



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: 1406-N	
Luminaire: 92.70.043.00	
Report No: NATA0100	Voltage(V): 35.9000
Test No: GC2019011809	Current(A): 0.1470
LampCAT: CITIZEN CLU7A2	Power (W): 5.2800
Lamp flux(lm): 511.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 479.35
Efficiency(%): 93.81%
Lumens(lm)/Power(W): 91.55
Central intensity(cd): 750.867
Maximum intensity(cd): 750.867
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.8
 [C90/270]Total=35.8
Field angle(10%Imax): [C0/180]Total=87.1
 [C90/270]Total=87.1
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.63 C90_270=0.63
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.59%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.454%

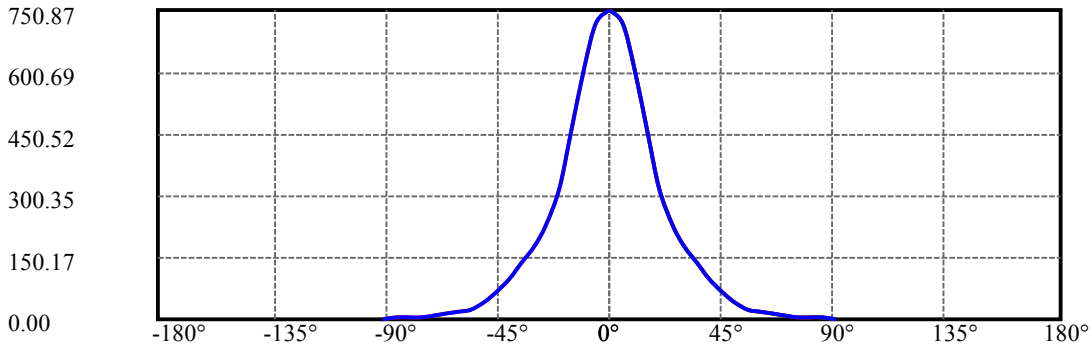
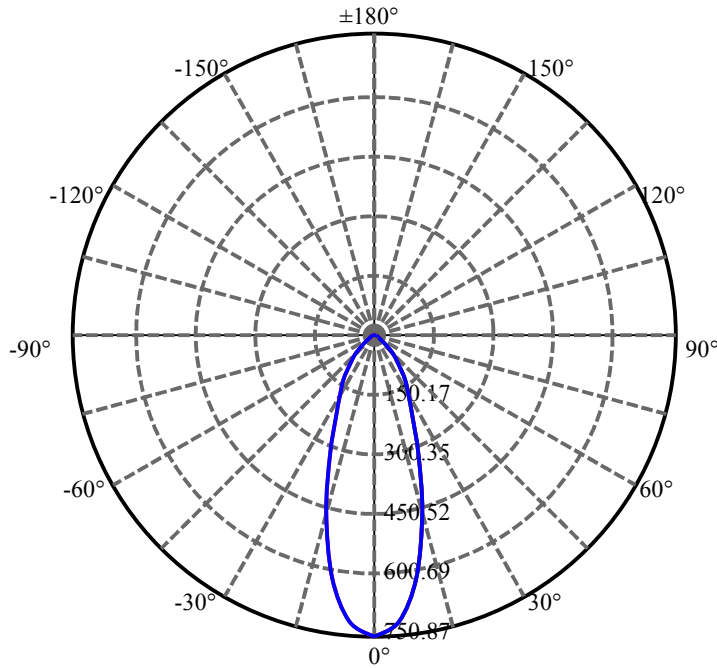
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	750.867	4.490	4.49	.879%	.937%
5.0	717.061	34.256	38.747	6.704%	8.083%
10.0	612.443	58.294	97.041	11.408%	20.244%
15.0	454.380	64.462	161.503	12.615%	33.692%
20.0	317.377	59.500	221.003	11.644%	46.105%
25.0	226.863	52.554	273.557	10.284%	57.069%
30.0	175.613	48.130	321.686	9.419%	67.110%
35.0	135.584	42.627	364.314	8.342%	76.002%
40.0	99.872	35.188	399.502	6.886%	83.343%
45.0	64.800	25.116	424.618	4.915%	88.583%
50.0	40.556	17.029	441.648	3.333%	92.136%
55.0	25.481	11.441	453.089	2.239%	94.522%
60.0	17.522	8.318	461.407	1.628%	96.258%
65.0	12.220	6.071	467.477	1.188%	97.524%
70.0	8.754	4.509	471.986	.882%	98.465%
75.0	6.054	3.205	475.192	.627%	99.133%
80.0	4.071	2.198	477.389	.430%	99.592%
85.0	2.602	1.421	478.81	.278%	99.888%
90.0	1.955	0.536	479.346	.105%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	321.69	62.95%	67.11%
0-40	399.50	78.18%	83.34%
0-60	461.41	90.29%	96.26%
0-90	478.81	93.70%	99.89%
0-120	478.81	93.70%	99.89%
0-180	479.35	93.81%	100.00%
60-90	25.72	5.03%	5.37%
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%
0-37.72	383.48	75.04%	80.00%

