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## NATA

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LumCAT: 4-1666-E	
Luminaire: 92.76.227.00	
Report No: NATA0100	Voltage(V): 36.4000
Test No: GC2019022807	Current(A): 0.9000
LampCAT: BRIDGELUX VERO29	Power (W): 32.7600
Lamp flux(lm): 3985.1	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 3456.97  
Efficiency(%): 86.75%  
Lumens(lm)/Power(W): 106.68  
Central intensity(cd): 6864.047  
Maximum intensity(cd): 6864.047  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=39.4  
                                  [C90/270]Total=39.4  
Field angle(10%Imax): [C0/180]Total=69.6  
                                  [C90/270]Total=69.6  
Maximum s/h(1/2): C0\_180=0.64 C90\_270=0.64  
Maximum s/h(1/4): C0\_180=0.64 C90\_270=0.64  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 87.69%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.807%

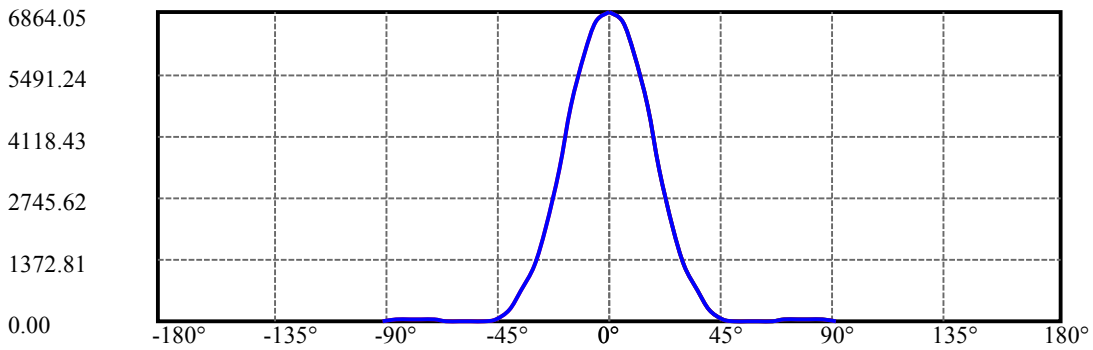
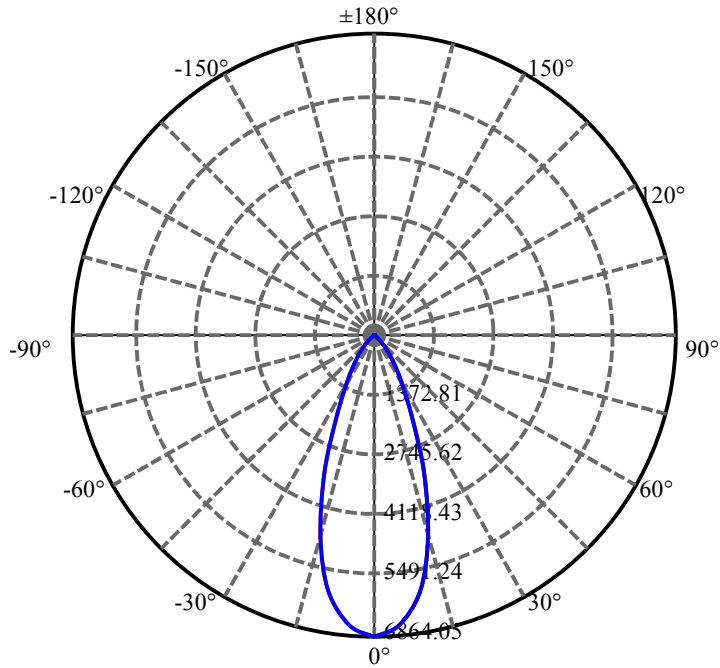
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6864.047	41.048	41.048	1.030%	1.187%
5.0	6643.477	317.381	358.429	7.964%	10.368%
10.0	5922.141	563.687	922.117	14.145%	26.674%
15.0	4758.047	675.016	1597.133	16.939%	46.200%
20.0	3347.578	627.584	2224.717	15.748%	64.355%
25.0	2110.359	488.871	2713.588	12.267%	78.496%
30.0	1232.557	337.805	3051.393	8.477%	88.268%
35.0	663.581	208.629	3260.022	5.235%	94.303%
40.0	243.148	85.670	3345.692	2.150%	96.781%
45.0	28.716	11.130	3356.822	.279%	97.103%
50.0	20.060	8.423	3365.245	.211%	97.347%
55.0	19.259	8.647	3373.892	.217%	97.597%
60.0	19.498	9.256	3383.148	.232%	97.865%
65.0	20.285	10.077	3393.225	.253%	98.156%
70.0	22.648	11.665	3404.891	.293%	98.494%
75.0	26.726	14.150	3419.041	.355%	98.903%
80.0	27.302	14.738	3433.779	.370%	99.329%
85.0	33.391	18.233	3452.012	.458%	99.857%
90.0	18.084	4.956	3456.969	.124%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	3051.39	76.57%	88.27%
0-40	3345.69	83.96%	96.78%
0-60	3383.15	84.89%	97.86%
0-90	3452.01	86.62%	99.86%
0-120	3452.01	86.62%	99.86%
0-180	3456.97	86.75%	100.00%
60-90	78.12	1.96%	2.26%
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%
0-25.77	2765.58	69.40%	80.00%

