



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: 92.70.134.00	
Report No: NATA0100	Voltage(V): 34.9000
Test No: GC2019010909	Current(A): 0.7000
LampCAT: OSRAM SOLERIQ S19	Power (W): 24.4300
Lamp flux(lm): 3440.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2987.93
Efficiency(%): 86.86%
Lumens(lm)/Power(W): 124.93
Central intensity(cd): 11214.560
Maximum intensity(cd): 11214.560
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.7
 [C90/270]Total=23.7
Field angle(10%Imax): [C0/180]Total=57.7
 [C90/270]Total=57.7
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.73%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.698%

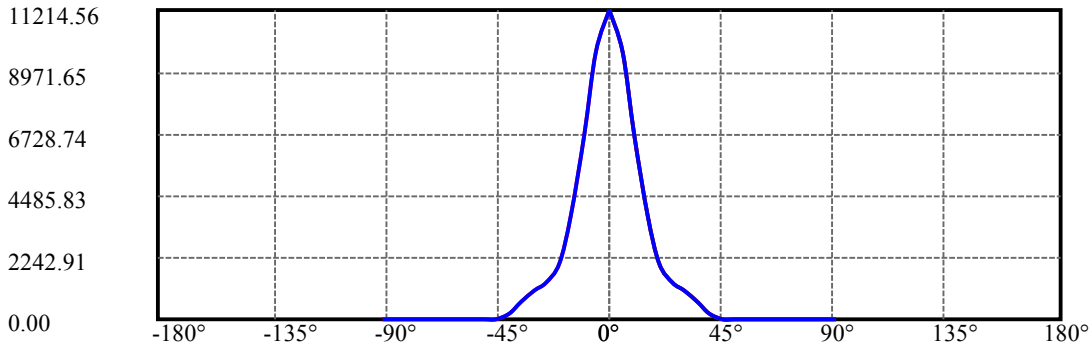
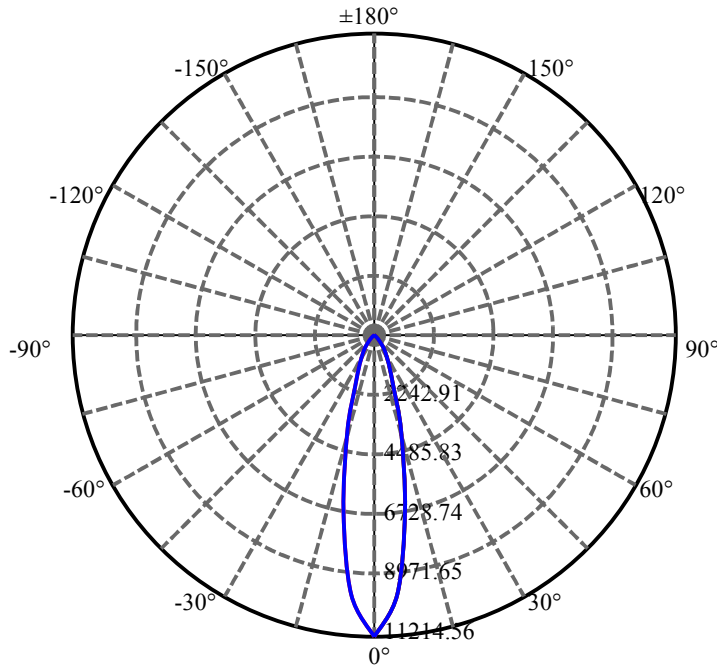
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11214.563	67.065	67.065	1.950%	2.245%
5.0	9659.320	461.458	528.523	13.414%	17.689%
10.0	6692.766	637.038	1165.561	18.519%	39.009%
15.0	3732.680	529.549	1695.11	15.394%	56.732%
20.0	2038.078	382.087	2077.197	11.107%	69.520%
25.0	1303.664	301.998	2379.195	8.779%	79.627%
30.0	1067.527	292.576	2671.77	8.505%	89.419%
35.0	599.885	188.603	2860.373	5.483%	95.731%
40.0	181.146	63.824	2924.198	1.855%	97.867%
45.0	19.540	7.573	2931.771	.220%	98.121%
50.0	16.024	6.729	2938.5	.196%	98.346%
55.0	14.372	6.453	2944.953	.188%	98.562%
60.0	13.500	6.408	2951.361	.186%	98.776%
65.0	13.008	6.462	2957.823	.188%	98.993%
70.0	12.720	6.552	2964.375	.190%	99.212%
75.0	12.544	6.641	2971.016	.193%	99.434%
80.0	12.502	6.748	2977.765	.196%	99.660%
85.0	12.452	6.800	2984.564	.198%	99.888%
90.0	12.263	3.361	2987.925	.098%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2671.77	77.67%	89.42%
0-40	2924.20	85.01%	97.87%
0-60	2951.36	85.80%	98.78%
0-90	2984.56	86.76%	99.89%
0-120	2984.56	86.76%	99.89%
0-180	2987.93	86.86%	100.00%
60-90	39.61	1.15%	1.33%
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%
0-25.19	2390.34	69.49%	80.00%

