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NATA

LumCAT: 1689-M	
Luminaire: 92.70.124.00	
Report No: NATA0100	Voltage(V): 33.9000
Test No: GC2019021812	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): 46	Width(mm): 46
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1368.33
Efficiency(%): 91.40%
Lumens(lm)/Power(W): 135.12
Central intensity(cd): 1195.313
Maximum intensity(cd): 1195.313
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=70.7
[C90/270]Total=70.7
Field angle(10%Imax): [C0/180]Total=95.5
[C90/270]Total=95.5
Maximum s/h(1/2): C0_180=0.97 C90_270=0.97
Maximum s/h(1/4): C0_180=1.04 C90_270=1.04
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.80%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.444%

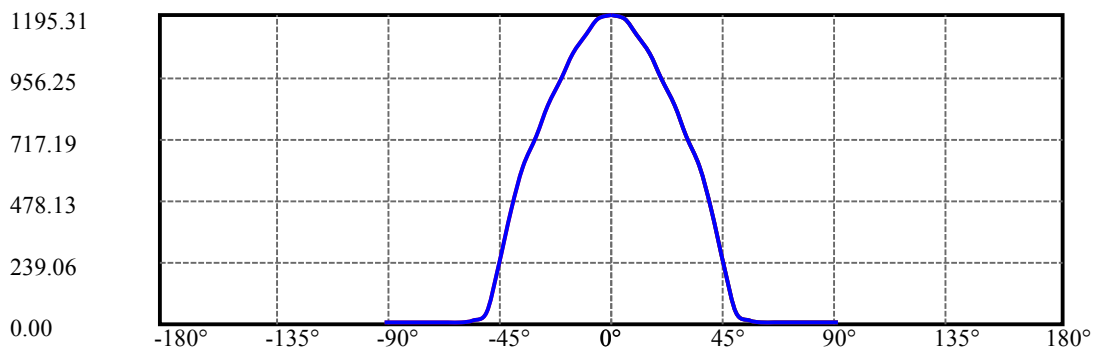
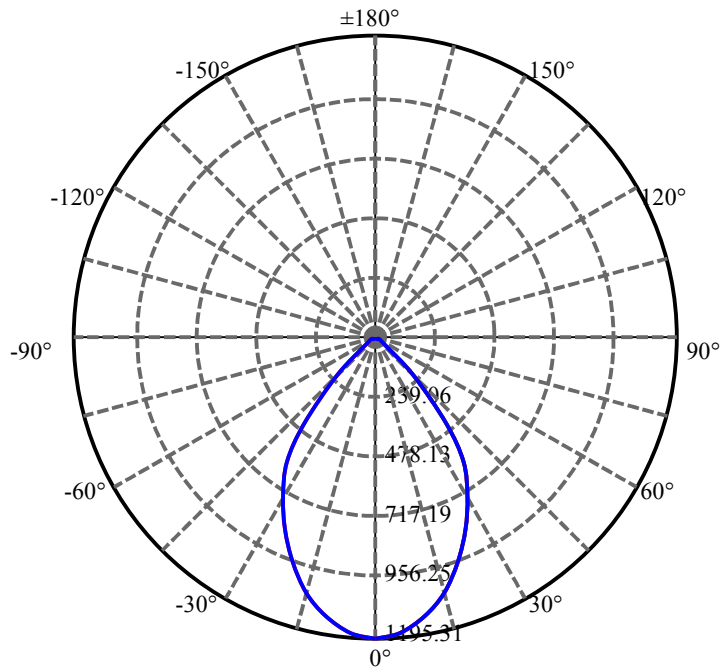
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1195.313	7.148	7.148	.478%	.522%
5.0	1178.016	56.278	63.426	3.759%	4.635%
10.0	1121.330	106.732	170.158	7.130%	12.435%
15.0	1044.865	148.233	318.391	9.902%	23.269%
20.0	951.005	178.289	496.679	11.910%	36.298%
25.0	843.124	195.312	691.992	13.047%	50.572%
30.0	728.044	199.534	891.526	13.329%	65.154%
35.0	608.766	191.395	1082.921	12.785%	79.142%
40.0	442.484	155.903	1238.824	10.414%	90.535%
45.0	211.971	82.158	1320.982	5.488%	96.540%
50.0	44.986	18.889	1339.871	1.262%	97.920%
55.0	17.796	7.991	1347.862	.534%	98.504%
60.0	10.378	4.927	1352.788	.329%	98.864%
65.0	7.045	3.500	1356.288	.234%	99.120%
70.0	5.674	2.923	1359.211	.195%	99.334%
75.0	5.077	2.688	1361.899	.180%	99.530%
80.0	4.816	2.600	1364.499	.174%	99.720%
85.0	4.683	2.557	1367.056	.171%	99.907%
90.0	4.648	1.274	1368.33	.085%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	891.53	59.55%	65.15%
0-40	1238.82	82.75%	90.54%
0-60	1352.79	90.37%	98.86%
0-90	1367.06	91.32%	99.91%
0-120	1367.06	91.32%	99.91%
0-180	1368.33	91.40%	100.00%
60-90	19.19	1.28%	1.40%
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%
0-35.38	1094.66	73.12%	80.00%