ZONAL LUMEN SUMMARY

0-10	922.12
10-20	1302.60
20-30	826.68
30-40	294.30
40-50	19.55
50-60	17.90
60-70	21.74
70-80	28.89
80-90	18.23
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: ———

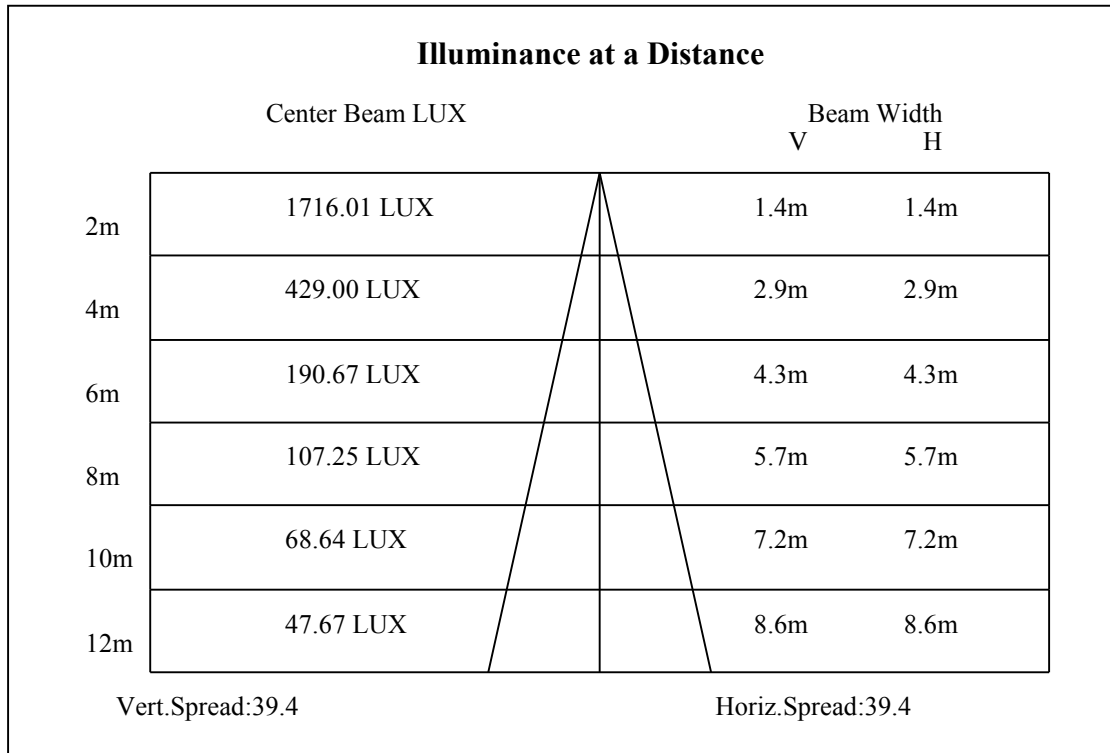