ZONAL LUMEN SUMMARY

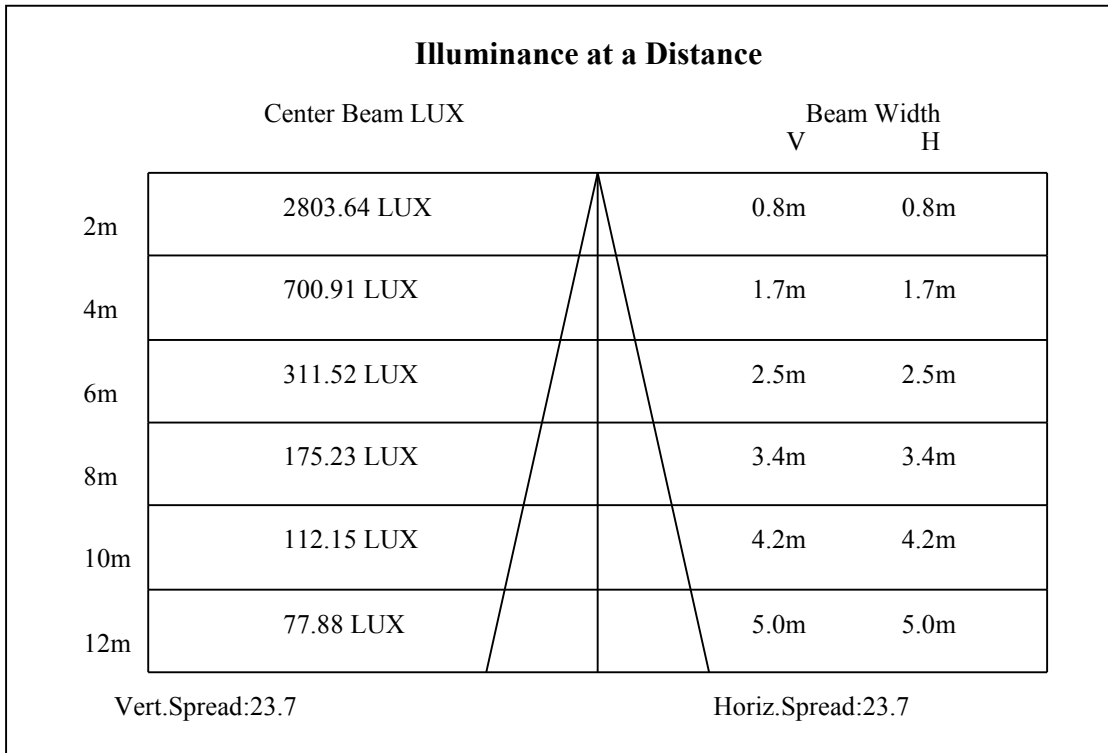
0-10	1165.56
10-20	911.64
20-30	594.57
30-40	252.43
40-50	14.30
50-60	12.86
60-70	13.01
70-80	13.39
80-90	6.80
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