ZONAL LUMEN SUMMARY

0-10	170.16
10-20	326.52
20-30	394.85
30-40	347.30
40-50	101.05
50-60	12.92
60-70	6.42
70-80	5.29
80-90	2.56
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

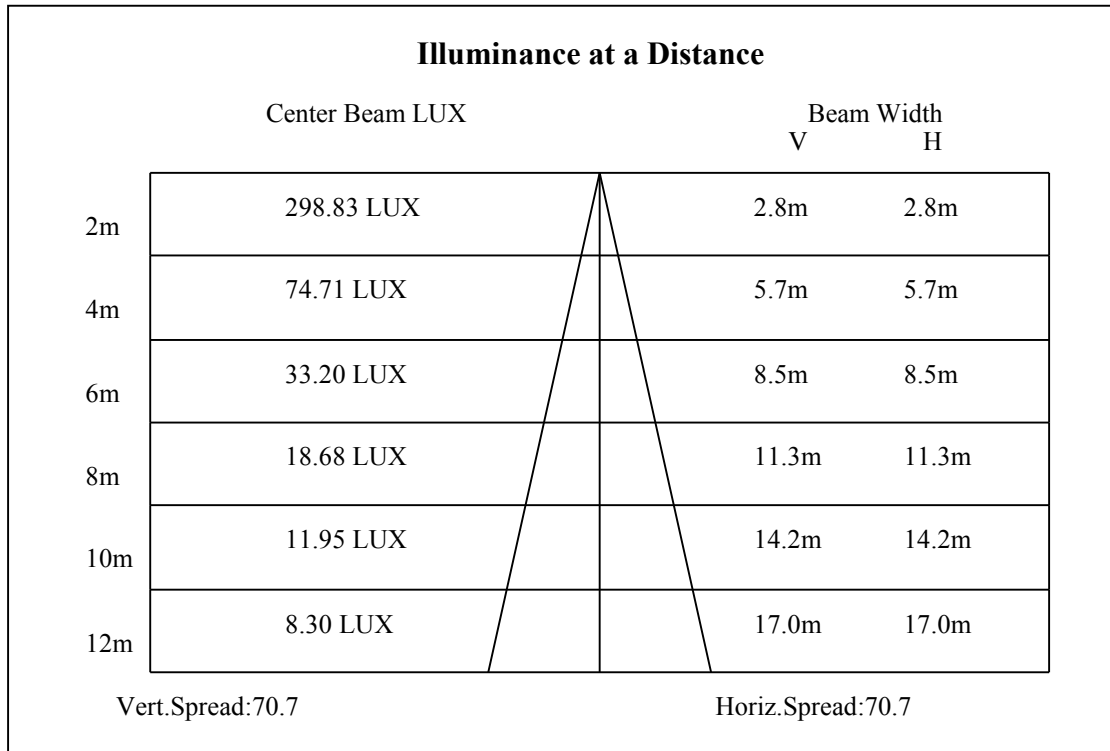
C0(Max): —————C0/C180: —————C90/C270: —————