C90/C270: ———

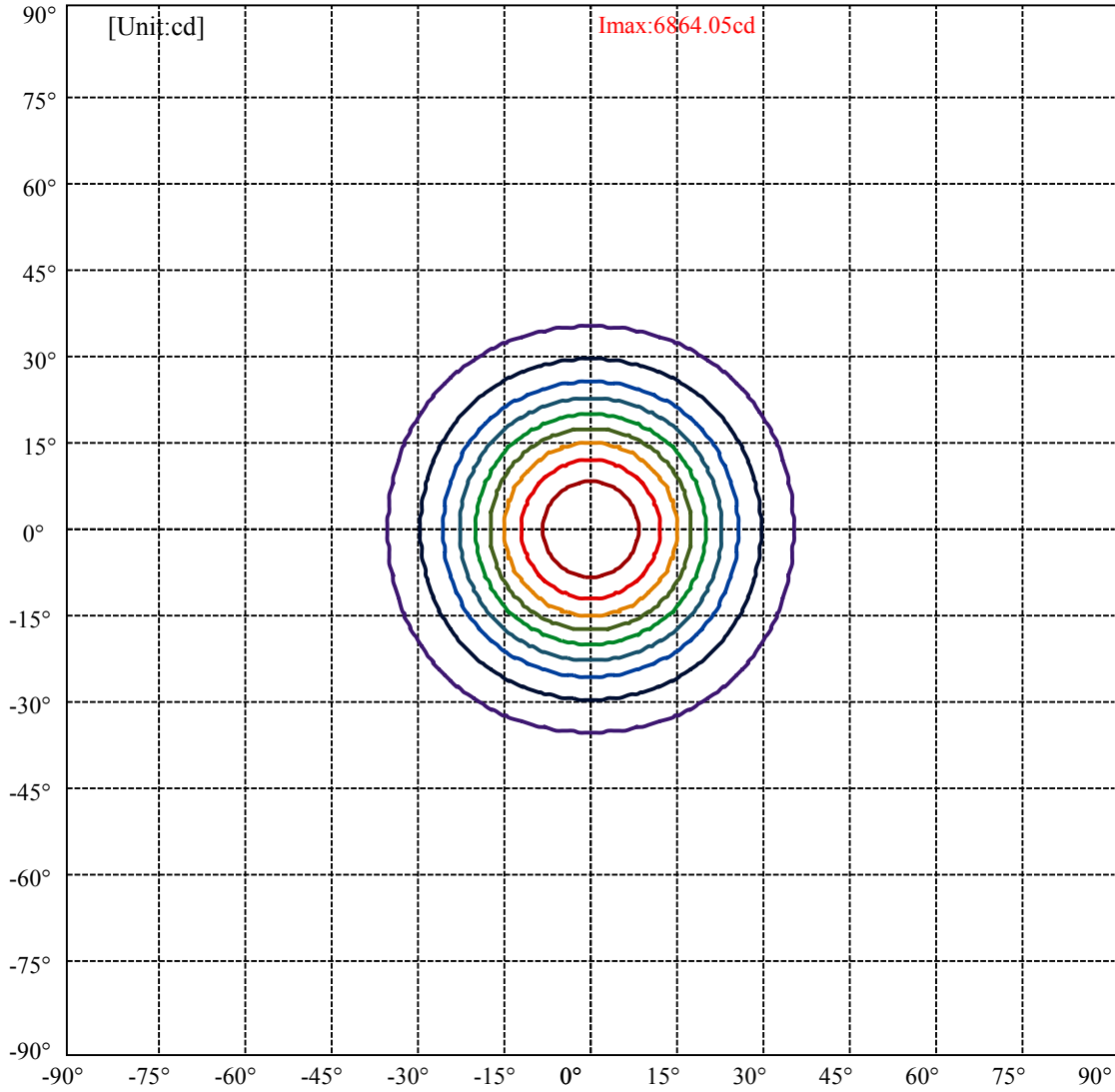
Field angle(10%Imax):C0/180Left:34.8 Right:34.8

:C90/270Left:34.8 Right:34.8

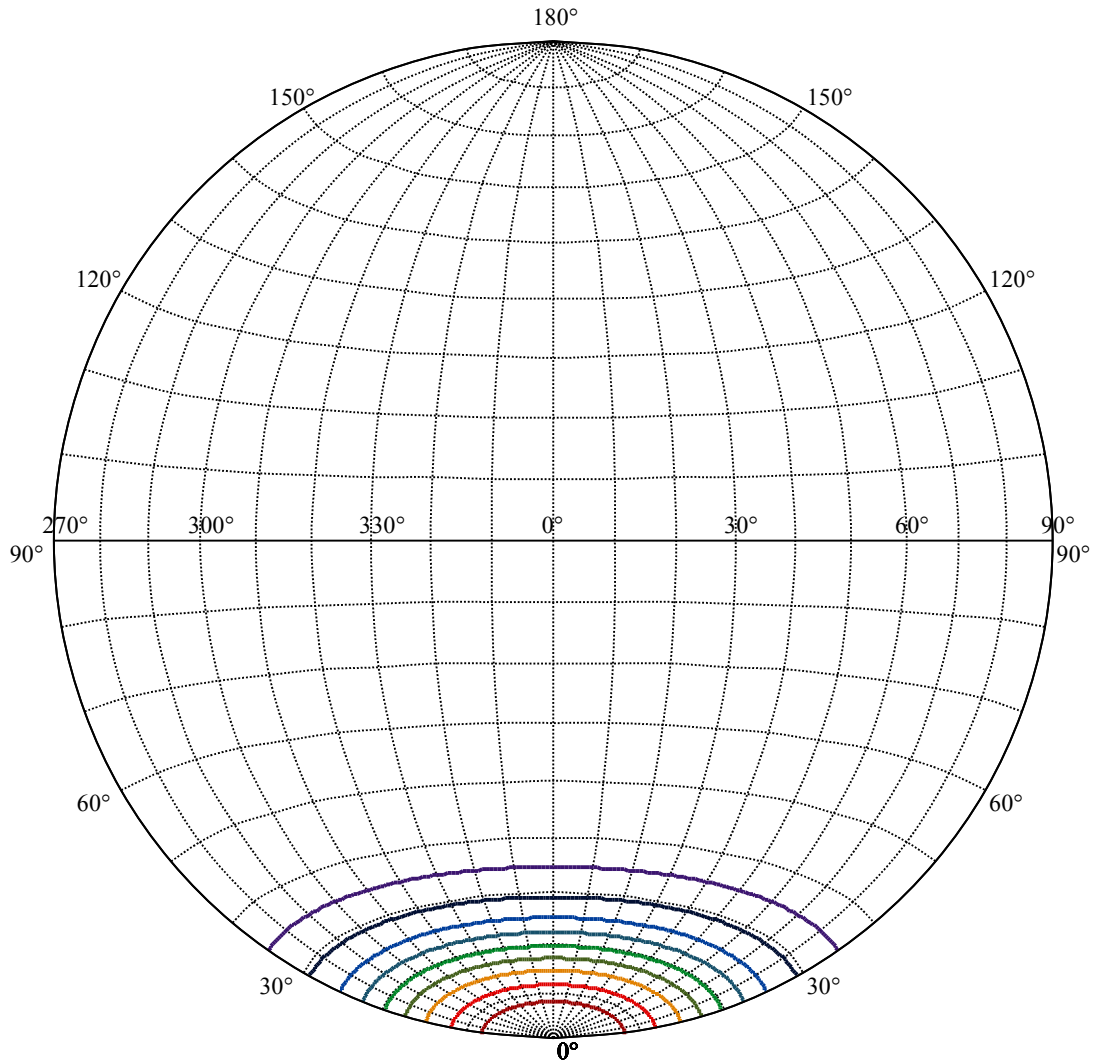
Beam Angle(50%Imax):C0/180Left:19.7 Right:19.7

