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## NATA

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LumCAT: 1687-M	
Luminaire: 92.70.124.00	
Report No: NATA0100	Voltage(V): 33.9000
Test No: GC2019021810	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

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## Photometric Results

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Lumens(lm): 1346.68  
Efficiency(%): 89.96%  
Lumens(lm)/Power(W): 134.38  
Central intensity(cd): 3550.078  
Maximum intensity(cd): 3550.078  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=25.6  
                                  [C90/270]Total=25.6  
Field angle(10%Imax): [C0/180]Total=80.3  
                                  [C90/270]Total=80.3  
Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.43  
Maximum s/h(1/4): C0\_180=0.45 C90\_270=0.45  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 91.29%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.480%

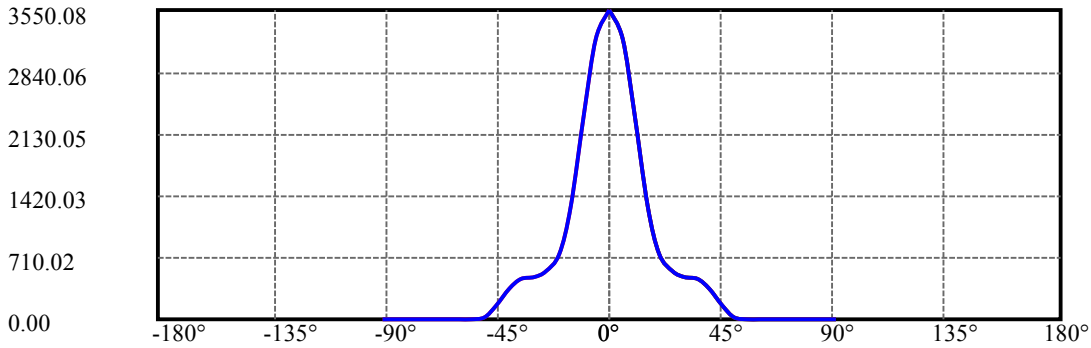
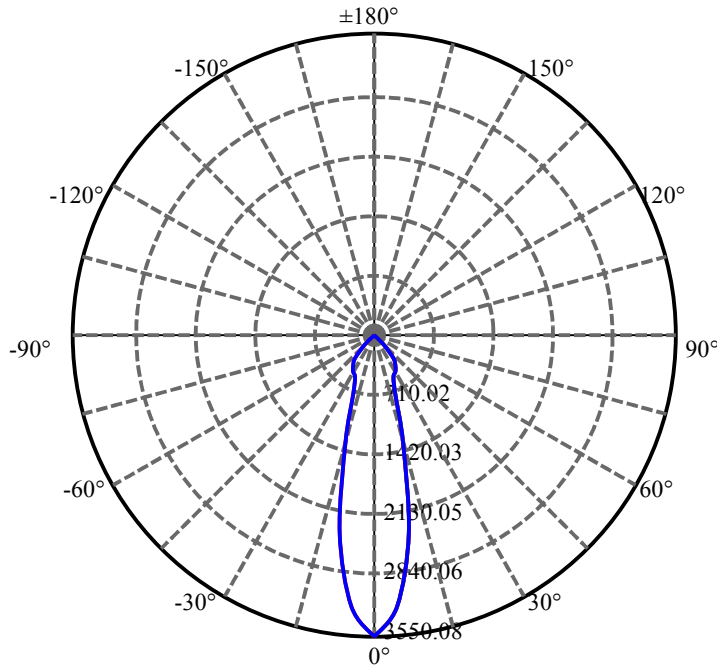
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3550.078	21.230	21.23	1.418%	1.576%
5.0	3211.594	153.428	174.659	10.249%	12.970%
10.0	2373.750	225.941	400.599	15.093%	29.747%
15.0	1302.152	184.734	585.334	12.340%	43.465%
20.0	747.984	140.228	725.561	9.367%	53.878%
25.0	550.680	127.567	853.128	8.521%	63.351%
30.0	491.161	134.612	987.74	8.992%	73.346%
35.0	453.150	142.470	1130.21	9.517%	83.926%
40.0	360.745	127.104	1257.313	8.491%	93.364%
45.0	154.048	59.708	1317.021	3.988%	97.798%
50.0	20.834	8.748	1325.769	.584%	98.447%
55.0	7.643	3.432	1329.201	.229%	98.702%
60.0	6.286	2.984	1332.184	.199%	98.924%
65.0	5.653	2.808	1334.993	.188%	99.132%
70.0	5.168	2.662	1337.655	.178%	99.330%
75.0	4.901	2.595	1340.25	.173%	99.523%
80.0	4.802	2.592	1342.842	.173%	99.715%
85.0	4.697	2.565	1345.407	.171%	99.906%
90.0	4.641	1.272	1346.678	.085%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	987.74	65.98%	73.35%
0-40	1257.31	83.99%	93.36%
0-60	1332.18	88.99%	98.92%
0-90	1345.41	89.87%	99.91%
0-120	1345.41	89.87%	99.91%
0-180	1346.68	89.96%	100.00%
60-90	16.21	1.08%	1.20%
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%
0-33.14	1077.34	71.97%	80.00%

