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NATA

LumCAT: 2-1682-M	
Luminaire: 92.70.124.00	
Report No: NATA0100	Voltage(V): 33.9000
Test No: GC2019021816	Current(A): 0.3000
LampCAT: BRIDGELUX V10B	Power (W): 10.1700
Lamp flux(lm): 1497.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1312.06
Efficiency(%): 87.65%
Lumens(lm)/Power(W): 130.53
Central intensity(cd): 2784.938
Maximum intensity(cd): 2784.938
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.9
[C90/270]Total=36.9
Field angle(10%Imax): [C0/180]Total=69.5
[C90/270]Total=69.5
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.62 C90_270=0.62
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.68%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.671%

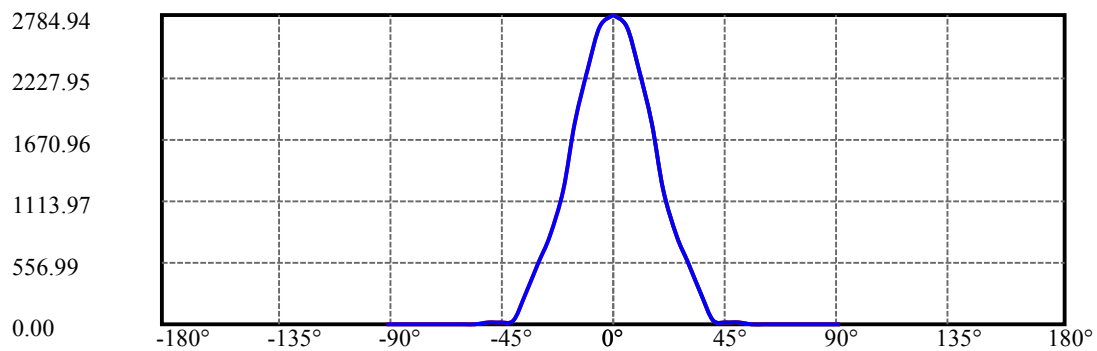
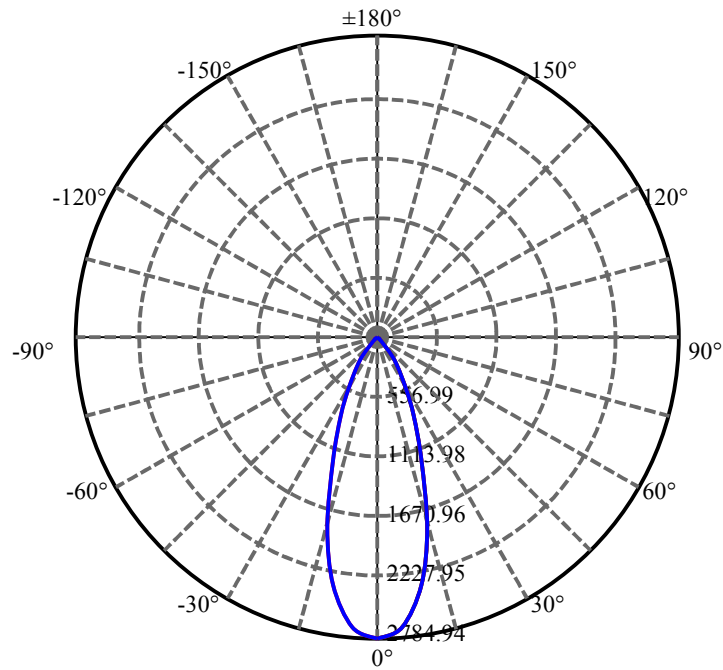
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2784.938	16.654	16.654	1.113%	1.269%
5.0	2686.570	128.346	145.001	8.574%	11.051%
10.0	2319.258	220.754	365.755	14.746%	27.876%
15.0	1809.281	256.680	622.435	17.146%	47.439%
20.0	1202.991	225.529	847.964	15.065%	64.628%
25.0	799.320	185.165	1033.129	12.369%	78.741%
30.0	545.428	149.485	1182.614	9.986%	90.134%
35.0	264.438	83.139	1265.753	5.554%	96.470%
40.0	42.546	14.991	1280.743	1.001%	97.613%
45.0	12.670	4.911	1285.654	.328%	97.987%
50.0	9.879	4.148	1289.802	.277%	98.303%
55.0	7.995	3.590	1293.392	.240%	98.577%
60.0	6.645	3.154	1296.546	.211%	98.817%
65.0	5.829	2.896	1299.442	.193%	99.038%
70.0	5.414	2.789	1302.23	.186%	99.251%
75.0	5.217	2.762	1304.993	.185%	99.461%
80.0	5.203	2.809	1307.801	.188%	99.675%
85.0	5.196	2.837	1310.639	.190%	99.891%
90.0	5.196	1.424	1312.063	.095%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1182.61	79.00%	90.13%
0-40	1280.74	85.55%	97.61%
0-60	1296.55	86.61%	98.82%
0-90	1310.64	87.55%	99.89%
0-120	1310.64	87.55%	99.89%
0-180	1312.06	87.65%	100.00%
60-90	17.25	1.15%	1.31%
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%
0-25.55	1049.65	70.12%	80.00%