:C90/270Left:19.7 Right:19.7





(10%Imax) 686.405	—
(20%Imax) 1372.81	—
(30%Imax) 2059.21	—
(40%Imax) 2745.62	—
(50%Imax) 3432.02	—
(60%Imax) 4118.43	—
(70%Imax) 4804.83	—
(80%Imax) 5491.24	—
(90%Imax) 6177.64	—



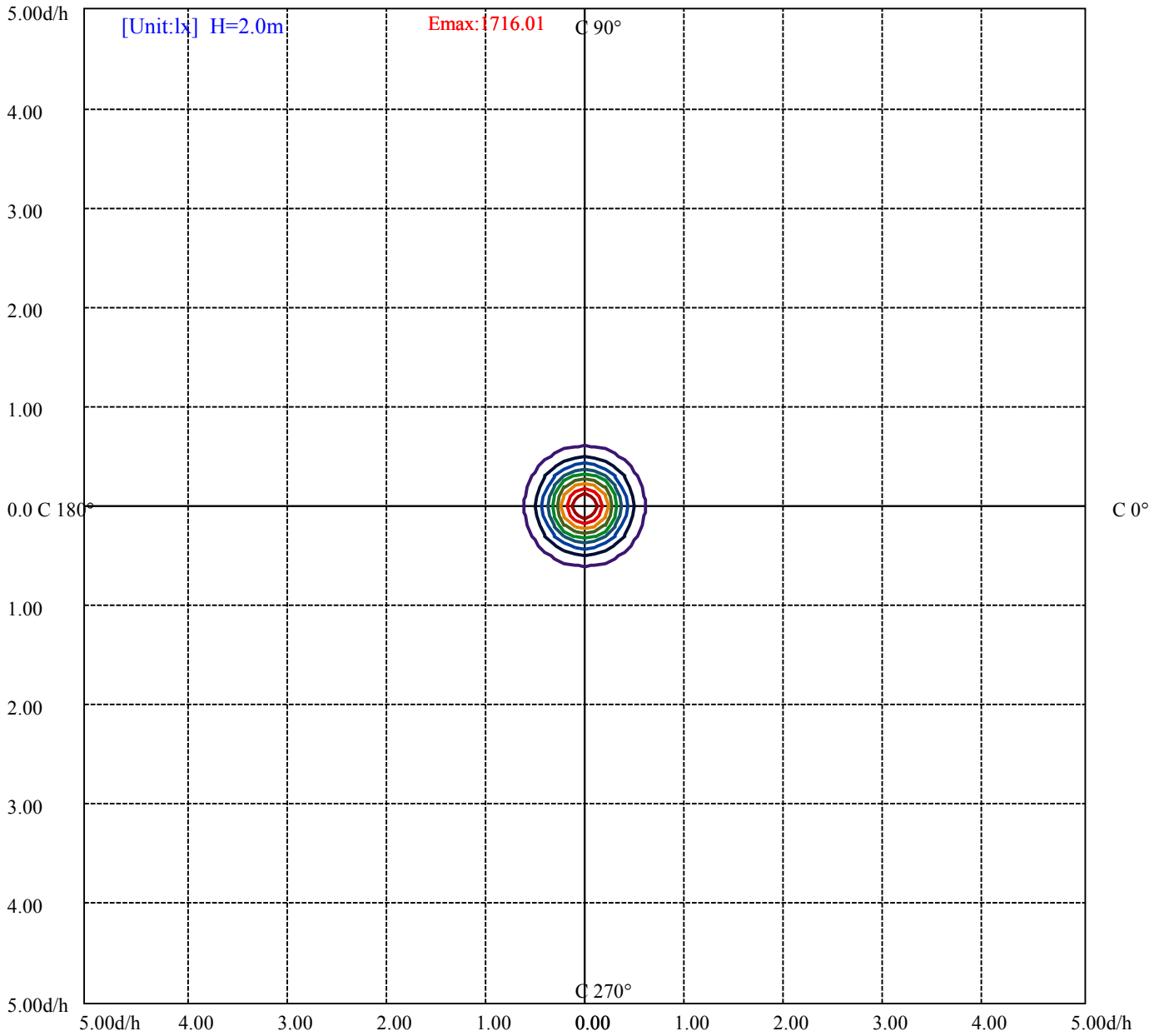
House

[Unit:cd]