ZONAL LUMEN SUMMARY

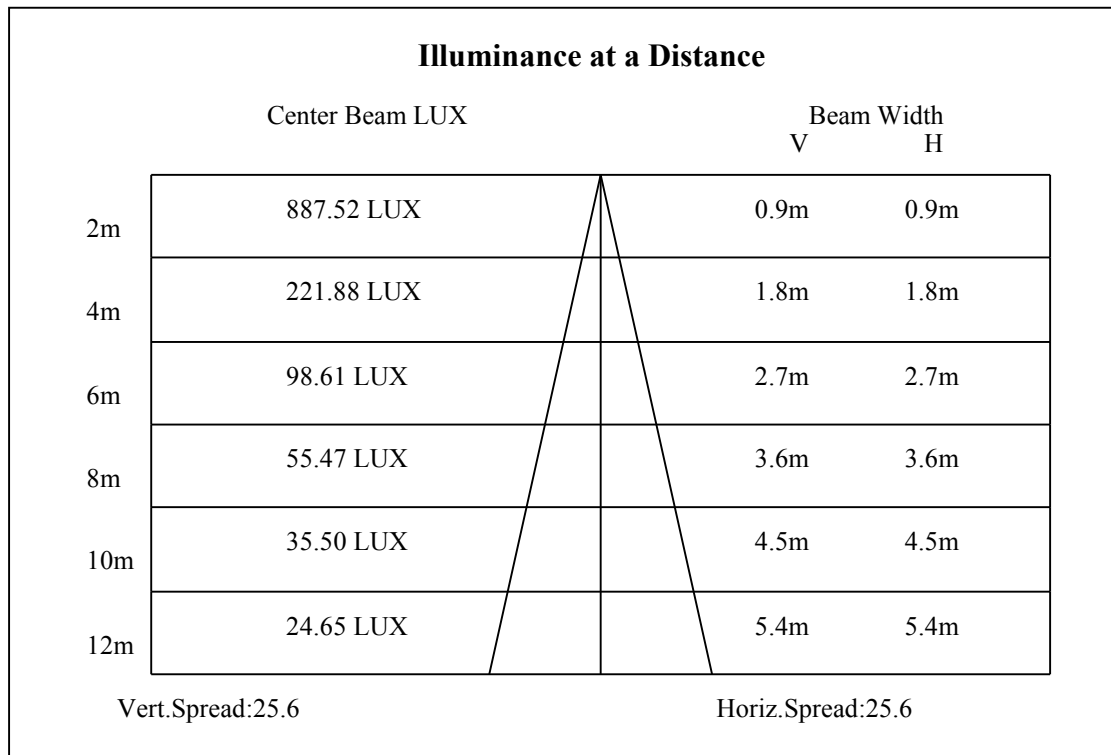
0-10	400.60
10-20	324.96
20-30	262.18
30-40	269.57
40-50	68.46
50-60	6.42
60-70	5.47
70-80	5.19
80-90	2.56
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

