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## NATA

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LumCAT: 3-1940-M	
Luminaire: BJB 47.319.2020	
Report No: NATA0100	Voltage(V): 34.3000
Test No: GC2019021904	Current(A): 0.5000
LampCAT: BRIDGELUX V13B	Power (W): 17.1500
Lamp flux(lm): 2579.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 32	Width(mm): 32
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2304.30  
Efficiency(%): 89.35%  
Lumens(lm)/Power(W): 136.20  
Central intensity(cd): 5644.899  
Maximum intensity(cd): 5644.899  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=33.8  
                                  [C90/270]Total=33.8  
Field angle(10%Imax): [C0/180]Total=66.2  
                                  [C90/270]Total=66.2  
Maximum s/h(1/2): C0\_180=0.55 C90\_270=0.55  
Maximum s/h(1/4): C0\_180=0.58 C90\_270=0.58  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.57%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.468%

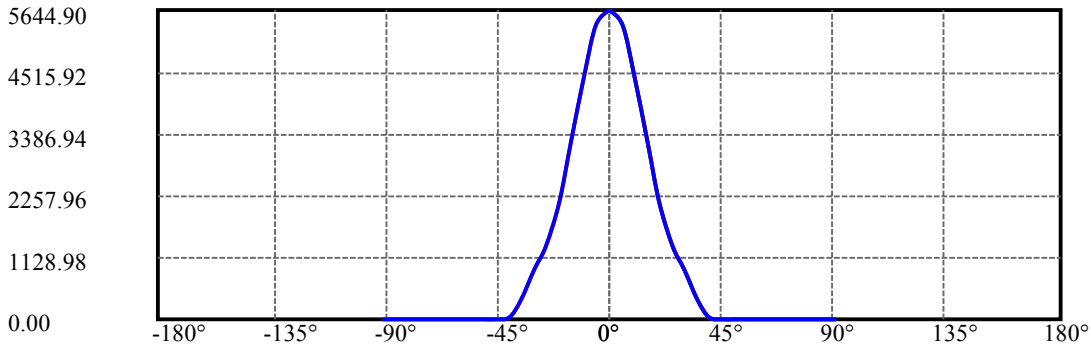
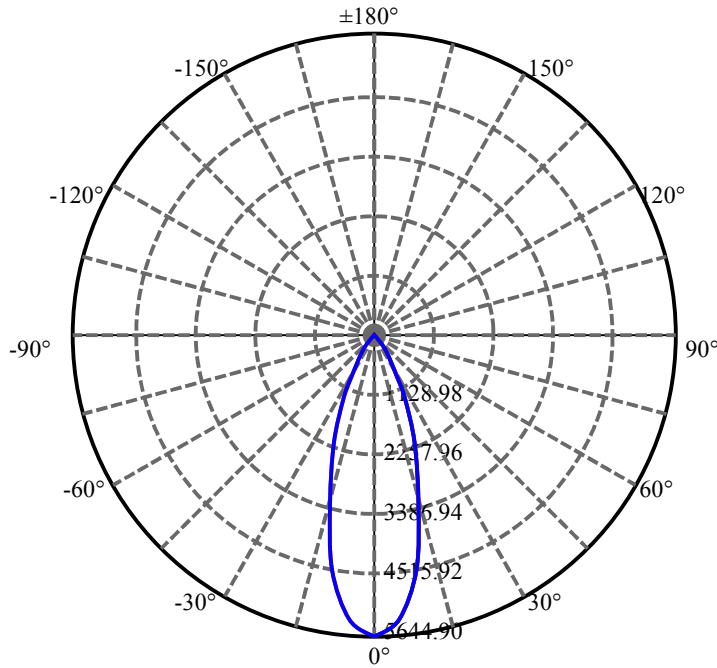
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5644.898	33.758	33.758	1.309%	1.465%
5.0	5357.602	255.950	289.708	9.924%	12.572%
10.0	4458.305	424.355	714.063	16.454%	30.988%
15.0	3238.102	459.384	1173.447	17.812%	50.924%
20.0	2155.430	404.087	1577.534	15.668%	68.460%
25.0	1326.059	307.185	1884.72	11.911%	81.791%
30.0	894.473	245.147	2129.867	9.506%	92.430%
35.0	362.756	114.050	2243.917	4.422%	97.379%
40.0	32.998	11.626	2255.543	.451%	97.884%
45.0	15.630	6.058	2261.602	.235%	98.147%
50.0	12.248	5.143	2266.745	.199%	98.370%
55.0	11.173	5.017	2271.761	.195%	98.588%
60.0	10.477	4.973	2276.734	.193%	98.804%
65.0	9.998	4.967	2281.701	.193%	99.019%
70.0	9.724	5.009	2286.71	.194%	99.236%
75.0	9.485	5.022	2291.732	.195%	99.454%
80.0	9.316	5.029	2296.761	.195%	99.673%
85.0	9.204	5.026	2301.787	.195%	99.891%
90.0	9.183	2.517	2304.304	.098%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2129.87	82.58%	92.43%
0-40	2255.54	87.46%	97.88%
0-60	2276.73	88.28%	98.80%
0-90	2301.79	89.25%	99.89%
0-120	2301.79	89.25%	99.89%
0-180	2304.30	89.35%	100.00%
60-90	30.03	1.16%	1.30%
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%
0-24.33	1843.44	71.48%	80.00%