ZONAL LUMEN SUMMARY

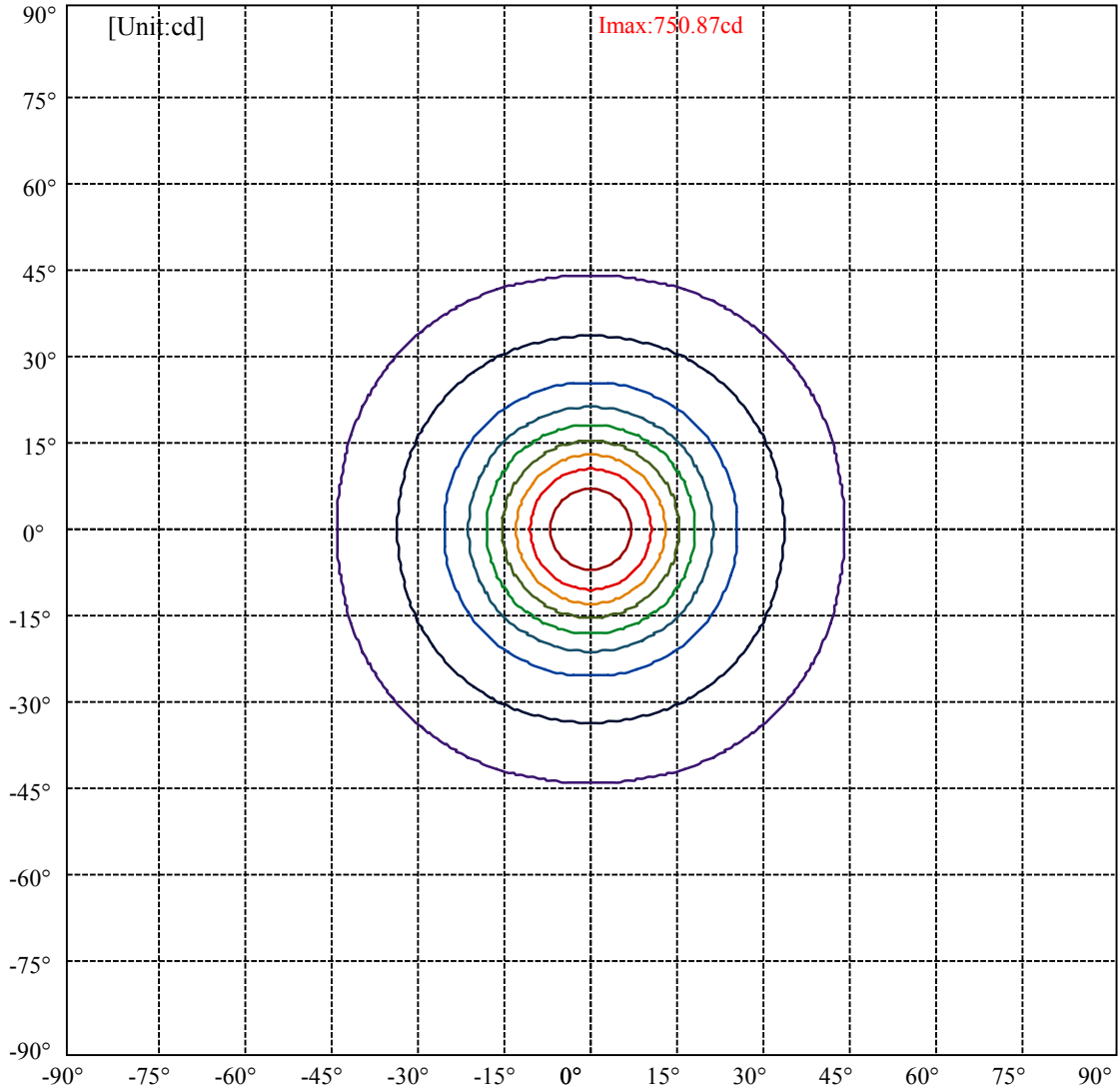
0-10	97.04
10-20	123.96
20-30	100.68
30-40	77.82
40-50	42.15
50-60	19.76
60-70	10.58
70-80	5.40
80-90	1.42
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