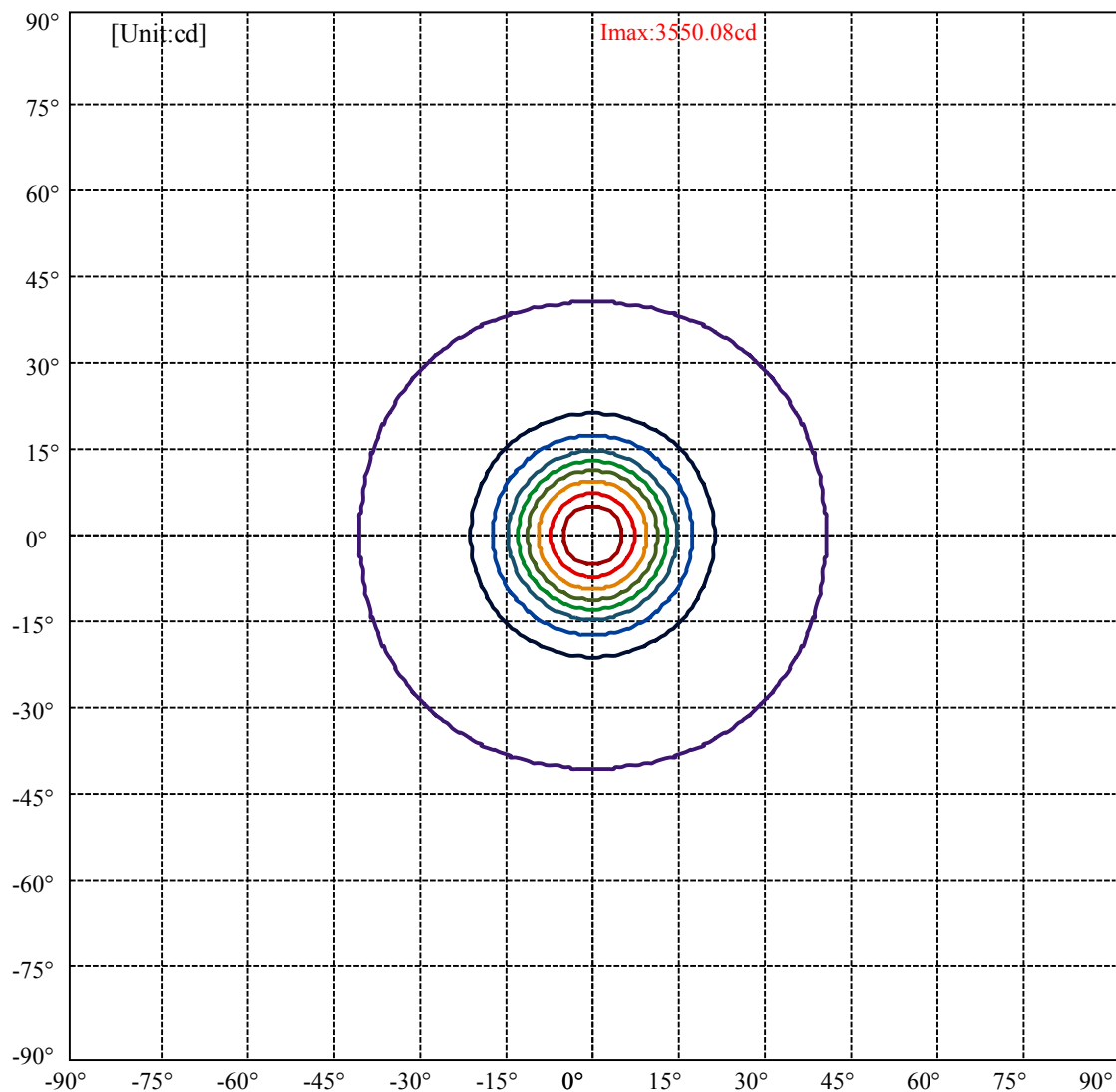


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

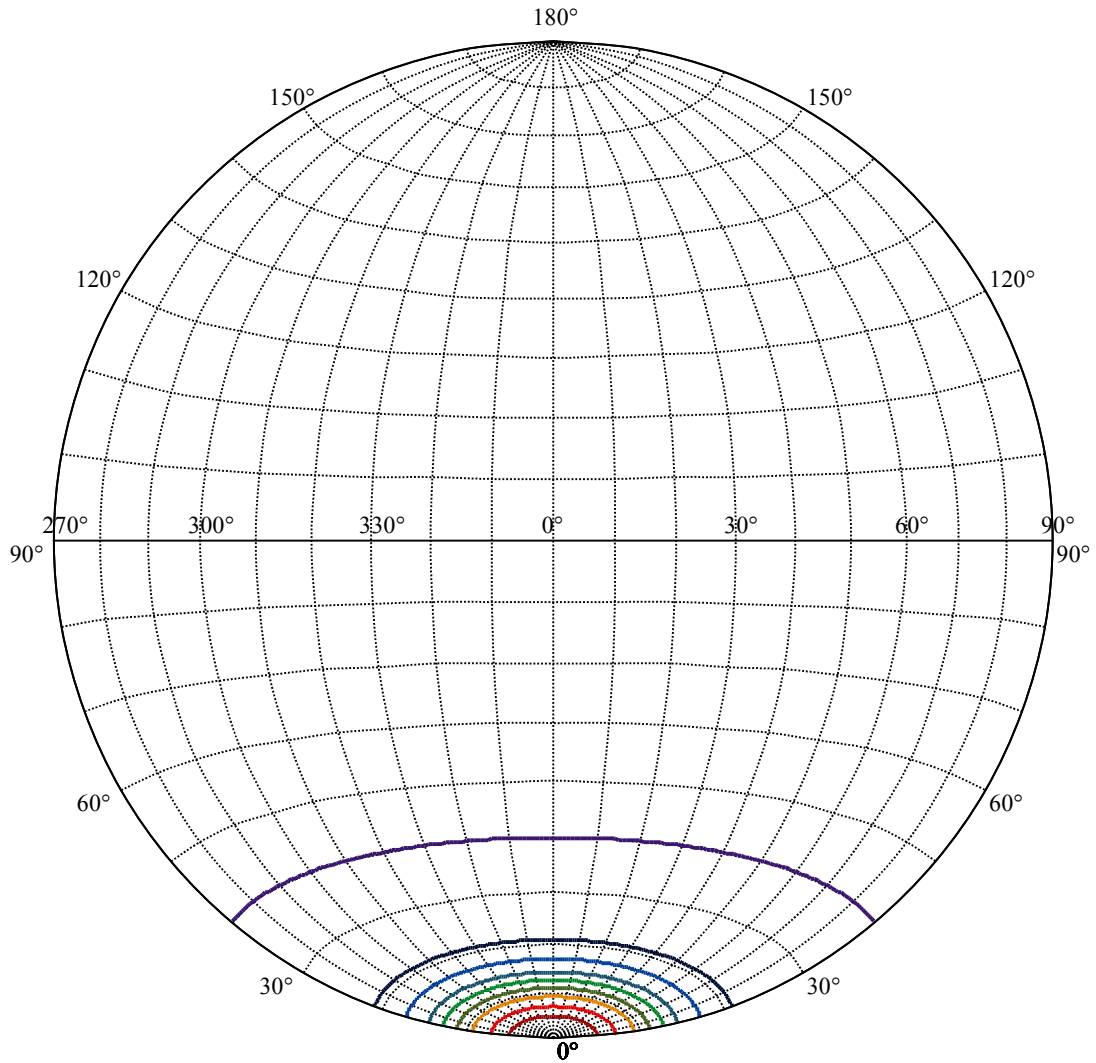
Field angle(10%Imax):C0/180Left:40.1 Right:40.1  
:C90/270Left:40.1 Right:40.1