ZONAL LUMEN SUMMARY

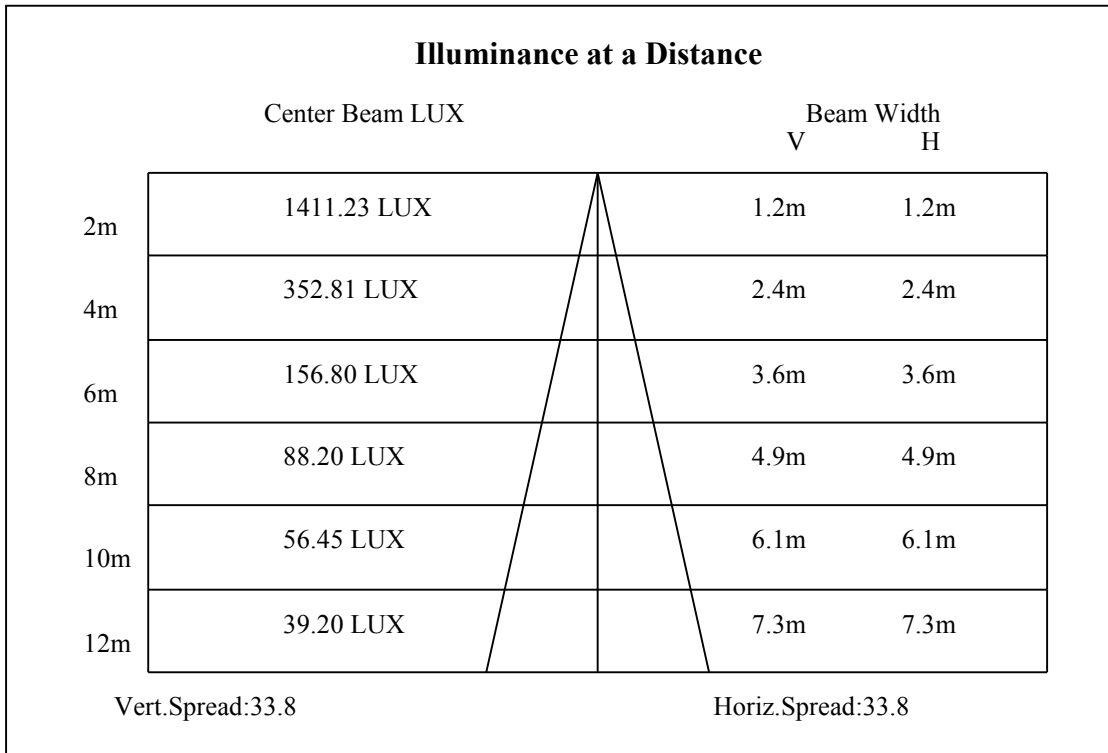
0-10	714.06
10-20	863.47
20-30	552.33
30-40	125.68
40-50	11.20
50-60	9.99
60-70	9.98
70-80	10.05
80-90	5.03
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

