



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.com  
Tel:+86-750-3770000 Fax:+86-750-3771111  
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

---

## NATA

---

LumCAT: 3-2040-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 36.1000
Test No: GC2018111216	Current(A): 0.5500
LampCAT: OSRAM SOLERIQ S15	Power (W): 19.8550
Lamp flux(lm): 2582.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 78	Width(mm): 78
Phm Type: C	Height(mm): 0

---

## Photometric Results

---

Lumens(lm): 2288.80  
Efficiency(%): 88.64%  
Lumens(lm)/Power(W): 116.35  
Central intensity(cd): 3941.578  
Maximum intensity(cd): 3941.578  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=43.1  
                                  [C90/270]Total=43.1  
Field angle(10%Imax): [C0/180]Total=73.9  
                                  [C90/270]Total=73.9  
Maximum s/h(1/2): C0\_180=0.69 C90\_270=0.69  
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(%): 89.47%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.796%

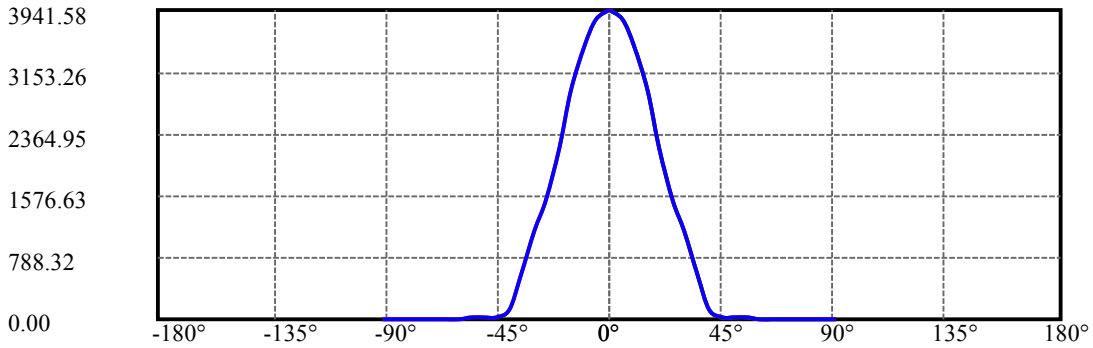
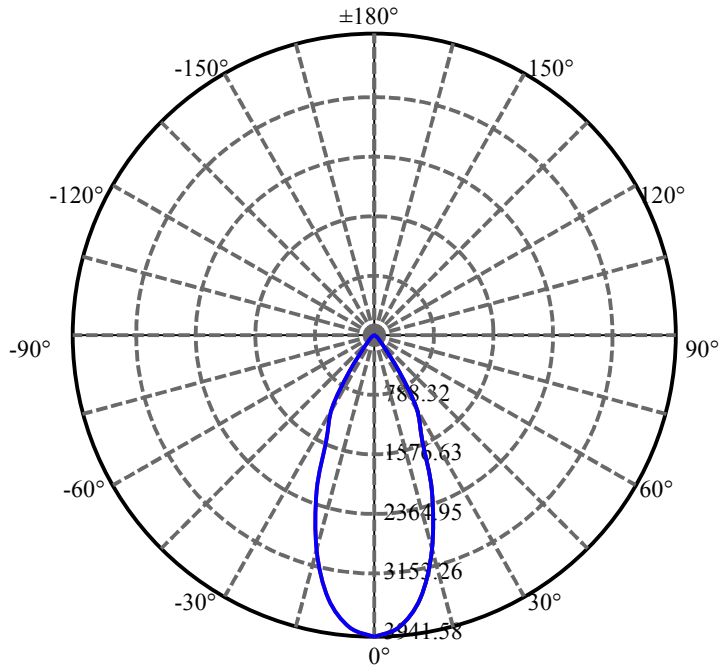
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3941.578	23.571	23.571	.913%	1.030%
5.0	3819.305	182.461	206.032	7.067%	9.002%
10.0	3487.992	331.998	538.03	12.858%	23.507%
15.0	2907.422	412.471	950.501	15.975%	41.528%
20.0	2174.555	407.673	1358.174	15.789%	59.340%
25.0	1514.109	350.748	1708.922	13.584%	74.665%
30.0	1115.866	305.824	2014.746	11.844%	88.026%
35.0	574.327	180.568	2195.313	6.993%	95.916%
40.0	114.673	40.403	2235.717	1.565%	97.681%
45.0	17.445	6.761	2242.478	.262%	97.976%
50.0	13.704	5.754	2248.232	.223%	98.228%
55.0	12.382	5.560	2253.792	.215%	98.471%
60.0	11.545	5.481	2259.272	.212%	98.710%
65.0	10.934	5.432	2264.704	.210%	98.947%
70.0	10.441	5.378	2270.082	.208%	99.182%
75.0	10.111	5.353	2275.435	.207%	99.416%
80.0	9.921	5.356	2280.791	.207%	99.650%
85.0	9.795	5.348	2286.139	.207%	99.884%
90.0	9.696	2.657	2288.797	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2014.75	78.03%	88.03%
0-40	2235.72	86.59%	97.68%
0-60	2259.27	87.50%	98.71%
0-90	2286.14	88.54%	99.88%
0-120	2286.14	88.54%	99.88%
0-180	2288.80	88.64%	100.00%
60-90	32.35	1.25%	1.41%
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	1831.04	70.92%	80.00%