Beam Angle(50%Imax):C0/180Left:12.8 Right:12.8  
:C90/270Left:12.8 Right:12.8





(10%Imax) 355.008	—
(20%Imax) 710.016	—
(30%Imax) 1065.02	—
(40%Imax) 1420.03	—
(50%Imax) 1775.04	—
(60%Imax) 2130.05	—
(70%Imax) 2485.05	—
(80%Imax) 2840.06	—
(90%Imax) 3195.07	—



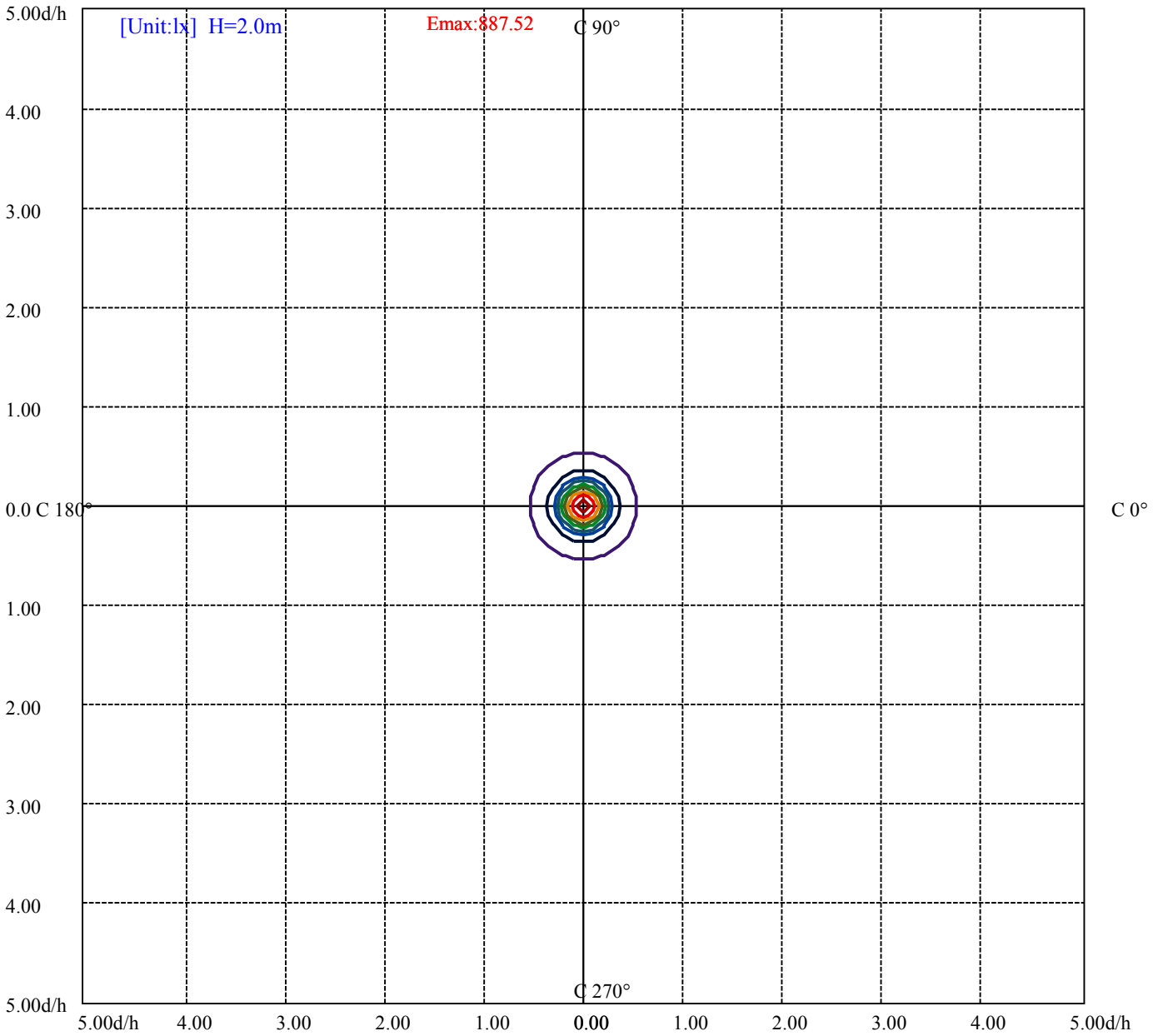
House

[Unit:cd]