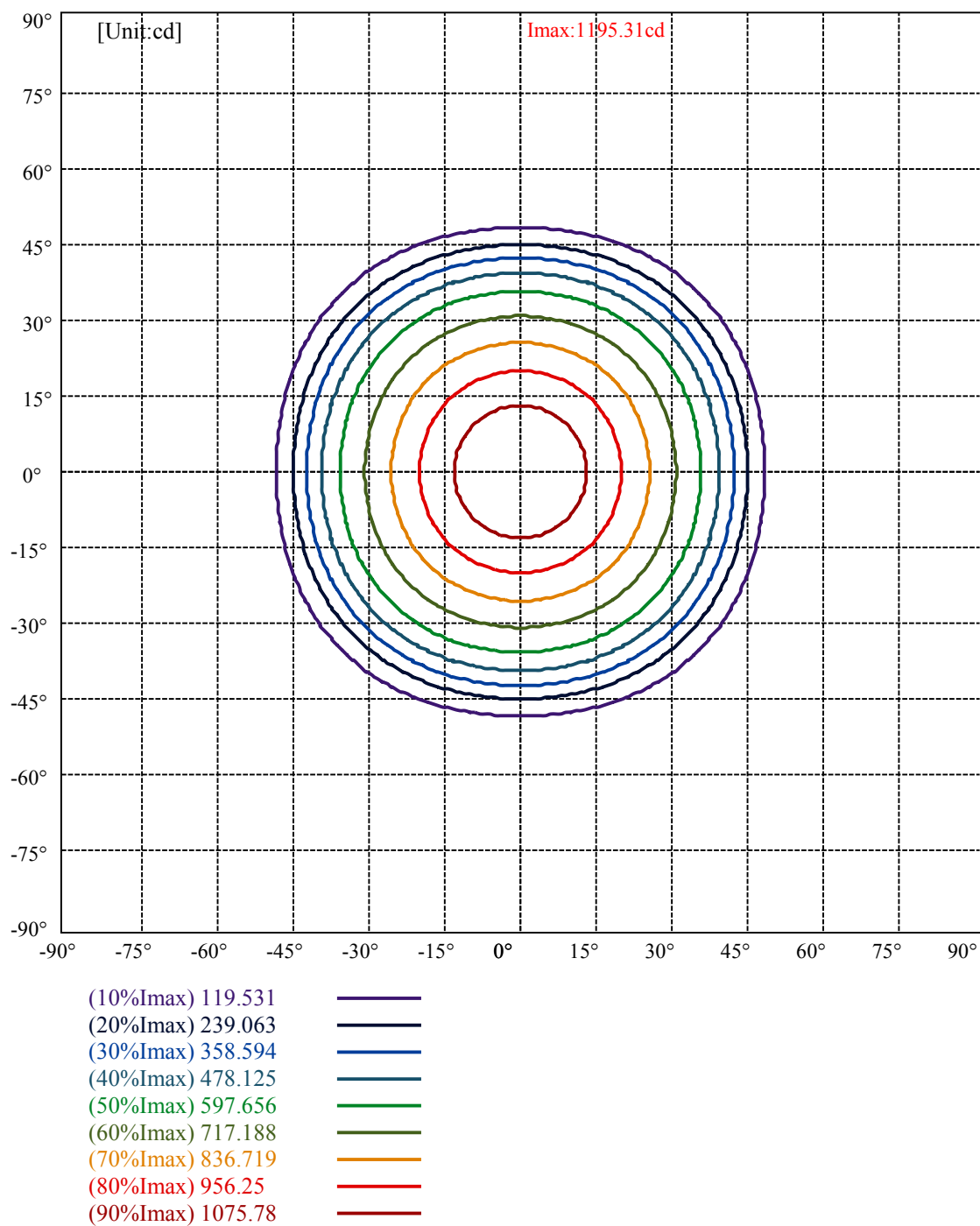
Field angle(10%Imax):C0/180Left:47.8 Right:47.8