ZONAL LUMEN SUMMARY

0-10	538.03
10-20	820.14
20-30	656.57
30-40	220.97
40-50	12.52
50-60	11.04
60-70	10.81
70-80	10.71
80-90	5.35
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: —————

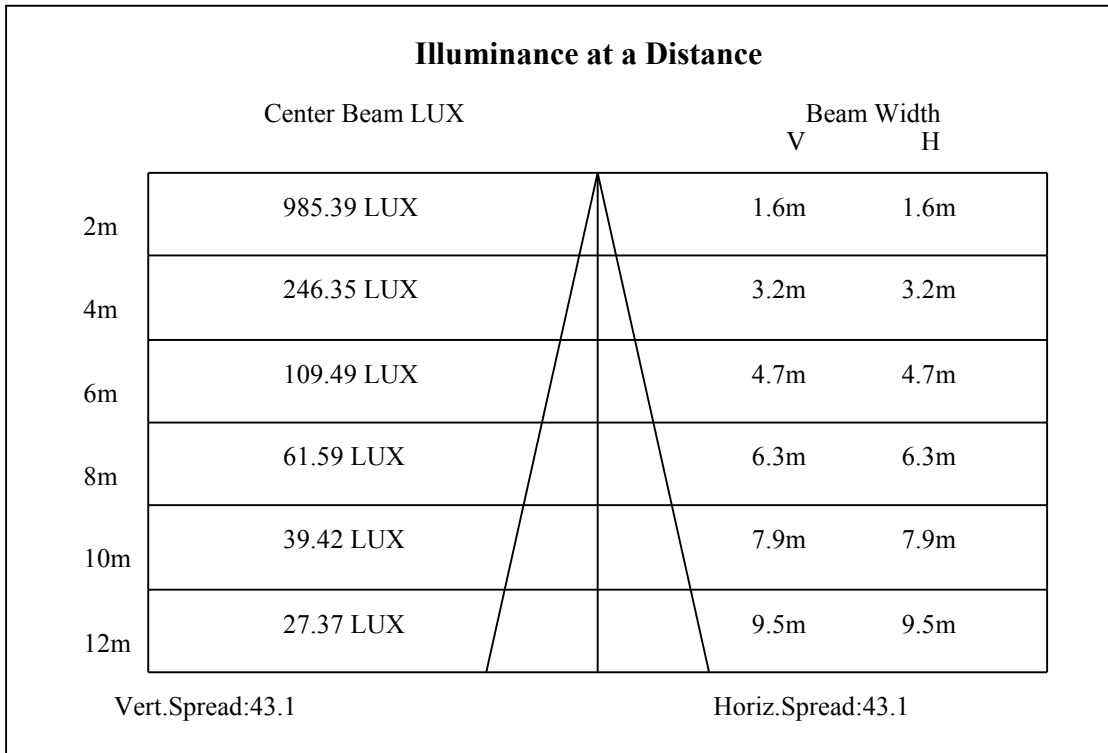