ZONAL LUMEN SUMMARY

0-10	365.75
10-20	482.21
20-30	334.65
30-40	98.13
40-50	9.06
50-60	6.74
60-70	5.68
70-80	5.57
80-90	2.84
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

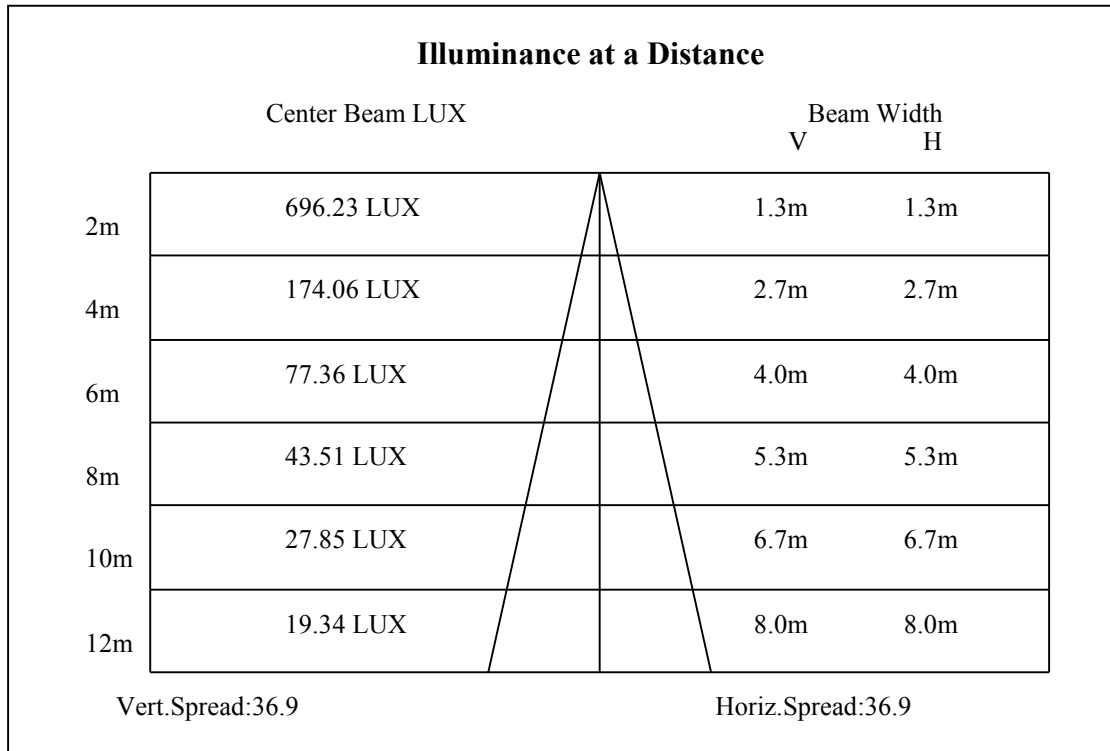
C0(Max): —————C0/C180: —————C90/C270: —————