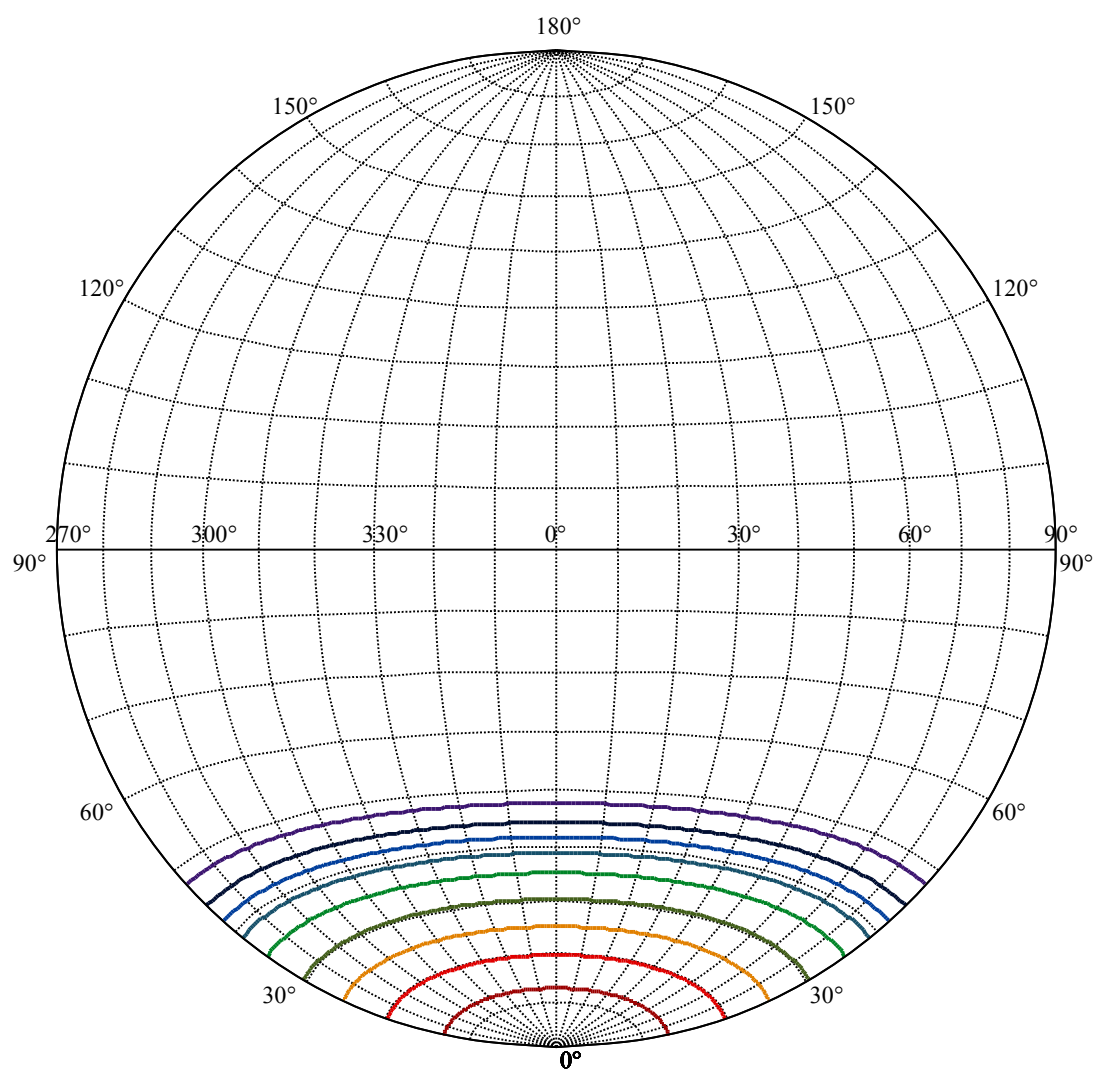
:C90/270Left:47.8 Right:47.8

Beam Angle(50%Imax):C0/180Left:35.3 Right:35.3

:C90/270Left:35.3 Right:35.3







House

[Unit:cd]