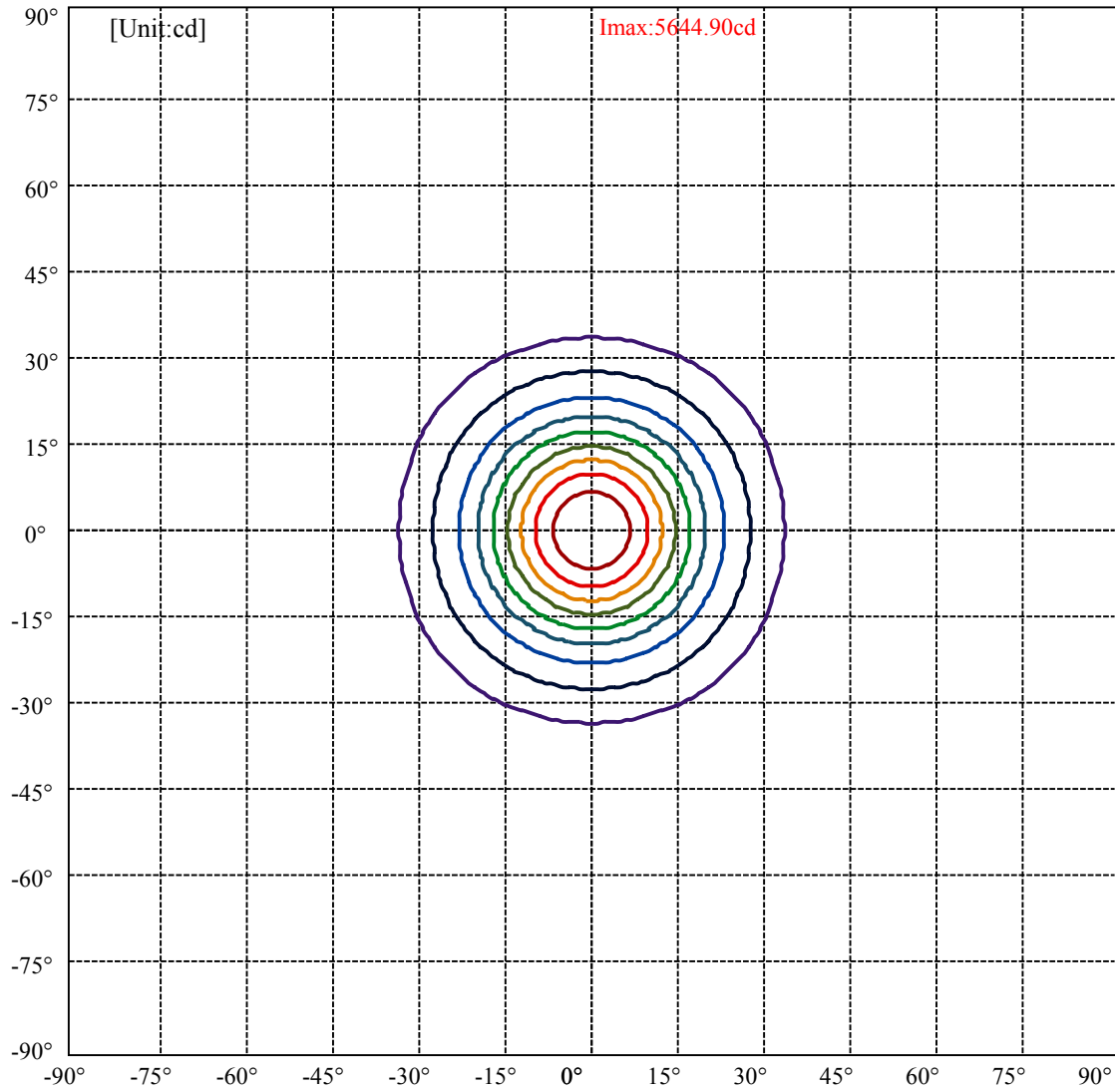


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

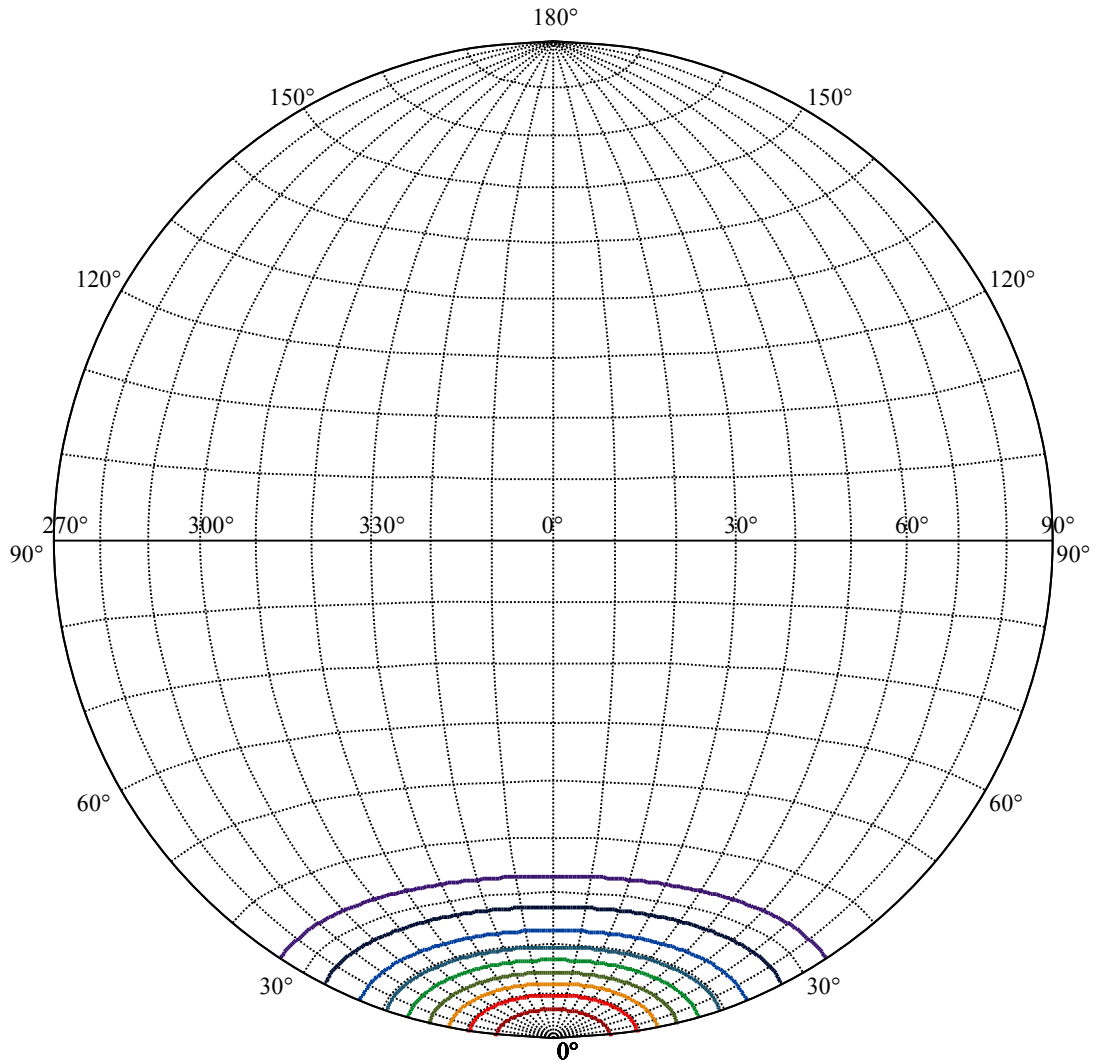
Field angle(10%Imax):C0/180Left:33.1 Right:33.1  
:C90/270Left:33.1 Right:33.1