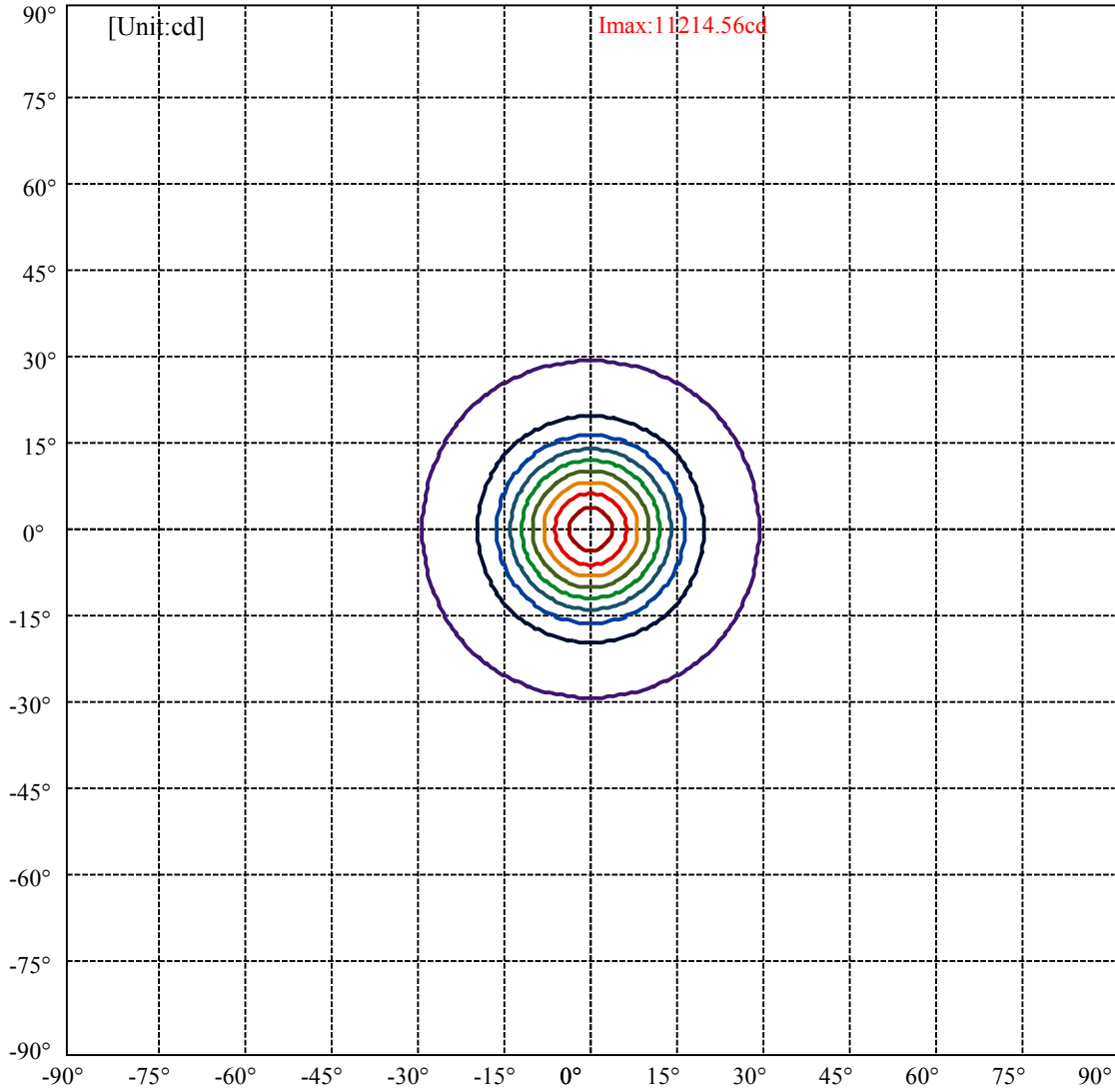


C0(Max): —————
C0/C180: —————
C90/C270: —————

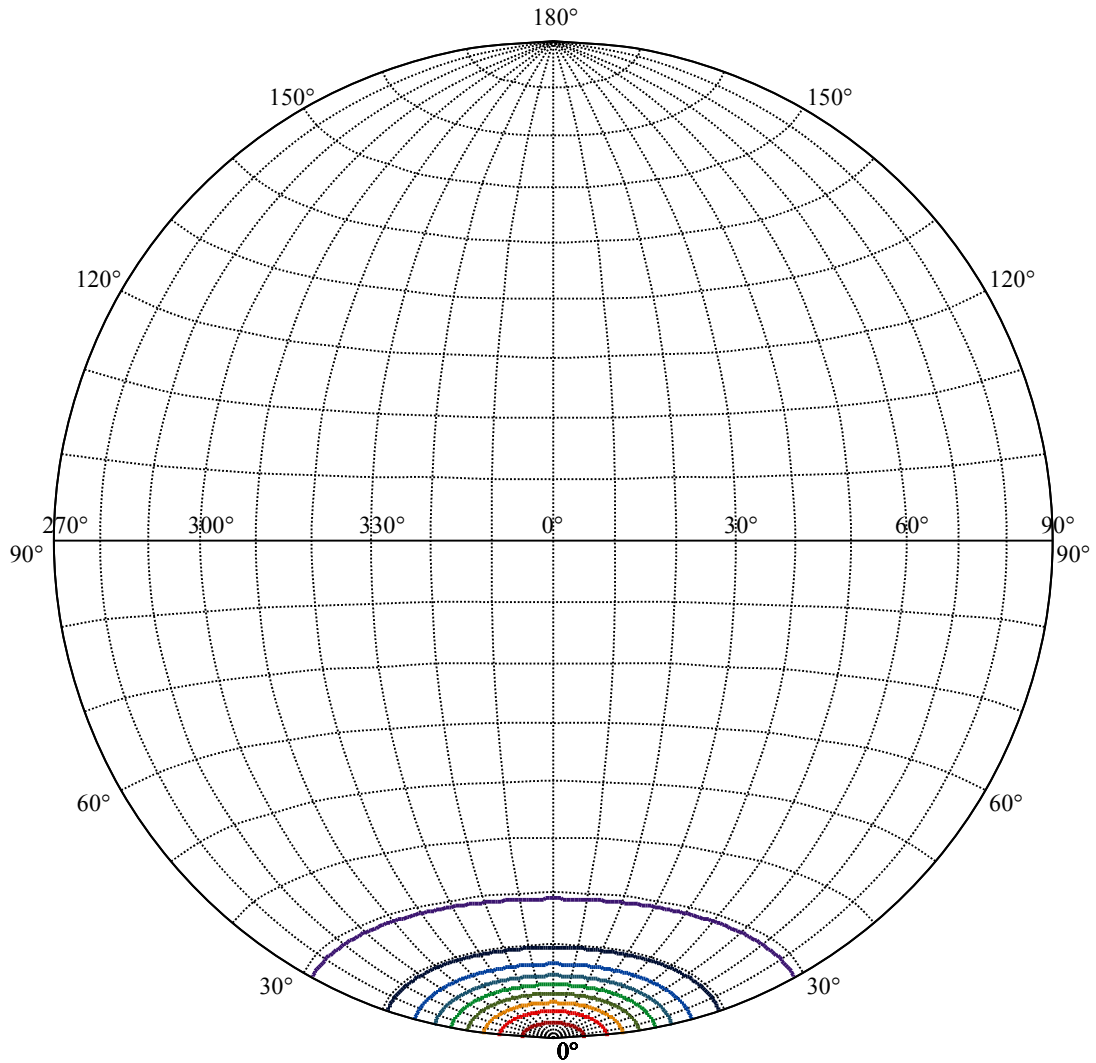
Field angle(10%Imax):C0/180Left:28.9 Right:28.9
:C90/270Left:28.9 Right:28.9

Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8
:C90/270Left:11.8 Right:11.8





(10%Imax) 1121.46	—
(20%Imax) 2242.91	—
(30%Imax) 3364.37	—
(40%Imax) 4485.83	—
(50%Imax) 5607.28	—
(60%Imax) 6728.74	—
(70%Imax) 7850.19	—
(80%Imax) 8971.65	—
(90%Imax) 10093.1	—



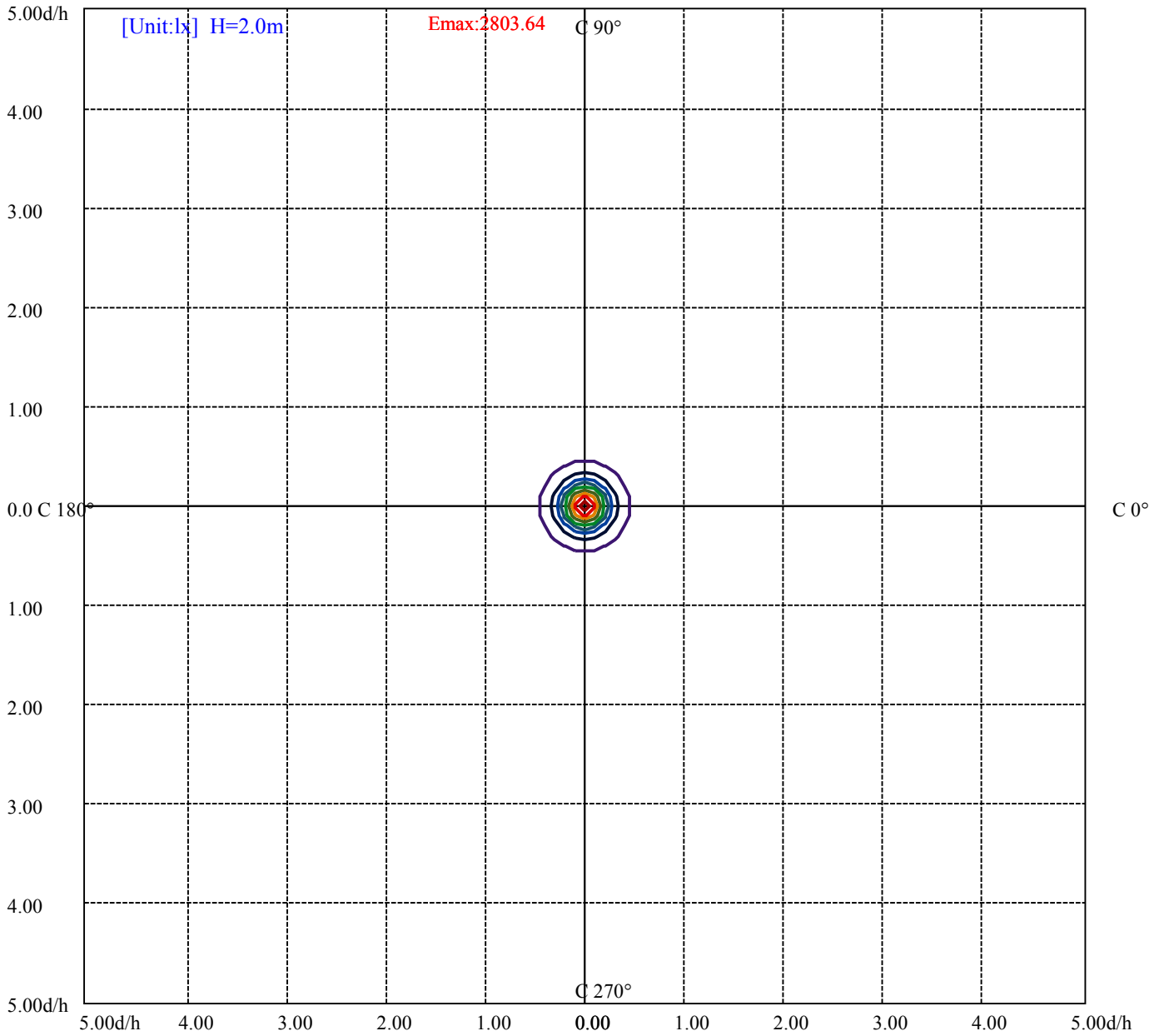
House

[Unit:cd]

