



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

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## Nata

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LumCAT: 3-1550-A3  
Luminaire: 99.02.73.172+92.76.365.00  
Report No: NATA0100  
Test No: GC2018091215  
LampCAT: LUMINUS CXM-11-AC30  
Lamp flux(lm): 2496.0  
Number of Lamps: 1  
Length(mm): 78  
Phm Type: C

Voltage(V): 34.7000  
Current(A): 0.4900  
Power (W): 17.0030  
PF: 0.0000  
Ballast type: DC  
Width(mm): 78  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2264.52  
Efficiency(%): 90.73%  
Lumens(lm)/Power(W): 133.18  
Central intensity(cd): 4065.891  
Maximum intensity(cd): 4065.891  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=42.0  
                                  [C90/270]Total=42.0  
Field angle(10%Imax): [C0/180]Total=73.2  
                                  [C90/270]Total=73.2  
Maximum s/h(1/2): C0\_180=0.67 C90\_270=0.67  
Maximum s/h(1/4): C0\_180=0.70 C90\_270=0.70  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 91.61%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.709%

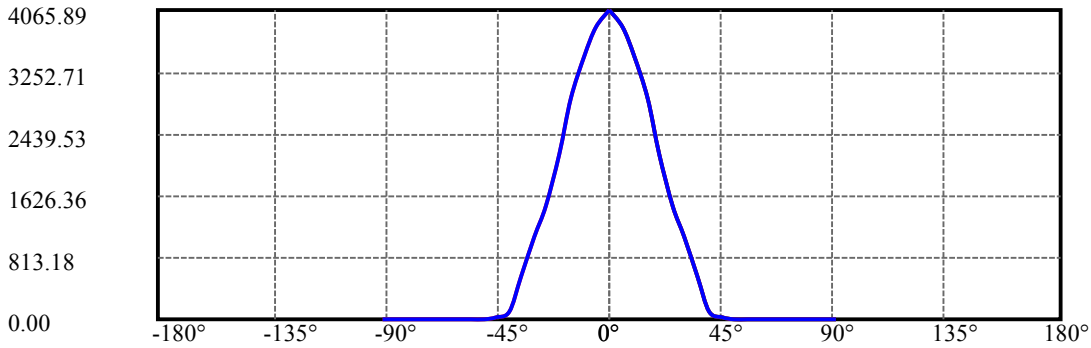
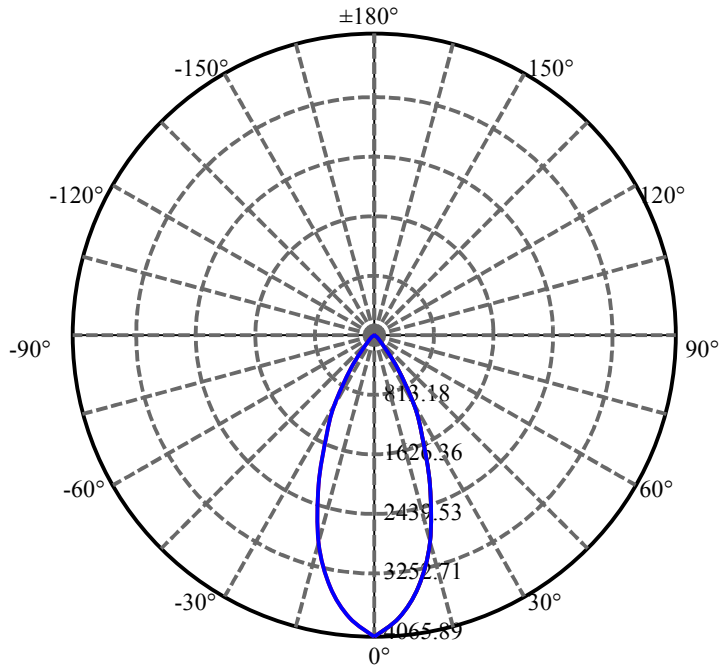
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4065.891	24.315	24.315	.974%	1.074%
5.0	3828.727	182.911	207.226	7.328%	9.151%
10.0	3453.328	328.698	535.924	13.169%	23.666%
15.0	2907.563	412.491	948.415	16.526%	41.881%
20.0	2161.898	405.300	1353.715	16.238%	59.779%
25.0	1502.508	348.060	1701.775	13.945%	75.149%
30.0	1092.277	299.359	2001.134	11.994%	88.369%
35.0	545.618	171.542	2172.676	6.873%	95.944%
40.0	112.641	39.687	2212.363	1.590%	97.697%
45.0	16.010	6.205	2218.569	.249%	97.971%
50.0	12.361	5.190	2223.759	.208%	98.200%
55.0	11.637	5.225	2228.984	.209%	98.431%
60.0	11.166	5.300	2234.284	.212%	98.665%
65.0	10.821	5.376	2239.66	.215%	98.902%
70.0	10.582	5.451	2245.111	.218%	99.143%
75.0	10.399	5.506	2250.616	.221%	99.386%
80.0	10.266	5.541	2256.158	.222%	99.631%
85.0	10.273	5.609	2261.767	.225%	99.878%
90.0	10.055	2.756	2264.523	.110%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2001.13	80.17%	88.37%
0-40	2212.36	88.64%	97.70%
0-60	2234.28	89.51%	98.66%
0-90	2261.77	90.62%	99.88%
0-120	2261.77	90.62%	99.88%
0-180	2264.52	90.73%	100.00%
60-90	32.78	1.31%	1.45%
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%
0-26.83	1811.62	72.58%	80.00%