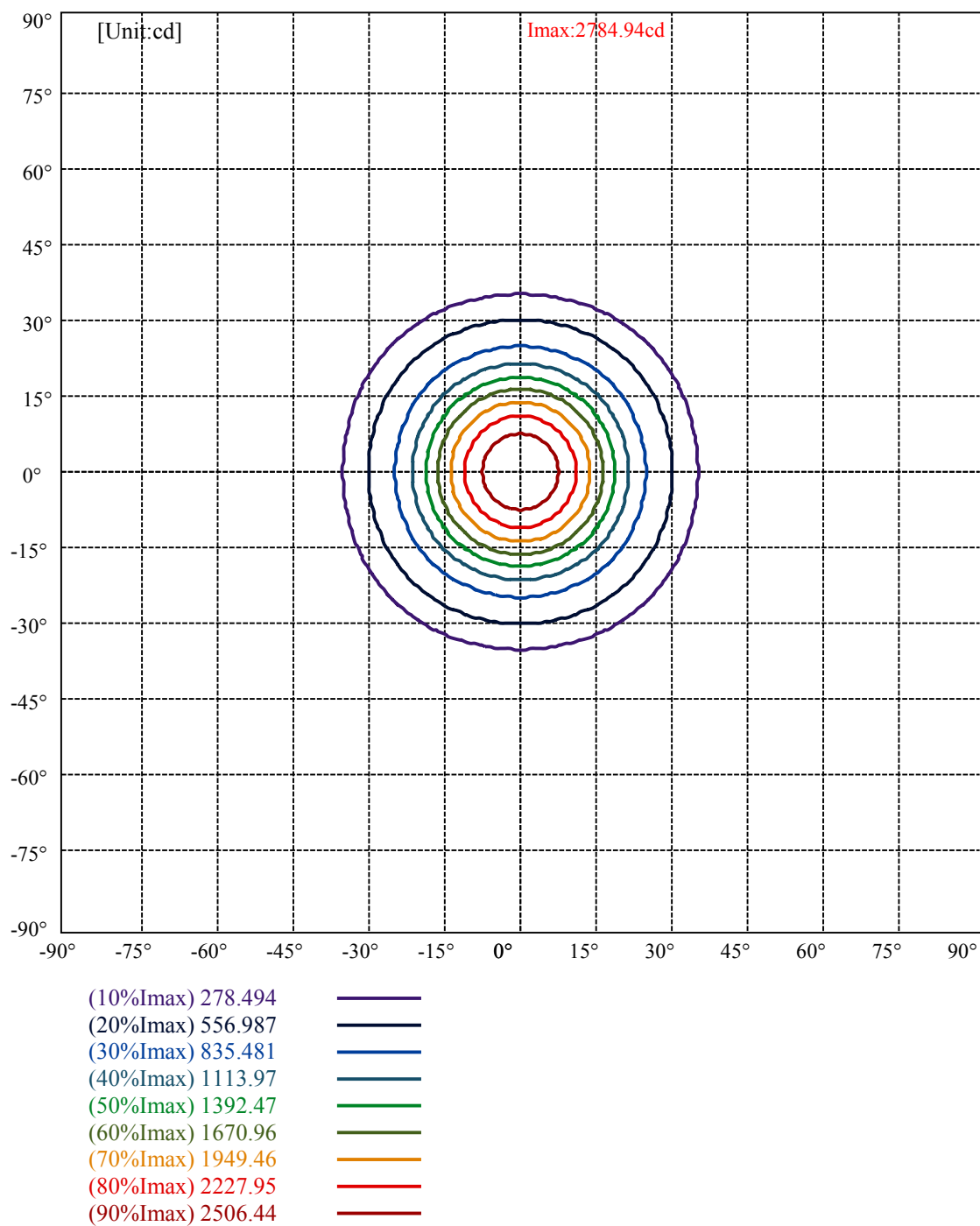
Field angle(10%Imax):C0/180Left:34.7 Right:34.7