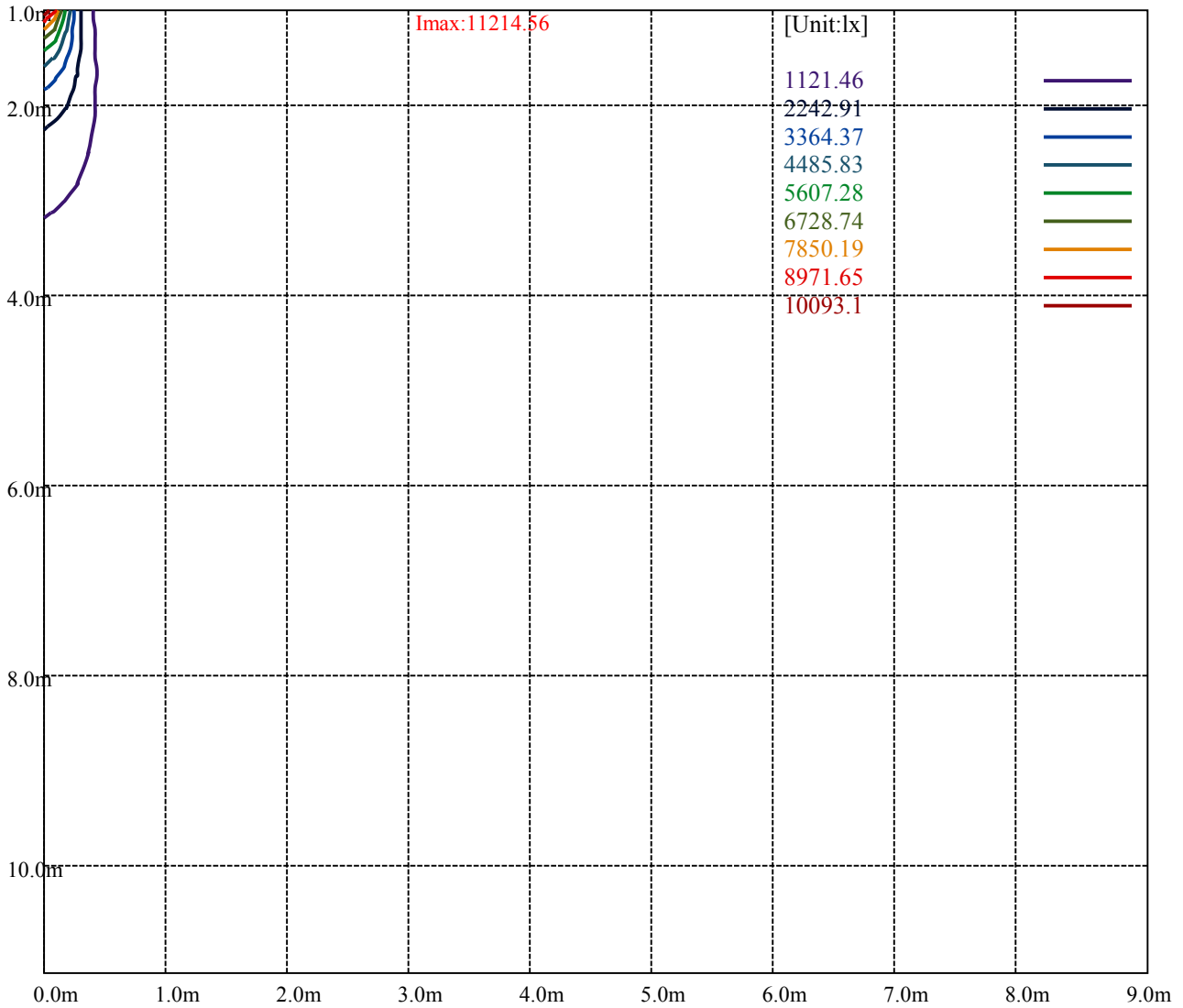
Road

Imax:11214.56

(10%Imax)	1121.46	—
(20%Imax)	2242.91	—
(30%Imax)	3364.37	—
(40%Imax)	4485.83	—
(50%Imax)	5607.28	—
(60%Imax)	6728.74	—
(70%Imax)	7850.19	—
(80%Imax)	8971.65	—
(90%Imax)	10093.1	—



(10%Emax) 280.3625	—
(20%Emax) 560.725	—
(30%Emax) 841.0875	—
(40%Emax) 1121.453	—
(50%Emax) 1401.815	—
(60%Emax) 1682.177	—
(70%Emax) 1962.54	—
(80%Emax) 2242.903	—
(90%Emax) 2523.275	—