ZONAL LUMEN SUMMARY

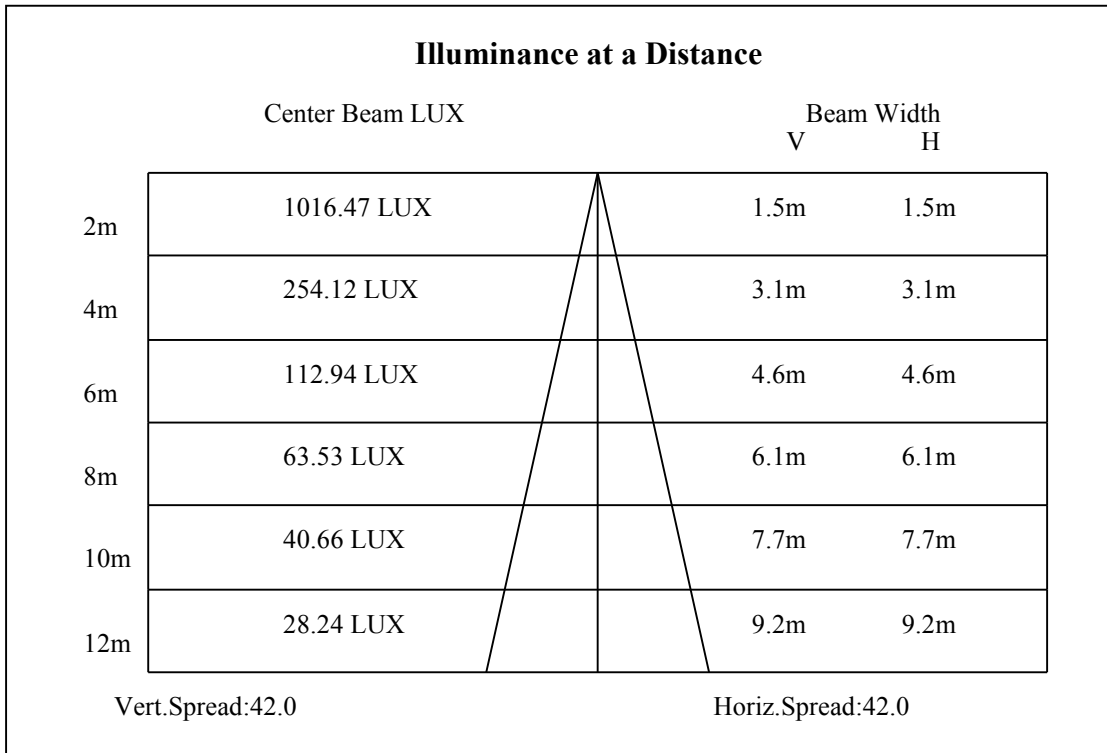
0-10	535.92
10-20	817.79
20-30	647.42
30-40	211.23
40-50	11.40
50-60	10.53
60-70	10.83
70-80	11.05
80-90	5.61
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