Road

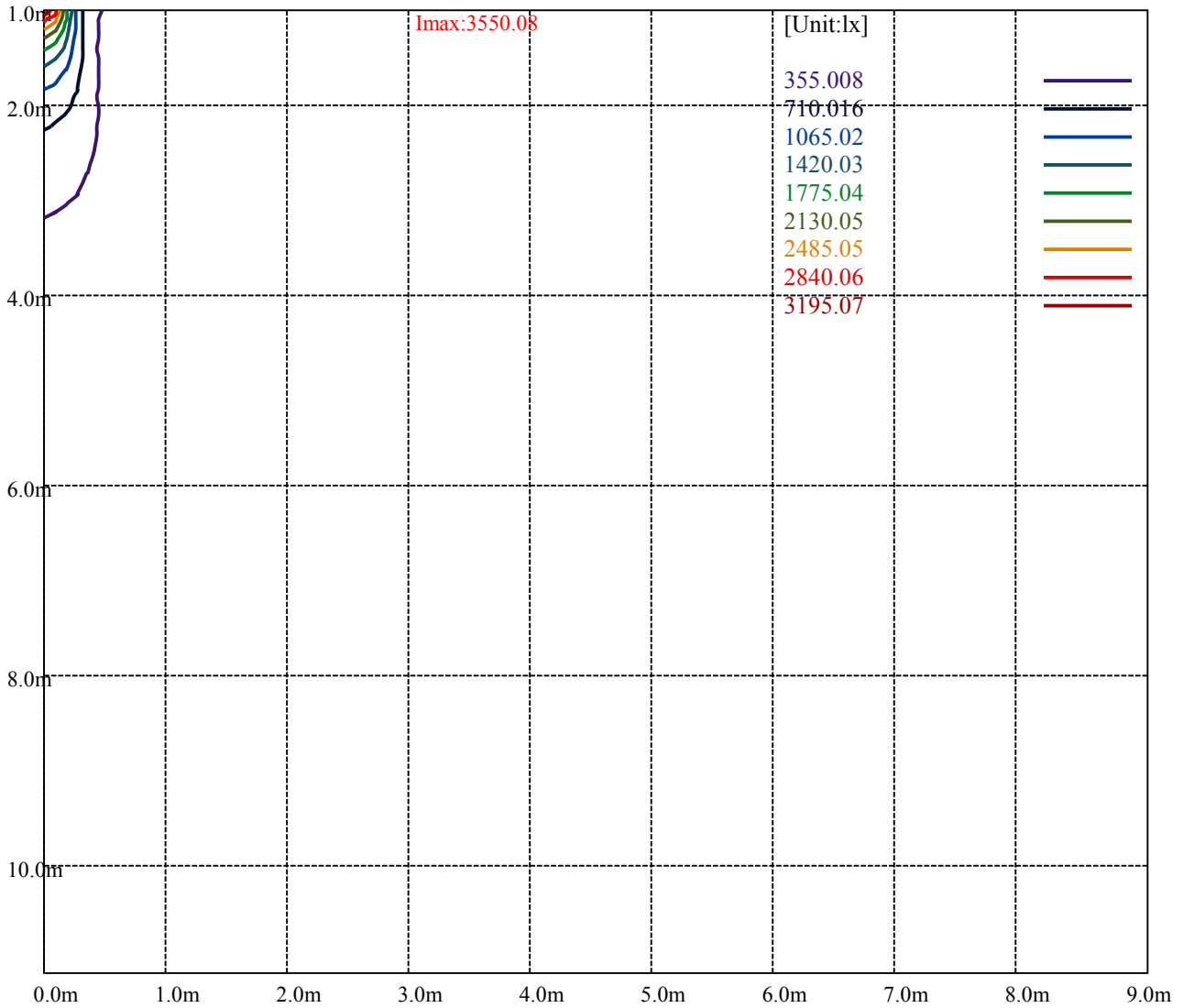
**Imax:3550.08**

(10%Imax)	355.008	—
(20%Imax)	710.016	—
(30%Imax)	1065.02	—
(40%Imax)	1420.03	—
(50%Imax)	1775.04	—
(60%Imax)	2130.05	—
(70%Imax)	2485.05	—
(80%Imax)	2840.06	—
(90%Imax)	3195.07	—



(10%E <sub>max</sub> ) 88.75175	—
(20%E <sub>max</sub> ) 177.5035	—
(30%E <sub>max</sub> ) 266.255	—
(40%E <sub>max</sub> ) 355.0075	—
(50%E <sub>max</sub> ) 443.7575	—
(60%E <sub>max</sub> ) 532.51	—
(70%E <sub>max</sub> ) 621.2625	—
(80%E <sub>max</sub> ) 710.0125	—
(90%E <sub>max</sub> ) 798.765	—