Beam Angle(50%Imax):C0/180Left:16.9 Right:16.9  
:C90/270Left:16.9 Right:16.9





(10%Imax) 564.49	—
(20%Imax) 1128.98	—
(30%Imax) 1693.47	—
(40%Imax) 2257.96	—
(50%Imax) 2822.45	—
(60%Imax) 3386.94	—
(70%Imax) 3951.43	—
(80%Imax) 4515.92	—
(90%Imax) 5080.41	—



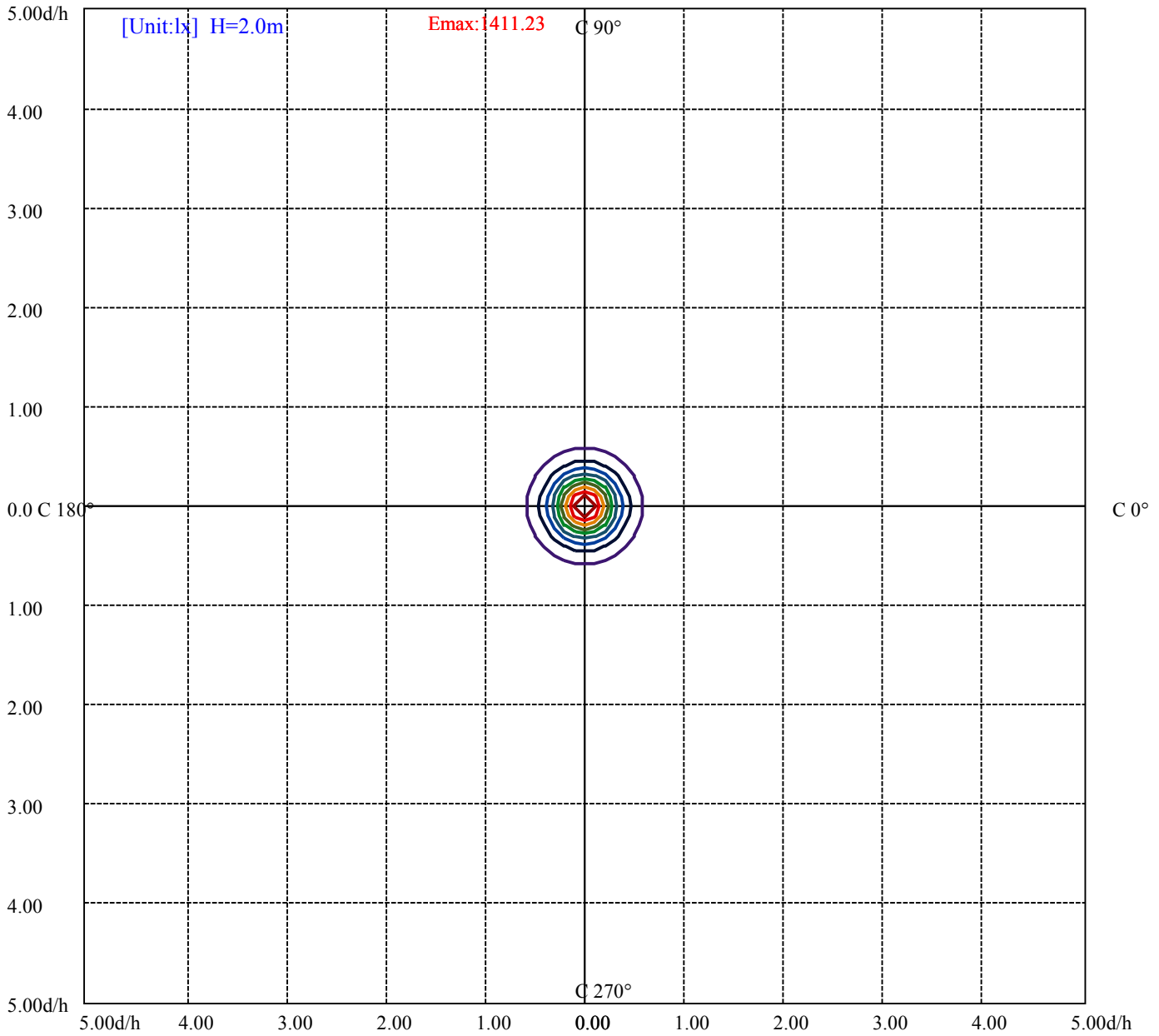
House

[Unit:cd]