C90/C270: —————

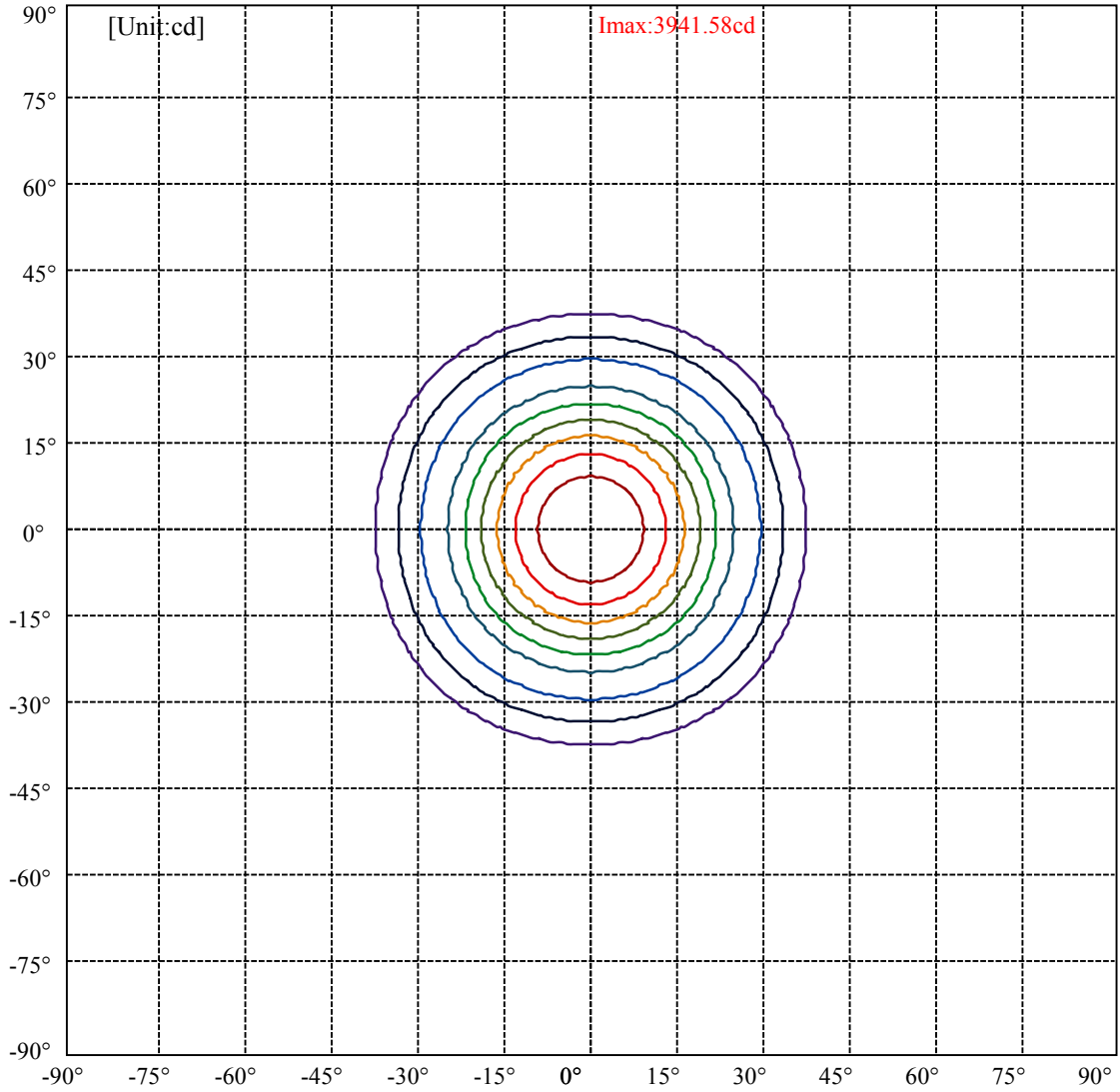
Field angle(10%Imax):C0/180Left:37.0 Right:37.0

:C90/270Left:37.0 Right:37.0

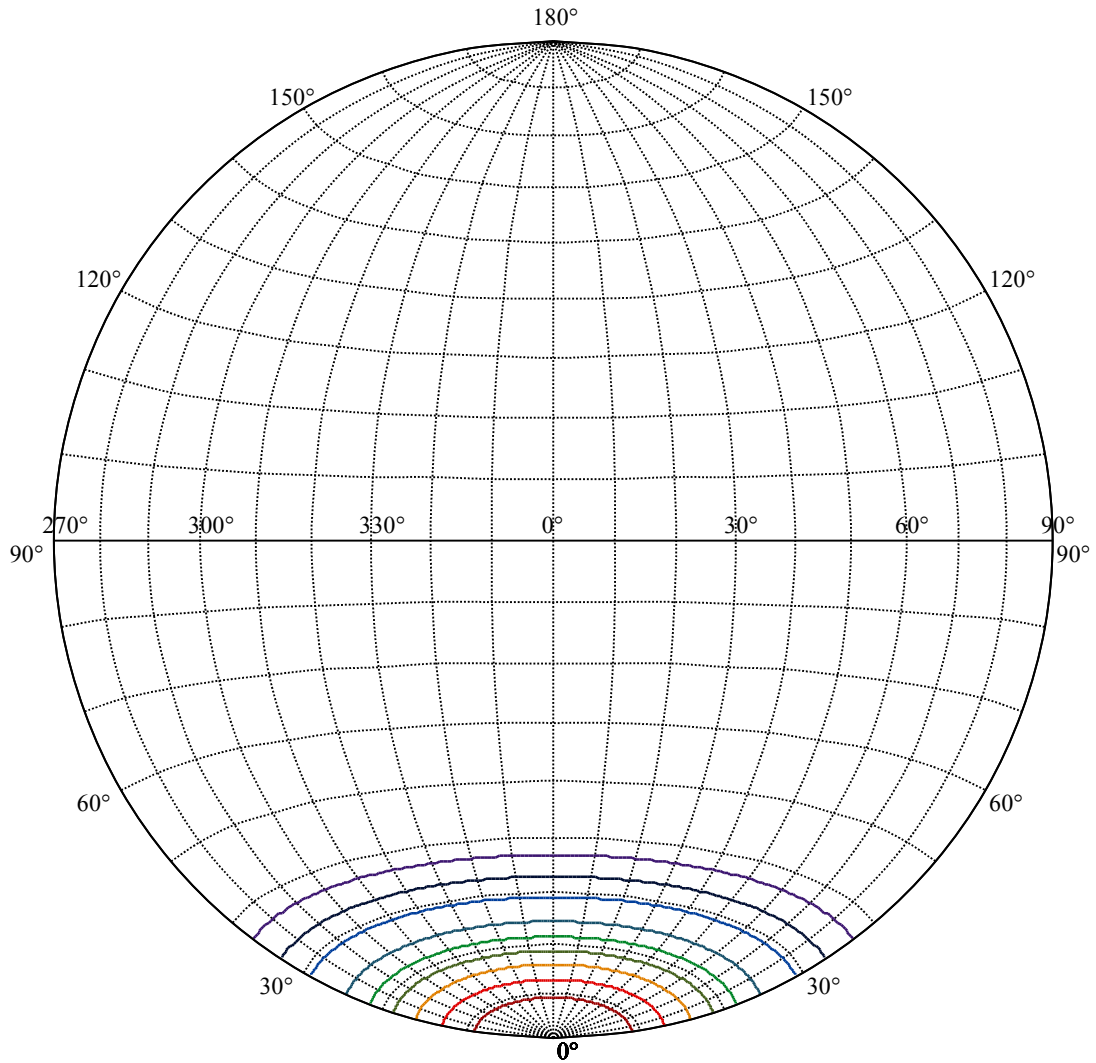
Beam Angle(50%Imax):C0/180Left:21.5 Right:21.5