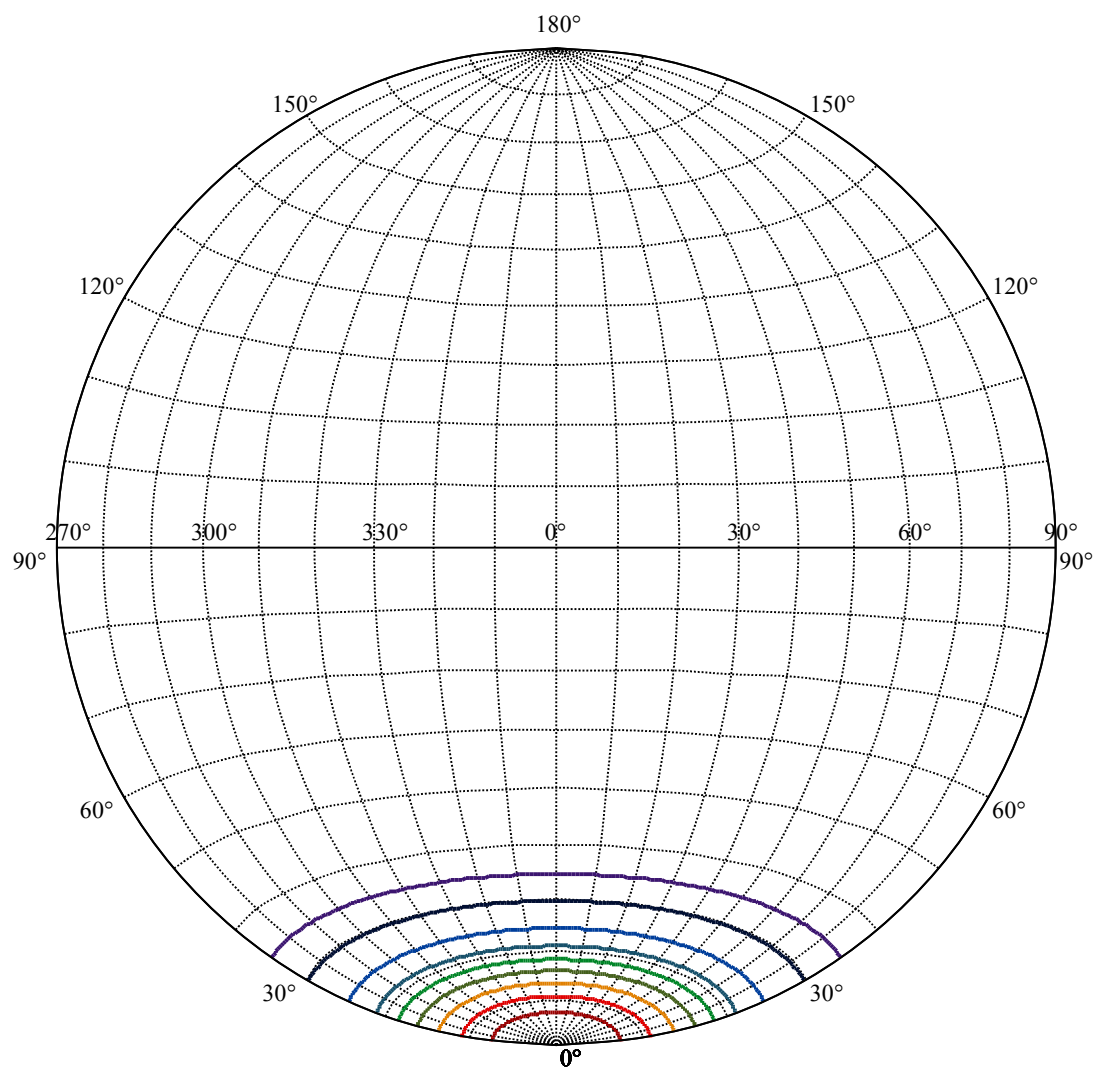
:C90/270Left:34.7 Right:34.7

Beam Angle(50%Imax):C0/180Left:18.4 Right:18.4

:C90/270Left:18.4 Right:18.4







House

[Unit:cd]