Road

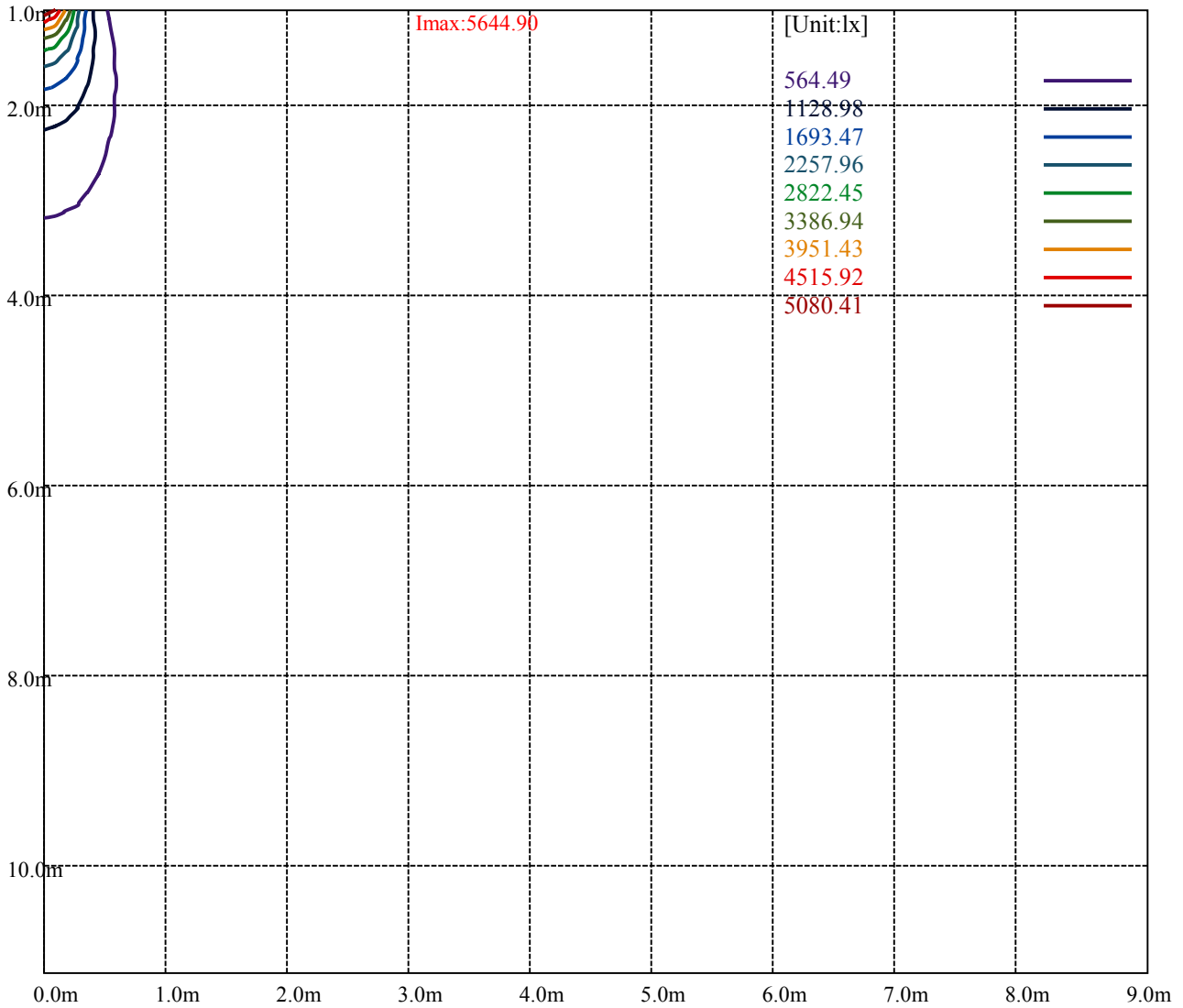
**Imax:5644.90**

(10%Imax) 564.49	—
(20%Imax) 1128.98	—
(30%Imax) 1693.47	—
(40%Imax) 2257.96	—
(50%Imax) 2822.45	—
(60%Imax) 3386.94	—
(70%Imax) 3951.43	—
(80%Imax) 4515.92	—
(90%Imax) 5080.41	—



- (10%Emax) 141.1223    ———
- (20%Emax) 282.245    ———
- (30%Emax) 423.3675    ———
- (40%Emax) 564.49    ———
- (50%Emax) 705.6125    ———
- (60%Emax) 846.7325    ———
- (70%Emax) 987.855    ———
- (80%Emax) 1128.978    ———
- (90%Emax) 1270.1    ———