Luminance Table

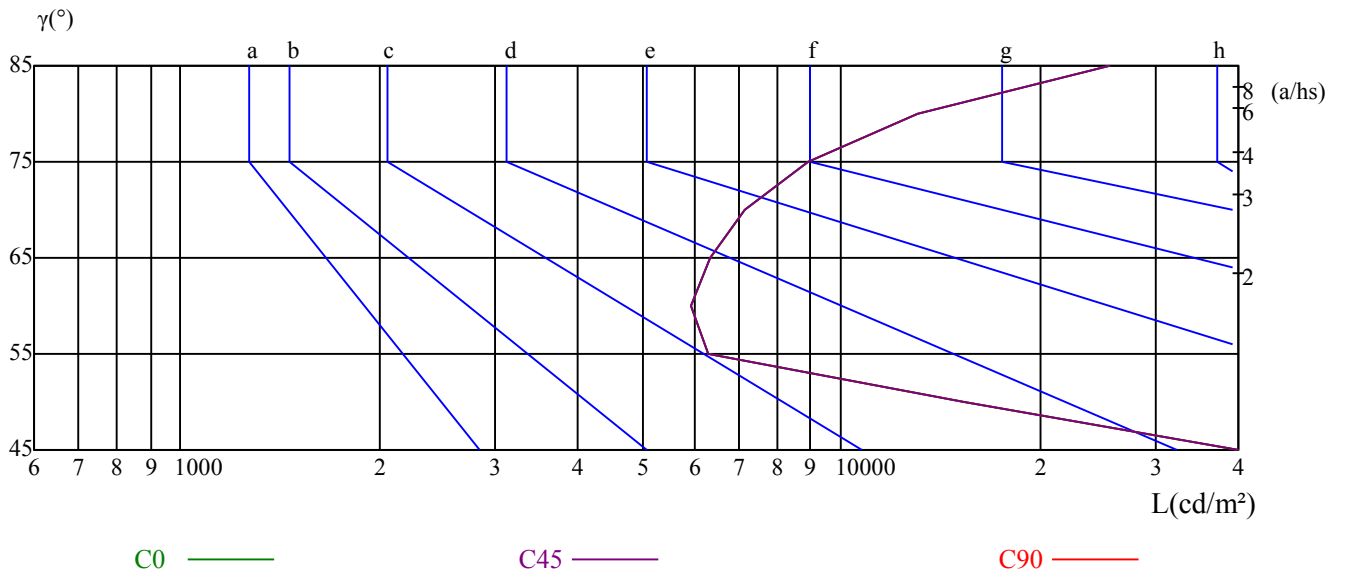
$\gamma$	45	50	55	60	65	70	75	80	85
C0	102957	15317	6297	5941	6322	7141	8949	13070	25468
C45	102957	15317	6297	5941	6322	7141	8949	13070	25468
C90	102957	15317	6297	5941	6322	7141	8949	13070	25468

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6322	6322	6322	8949	8949	8949	25468	25468	25468