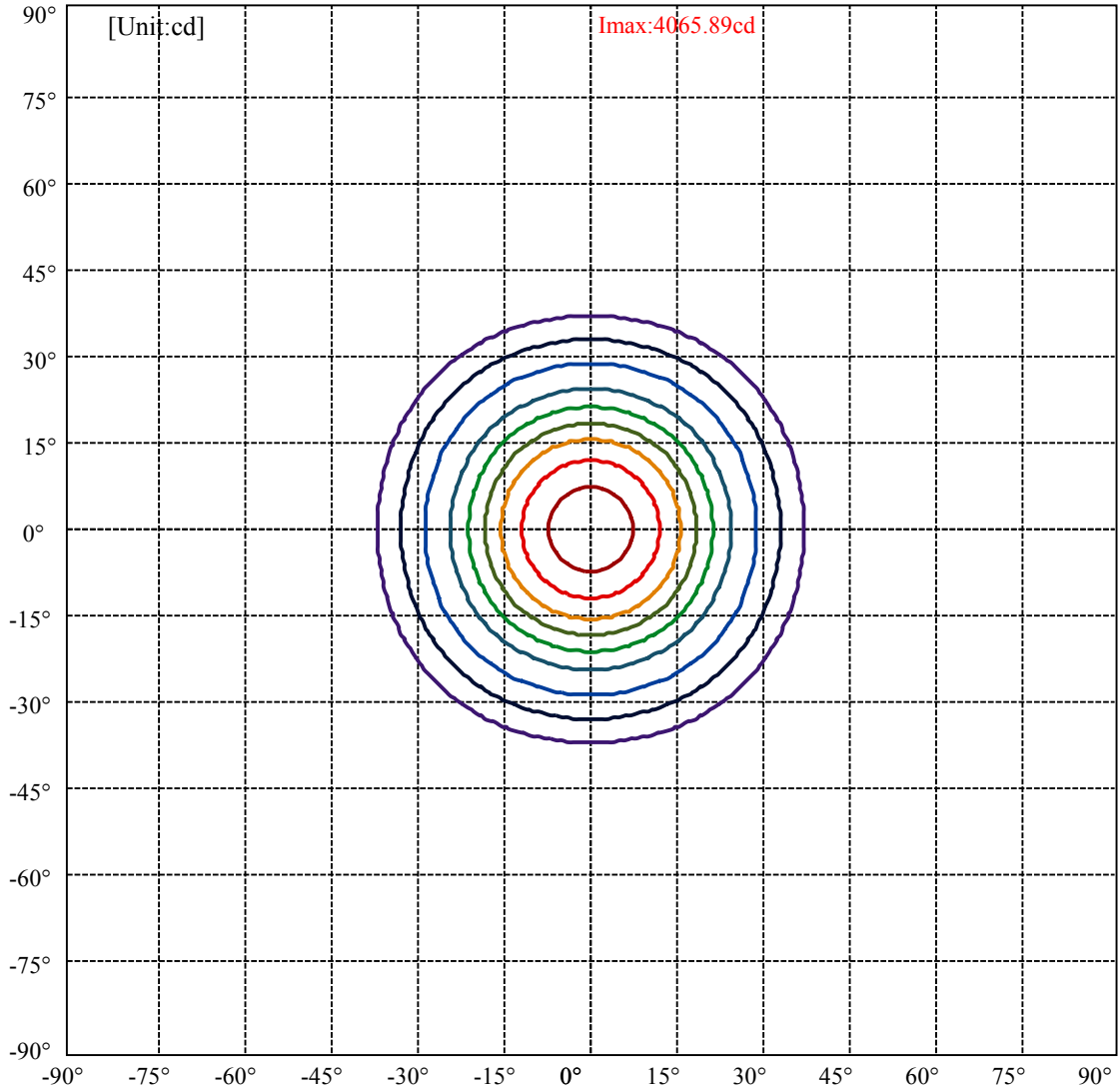


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

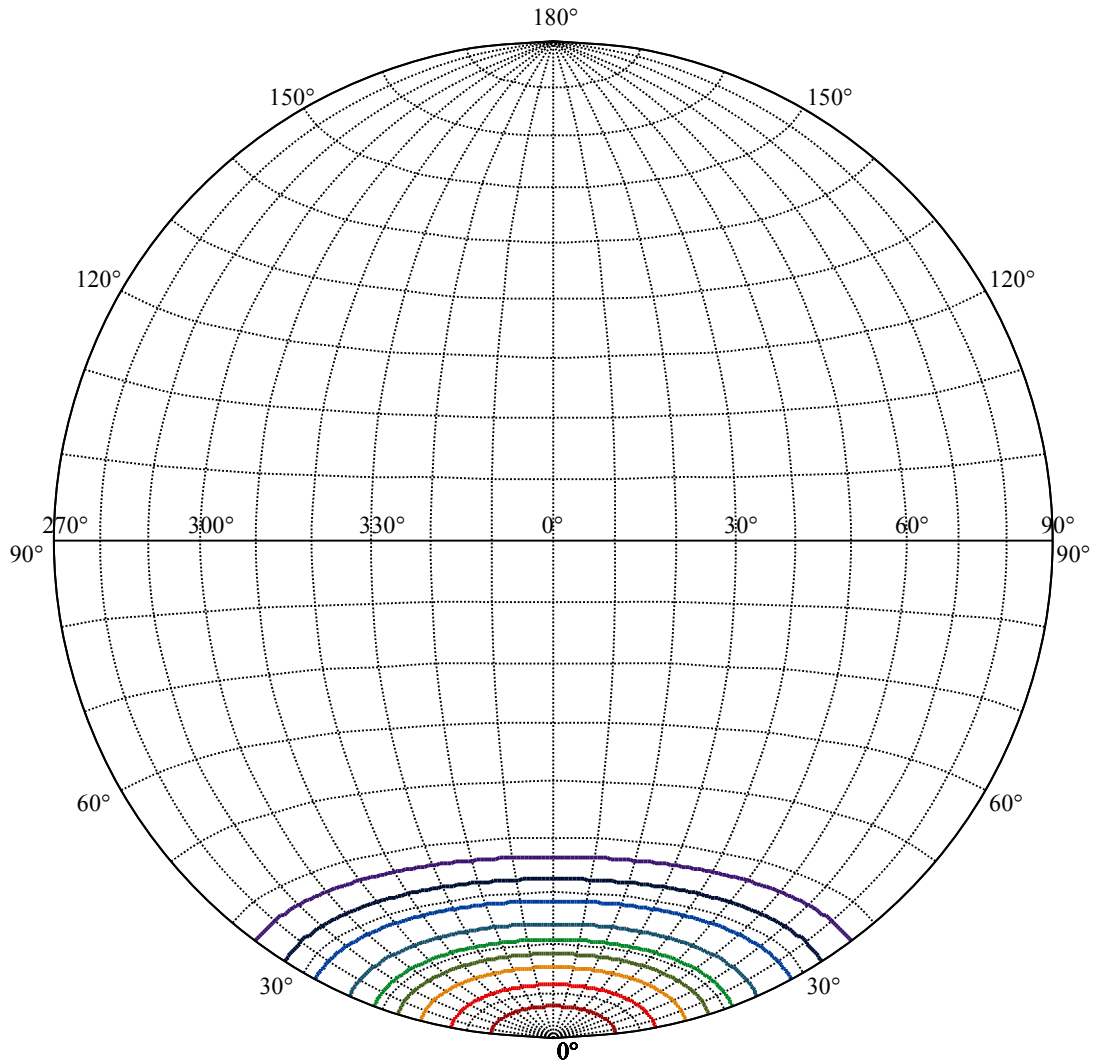
Field angle(10%Imax):C0/180Left:36.6 Right:36.6  
:C90/270Left:36.6 Right:36.6