Luminance Table

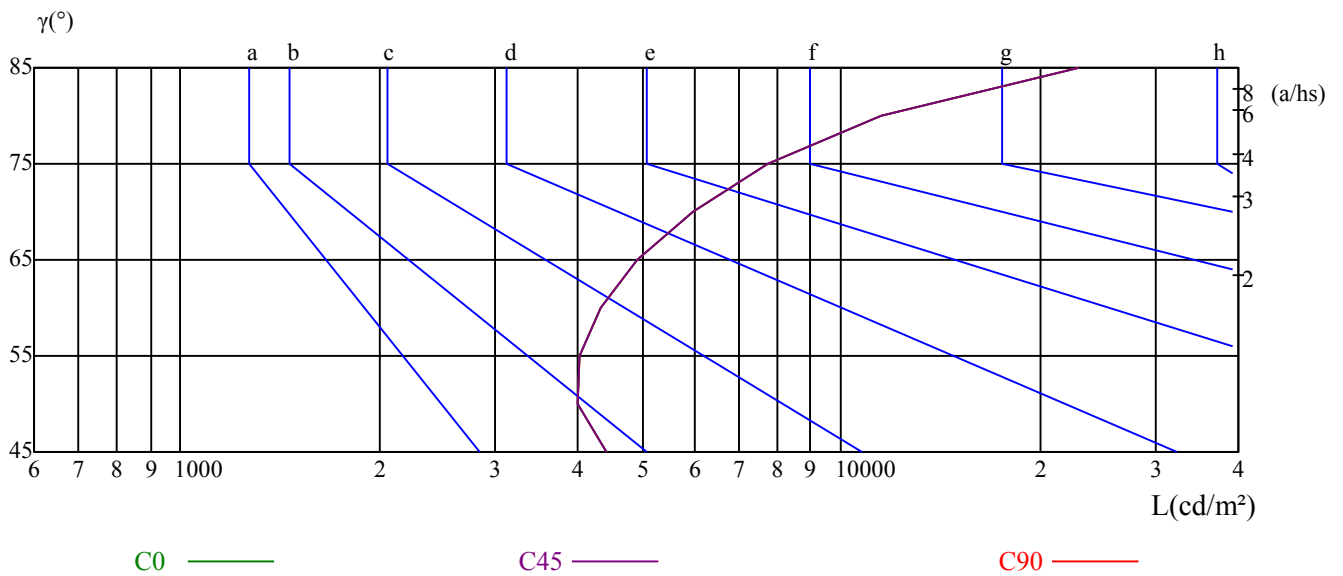
γ	45	50	55	60	65	70	75	80	85
C0	4428	3994	4015	4326	4932	5959	7766	11536	22893
C45	4428	3994	4015	4326	4932	5959	7766	11536	22893
C90	4428	3994	4015	4326	4932	5959	7766	11536	22893

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4932	4932	4932	7766	7766	7766	22893	22893	22893