:C90/270Left:21.5 Right:21.5





(10%I <sub>max</sub> ) 394.158	—
(20%I <sub>max</sub> ) 788.316	—
(30%I <sub>max</sub> ) 1182.47	—
(40%I <sub>max</sub> ) 1576.63	—
(50%I <sub>max</sub> ) 1970.79	—
(60%I <sub>max</sub> ) 2364.95	—
(70%I <sub>max</sub> ) 2759.1	—
(80%I <sub>max</sub> ) 3153.26	—
(90%I <sub>max</sub> ) 3547.42	—



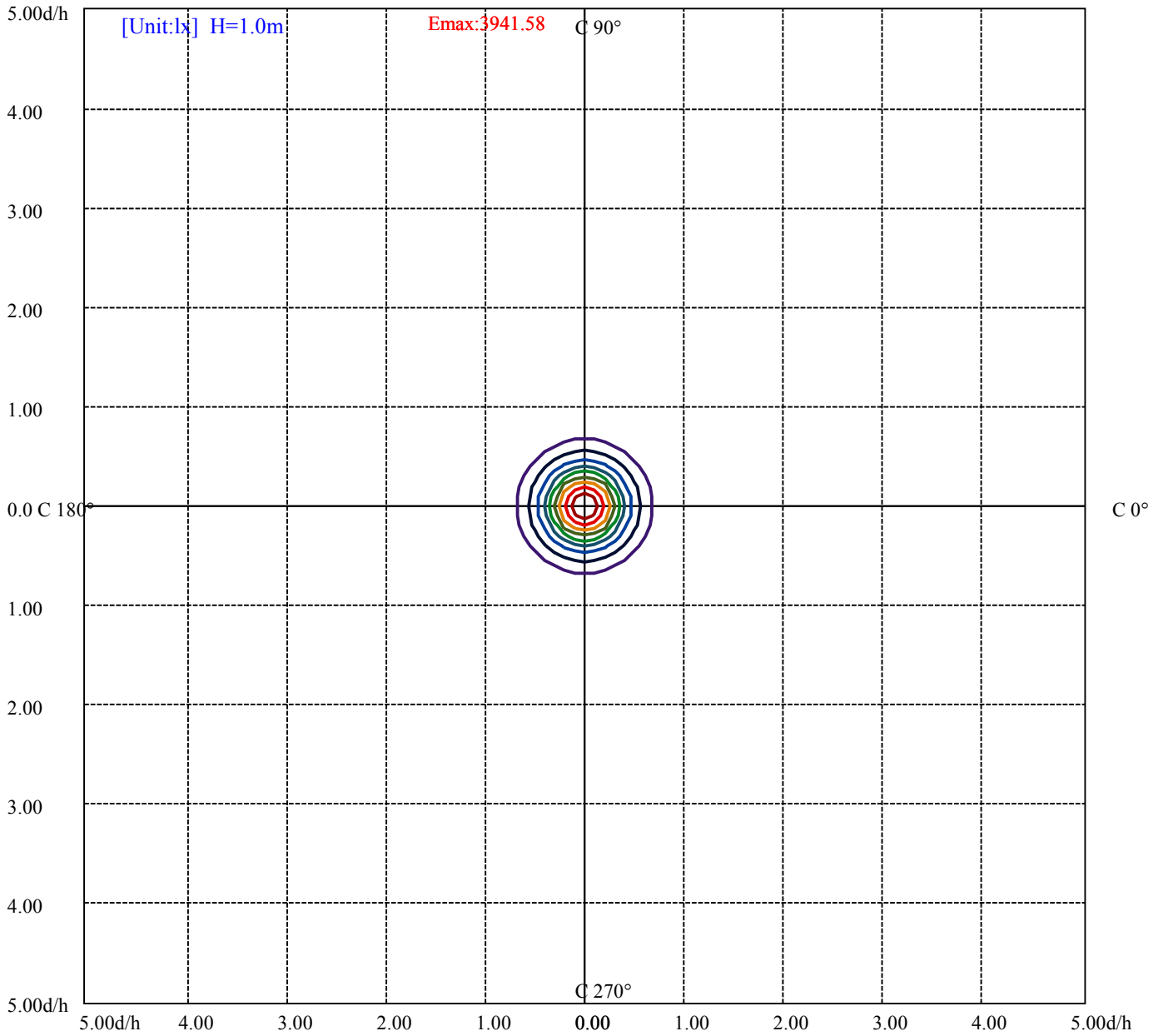
House

[Unit:cd]