Road

Imax:2784.94

(10%Imax) 278.494

(20%Imax) 556.987

(30%Imax) 835.481

(40%Imax) 1113.97

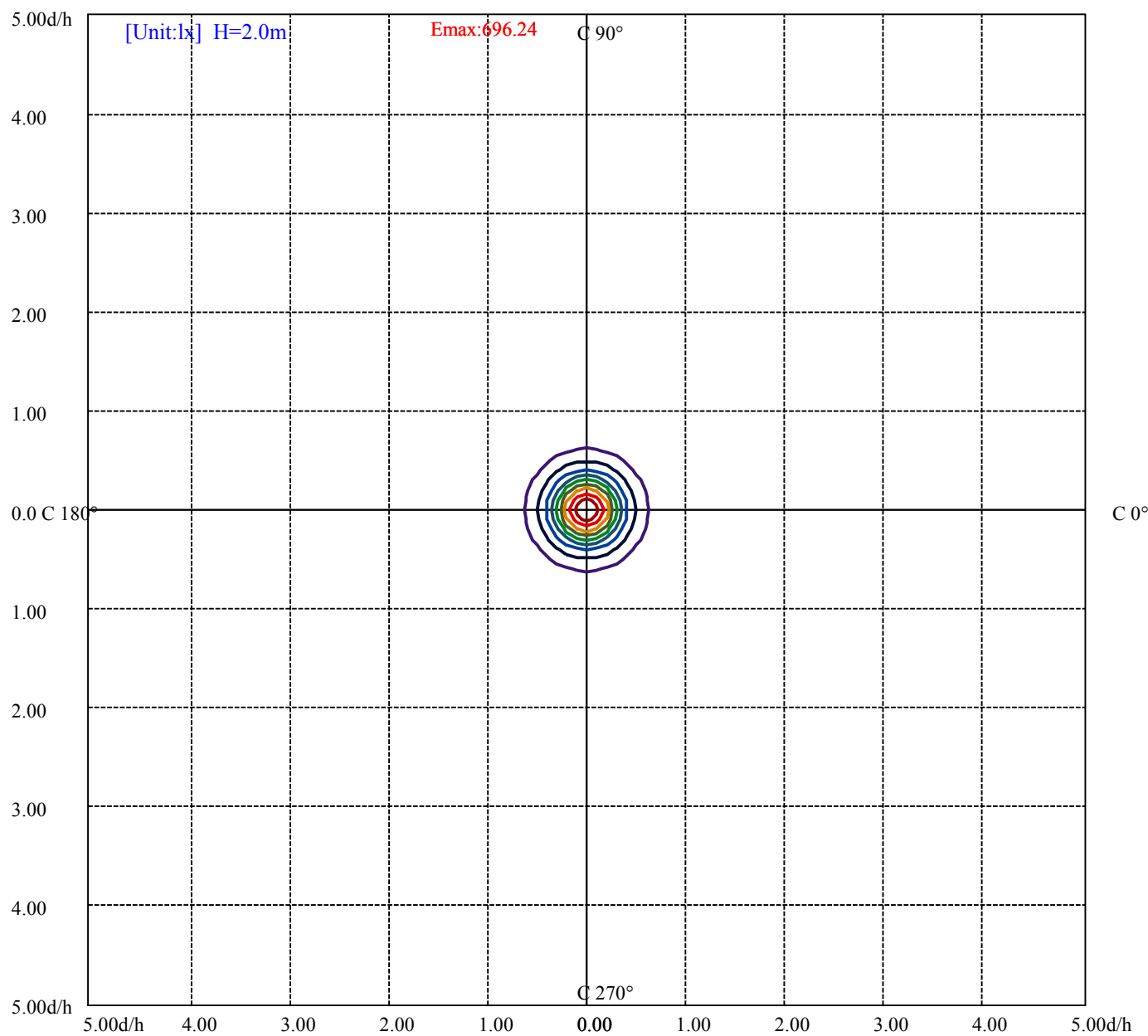
(50%Imax) 1392.47

(60%Imax) 1670.96

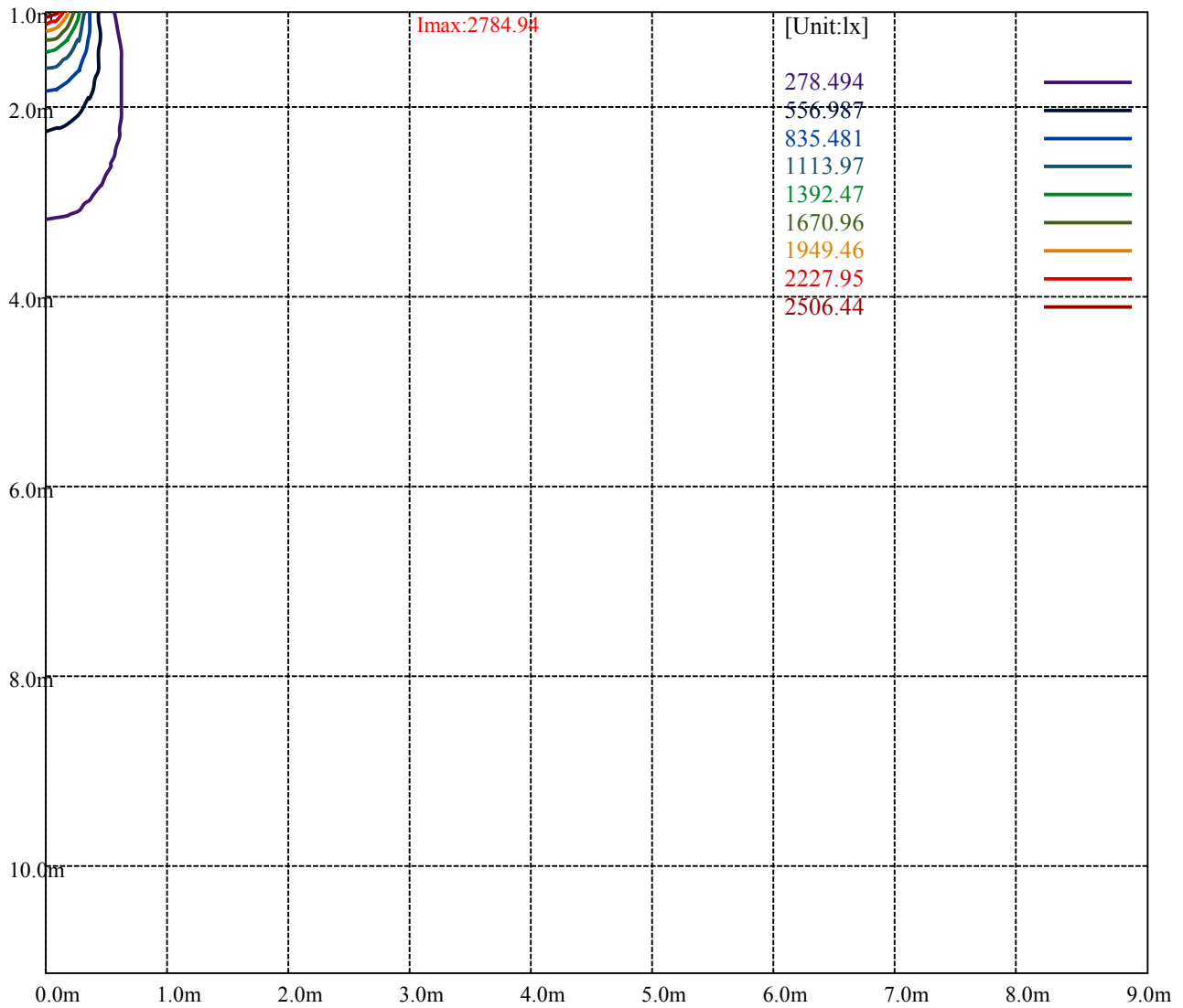
(70%Imax) 1949.46

(80%Imax) 2227.95

(90%Imax) 2506.44



(10%E _{max}) 69.62325	—
(20%E _{max}) 139.2467	—
(30%E _{max}) 208.87	—
(40%E _{max}) 278.4925	—
(50%E _{max}) 348.1175	—
(60%E _{max}) 417.74	—
(70%E _{max}) 487.3625	—
(80%E _{max}) 556.9875	—
(90%E _{max}) 626.61	—