Road

Imax:1195.31

(10%Imax) 119.531

(20%Imax) 239.063

(30%Imax) 358.594

(40%Imax) 478.125

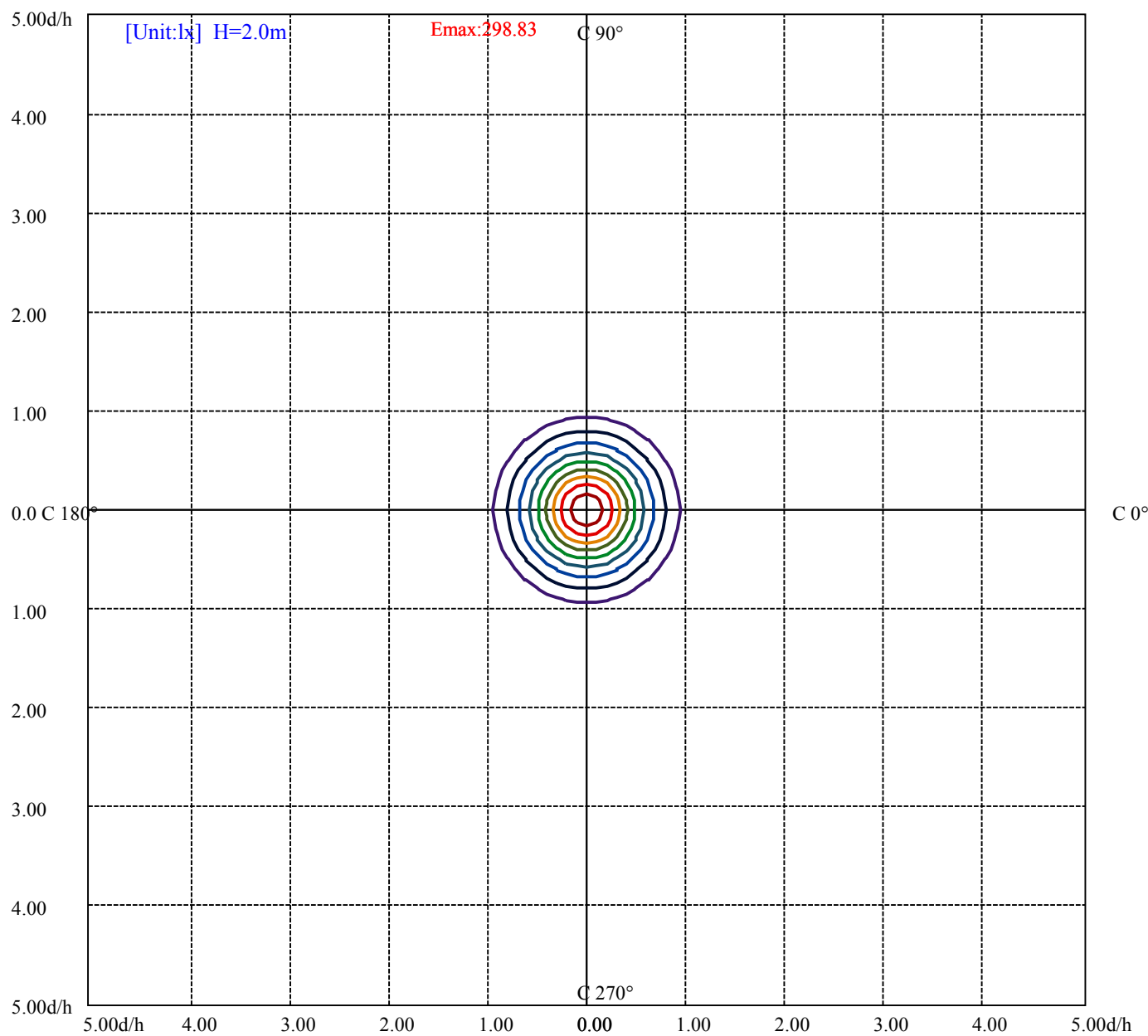
(50%Imax) 597.656

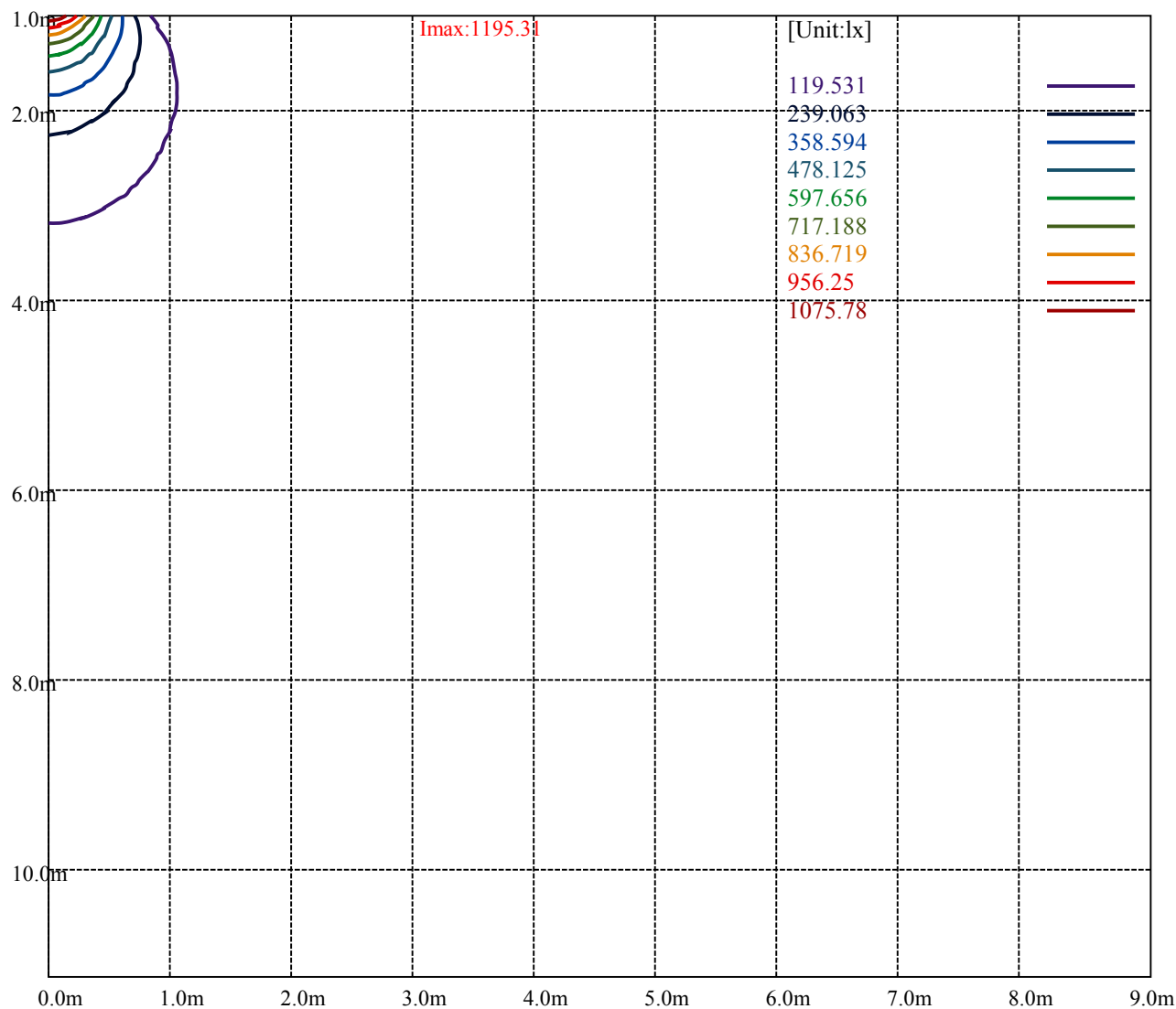
(60%Imax) 717.188

(70%Imax) 836.719

(80%Imax) 956.25

(90%Imax) 1075.78





Luminance Table

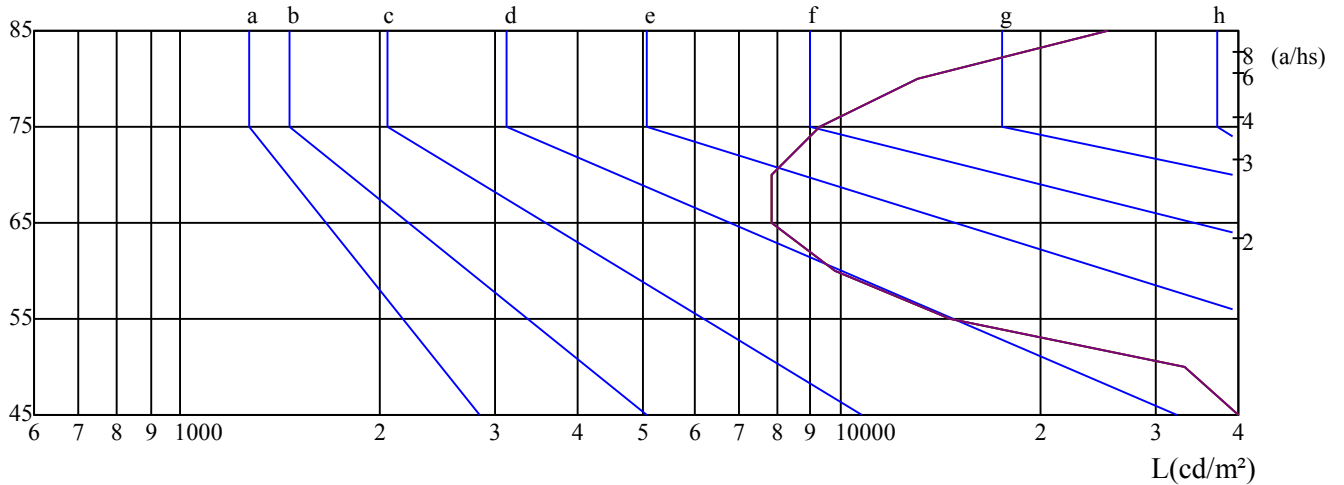
γ	45	50	55	60	65	70	75	80	85
C0	141669	33075	14663	9809	7878	7840	9270	13108	25392
C45	141669	33075	14663	9809	7878	7840	9270	13108	25392
C90	141669	33075	14663	9809	7878	7840	9270	13108	25392

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7878	7878	7878	9270	9270	9270	25392	25392	25392