Road

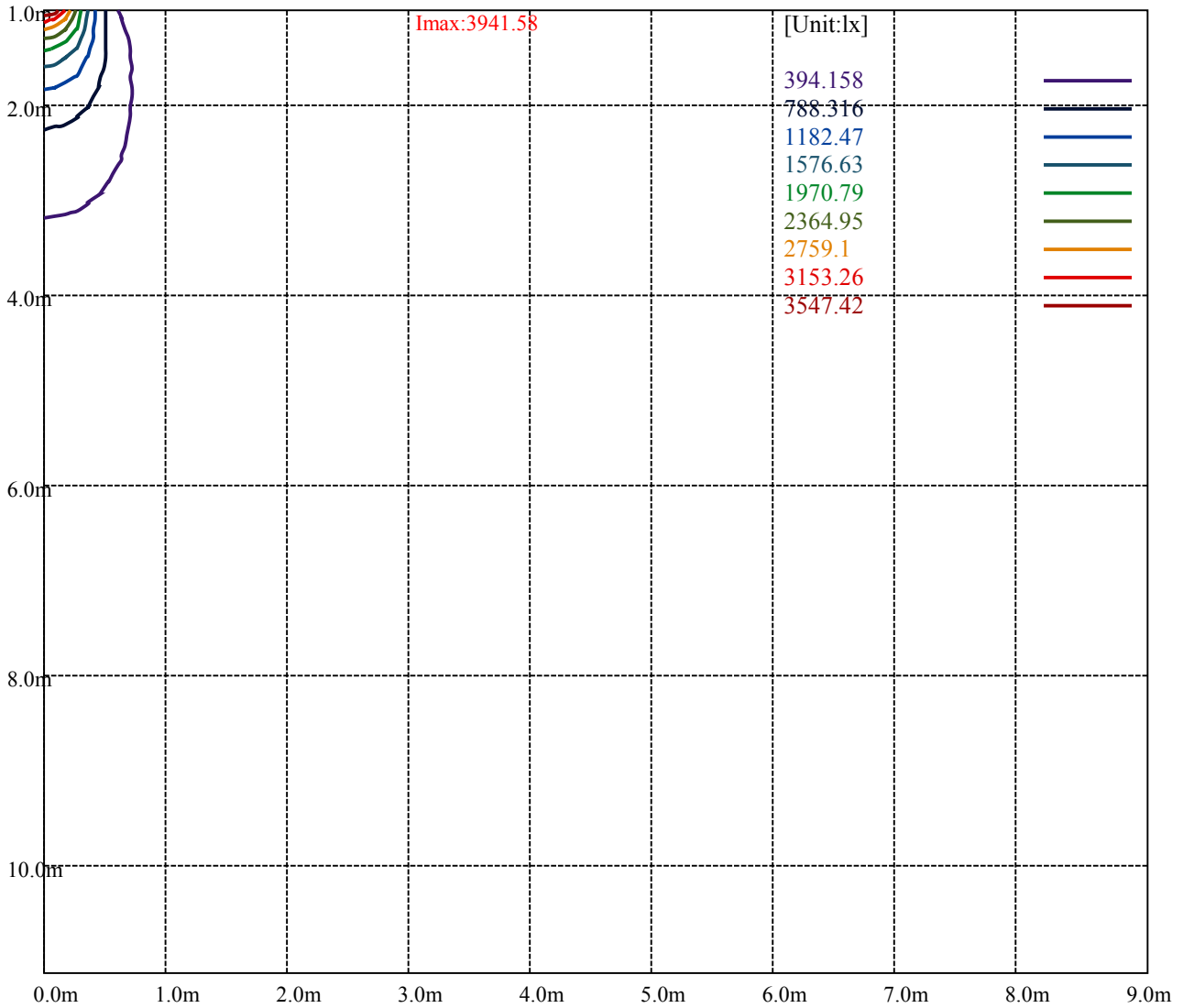
Imax:3941.58

(10%Imax)	394.158	—
(20%Imax)	788.316	—
(30%Imax)	1182.47	—
(40%Imax)	1576.63	—
(50%Imax)	1970.79	—
(60%Imax)	2364.95	—
(70%Imax)	2759.1	—
(80%Imax)	3153.26	—
(90%Imax)	3547.42	—



(10%Emax) 394.157	—
(20%Emax) 788.315	—
(30%Emax) 1182.47	—
(40%Emax) 1576.63	—
(50%Emax) 1970.79	—