Luminance Table

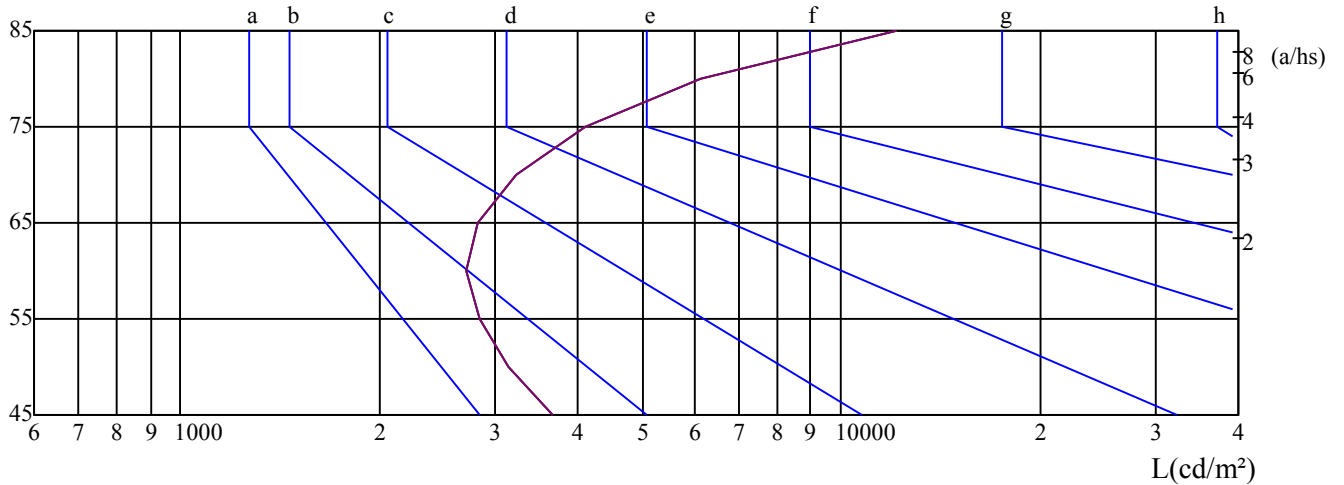
γ	45	50	55	60	65	70	75	80	85
C0	3657	3137	2844	2712	2815	3231	4114	6115	12167
C45	3657	3137	2844	2712	2815	3231	4114	6115	12167
C90	3657	3137	2844	2712	2815	3231	4114	6115	12167

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2815	2815	2815	4114	4114	4114	12167	12167	12167