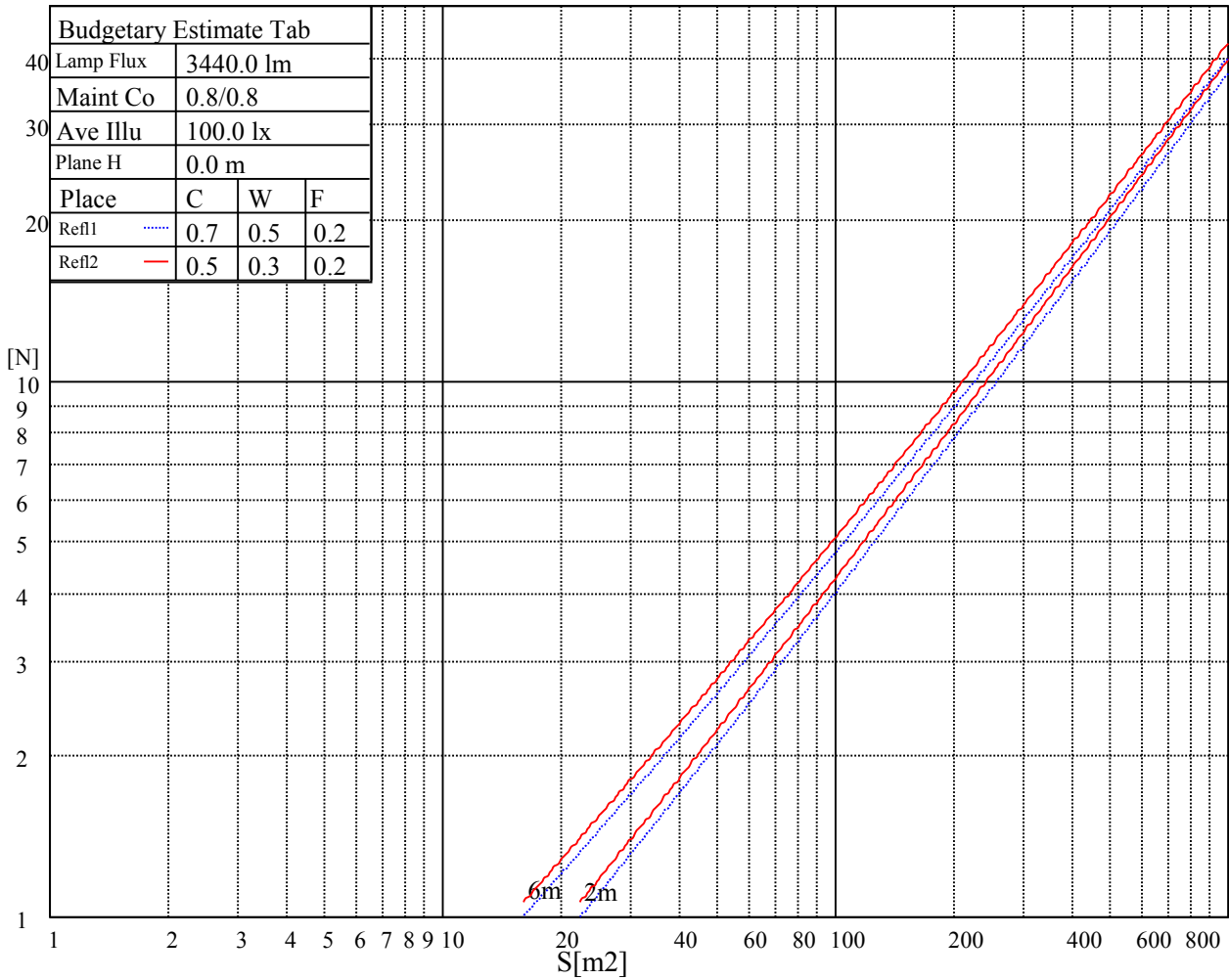
Glare Table

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

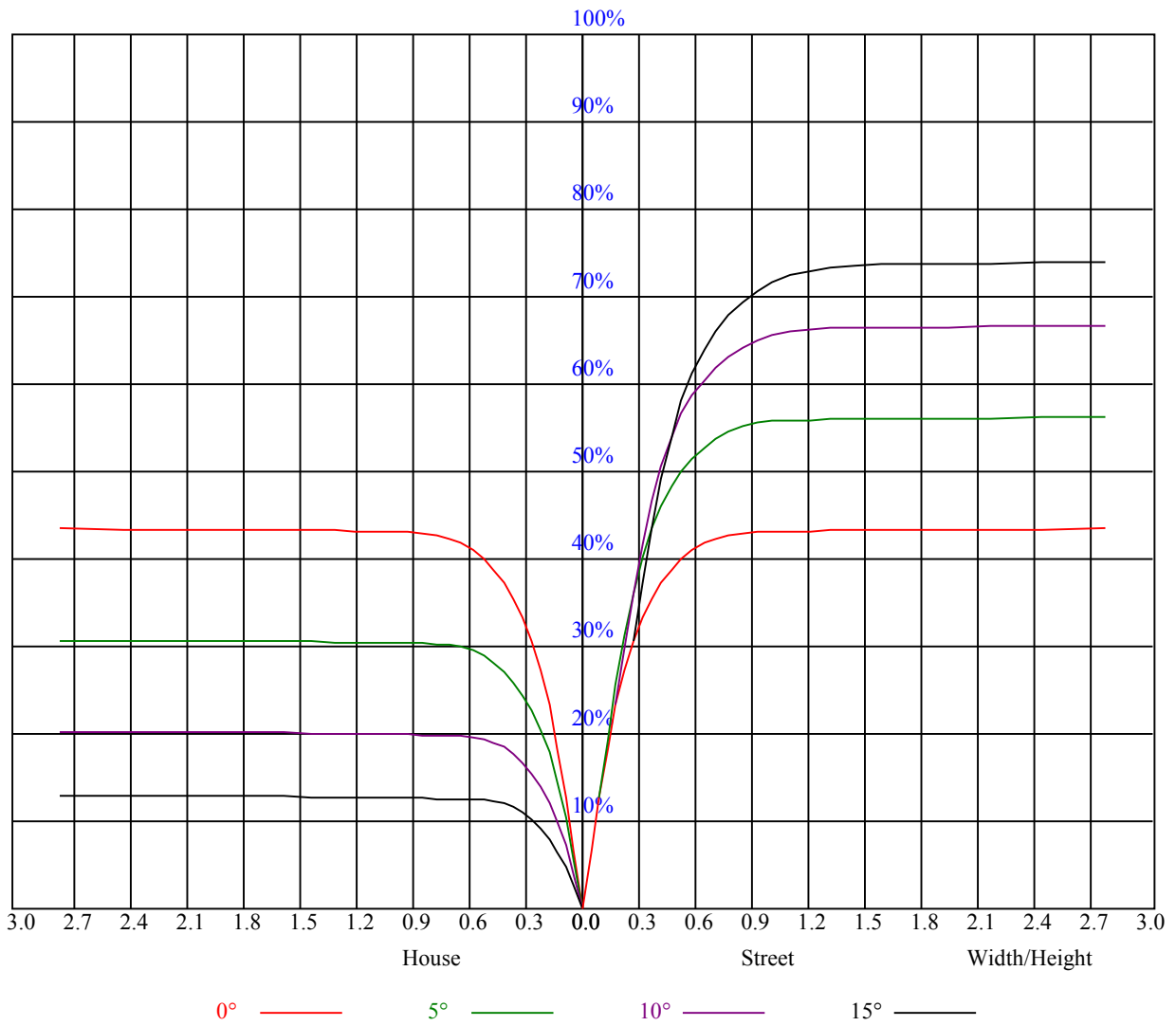
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	1.84	2.76	2.21	3.07	3.38	1.86	2.77	2.23	3.08	3.40
	3H	5.02	5.82	5.40	6.16	6.53	5.00	5.81	5.39	6.14	6.51
	4H	6.76	7.50	7.17	7.86	8.25	6.73	7.48	7.14	7.83	8.23
	6H	8.76	9.44	9.18	9.82	10.22	8.69	9.37	9.11	9.75	10.15
	8H	9.88	10.52	10.32	10.91	11.32	9.78	10.42	10.22	10.81	11.23
	12H	11.68	12.29	12.11	12.67	13.10	11.55	12.16	11.99	12.55	12.98
4H	2H	2.73	3.47	3.14	3.83	4.22	2.74	3.48	3.15	3.84	4.23
	3H	6.16	6.77	6.57	7.18	7.58	6.14	6.75	6.56	7.16	7.57
	4H	8.06	8.61	8.50	9.04	9.49	8.05	8.59	8.49	9.02	9.47
	6H	10.22	10.69	10.69	11.14	11.62	10.17	10.64	10.64	11.09	11.57
	8H	11.44	11.88	11.92	12.33	12.80	11.36	11.79	11.84	12.24	12.72
	12H	13.14	13.51	13.63	14.00	14.48	13.02	13.40	13.52	13.89	14.37
8H	4H	8.79	9.22	9.27	9.67	10.15	8.77	9.21	9.25	9.66	10.14
	6H	11.22	11.56	11.73	12.07	12.55	11.18	11.52	11.69	12.02	12.51
	8H	12.63	12.93	13.16	13.45	13.95	12.55	12.85	13.09	13.38	13.88
	12H	14.46	14.72	14.98	15.22	15.80	14.35	14.61	14.88	15.11	15.69
12H	4H	9.00	9.37	9.49	9.86	10.34	8.99	9.36	9.48	9.85	10.33
	6H	11.73	11.84	12.07	12.31	12.86	11.70	11.80	12.04	12.27	12.82
	8H	13.07	13.33	13.59	13.83	14.41	13.01	13.26	13.53	13.76	14.35
Variation with the observer position at spacings:											
S = 1.0H	5.3/-7.0					5.3/-7.0					
S = 1.5H	7.4/-5.2					7.4/-5.2					
S = 2.0H	8.6/-3.8					8.6/-3.8					
Standard tables:	BK3					BK3					
Uncorrected UGR	1.2					1.2					