Road

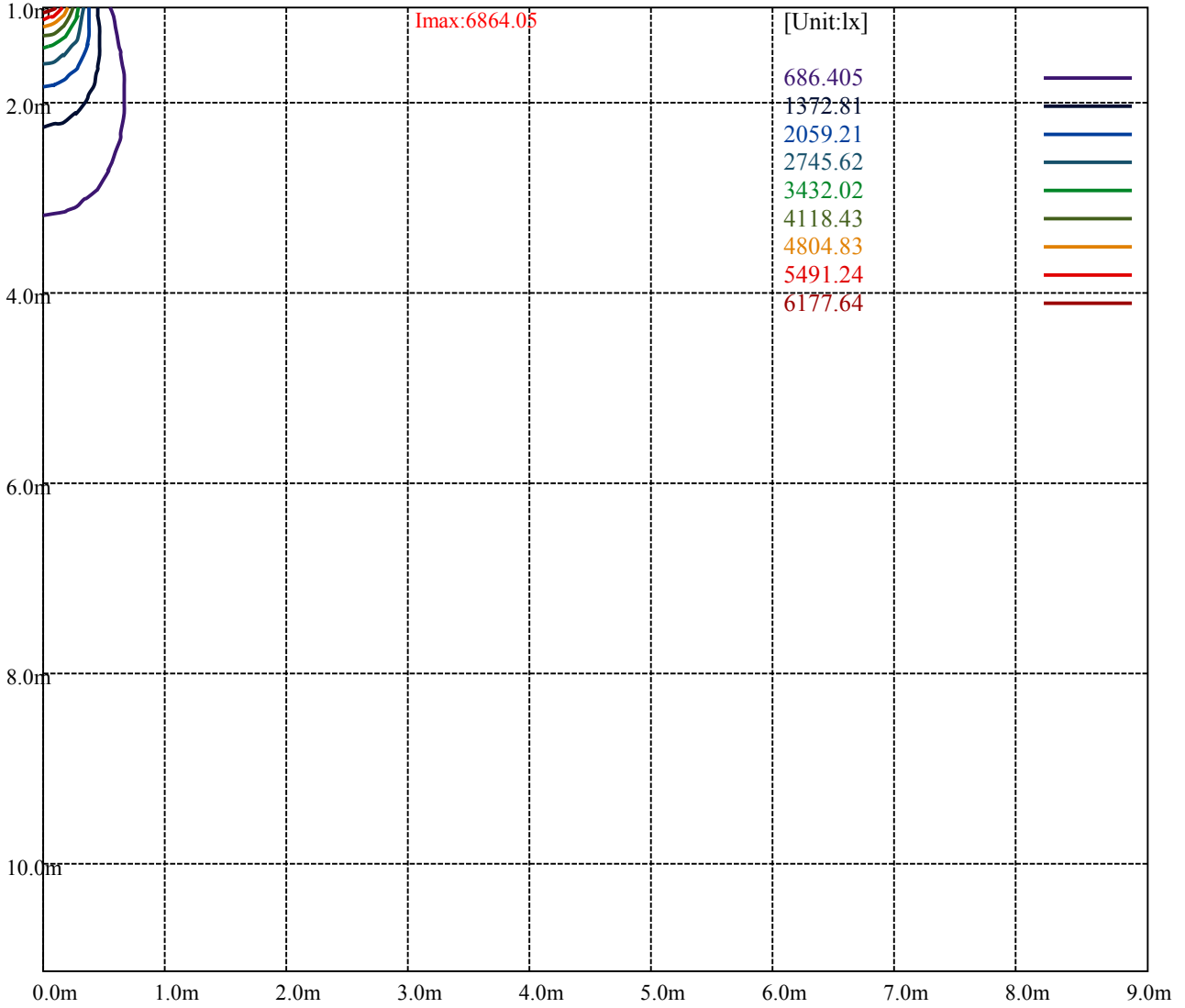
**Imax:6864.05**

(10%Imax) 686.405	—
(20%Imax) 1372.81	—
(30%Imax) 2059.21	—
(40%Imax) 2745.62	—
(50%Imax) 3432.02	—
(60%Imax) 4118.43	—
(70%Imax) 4804.83	—
(80%Imax) 5491.24	—
(90%Imax) 6177.64	—



(10%Emax) 171.601	—
(20%Emax) 343.2025	—
(30%Emax) 514.8025	—
(40%Emax) 686.405	—
(50%Emax) 858.005	—
(60%Emax) 1029.605	—
(70%Emax) 1201.208	—
(80%Emax) 1372.807	—
(90%Emax) 1544.41	—