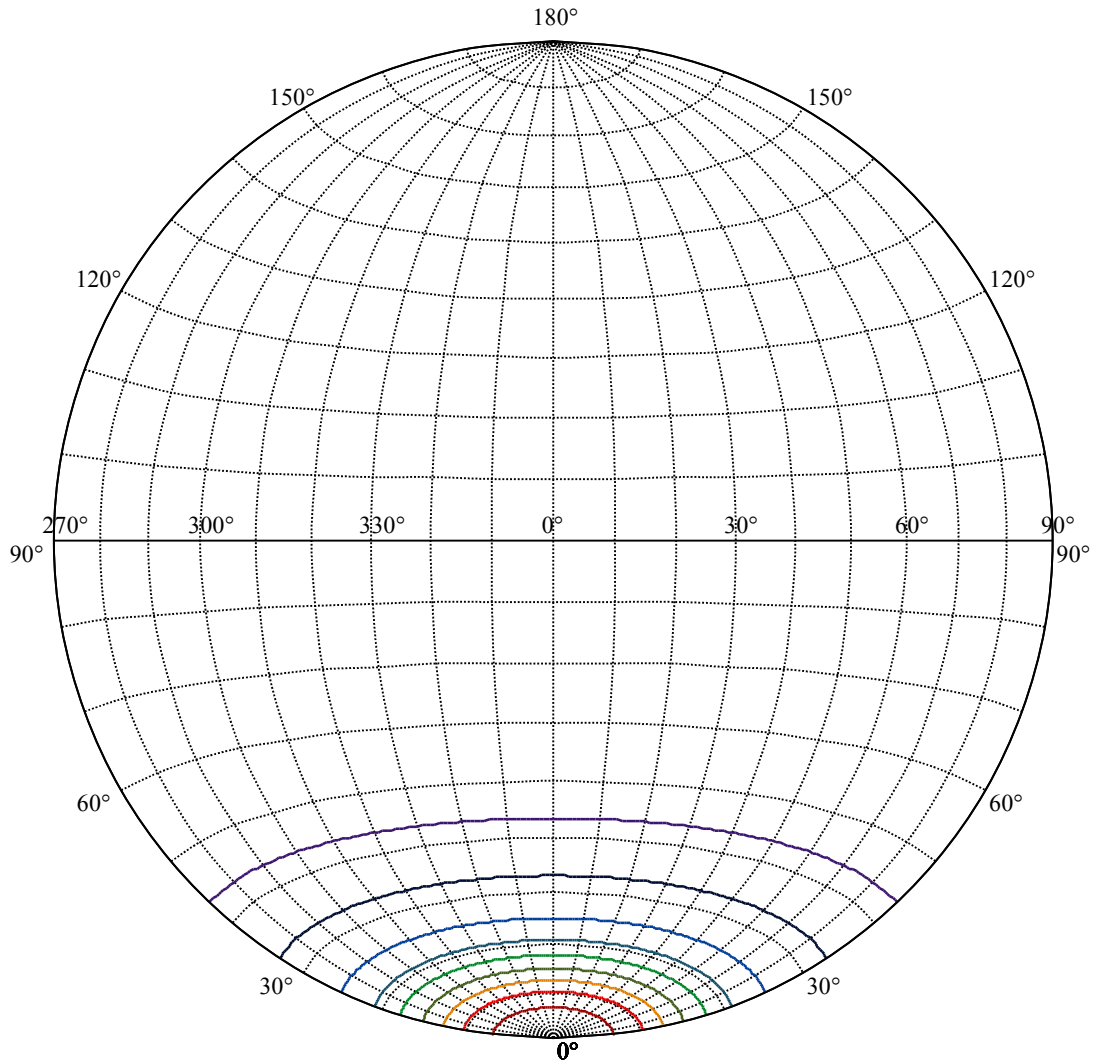
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:43.5 Right:43.5
:C90/270Left:43.5 Right:43.5

Beam Angle(50%Imax):C0/180Left:17.9 Right:17.9
:C90/270Left:17.9 Right:17.9



(10%Imax) 75.0867	—
(20%Imax) 150.173	—
(30%Imax) 225.26	—
(40%Imax) 300.347	—
(50%Imax) 375.434	—
(60%Imax) 450.52	—
(70%Imax) 525.607	—
(80%Imax) 600.694	—
(90%Imax) 675.78	—



House

[Unit:cd]