Luminance Table

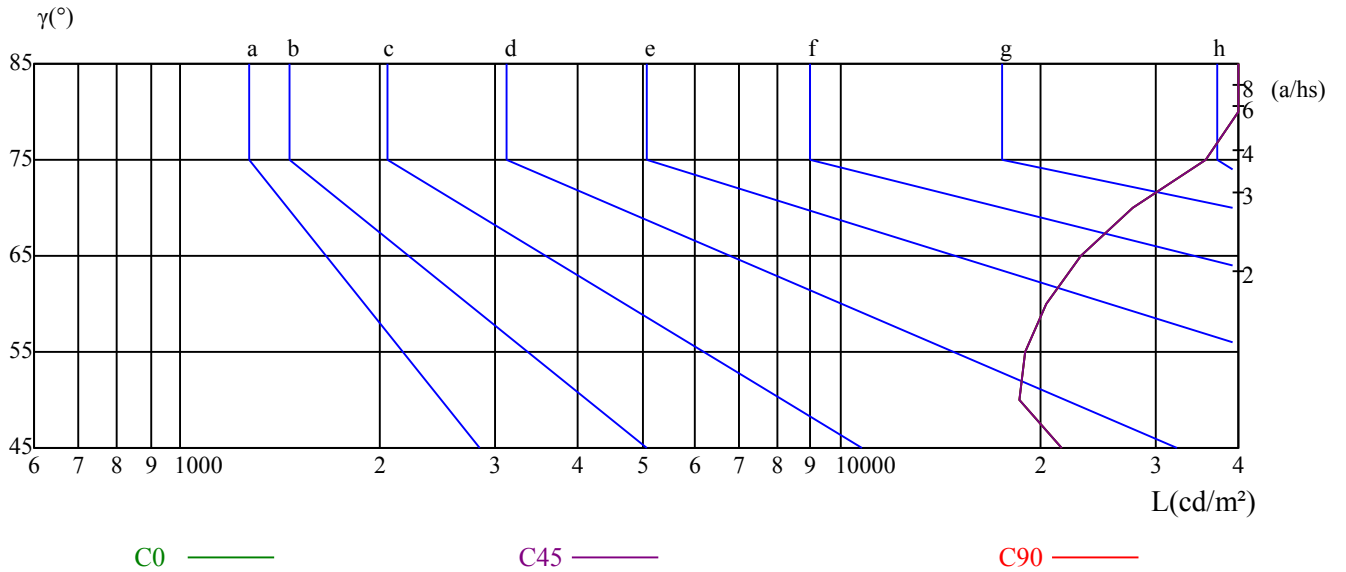
$\gamma$	45	50	55	60	65	70	75	80	85
C0	21587	18609	19022	20462	23104	27765	35789	52394	103128
C45	21587	18609	19022	20462	23104	27765	35789	52394	103128
C90	21587	18609	19022	20462	23104	27765	35789	52394	103128

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
23104	23104	23104	35789	35789	35789	103128	103128	103128