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

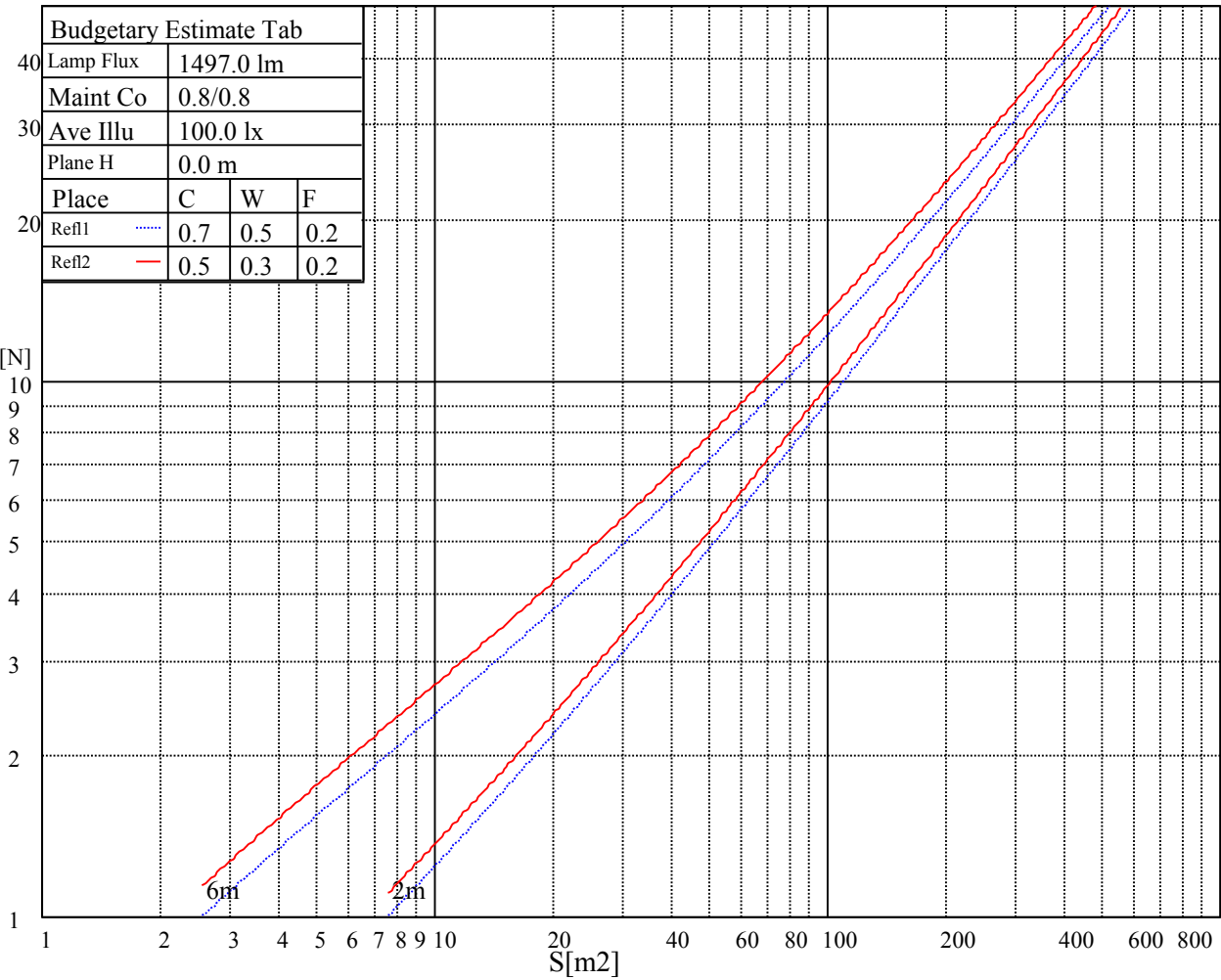
 $\gamma(^{\circ})$ 

C0 ———

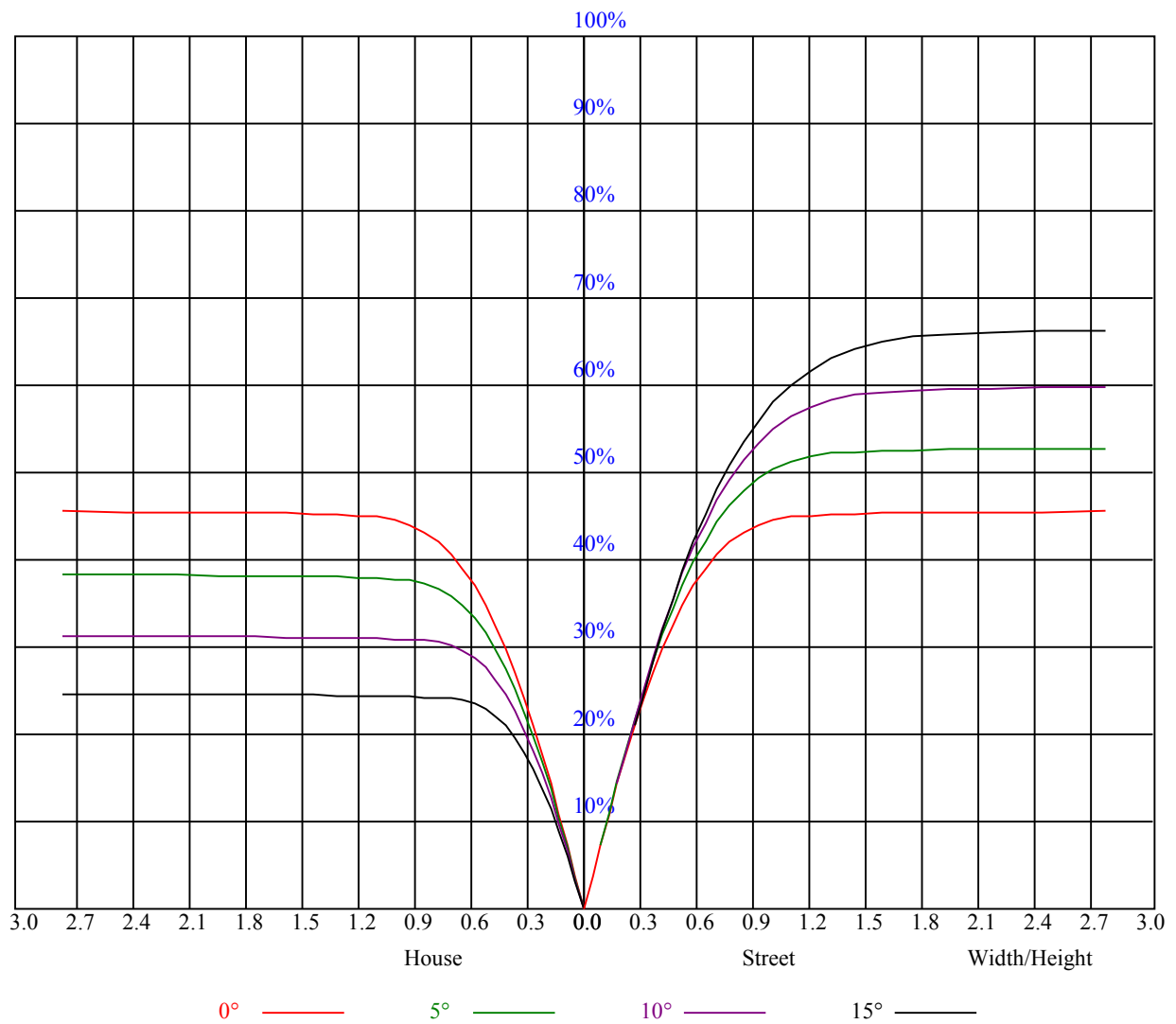
C45 ———

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	10.72	11.80	11.09	12.11	12.43	10.90	11.98	11.27	12.29	12.61
	3H	11.65	12.60	12.03	12.93	13.30	11.82	12.77	12.21	13.10	13.47
	4H	12.29	13.16	12.70	13.52	13.91	12.44	13.31	12.85	13.67	14.06
	6H	13.22	14.02	13.64	14.39	14.79	13.33	14.13	13.74	14.50	14.90
	8H	13.84	14.59	14.28	14.99	15.40	13.92	14.68	14.36	15.07	15.48
	12H	15.02	15.74	15.46	16.13	16.56	15.07	15.79	15.51	16.17	16.60
4H	2H	10.86	11.73	11.26	12.08	12.47	11.02	11.89	11.42	12.24	12.63
	3H	12.08	12.79	12.50	13.20	13.60	12.23	12.94	12.64	13.35	13.75
	4H	12.95	13.59	13.39	14.01	14.46	13.07	13.70	13.51	14.12	14.57
	6H	14.17	14.71	14.64	15.16	15.63	14.24	14.79	14.71	15.24	15.71
	8H	14.96	15.47	15.44	15.92	16.39	15.02	15.52	15.49	15.97	16.45
	12H	16.22	16.66	16.71	17.14	17.62	16.24	16.68	16.73	17.17	17.65
8H	4H	13.31	13.81	13.78	14.26	14.74	13.40	13.91	13.88	14.36	14.83
	6H	14.83	15.24	15.34	15.74	16.22	14.89	15.29	15.40	15.80	16.28
	8H	15.85	16.21	16.38	16.73	17.23	15.88	16.25	16.41	16.77	17.26
	12H	17.38	17.70	17.90	18.20	18.78	17.40	17.72	17.92	18.22	18.80
12H	4H	13.40	13.84	13.89	14.33	14.81	13.50	13.93	13.99	14.42	14.90
	6H	15.39	15.41	15.58	15.88	16.43	15.44	15.46	15.63	15.93	16.48
	8H	16.20	16.51	16.72	17.01	17.59	16.23	16.55	16.75	17.04	17.62
Variation with the observer position at spacings:											
S = 1.0H		3.1/-11.0					3.1/-11.0				
S = 1.5H		5.3/-10.6					5.3/-10.6				
S = 2.0H		7.2/-9.5					7.2/-9.5				
Standard tables:		BK0					BK0				
Uncorrected UGR		7.3					7.3				



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	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.01	0.98	0.96	0.99	0.97	0.94	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.87	0.86	0.85
2	0.93	0.90	0.86	0.92	0.88	0.85	0.89	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.78
3	0.87	0.82	0.78	0.86	0.81	0.78	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.73