Road

Imax:750.87

(10%Imax) 75.0867

(20%Imax) 150.173

(30%Imax) 225.26

(40%Imax) 300.347

(50%Imax) 375.434

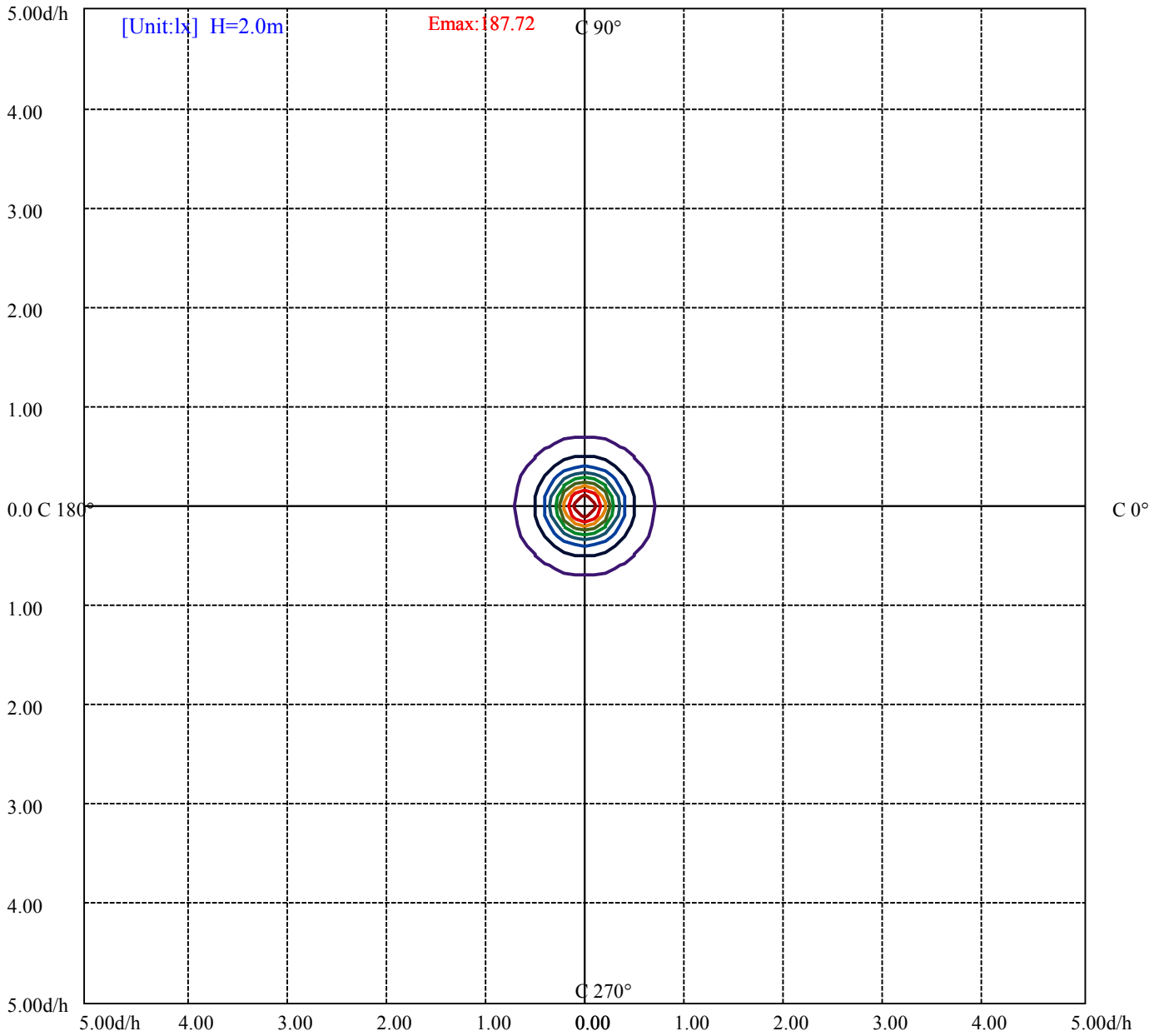
(60%Imax) 450.52

(70%Imax) 525.607

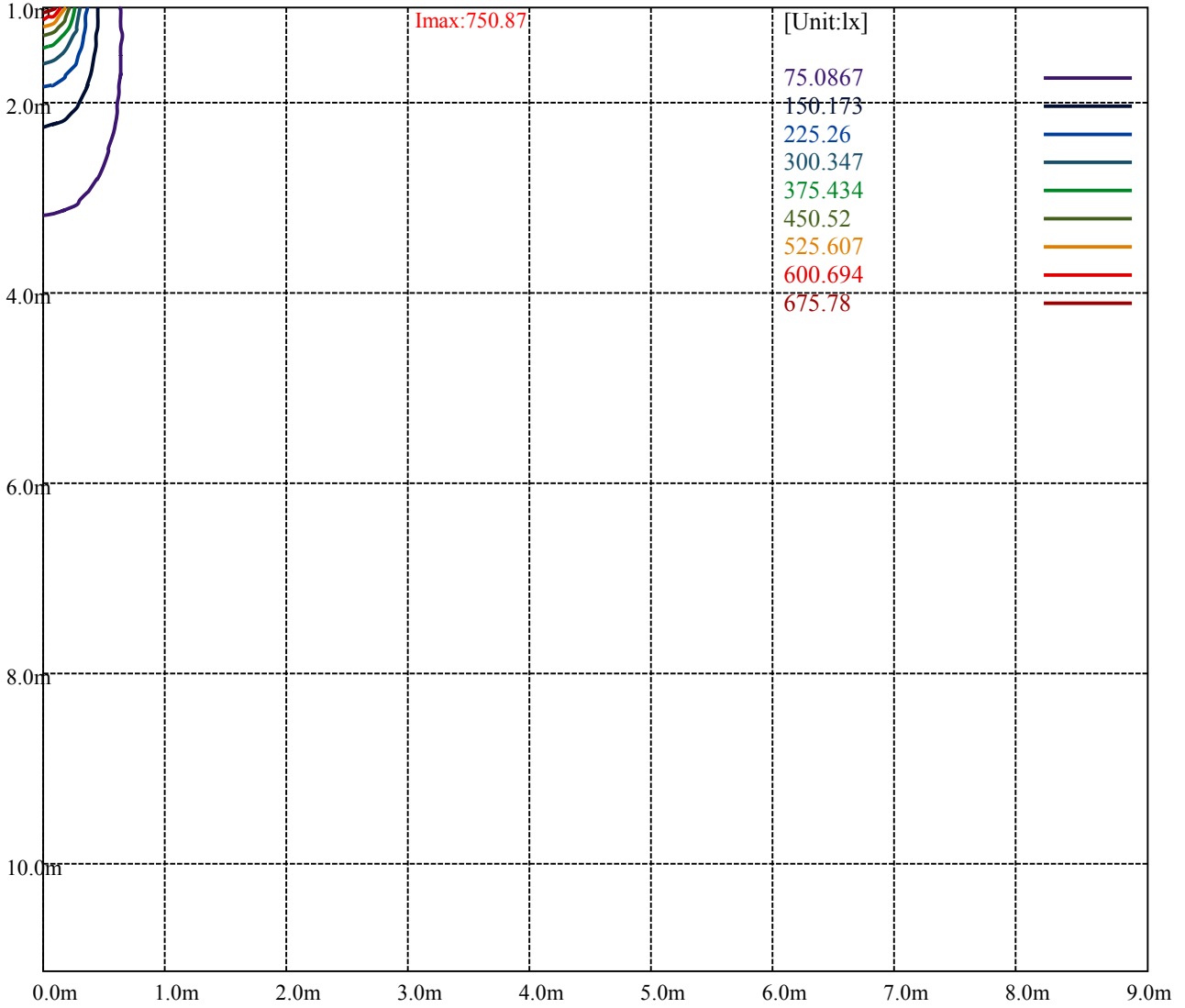
(80%Imax) 600.694

(90%Imax) 675.78





(10%Emax) 18.77165	—
(20%Emax) 37.54325	—
(30%Emax) 56.315	—
(40%Emax) 75.0865	—