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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.91	0.91	0.91	0.89
1	0.97	0.95	0.92	0.95	0.93	0.91	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.81
2	0.92	0.89	0.86	0.91	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.78
3	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.75
4	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.74	0.78	0.75	0.74	0.72
5	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
6	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.67
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
9	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.62	0.61
10	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60



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	11219.63	9877.50	6834.38	3915.00	2023.88	1321.31	1074.38	610.31	288.56
45.0	11226.94	9607.50	6823.13	3757.50	2030.63	1303.31	1072.13	588.38	177.98
90.0	11206.69	9438.19	6253.31	3457.13	1875.38	1248.75	1038.66	553.44	89.55
135.0	11205.00	10012.50	7008.75	4050.00	2138.06	1335.94	1088.44	684.00	286.31
180.0	11219.63	9450.56	6471.00	3648.94	1972.13	1290.94	1061.94	577.35	111.04
225.0	11226.94	9643.50	6714.00	3693.38	1999.69	1325.81	1067.79	577.46	121.11
270.0	11206.69	9939.38	7098.75	3982.50	2435.63	1353.38	1099.13	673.31	288.00
315.0	11205.00	9305.44	6338.81	3357.00	1829.25	1249.88	1037.76	534.83	86.63
360.0	11219.63	9877.50	6834.38	3915.00	2023.88	1321.31	1074.38	610.31	288.56

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	19.41	16.37	14.68	13.50	12.99	12.71	12.54	12.43	12.38
45.0	18.62	16.20	14.51	13.61	13.11	12.77	12.60	12.60	12.54
90.0	18.51	16.09	14.29	13.39	12.99	12.71	12.71	12.94	12.88
135.0	23.12	15.98	14.34	13.50	12.99	12.66	12.49	12.43	12.38
180.0	19.01	15.75	14.23	13.44	12.99	12.71	12.43	12.38	12.32
225.0	18.39	16.09	14.40	13.56	12.99	12.71	12.54	12.43	12.38
270.0	21.32	16.03	14.46	13.61	13.05	12.77	12.54	12.43	12.43
315.0	17.94	15.69	14.06	13.39	12.94	12.71	12.49	12.38	12.32
360.0	19.41	16.37	14.68	13.50	12.99	12.71	12.54	12.43	12.38

C/γ(°)	90.0
0.0	12.26
45.0	12.26
90.0	12.32
135.0	12.26
180.0	12.21
225.0	12.26
270.0	12.26
315.0	12.26
360.0	12.26