(60%Emax) 2364.94	—
(70%Emax) 2759.1	—
(80%Emax) 3153.26	—
(90%Emax) 3547.42	—





Luminance Table

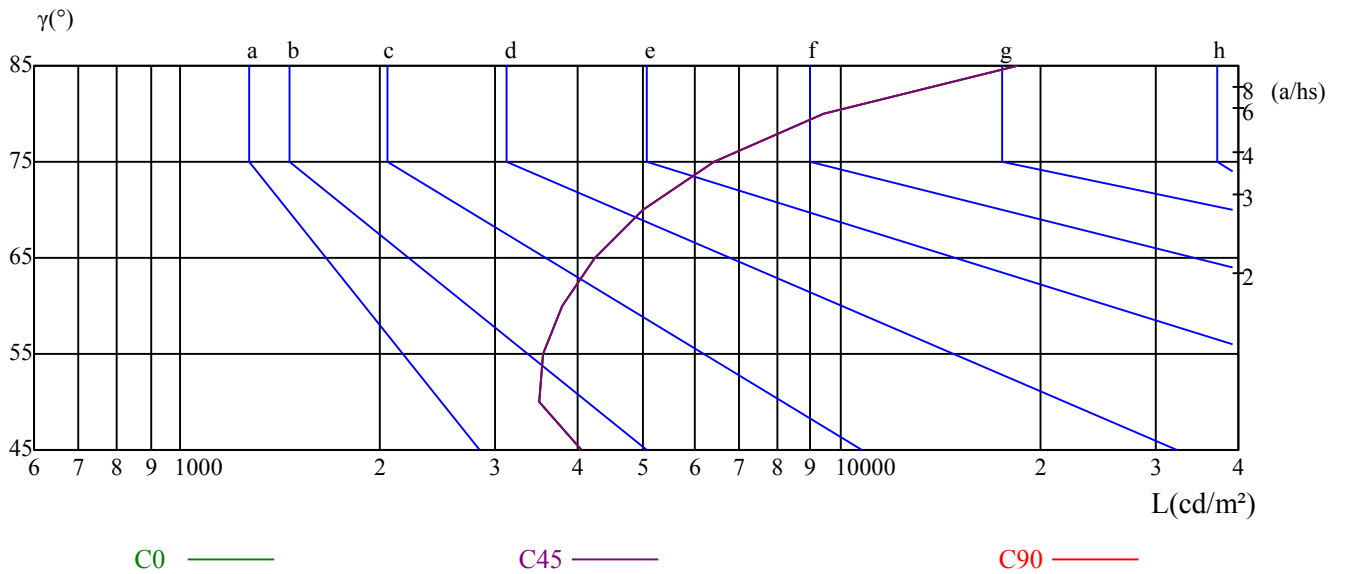
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4055	3504	3548	3795	4252	5018	6421	9391	18471
C45	4055	3504	3548	3795	4252	5018	6421	9391	18471
C90	4055	3504	3548	3795	4252	5018	6421	9391	18471