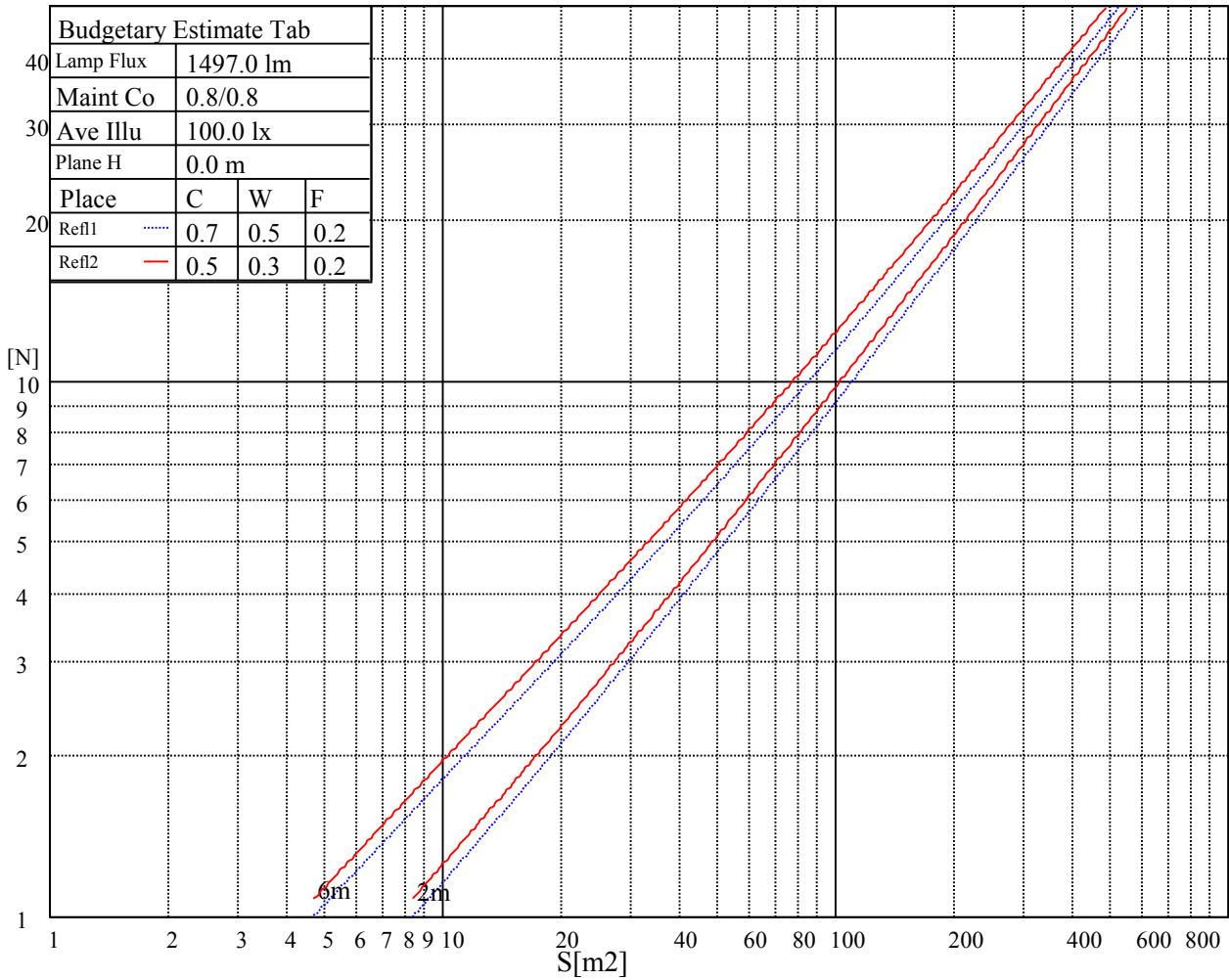
Glare Table

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

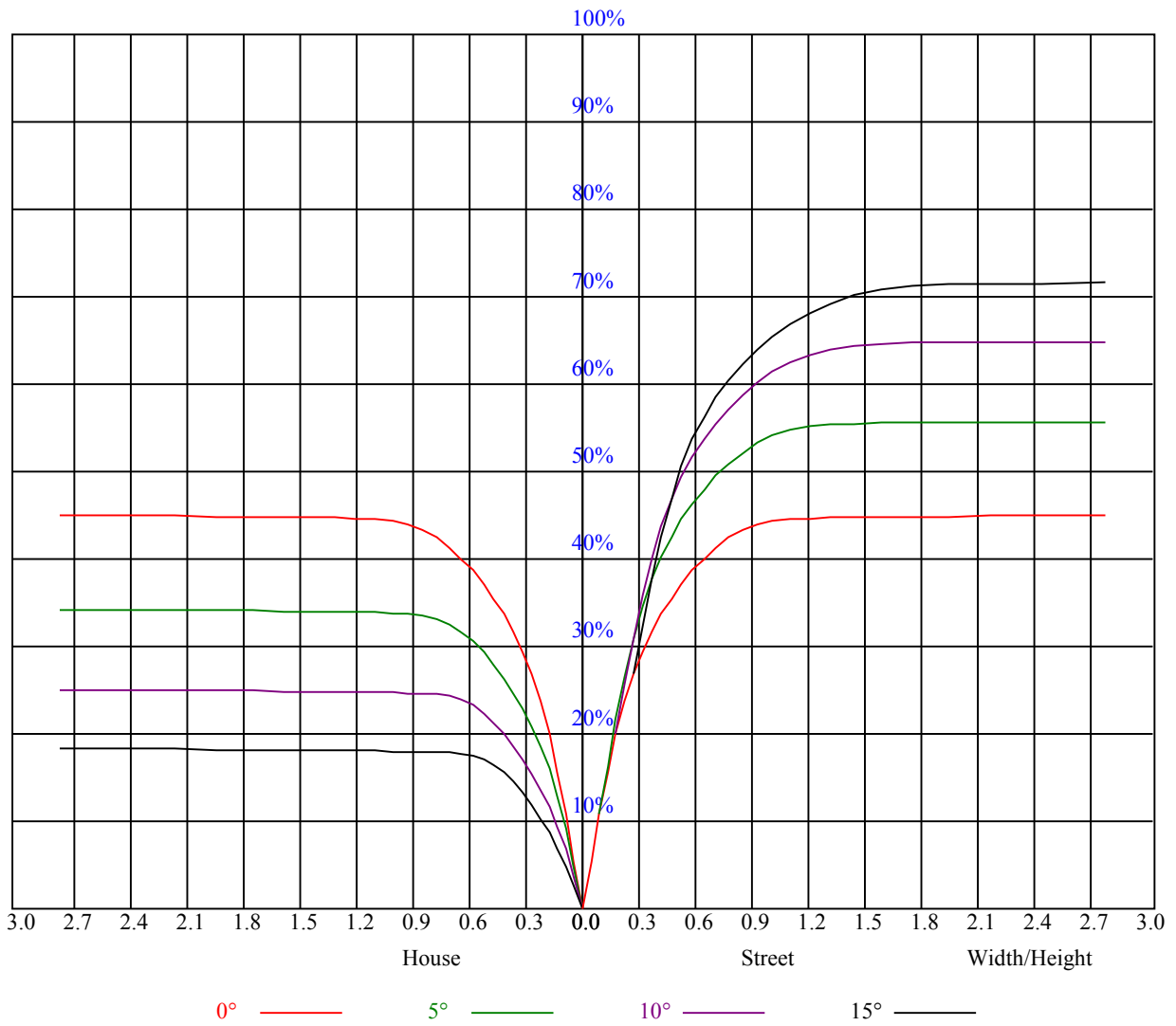
Luminance Limiting Curve



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	6.15	7.18	6.52	7.49	7.80	6.18	7.21	6.55	7.52	7.83
	3H	8.62	9.52	9.00	9.85	10.22	8.58	9.48	8.97	9.81	10.18
	4H	10.03	10.86	10.43	11.21	11.60	9.98	10.81	10.39	11.16	11.55
	6H	11.73	12.49	12.15	12.86	13.26	11.67	12.43	12.09	12.81	13.21
	8H	12.70	13.42	13.14	13.81	14.22	12.65	13.37	13.09	13.76	14.17
	12H	14.32	15.00	14.75	15.38	15.81	14.29	14.97	14.73	15.36	15.79
4H	2H	6.83	7.66	7.23	8.01	8.40	6.85	7.68	7.26	8.03	8.42
	3H	9.61	10.29	10.03	10.69	11.10	9.58	10.25	9.99	10.66	11.07
	4H	11.22	11.82	11.66	12.25	12.69	11.18	11.78	11.62	12.21	12.66
	6H	13.11	13.62	13.58	14.07	14.55	13.07	13.59	13.54	14.04	14.51
	8H	14.21	14.69	14.69	15.14	15.62	14.17	14.65	14.65	15.10	15.58
	12H	15.76	16.18	16.25	16.67	17.15	15.75	16.16	16.24	16.65	17.13
8H	4H	11.85	12.33	12.33	12.78	13.26	11.82	12.31	12.30	12.76	13.23
	6H	14.04	14.42	14.55	14.93	15.41	14.01	14.40	14.52	14.90	15.38
	8H	15.34	15.68	15.87	16.20	16.70	15.31	15.65	15.84	16.18	16.67
	12H	17.07	17.37	17.59	17.87	18.44	17.05	17.35	17.58	17.85	18.43
12H	4H	12.03	12.45	12.52	12.94	13.42	12.01	12.42	12.50	12.91	13.39
	6H	14.63	14.68	14.87	15.15	15.70	14.60	14.65	14.84	15.12	15.67
	8H	15.76	16.06	16.28	16.56	17.14	15.74	16.04	16.26	16.54	17.12
Variation with the observer position at spacings:											
S = 1.0H	3.2/-11.5					3.2/-11.5					
S = 1.5H	4.9/-9.5					4.9/-9.5					
S = 2.0H	6.7/-8.2					6.7/-8.2					
Standard tables:	BK0					BK0					
Uncorrected UGR	5.5					5.5					



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	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.97	0.95	0.98	0.96	0.93	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.86	0.85	0.84
2	0.94	0.90	0.87	0.92	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.81	0.78	0.82	0.80	0.77	0.80	0.78	0.76	0.75