Beam Angle(50%Imax):C0/180Left:21.0 Right:21.0  
:C90/270Left:21.0 Right:21.0





(10%Imax) 406.589	—
(20%Imax) 813.178	—
(30%Imax) 1219.77	—
(40%Imax) 1626.36	—
(50%Imax) 2032.95	—
(60%Imax) 2439.53	—
(70%Imax) 2846.12	—
(80%Imax) 3252.71	—
(90%Imax) 3659.3	—



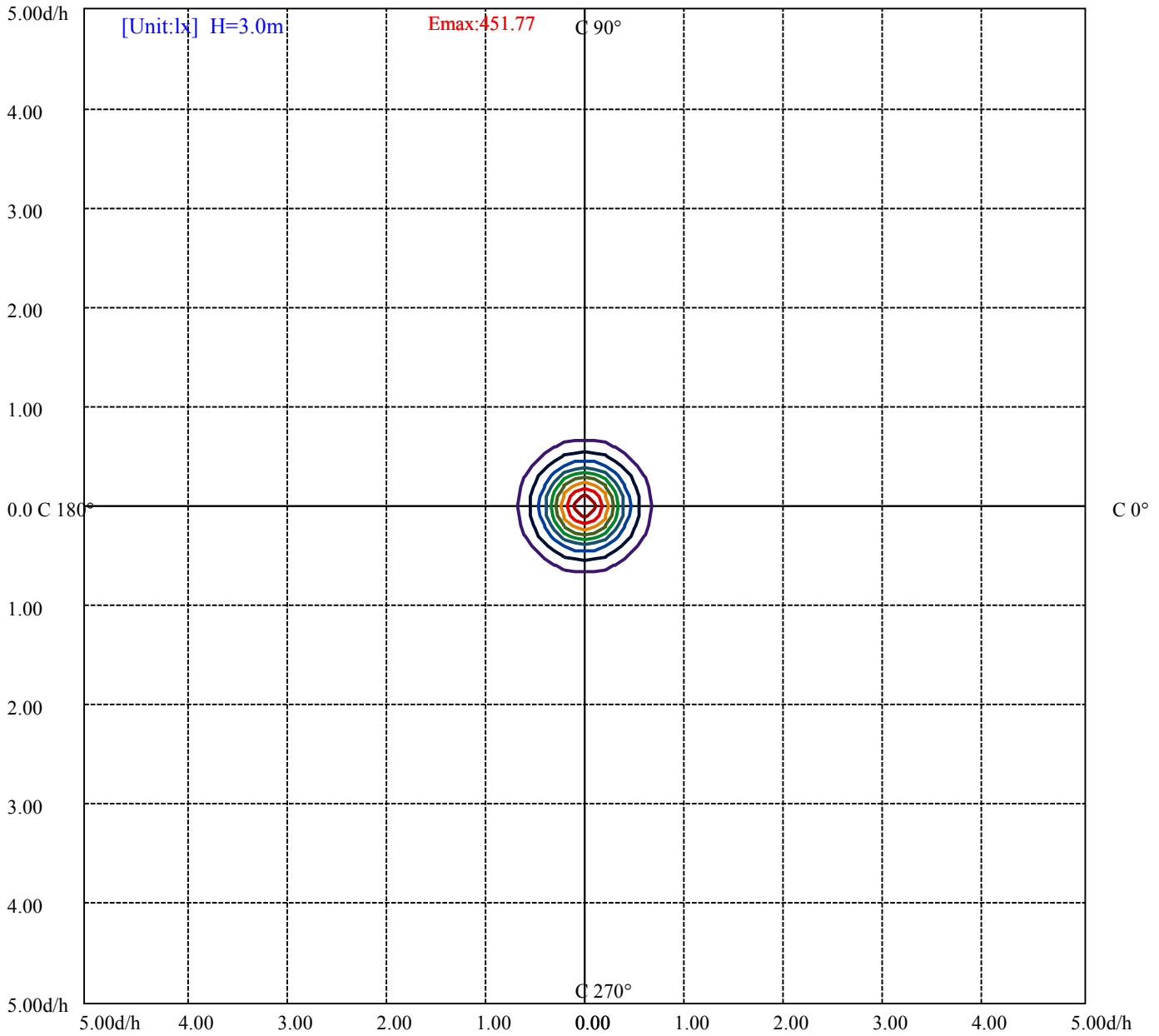
House

[Unit:cd]