Luminance Table

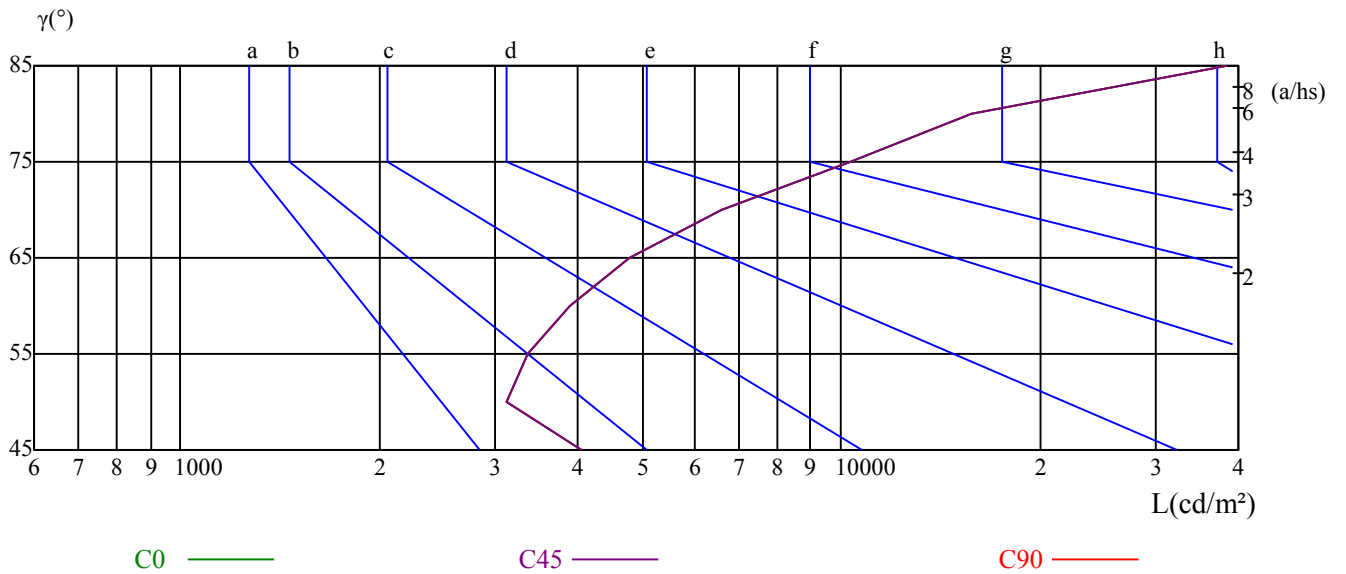
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4061	3121	3358	3900	4800	6622	10326	15723	38312
C45	4061	3121	3358	3900	4800	6622	10326	15723	38312
C90	4061	3121	3358	3900	4800	6622	10326	15723	38312

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4800	4800	4800	10326	10326	10326	38312	38312	38312