(50%Emax) 93.85825	—
(60%Emax) 112.63	—
(70%Emax) 131.4015	—
(80%Emax) 150.1732	—
(90%Emax) 168.9447	—



Luminance Table

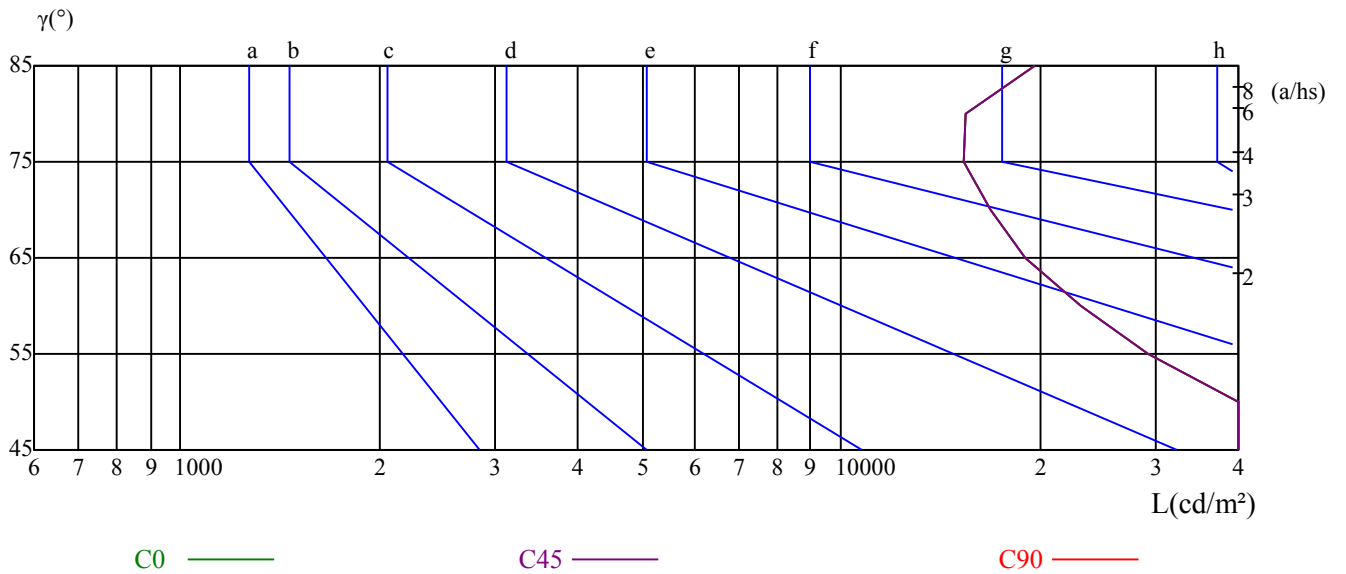
γ	45	50	55	60	65	70	75	80	85
C0	60251	41482	29208	23040	19011	16828	15378	15414	19625
C45	60251	41482	29208	23040	19011	16828	15378	15414	19625
C90	60251	41482	29208	23040	19011	16828	15378	15414	19625