Road

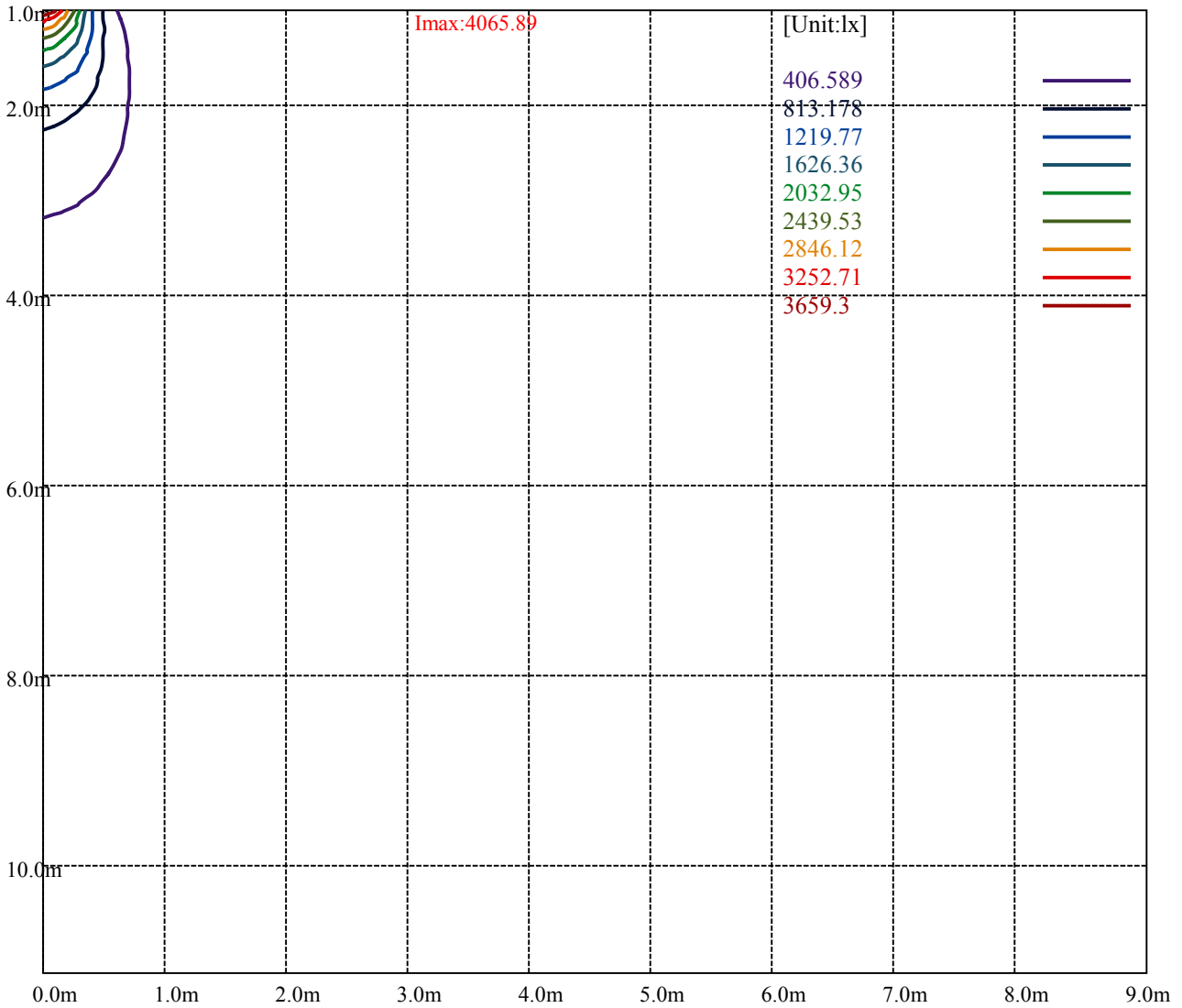
Imax:4065.89

(10%Imax)	406.589	—
(20%Imax)	813.178	—
(30%Imax)	1219.77	—
(40%Imax)	1626.36	—
(50%Imax)	2032.95	—
(60%Imax)	2439.53	—
(70%Imax)	2846.12	—
(80%Imax)	3252.71	—
(90%Imax)	3659.3	—



- (10%Emax) 45.17645
- (20%Emax) 90.353
- (30%Emax) 135.53
- (40%Emax) 180.7056
- (50%Emax) 225.8822
- (60%Emax) 271.0589
- (70%Emax) 316.2356
- (80%Emax) 361.4122
- (90%Emax) 406.5889