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

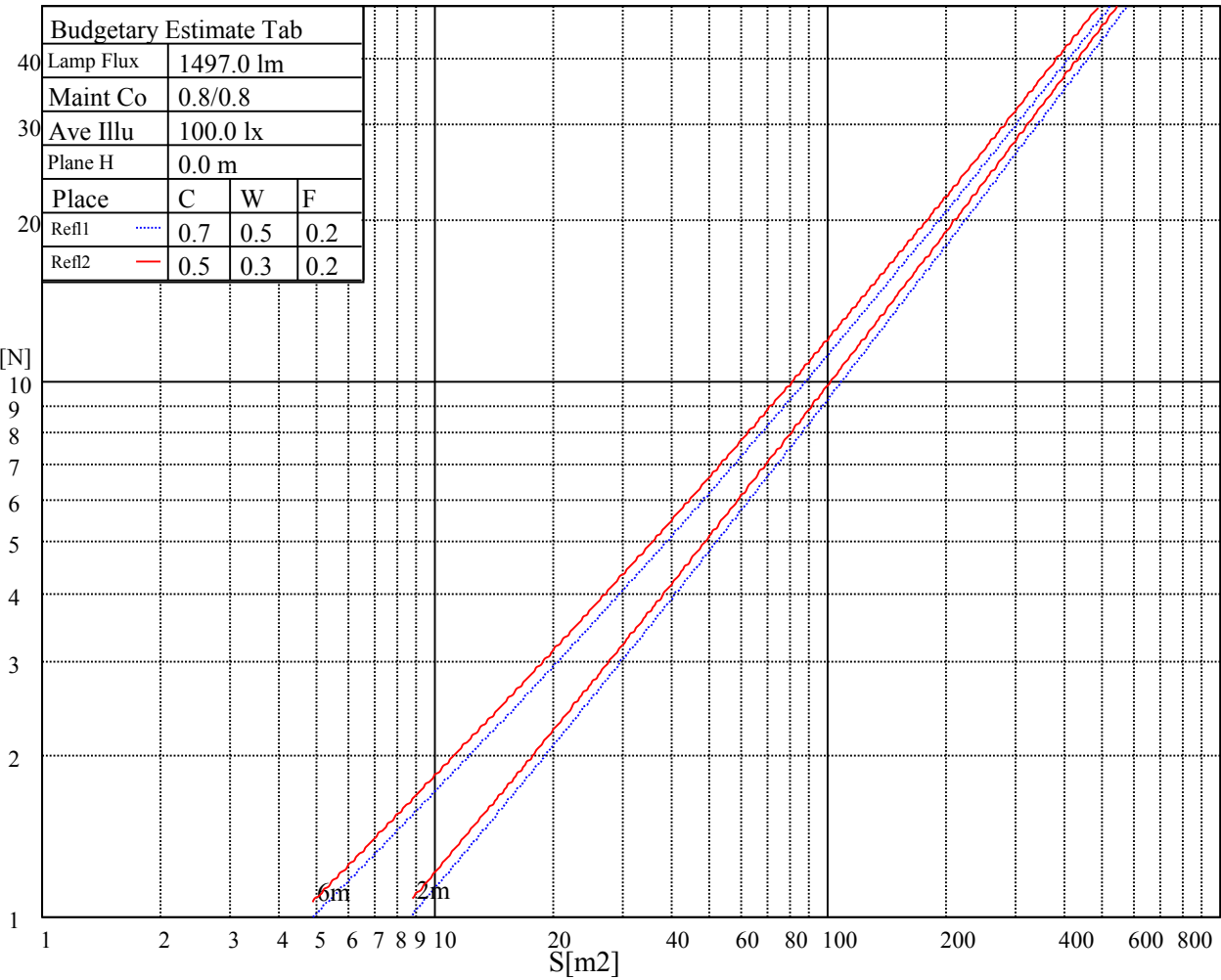
 $\gamma(^{\circ})$ 

C0 ———

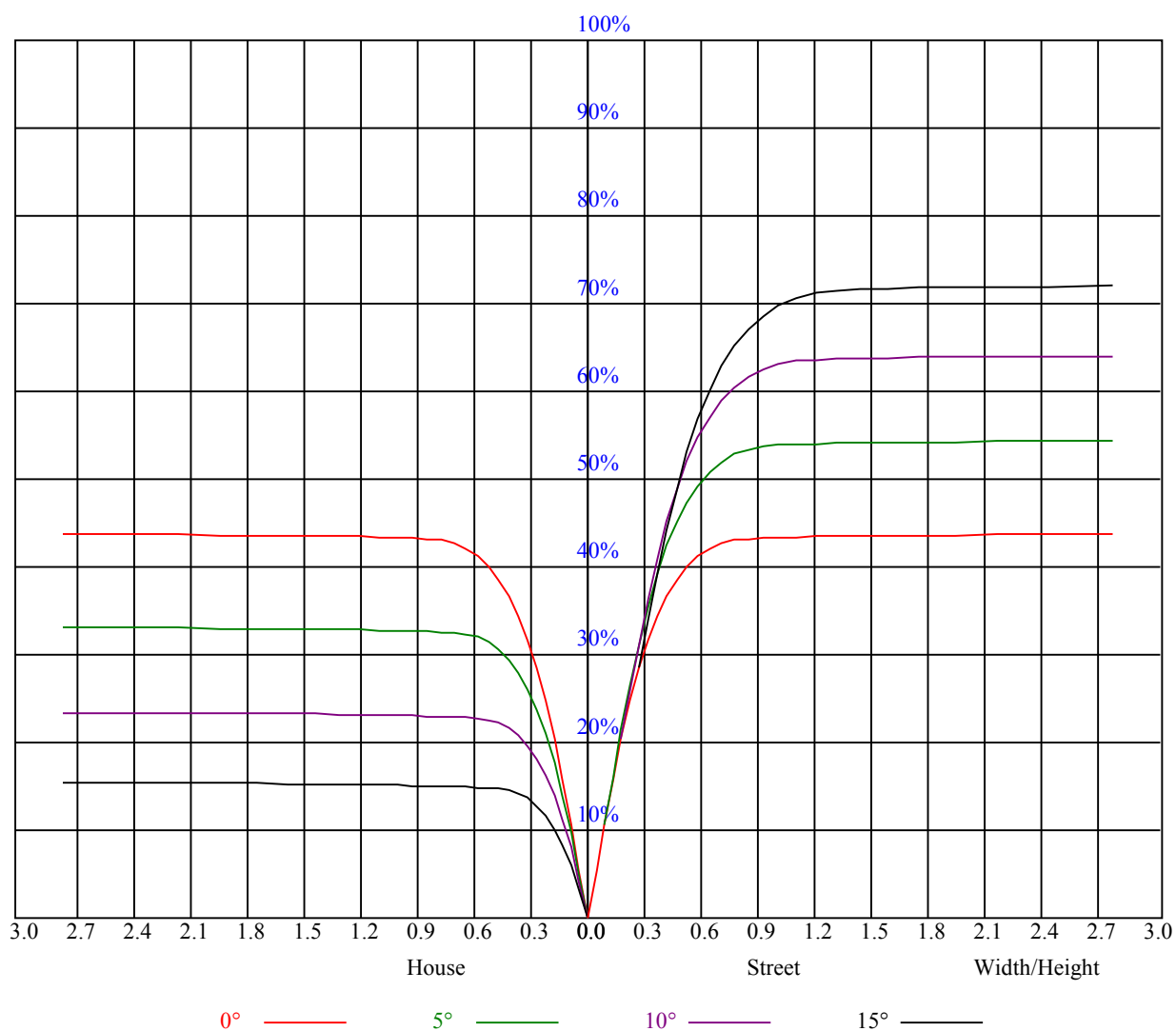
C45 ———

C90 ———

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	3.92	4.83	4.28	5.14	5.46	3.95	4.86	4.31	5.17	5.49
	3H	6.31	7.12	6.70	7.46	7.83	6.33	7.14	6.71	7.47	7.84
	4H	7.75	8.50	8.16	8.85	9.24	7.75	8.50	8.16	8.86	9.25
	6H	9.52	10.20	9.94	10.58	10.97	9.49	10.17	9.91	10.55	10.94
	8H	10.54	11.18	10.98	11.57	11.98	10.50	11.14	10.93	11.53	11.94
	12H	12.23	12.85	12.67	13.23	13.66	12.19	12.80	12.62	13.18	13.62
4H	2H	4.52	5.26	4.92	5.62	6.01	4.54	5.29	4.95	5.64	6.03
	3H	7.25	7.86	7.67	8.27	8.68	7.26	7.87	7.68	8.28	8.69
	4H	8.91	9.46	9.35	9.88	10.33	8.91	9.46	9.35	9.88	10.33
	6H	10.90	11.37	11.37	11.82	12.30	10.88	11.35	11.35	11.80	12.28
	8H	12.04	12.48	12.52	12.93	13.41	12.01	12.45	12.49	12.90	13.37
	12H	13.67	14.04	14.16	14.53	15.01	13.63	14.00	14.12	14.49	14.97
8H	4H	9.55	9.99	10.03	10.44	10.92	9.55	9.99	10.03	10.44	10.92
	6H	11.85	12.19	12.36	12.69	13.18	11.82	12.16	12.33	12.67	13.15
	8H	13.19	13.49	13.73	14.02	14.52	13.15	13.46	13.69	13.98	14.48
	12H	14.98	15.24	15.50	15.74	16.32	14.94	15.20	15.47	15.70	16.28
12H	4H	9.74	10.11	10.23	10.60	11.08	9.74	10.12	10.24	10.61	11.09
	6H	12.35	12.45	12.68	12.92	13.47	12.33	12.43	12.66	12.90	13.45
	8H	13.63	13.89	14.15	14.39	14.97	13.60	13.86	14.12	14.36	14.94
Variation with the observer position at spacings:											
S = 1.0H		5.7/-7.1					5.7/-7.1				
S = 1.5H		7.9/-5.3					7.9/-5.3				
S = 2.0H		9.3/-4.1					9.3/-4.1				
Standard tables:		BK3					BK3				
Uncorrected UGR		-0.6					-0.6				



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	0.90	0.90	0.90	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.82
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.81	0.80	0.79