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
19011	19011	19011	15378	15378	15378	19625	19625	19625

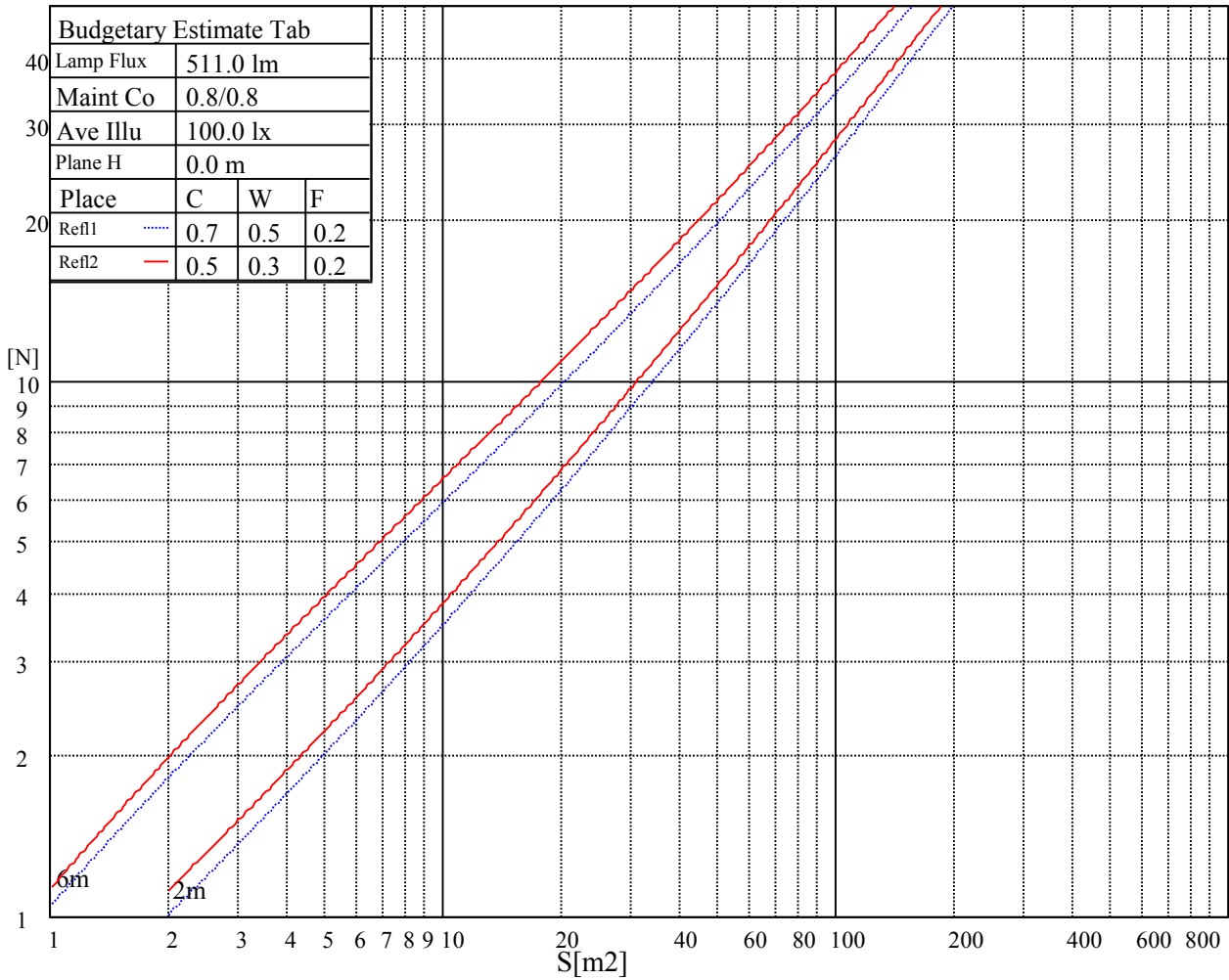
Glare Table

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

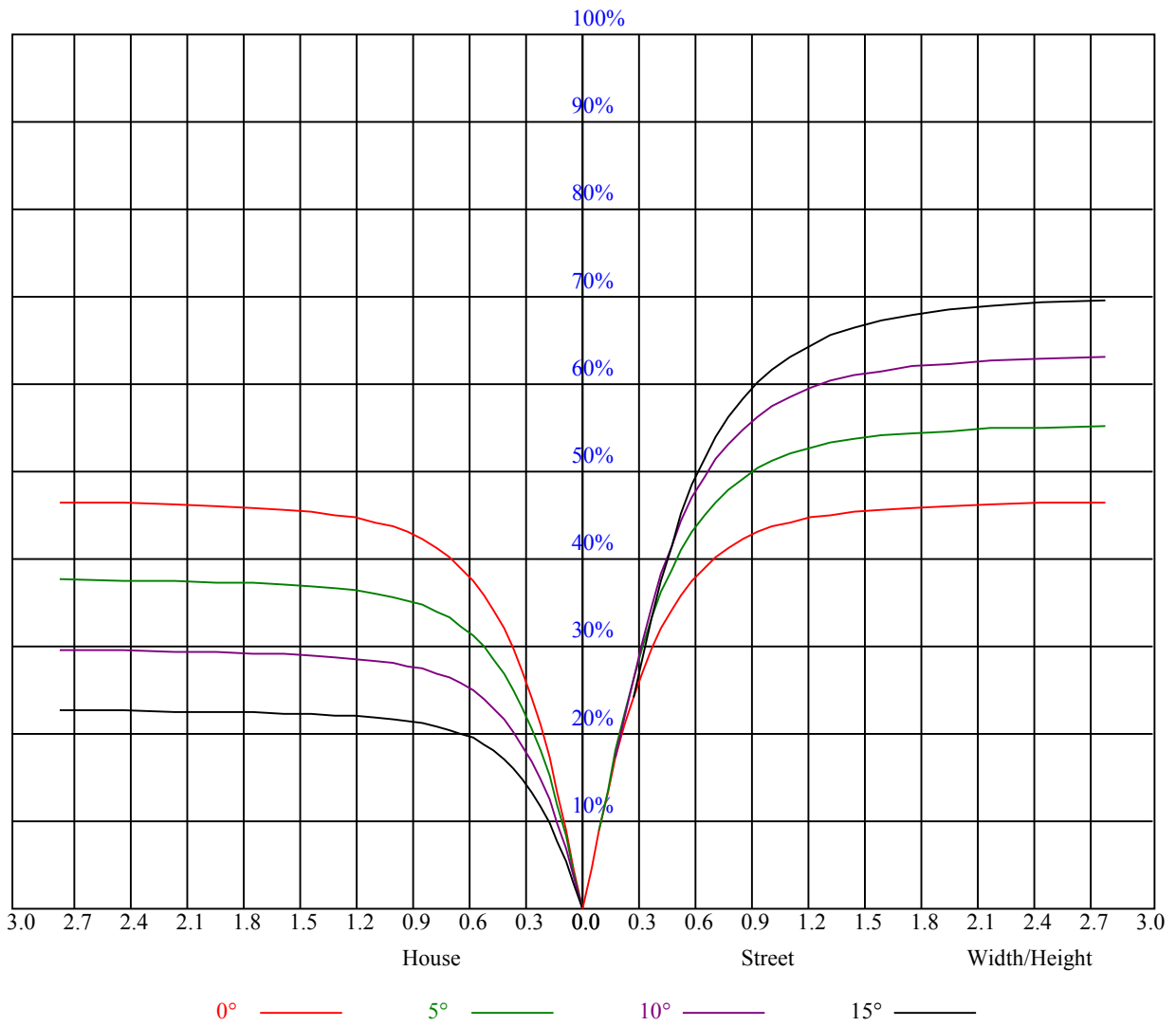
Luminance Limiting Curve



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	21.99	23.15	22.36	23.46	23.78	22.21	23.37	22.57	23.68	24.00
	3H	22.98	24.01	23.37	24.34	24.71	23.24	24.26	23.62	24.60	24.96
	4H	23.37	24.32	23.77	24.67	25.06	23.64	24.59	24.05	24.95	25.33
	6H	23.70	24.58	24.12	24.95	25.34	23.99	24.87	24.41	25.24	25.63
	8H	23.85	24.67	24.28	25.07	25.47	24.15	24.97	24.58	25.37	25.77
	12H	24.11	24.90	24.54	25.28	25.71	24.43	25.22	24.86	25.60	26.03
4H	2H	22.27	23.23	22.68	23.58	23.96	22.46	23.41	22.86	23.76	24.15
	3H	23.48	24.26	23.90	24.67	25.07	23.70	24.48	24.12	24.89	25.29
	4H	23.99	24.68	24.42	25.10	25.55	24.22	24.92	24.66	25.34	25.79
	6H	24.39	24.99	24.85	25.43	25.90	24.64	25.24	25.11	25.69	26.16
	8H	24.60	25.16	25.07	25.61	26.08	24.87	25.43	25.34	25.88	26.35
	12H	24.91	25.40	25.40	25.89	26.36	25.20	25.69	25.69	26.18	26.65
8H	4H	24.15	24.71	24.63	25.16	25.63	24.37	24.93	24.84	25.38	25.85
	6H	24.70	25.16	25.21	25.66	26.14	24.94	25.39	25.44	25.89	26.37
	8H	25.03	25.43	25.55	25.95	26.44	25.27	25.68	25.80	26.20	26.69
	12H	25.84	26.20	26.36	26.70	27.27	26.11	26.46	26.62	26.96	27.53
