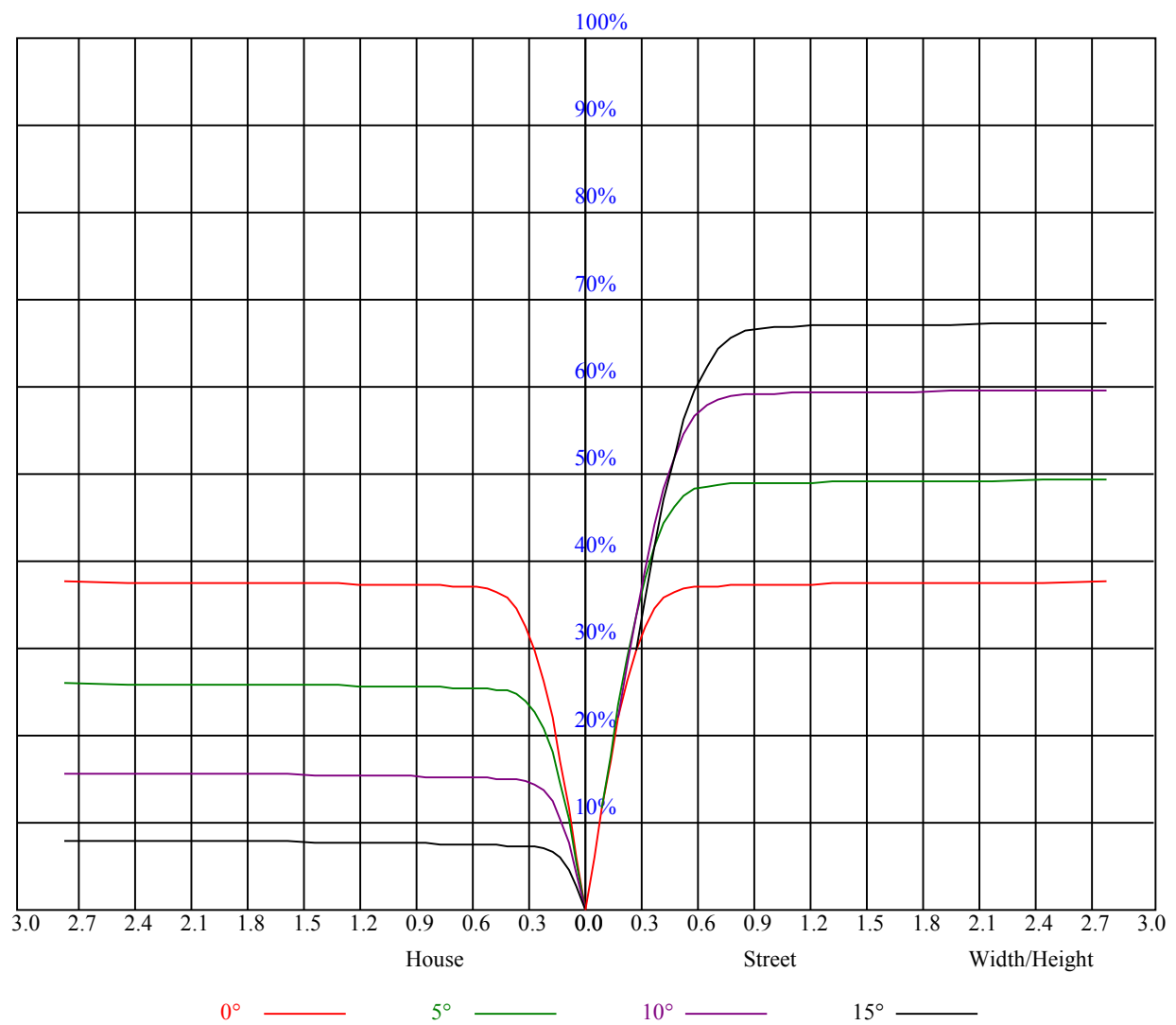
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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



Nata 1-0920-M

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	2476.13	2502.56	2280.94	1826.44	1188.56	515.25	64.74	9.84	6.02	
45.0	2484.00	2473.88	2230.88	1745.44	1108.13	397.13	45.79	7.82	5.40	
90.0	2490.19	2360.25	1979.44	1426.50	760.84	156.66	14.79	6.08	4.84	
135.0	2496.94	2313.56	1949.63	1332.00	664.88	285.19	11.64	5.91	4.78	
180.0	2476.13	2228.63	1739.81	1104.86	436.73	46.01	8.89	5.63	4.67	
225.0	2484.00	2241.00	1836.00	1111.33	516.43	71.66	11.08	6.08	4.84	
270.0	2490.19	2387.25	2040.75	1532.25	838.69	305.44	22.56	7.71	5.29	
315.0	2496.94	2427.75	2113.88	1595.81	934.37	296.38	30.04	7.99	5.46	
360.0	2476.13	2502.56	2280.94	1826.44	1188.56	515.25	64.74	9.84	6.02	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	4.78	4.22	3.94	3.77	3.71	3.66	3.60	3.60	3.60	
45.0	4.56	4.11	3.88	3.71	3.60	3.60	3.54	3.54	3.49	
90.0	4.22	3.94	3.77	3.60	3.54	3.54	3.49	3.54	3.54	
135.0	4.22	3.94	3.77	3.66	3.60	3.54	3.49	3.49	3.60	
180.0	4.22	3.94	3.77	3.66	3.60	3.60	3.54	3.54	3.49	
225.0	4.22	3.94	3.71	3.66	3.60	3.54	3.54	3.49	3.49	
270.0	4.50	3.99	3.77	3.66	3.54	3.54	3.49	3.49	3.49	
315.0	4.56	4.11	3.83	3.66	3.60	3.54	3.49	3.49	3.49	
360.0	4.78	4.22	3.94	3.77	3.71	3.66	3.60	3.60	3.60	
C/γ(°)	90.0									
0.0	3.54									
45.0	3.49									
90.0	3.43									
135.0	3.43									
180.0	3.49									
225.0	3.49									
270.0	3.43									
315.0	3.43									
360.0	3.54									