Luminance Table

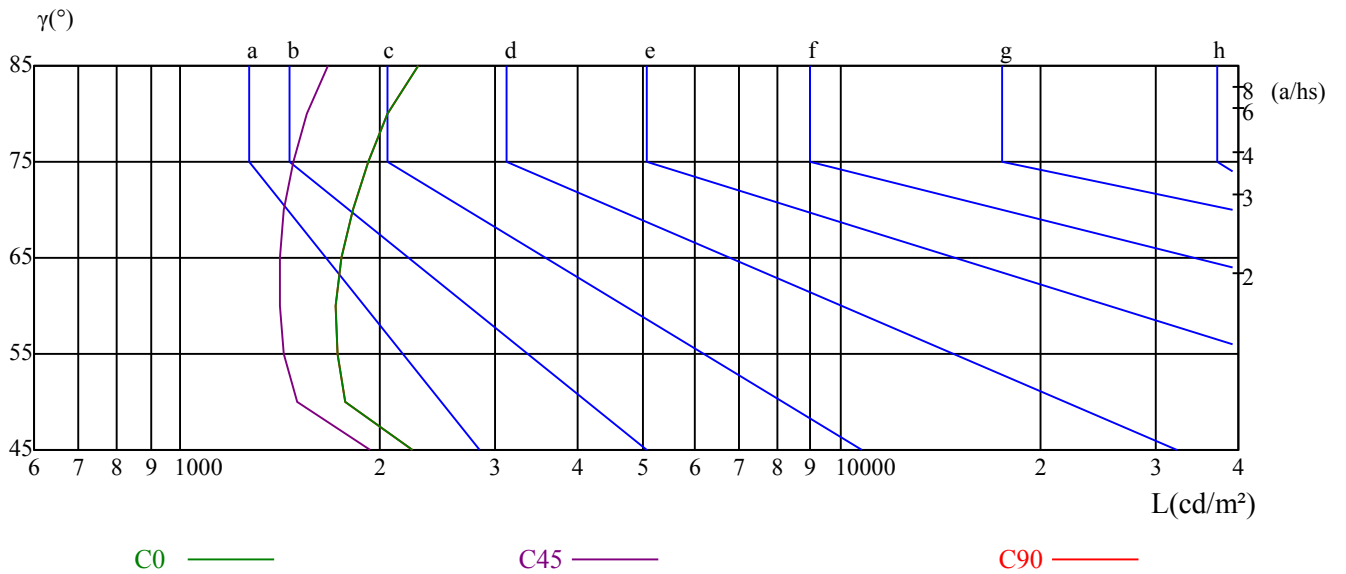
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2250	1776	1724	1721	1752	1819	1920	2064	2286
C45	1934	1504	1437	1411	1411	1436	1484	1556	1675
C90	2250	1776	1724	1721	1752	1819	1920	2064	2286

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4209	4209	4209	6604	6604	6604	19373	19373	19373