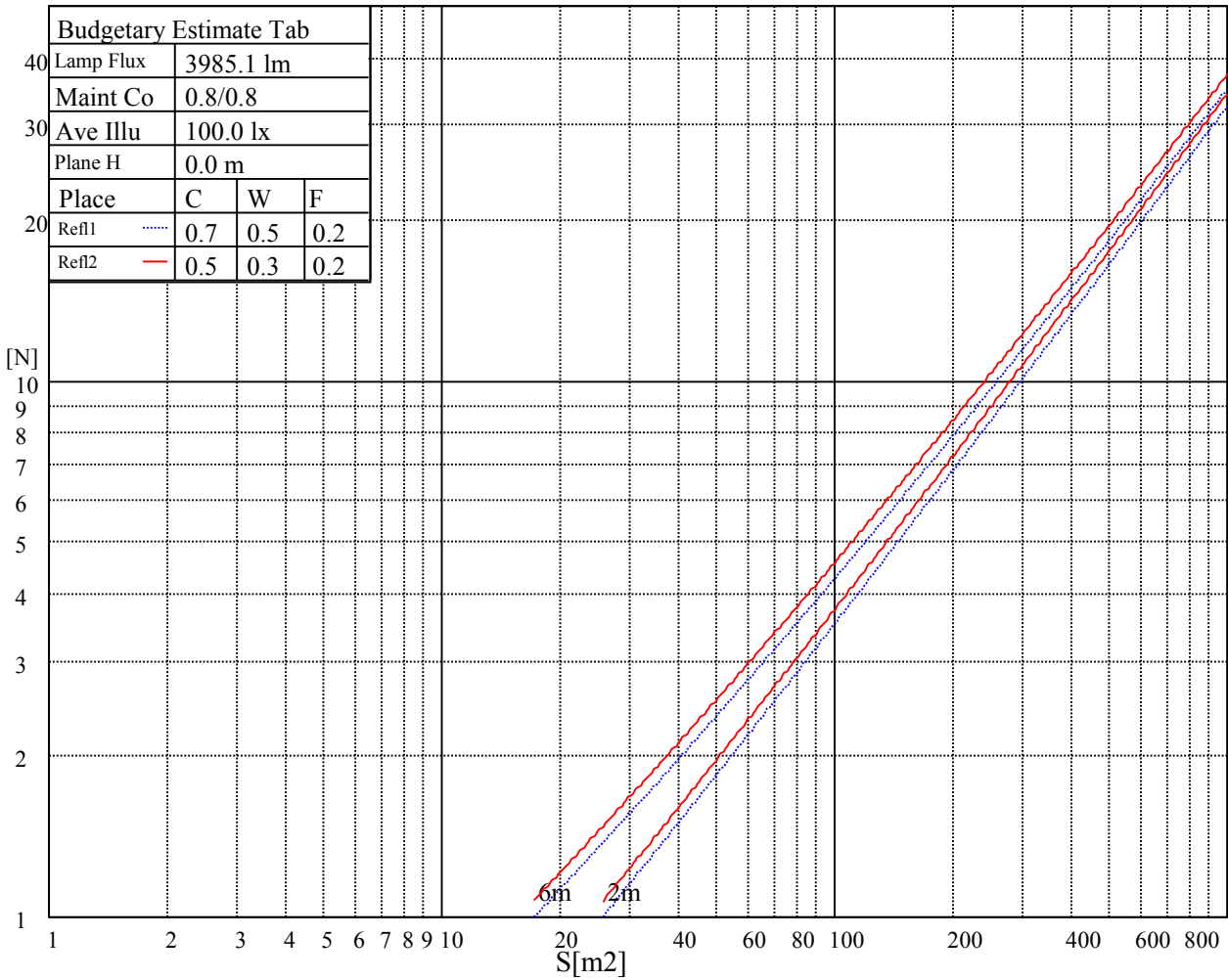
Glare Table

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

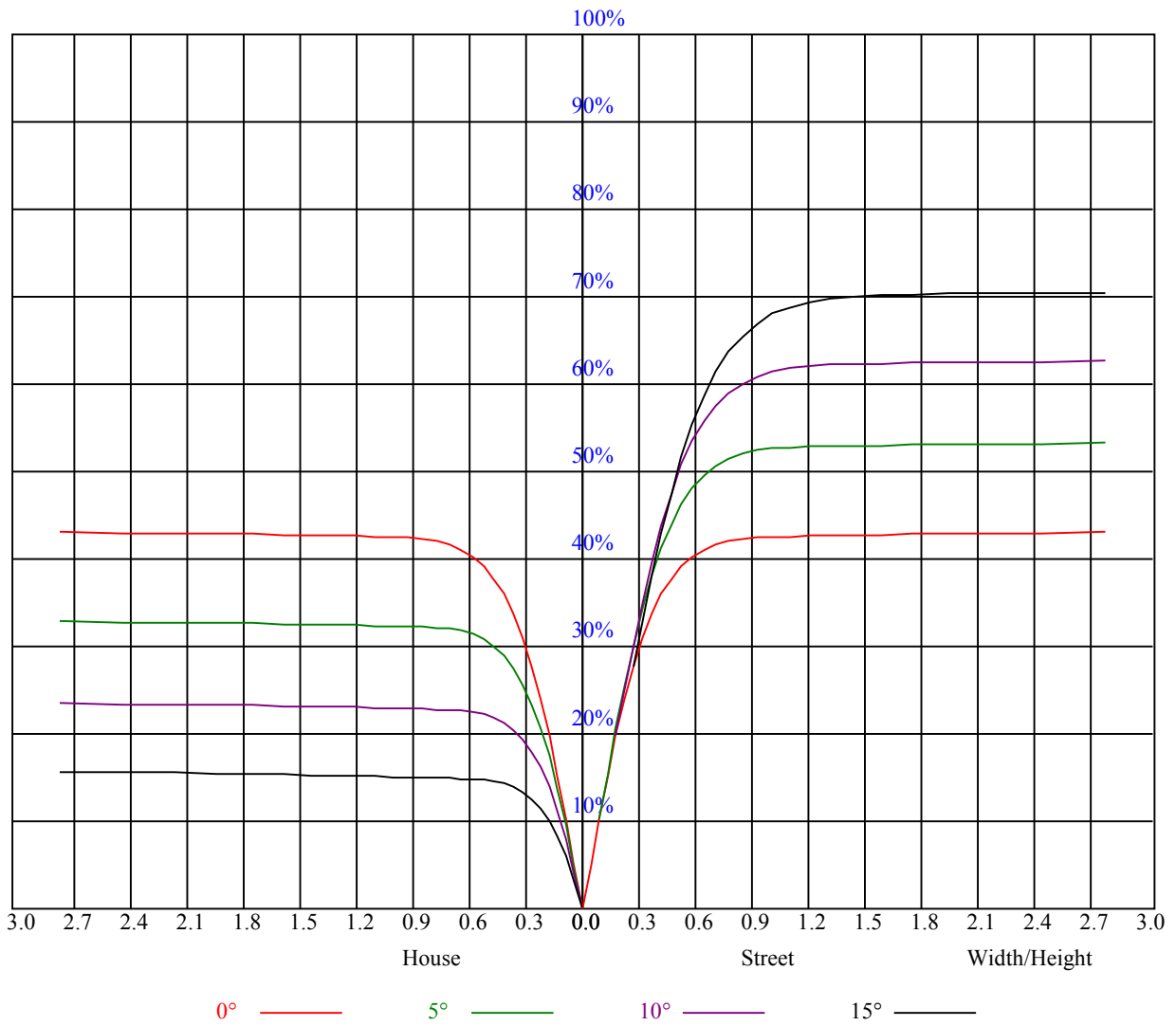
Luminance Limiting Curve



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	1.79	2.73	2.16	3.04	3.36	1.18	2.11	1.54	2.42	2.74
	3H	5.94	6.77	6.32	7.10	7.47	5.17	6.00	5.55	6.33	6.70
	4H	8.73	9.49	9.13	9.85	10.24	7.60	8.37	8.01	8.73	9.12
	6H	11.40	12.10	11.82	12.48	12.87	10.11	10.81	10.53	11.19	11.59
	8H	12.91	13.57	13.34	13.96	14.37	11.56	12.22	11.99	12.61	13.02
	12H	15.35	15.98	15.79	16.37	16.80	13.92	14.55	14.36	14.94	15.37
4H	2H	2.84	3.61	3.25	3.96	4.36	2.44	3.21	2.85	3.56	3.95
	3H	7.28	7.91	7.69	8.32	8.73	6.69	7.32	7.11	7.73	8.14
	4H	10.17	10.74	10.61	11.17	11.61	9.25	9.82	9.69	10.24	10.69
	6H	12.68	13.17	13.15	13.62	14.10	11.60	12.09	12.07	12.54	13.01
	8H	14.39	14.84	14.86	15.29	15.77	13.21	13.67	13.69	14.12	14.60
8H	12H	16.76	17.15	17.25	17.64	18.12	15.45	15.85	15.95	16.34	16.81
	4H	11.01	11.46	11.48	11.91	12.39	10.34	10.79	10.81	11.24	11.72
	6H	13.83	14.19	14.34	14.70	15.18	13.00	13.36	13.51	13.87	14.35
	8H	15.71	16.03	16.24	16.56	17.05	14.77	15.10	15.31	15.62	16.12
12H	12H	18.11	18.39	18.63	18.89	19.47	17.01	17.28	17.53	17.78	18.36
	4H	11.25	11.65	11.74	12.14	12.61	10.70	11.09	11.19	11.58	12.06
	6H	14.46	14.54	14.75	15.01	15.56	13.76	13.84	14.06	14.31	14.86
	8H	16.23	16.51	16.75	17.01	17.59	15.43	15.71	15.95	16.21	16.79
Variation with the observer position at spacings:											
S = 1.0H	4.6/-4.8					4.6/-4.8					
S = 1.5H	5.7/-3.3					5.7/-3.3					
S = 2.0H	6.2/-2.3					6.2/-2.3					
Standard tables:	BKBF					BKBF					
Uncorrected UGR	4.8					4.8					



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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88
1	0.97	0.94	0.92	0.95	0.93	0.91	0.91	0.89	0.88	0.88	0.86	0.85	0.85	0.84	0.83	0.81
2	0.91	0.88	0.85	0.90	0.86	0.84	0.87	0.84	0.82	0.84	0.82	0.80	0.82	0.80	0.79	0.77
3	0.86	0.82	0.79	0.85	0.81	0.79	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