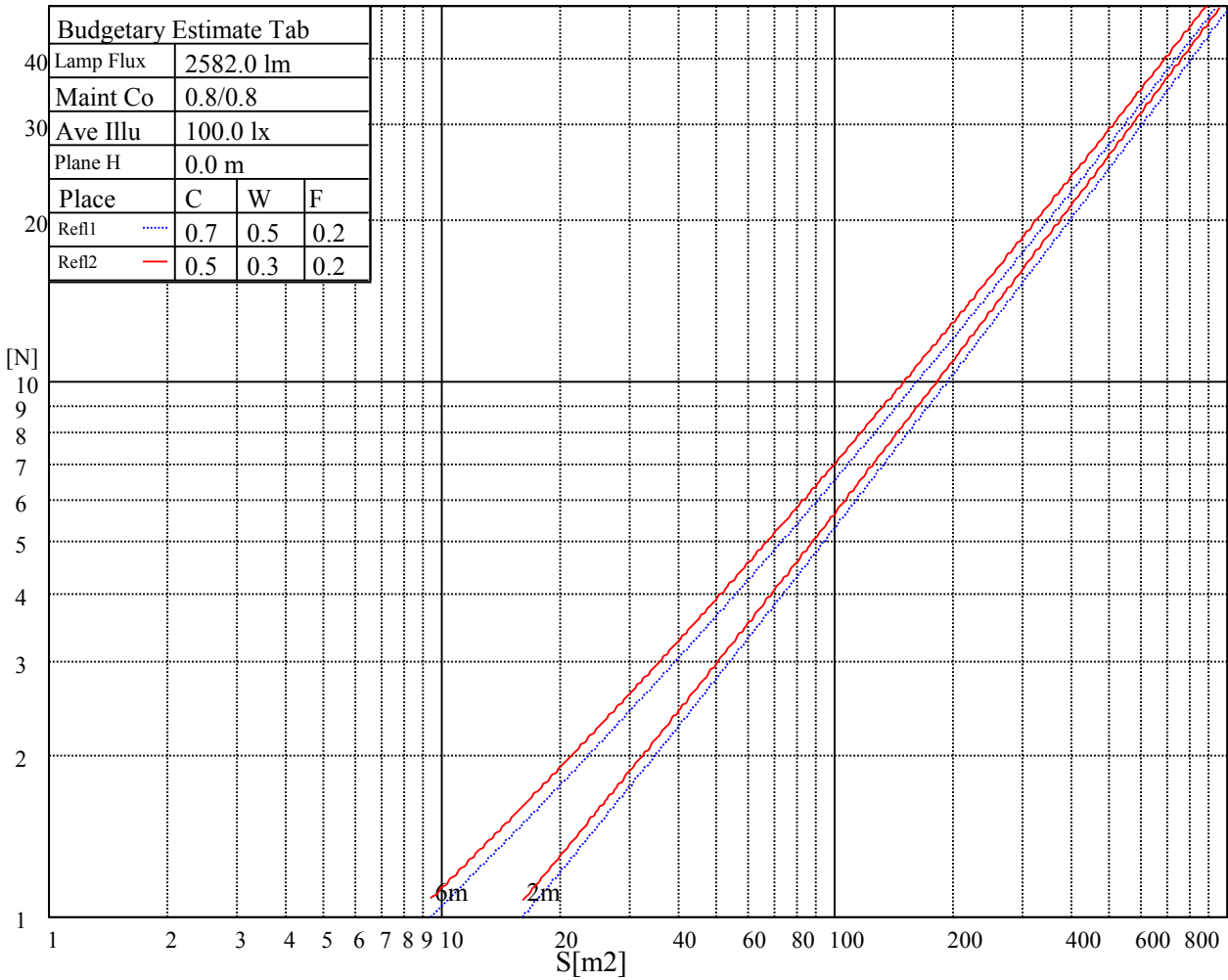
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4252	4252	4252	6421	6421	6421	18471	18471	18471