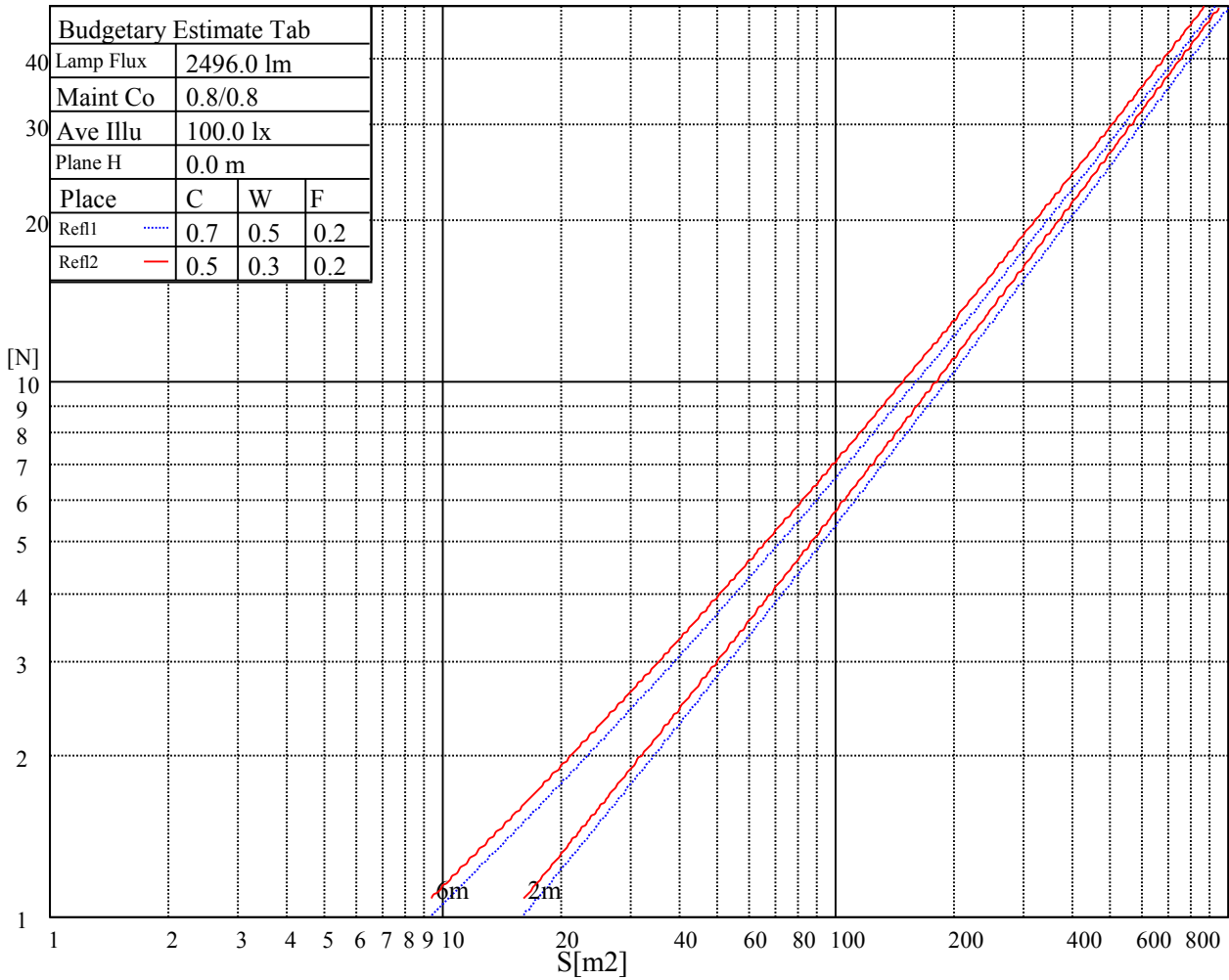
Glare Table

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

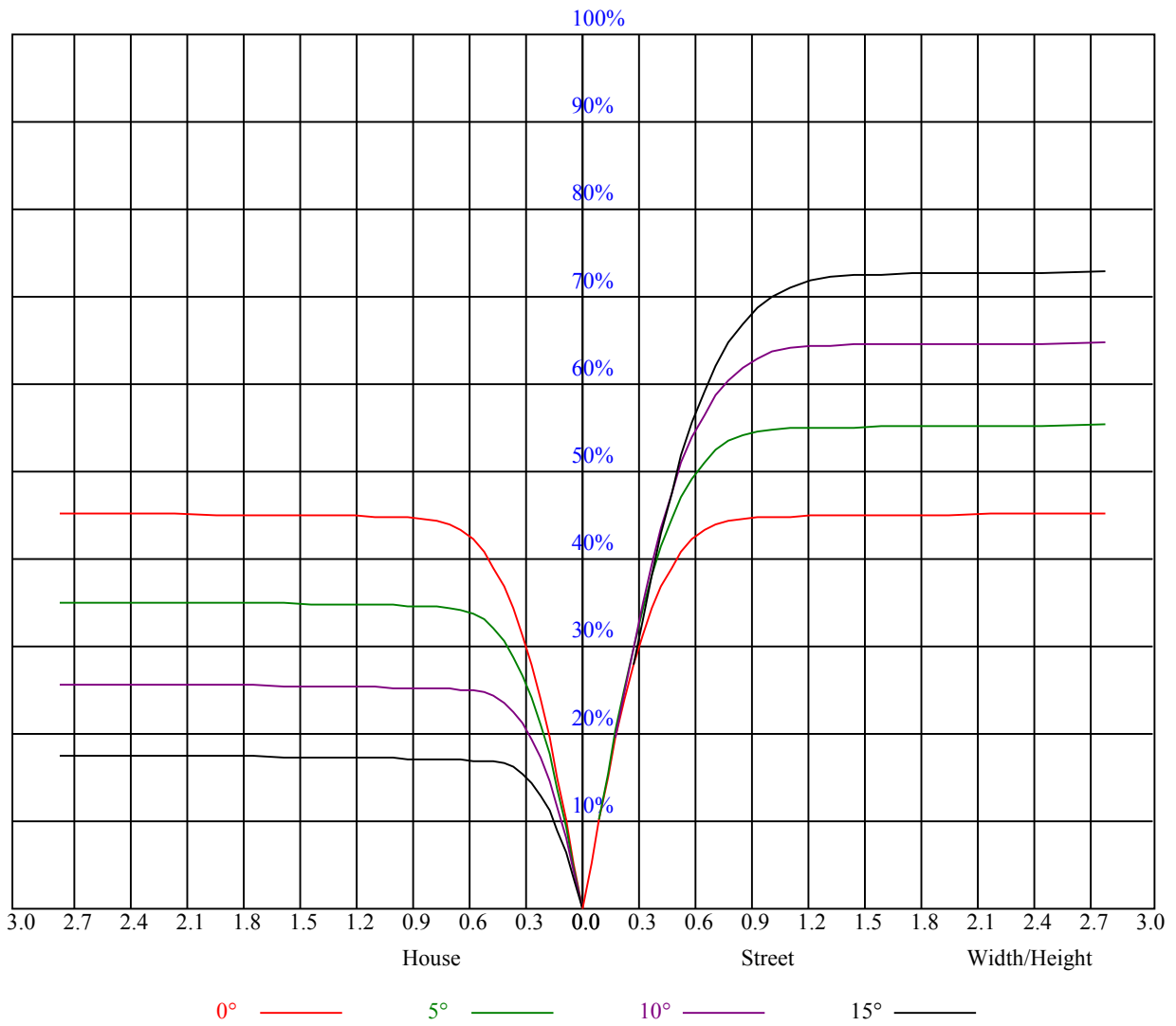
Luminance Limiting Curve



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	0.43	1.35	0.80	1.66	1.97	0.40	1.32	0.77	1.63	1.95
	3H	2.67	3.48	3.06	3.81	4.18	2.65	3.46	3.03	3.79	4.16
	4H	3.89	4.64	4.30	5.00	5.39	3.87	4.62	4.28	4.98	5.37
	6H	5.18	5.86	5.60	6.24	6.64	5.16	5.85	5.58	6.22	6.62
	8H	5.83	6.47	6.27	6.86	7.27	5.81	6.45	6.25	6.84	7.25
	12H	6.84	7.46	7.28	7.84	8.27	6.81	7.43	7.25	7.81	8.24
4H	2H	0.91	1.66	1.32	2.01	2.40	0.89	1.64	1.30	1.99	2.38
	3H	3.44	4.06	3.86	4.47	4.88	3.43	4.04	3.84	4.45	4.86
	4H	4.84	5.39	5.28	5.81	6.26	4.82	5.37	5.26	5.80	6.25
	6H	6.23	6.69	6.70	7.15	7.62	6.21	6.68	6.68	7.13	7.60
	8H	6.99	7.43	7.47	7.88	8.35	6.97	7.41	7.45	7.86	8.33
	12H	8.00	8.38	8.49	8.87	9.34	7.97	8.35	8.47	8.84	9.32
8H	4H	5.27	5.71	5.75	6.16	6.63	5.26	5.69	5.73	6.14	6.62
	6H	6.89	7.24	7.40	7.74	8.23	6.88	7.22	7.39	7.73	8.21
	8H	7.81	8.12	8.35	8.64	9.14	7.79	8.10	8.33	8.62	9.12
	12H	8.96	9.22	9.48	9.72	10.30	8.93	9.19	9.46	9.69	10.28
12H	4H	5.36	5.73	5.85	6.22	6.70	5.34	5.72	5.84	6.21	6.69
	6H	7.27	7.37	7.60	7.84	8.39	7.25	7.35	7.59	7.83	8.38
	8H	8.08	8.34	8.60	8.84	9.42	8.06	8.32	8.58	8.82	9.40
Variation with the observer position at spacings:											
S = 1.0H		5.8/-8.9					5.8/-8.9				
S = 1.5H		8.3/-7.1					8.3/-7.1				
S = 2.0H		10.0/-5.8					10.0/-5.8				
Standard tables:		BK1					BK1				
Uncorrected UGR		-2.2					-2.2				



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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.92
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.85
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.77
4	0.86	0.81	0.78	0.85	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.73