4	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.70
5	0.78	0.74	0.71	0.78	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.71	0.69	0.68
6	0.75	0.71	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.68	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.63	0.62
8	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.60
9	0.67	0.62	0.59	0.66	0.62	0.59	0.65	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	0.57	0.62	0.59	0.57	0.56



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	6856.88	6592.50	5908.50	4695.19	3256.88	2106.00	1293.75	633.94	285.75
45.0	6871.50	6707.81	6018.75	4824.56	3371.63	2134.13	1329.75	659.25	297.00
90.0	6881.06	6690.94	5900.63	4662.00	3288.38	2016.56	1119.77	642.60	208.46
135.0	6846.75	6787.69	6116.06	5136.75	3679.88	2313.00	1532.25	800.44	312.75
180.0	6856.88	6662.81	5945.06	4875.75	3461.06	2163.94	1090.63	694.46	224.16
225.0	6871.50	6640.31	5865.19	4726.13	3321.00	2109.94	1101.09	662.63	196.03
270.0	6881.06	6633.56	5932.69	4742.44	3394.13	2112.19	1308.94	675.56	291.94
315.0	6846.75	6432.19	5690.25	4401.56	3007.69	1927.13	1084.28	539.78	129.09
360.0	6856.88	6592.50	5908.50	4695.19	3256.88	2106.00	1293.75	633.94	285.75
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	23.68	18.39	18.06	18.45	19.69	22.50	25.37	25.76	31.44
45.0	29.08	18.79	17.78	17.66	18.28	19.35	22.78	23.29	27.17
90.0	32.79	19.18	17.89	17.27	17.49	17.78	20.64	20.59	26.61
135.0	34.65	19.24	17.72	17.10	16.76	16.71	17.04	19.24	26.38
180.0	27.28	18.45	17.21	16.99	17.38	18.39	21.49	22.33	26.72
225.0	29.48	20.25	19.52	20.53	22.05	25.93	30.60	29.14	38.81
270.0	28.69	23.91	23.18	24.02	25.43	30.66	40.22	39.83	47.03
315.0	24.08	22.28	22.73	23.96	25.20	29.87	35.66	38.25	42.98
360.0	23.68	18.39	18.06	18.45	19.69	22.50	25.37	25.76	31.44
C/γ(°)	90.0								
0.0	19.91								
45.0	18.17								
90.0	14.06								
135.0	13.84								
180.0	13.67								
225.0	15.36								
270.0	25.48								
315.0	24.19								
360.0	19.91								