4	0.81	0.76	0.72	0.80	0.75	0.71	0.78	0.74	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.67
5	0.76	0.70	0.66	0.75	0.70	0.66	0.73	0.69	0.65	0.72	0.68	0.64	0.70	0.67	0.64	0.63
6	0.71	0.65	0.61	0.70	0.65	0.61	0.69	0.64	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.58
7	0.66	0.61	0.57	0.66	0.60	0.57	0.65	0.60	0.56	0.64	0.59	0.56	0.62	0.59	0.56	0.54
8	0.62	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.52	0.59	0.55	0.52	0.51
9	0.59	0.53	0.50	0.58	0.53	0.49	0.58	0.53	0.49	0.57	0.52	0.49	0.56	0.52	0.49	0.48
10	0.56	0.50	0.47	0.55	0.50	0.46	0.54	0.50	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.45



NATA 1689-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	1189.13	1163.81	1113.75	1030.50	937.13	833.63	729.00	614.81	443.25		
45.0	1198.13	1185.19	1135.69	1049.06	946.13	849.38	730.13	614.25	473.06		
90.0	1199.81	1191.94	1118.87	1060.88	960.47	849.38	735.75	610.31	448.76		
135.0	1194.19	1193.63	1154.81	1085.63	997.88	888.19	768.94	645.75	513.00		
180.0	1189.13	1175.63	1122.30	1054.01	962.04	856.69	733.11	604.80	453.88		
225.0	1198.13	1177.31	1119.71	1045.80	955.07	840.54	724.11	596.42	396.79		
270.0	1199.81	1175.06	1122.19	1038.94	948.94	837.00	720.56	604.13	434.25		
315.0	1194.19	1161.56	1083.32	994.11	900.39	790.20	682.76	579.66	376.88		
360.0	1189.13	1163.81	1113.75	1030.50	937.13	833.63	729.00	614.81	443.25		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	289.13	47.81	21.54	13.11	8.27	6.19	5.18	4.84	4.67		
45.0	285.75	50.40	19.80	11.36	7.26	5.74	5.06	4.84	4.67		
90.0	180.06	44.27	16.26	9.11	6.47	5.40	5.01	4.84	4.73		
135.0	293.06	57.32	16.99	9.00	6.58	5.51	5.06	4.84	4.73		
180.0	185.23	39.99	14.74	9.00	6.41	5.46	5.06	4.78	4.67		
225.0	164.76	39.43	16.54	9.96	6.92	5.68	5.12	4.78	4.67		
270.0	172.69	43.26	19.24	11.42	7.65	5.91	5.18	4.84	4.67		
315.0	125.10	37.41	17.27	10.07	6.81	5.51	4.95	4.78	4.67		
360.0	289.13	47.81	21.54	13.11	8.27	6.19	5.18	4.84	4.67		
C/γ(°)	90.0										
0.0	4.67										
45.0	4.61										
90.0	4.61										
135.0	4.67										
180.0	4.67										
225.0	4.67										
270.0	4.61										
315.0	4.67										
360.0	4.67										