12H	4H	24.16	24.65	24.65	25.13	25.61	24.37	24.86	24.86	25.34	25.82
	6H	25.20	25.16	25.29	25.63	26.18	25.42	25.39	25.51	25.86	26.40
	8H	25.15	25.50	25.67	26.00	26.58	25.39	25.74	25.90	26.24	26.81
Variation with the observer position at spacings:											
S = 1.0H	1.1/-1.9					1.1/-1.9					
S = 1.5H	2.3/-2.5					2.3/-2.5					
S = 2.0H	4.2/-2.6					4.2/-2.6					
Standard tables:	BK2					BK2					
Uncorrected UGR	6.0					6.0					



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	1.13	1.13	1.13	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.03	1.00	0.98	1.01	0.99	0.96	0.97	0.95	0.93	0.94	0.92	0.90	0.90	0.89	0.88	0.86
2	0.96	0.91	0.88	0.94	0.90	0.87	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.80
3	0.89	0.84	0.80	0.88	0.83	0.79	0.85	0.81	0.78	0.83	0.79	0.77	0.80	0.78	0.75	0.74
4	0.83	0.77	0.73	0.82	0.77	0.73	0.80	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.69
5	0.78	0.72	0.68	0.77	0.72	0.68	0.75	0.71	0.67	0.74	0.70	0.66	0.72	0.69	0.66	0.64
6	0.73	0.68	0.63	0.73	0.67	0.63	0.71	0.66	0.63	0.70	0.66	0.62	0.69	0.65	0.62	0.60
7	0.69	0.64	0.60	0.69	0.63	0.59	0.67	0.63	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.57
8	0.66	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.54
9	0.63	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.55	0.53	0.51
10	0.60	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.49