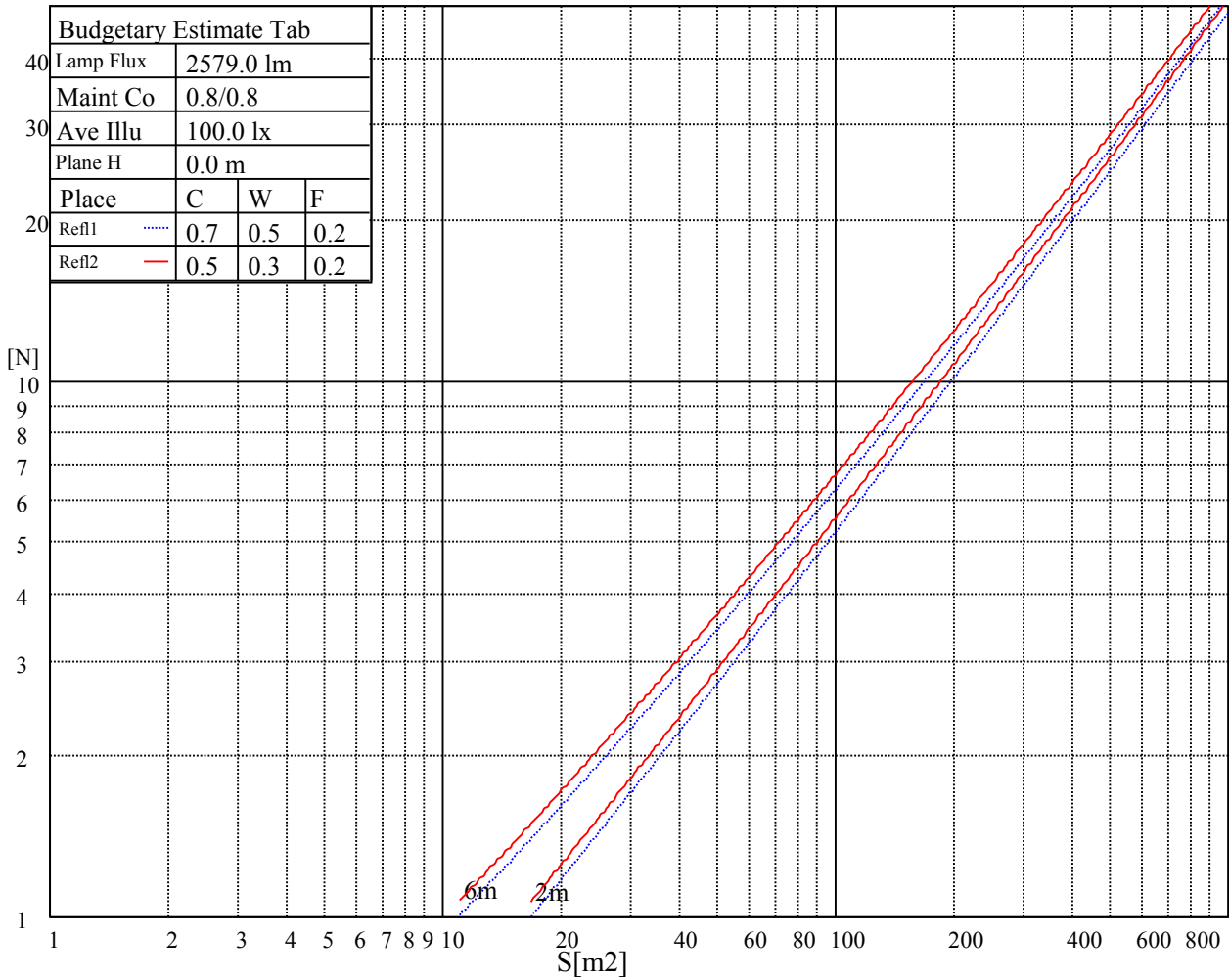
Glare Table

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

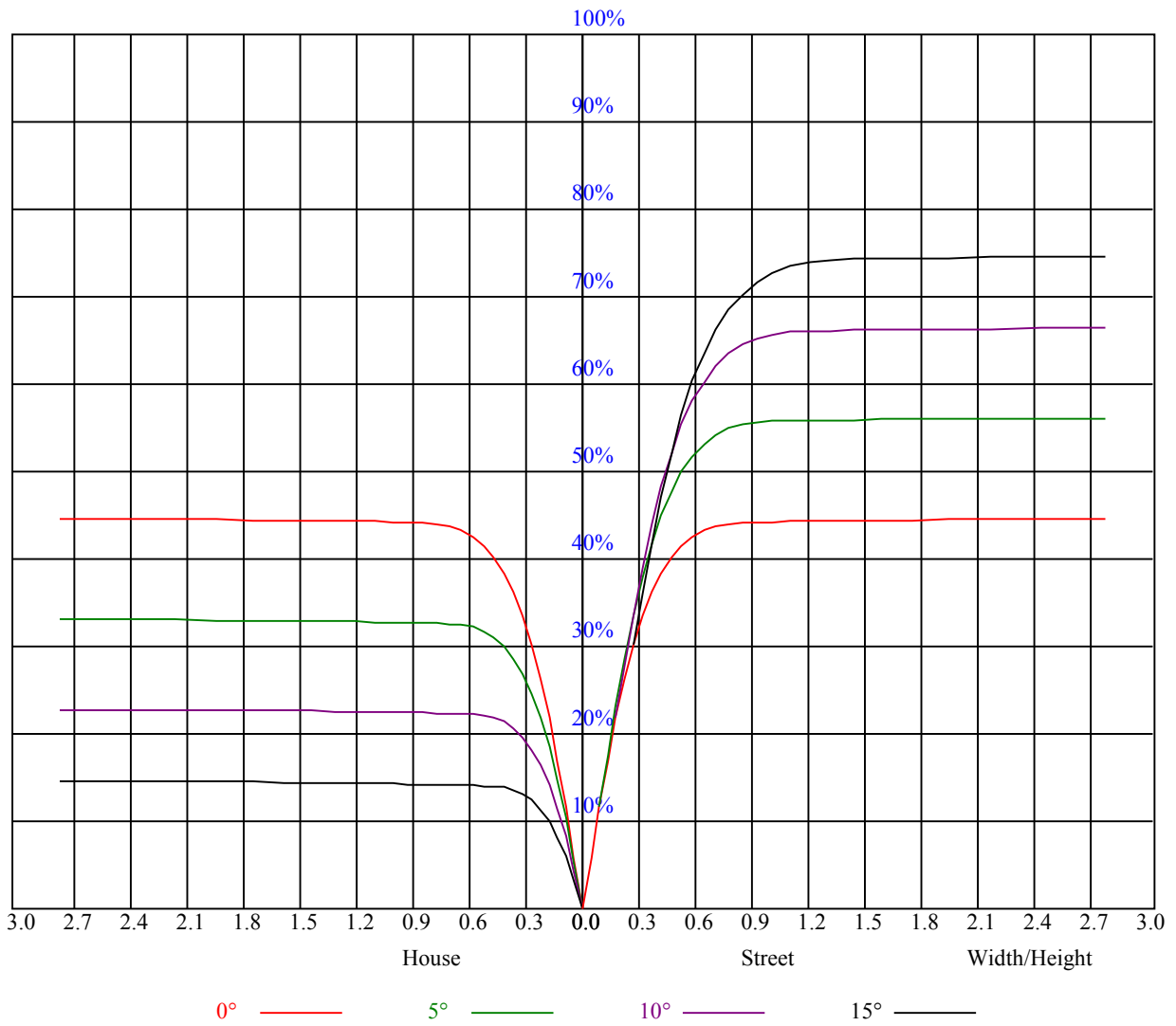
Luminance Limiting Curve



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	8.16	9.07	8.53	9.38	9.70	8.23	9.14	8.60	9.46	9.77
	3H	11.24	12.05	11.63	12.38	12.75	11.32	12.13	11.71	12.46	12.83
	4H	12.93	13.68	13.34	14.03	14.42	13.01	13.76	13.42	14.11	14.50
	6H	14.83	15.51	15.25	15.89	16.29	14.92	15.60	15.34	15.98	16.37
	8H	15.90	16.53	16.33	16.93	17.34	15.98	16.62	16.42	17.01	17.42
	12H	17.63	18.24	18.07	18.63	19.06	17.71	18.32	18.15	18.71	19.14
4H	2H	9.02	9.77	9.43	10.12	10.51	9.07	9.82	9.48	10.17	10.56
	3H	12.36	12.98	12.78	13.39	13.79	12.43	13.04	12.84	13.45	13.86
	4H	14.22	14.77	14.66	15.20	15.65	14.29	14.84	14.73	15.26	15.71
	6H	16.30	16.76	16.77	17.21	17.69	16.37	16.84	16.84	17.29	17.76
	8H	17.46	17.89	17.94	18.34	18.82	17.53	17.97	18.01	18.42	18.89
	12H	19.10	19.47	19.59	19.96	20.44	19.17	19.54	19.66	20.03	20.51
8H	4H	14.94	15.37	15.42	15.82	16.30	14.99	15.42	15.47	15.88	16.35
	6H	17.28	17.62	17.79	18.13	18.61	17.35	17.69	17.86	18.19	18.68
	8H	18.63	18.94	19.17	19.46	19.96	18.70	19.00	19.24	19.53	20.03
	12H	20.42	20.68	20.94	21.18	21.76	20.48	20.74	21.01	21.24	21.82
12H	4H	15.14	15.51	15.63	16.00	16.48	15.18	15.56	15.68	16.05	16.53
	6H	17.79	17.90	18.13	18.37	18.92	17.85	17.96	18.19	18.43	18.98
	8H	19.08	19.34	19.60	19.84	20.42	19.14	19.40	19.66	19.90	20.48
Variation with the observer position at spacings:											
S = 1.0H	5.8/-6.5					5.8/-6.5					
S = 1.5H	7.8/-4.7					7.8/-4.7					
S = 2.0H	9.0/-3.5					9.0/-3.5					
Standard tables:	BK3					BK3					
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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.00	0.98	0.95	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.86	0.88	0.85	0.84	0.85	0.83	0.82	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.80	0.77	0.75	0.74