5	0.82	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.76	0.74	0.71	0.70
6	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.67
7	0.74	0.70	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64
8	0.71	0.67	0.63	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.63	0.60	0.59
10	0.66	0.61	0.58	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57



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	4076.44	3787.88	3419.44	2849.06	2194.31	1482.19	1084.50	508.50	41.29
45.0	4059.00	3915.00	3589.31	3147.19	2458.13	1698.75	1234.13	807.75	315.00
90.0	4077.56	3888.00	3532.50	3072.38	2324.25	1627.88	1102.67	685.91	103.56
135.0	4050.56	3946.50	3629.81	3171.94	2450.81	1700.44	1206.00	779.06	294.75
180.0	4076.44	3888.00	3492.56	2979.56	2180.81	1485.00	1103.12	572.01	42.24
225.0	4059.00	3732.19	3331.13	2654.44	1860.19	1332.56	974.70	289.13	32.40
270.0	4077.56	3768.75	3375.00	2773.13	1968.19	1378.13	1044.00	417.38	38.70
315.0	4050.56	3703.50	3256.88	2612.81	1858.50	1315.13	989.10	305.21	33.19
360.0	4076.44	3787.88	3419.44	2849.06	2194.31	1482.19	1084.50	508.50	41.29

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	15.47	12.26	11.53	11.08	10.74	10.52	10.29	10.18	10.13
45.0	21.04	12.77	11.87	11.36	10.97	10.69	10.46	10.29	10.18
90.0	17.33	12.60	11.81	11.25	10.86	10.63	10.41	10.29	10.24
135.0	19.29	12.71	11.87	11.36	10.91	10.69	10.46	10.35	10.24
180.0	14.96	12.32	11.64	11.14	10.86	10.58	10.46	10.29	10.35
225.0	13.05	11.98	11.42	11.03	10.74	10.58	10.41	10.29	10.46
270.0	13.73	12.21	11.53	11.08	10.80	10.52	10.41	10.24	10.46
315.0	13.22	12.04	11.42	11.03	10.69	10.46	10.29	10.18	10.13
360.0	15.47	12.26	11.53	11.08	10.74	10.52	10.29	10.18	10.13

C/γ(°)	90.0
0.0	10.01
45.0	10.13
90.0	10.07
135.0	10.01
180.0	10.01
225.0	10.13
270.0	10.07
315.0	10.01
360.0	10.01