NATA 1406-N

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	750.21	717.41	608.51	449.72	327.88	228.88	175.39	135.68	100.74
45.0	755.10	714.99	604.01	441.45	308.36	224.83	173.48	133.43	97.48
90.0	749.53	705.43	589.89	436.28	299.98	212.96	165.26	126.39	91.86
135.0	748.63	728.94	640.01	483.13	336.32	239.68	182.48	141.53	107.44
180.0	750.21	717.64	614.42	463.89	323.55	231.98	180.11	140.18	102.26
225.0	755.10	726.64	632.76	470.25	327.88	234.51	184.56	142.26	104.63
270.0	749.53	722.31	630.84	469.52	324.96	233.27	178.09	137.76	104.12
315.0	748.63	703.13	579.09	420.81	290.08	208.80	165.54	127.46	90.45
360.0	750.21	717.41	608.51	449.72	327.88	228.88	175.39	135.68	100.74

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	64.63	40.33	26.21	18.00	12.54	9.34	6.41	4.33	2.70
45.0	63.56	39.38	24.53	17.16	11.93	8.49	6.08	4.05	2.59
90.0	59.91	37.41	23.23	15.86	11.25	8.10	5.51	3.71	2.42
135.0	69.75	43.37	27.11	18.23	12.49	8.94	6.30	4.22	2.70
180.0	65.25	41.51	25.88	17.66	12.43	8.89	6.08	4.05	2.64
225.0	69.98	43.48	27.00	18.62	12.77	8.94	6.13	4.16	2.70
270.0	68.68	42.41	26.04	18.00	12.43	8.83	6.13	4.11	2.53
315.0	56.64	36.56	23.85	16.65	11.93	8.49	5.79	3.94	2.53
360.0	64.63	40.33	26.21	18.00	12.54	9.34	6.41	4.33	2.70

C/γ(°)	90.0
0.0	2.08
45.0	1.91
90.0	1.91
135.0	1.91
180.0	2.03
225.0	2.03
270.0	1.86
315.0	1.91
360.0	2.08