4	0.83	0.79	0.75	0.82	0.78	0.74	0.80	0.77	0.74	0.79	0.75	0.73	0.77	0.74	0.72	0.71
5	0.79	0.74	0.70	0.78	0.74	0.70	0.77	0.73	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.67
6	0.75	0.70	0.66	0.74	0.70	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.64
7	0.72	0.67	0.63	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.61
8	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58
9	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.56
10	0.63	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.61	0.57	0.55	0.53



NATA 1687-M

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	3546.00	3231.00	2354.63	1339.31	750.38	558.00	497.25	463.50	370.13
45.0	3553.88	3296.81	2487.38	1518.19	804.94	564.19	498.38	457.31	387.56
90.0	3565.13	3295.13	2471.63	1306.69	770.91	555.64	489.88	450.17	379.41
135.0	3535.31	3374.44	2667.94	1639.13	860.63	576.56	501.19	461.25	414.56
180.0	3546.00	3182.63	2319.19	1092.43	726.53	542.42	487.29	452.19	367.20
225.0	3553.88	3148.31	2226.38	1084.95	692.21	536.23	483.64	443.70	334.41
270.0	3565.13	3139.88	2388.94	1326.94	719.44	544.50	490.50	453.38	337.50
315.0	3535.31	3024.56	2073.94	1109.59	658.86	527.91	481.16	443.70	295.20
360.0	3546.00	3231.00	2354.63	1339.31	750.38	558.00	497.25	463.50	370.13

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	137.87	20.25	7.48	6.13	5.51	5.12	4.89	4.78	4.73
45.0	177.53	23.46	7.93	6.36	5.74	5.23	4.95	4.84	4.73
90.0	164.81	22.11	7.65	6.41	5.74	5.23	4.95	4.84	4.67
135.0	293.06	30.66	9.06	6.64	5.91	5.29	4.89	4.78	4.73
180.0	138.83	20.59	7.88	6.30	5.68	5.12	4.89	4.78	4.67
225.0	113.29	17.27	7.20	6.19	5.57	5.18	4.89	4.84	4.73
270.0	122.74	18.17	7.26	6.36	5.68	5.18	4.89	4.84	4.67
315.0	84.26	14.18	6.69	5.91	5.40	5.01	4.84	4.73	4.67
360.0	137.87	20.25	7.48	6.13	5.51	5.12	4.89	4.78	4.73

C/γ(°)	90.0
0.0	4.61
45.0	4.67
90.0	4.61
135.0	4.67
180.0	4.67
225.0	4.67
270.0	4.61
315.0	4.61
360.0	4.61