3	0.88	0.84	0.81	0.87	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	0.79	0.76	0.83	0.79	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
6	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.66
7	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.61
9	0.68	0.64	0.61	0.68	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59
10	0.66	0.61	0.59	0.65	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57



NATA 2-1682-M

Intensity data(cd)										Appendix Page: 15 Total:15	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	2791.13	2755.13	2406.94	1902.38	1311.75	869.06	581.63	293.63	57.54		
45.0	2779.31	2687.63	2313.56	1791.56	1263.38	803.81	551.25	290.25	37.74		
90.0	2774.25	2611.69	2156.06	1643.63	1108.07	717.92	468.90	152.33	24.98		
135.0	2795.06	2644.88	2275.88	1746.56	1208.25	771.19	536.63	299.81	28.41		
180.0	2791.13	2624.63	2232.00	1735.88	1095.92	749.14	513.96	205.54	26.33		
225.0	2779.31	2684.25	2313.56	1810.69	1115.21	795.32	531.79	256.73	38.98		
270.0	2774.25	2751.19	2466.56	1986.75	1416.94	889.31	615.38	347.06	82.74		
315.0	2795.06	2733.19	2389.50	1856.81	1104.41	798.81	563.91	270.17	43.65		
360.0	2791.13	2755.13	2406.94	1902.38	1311.75	869.06	581.63	293.63	57.54		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	13.73	10.74	8.61	6.98	6.02	5.51	5.23	5.18	5.18		
45.0	12.32	9.62	7.82	6.58	5.79	5.40	5.23	5.18	5.18		
90.0	11.64	9.39	7.65	6.36	5.68	5.34	5.23	5.29	5.18		
135.0	11.87	9.45	7.59	6.47	5.74	5.40	5.18	5.23	5.23		
180.0	11.76	9.17	7.54	6.36	5.68	5.34	5.23	5.18	5.18		
225.0	12.32	10.01	8.04	6.58	5.79	5.40	5.18	5.18	5.18		
270.0	14.23	10.46	8.44	6.98	6.02	5.51	5.29	5.23	5.23		
315.0	13.50	10.18	8.27	6.86	5.91	5.40	5.18	5.18	5.23		
360.0	13.73	10.74	8.61	6.98	6.02	5.51	5.23	5.18	5.18		
C/γ(°)	90.0										
0.0	5.23										
45.0	5.18										
90.0	5.18										
135.0	5.23										
180.0	5.18										
225.0	5.18										
270.0	5.18										
315.0	5.23										
360.0	5.23										