Glare Table

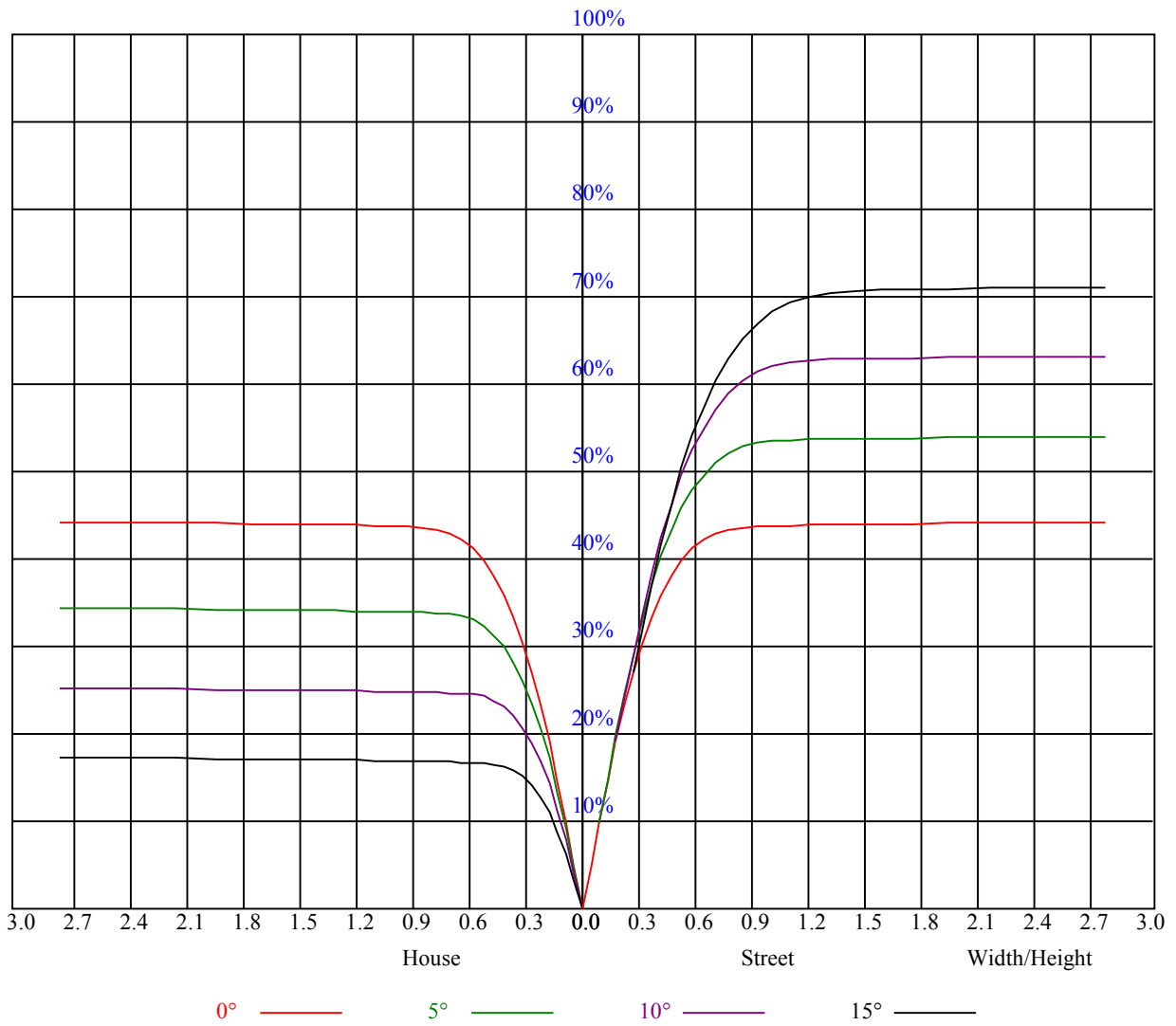
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.96	0.94	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.83
2	0.93	0.90	0.87	0.92	0.88	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.75
4	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.68
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.67	0.63	0.61	0.60
9	0.67	0.62	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.55



NATA 3-2040-M

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	3935.81	3907.13	3643.31	3112.31	2477.25	1680.19	1242.00	806.06	293.63
45.0	3946.50	3828.94	3477.94	2957.63	2149.88	1569.94	1146.38	583.31	72.68
90.0	3937.50	3771.56	3387.38	2812.50	1996.31	1422.00	1046.64	426.71	37.18
135.0	3946.50	3793.50	3468.38	2848.50	2109.38	1455.19	1064.25	523.13	53.04
180.0	3935.81	3731.06	3317.06	2655.00	1900.13	1348.31	997.20	357.53	29.70
225.0	3946.50	3819.38	3481.88	2871.00	2172.38	1516.50	1102.89	531.51	52.20
270.0	3937.50	3852.56	3599.44	3040.88	2348.44	1612.69	1216.13	731.25	297.00
315.0	3946.50	3850.31	3528.56	2961.56	2242.69	1508.06	1111.44	635.12	81.96
360.0	3935.81	3907.13	3643.31	3112.31	2477.25	1680.19	1242.00	806.06	293.63
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	22.16	14.74	12.94	11.87	11.19	10.63	10.18	9.96	9.79
45.0	17.66	13.89	12.54	11.64	11.03	10.46	10.18	9.90	9.73
90.0	15.58	13.39	12.15	11.42	10.86	10.41	10.07	9.96	9.73
135.0	16.54	13.44	12.32	11.48	10.86	10.41	10.07	9.90	9.73
180.0	14.79	13.16	12.09	11.31	10.74	10.29	10.01	9.84	9.73
225.0	16.14	13.44	12.26	11.48	10.86	10.41	10.07	9.90	9.79
270.0	19.13	13.84	12.43	11.64	11.03	10.52	10.24	10.01	10.07
315.0	17.55	13.73	12.32	11.53	10.91	10.41	10.07	9.90	9.79
360.0	22.16	14.74	12.94	11.87	11.19	10.63	10.18	9.96	9.79
C/γ(°)	90.0								
0.0	9.68								
45.0	9.68								
90.0	9.68								
135.0	9.73								
180.0	9.68								
225.0	9.68								
270.0	9.73								
315.0	9.73								
360.0	9.68								