5	0.82	0.78	0.75	0.82	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.71
6	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.76	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.60



NATA 3-1940-M

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5635.69	5504.06	4743.56	3617.44	2476.13	1602.00	1063.13	552.94	57.83
45.0	5642.44	5462.44	4756.50	3482.44	2312.44	1437.75	937.69	455.63	32.85
90.0	5648.06	5275.69	4229.44	3053.81	1966.50	1103.68	800.27	242.16	23.57
135.0	5653.69	5328.00	4373.44	3117.94	2073.38	1266.75	834.19	298.69	25.48
180.0	5635.69	5199.19	4130.44	2865.38	1806.19	1113.36	751.33	187.71	24.36
225.0	5642.44	5228.44	4276.13	3034.13	2001.94	1068.81	831.32	260.44	24.92
270.0	5648.06	5446.69	4644.00	3444.19	2332.69	1544.06	987.75	470.81	41.40
315.0	5653.13	5416.31	4512.94	3289.50	2274.19	1472.06	950.12	433.69	33.58
360.0	5635.69	5504.06	4743.56	3617.44	2476.13	1602.00	1063.13	552.94	57.83
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	18.90	12.88	11.59	10.74	10.24	9.90	9.62	9.45	9.28
45.0	16.48	12.21	11.19	10.52	9.96	9.68	9.39	9.28	9.11
90.0	14.12	11.87	10.91	10.29	9.84	9.62	9.39	9.23	9.17
135.0	14.29	12.15	11.19	10.46	10.01	9.73	9.51	9.34	9.23
180.0	13.73	12.04	11.08	10.46	10.01	9.79	9.51	9.34	9.28
225.0	14.18	11.81	10.80	10.24	9.84	9.56	9.39	9.28	9.17
270.0	17.04	12.43	11.25	10.52	10.01	9.73	9.51	9.28	9.17
315.0	16.31	12.60	11.36	10.58	10.07	9.79	9.56	9.34	9.23
360.0	18.90	12.88	11.59	10.74	10.24	9.90	9.62	9.45	9.28
C/ $\gamma$ (°)	90.0								
0.0	9.39								
45.0	9.06								
90.0	9.11								
135.0	9.17								
180.0	9.23								
225.0	9.06								
270.0	9.28								
315.0	9.17								
360.0	9.39								