
Nata

LumCAT: 1451-E	
Luminaire: 92.70.064.00	
Report No: NT2017091902	Voltage(V): 9.4000
Test No: GC2017091902	Current(A): 0.3100
LampCAT: CITIZEN CLU700	Power (W): 2.9140
Lamp flux(lm): 331.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 279.58
Efficiency(%): 84.47%
Lumens(lm)/Power(W): 95.94
Central intensity(cd): 555.299
Maximum intensity(cd): 555.299
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=34.2
[C90/270]Total=34.2
Field angle(10%Imax): [C0/180]Total=76.0
[C90/270]Total=76.0
Maximum s/h(1/2): C0_180=0.55 C90_270=0.55
Maximum s/h(1/4): C0_180=0.60 C90_270=0.60
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.47%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.127%

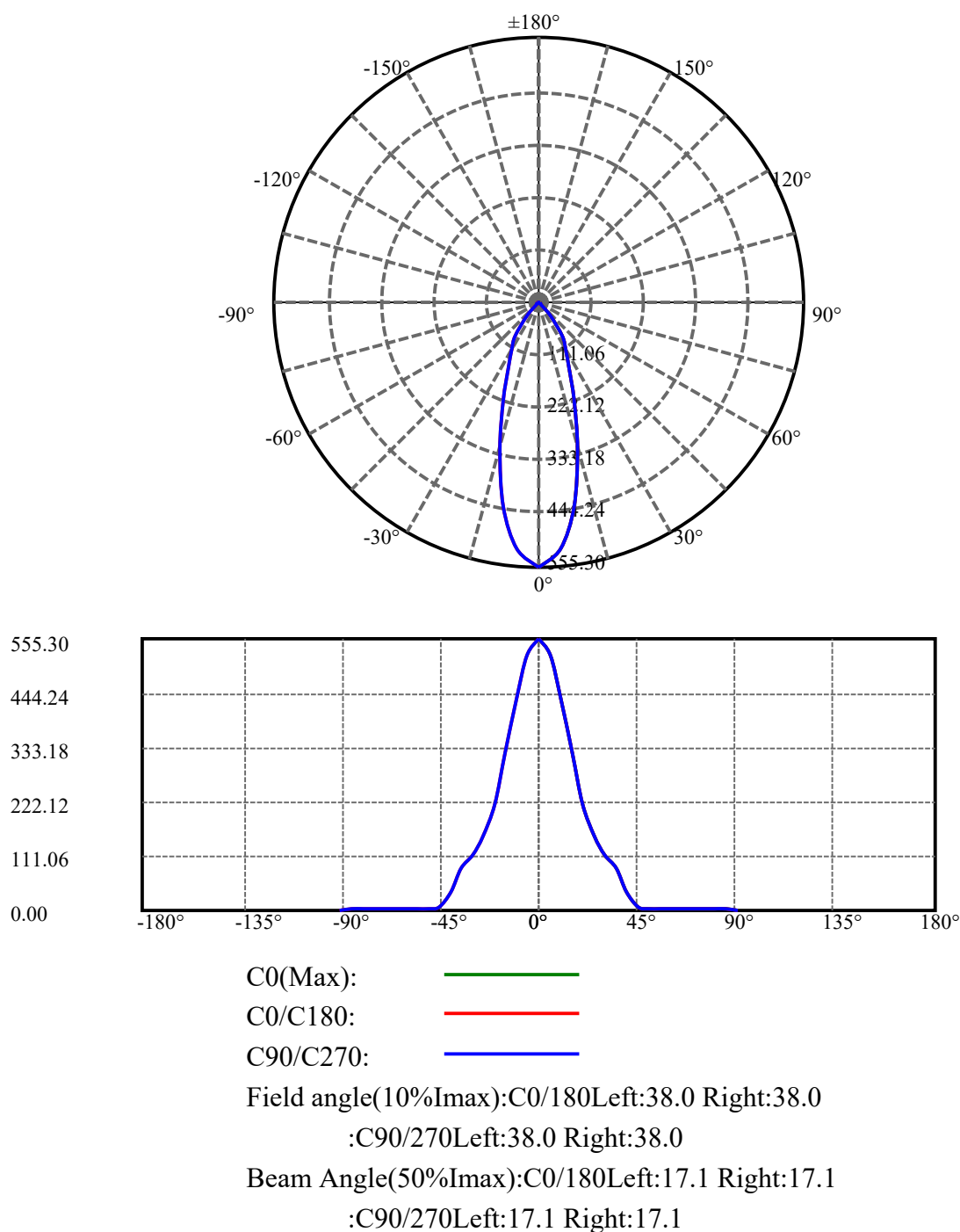
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	555.299	0.000	0	.000%	.000%
5.0	519.512	12.849	12.849	3.882%	4.596%
10.0	433.019	34.075	46.924	10.295%	16.784%
15.0	319.451	44.636	91.56	13.485%	32.749%
20.0	218.801	44.360	135.92	13.402%	48.615%
25.0	150.779	38.762	174.682	11.711%	62.480%
30.0	114.497	33.571	208.253	10.142%	74.487%
35.0	84.553	29.311	237.564	8.855%	84.971%
40.0	36.461	20.190	257.754	6.100%	92.193%
45.0	7.405	8.122	265.876	2.454%	95.098%
50.0	4.453	2.396	268.272	.724%	95.955%
55.0	3.524	1.734	270.007	.524%	96.575%
60.0	3.152	1.543	271.55	.466%	97.127%
65.0	3.042	1.506	273.056	.455%	97.666%
70.0	3.448	1.643	274.699	.496%	98.254%
75.0	2.925	1.666	276.365	.503%	98.850%
80.0	2.127	1.352	277.716	.408%	99.333%
85.0	1.762	1.057	278.773	.319%	99.711%
90.0	1.191	0.808	279.581	.244%	100.000%

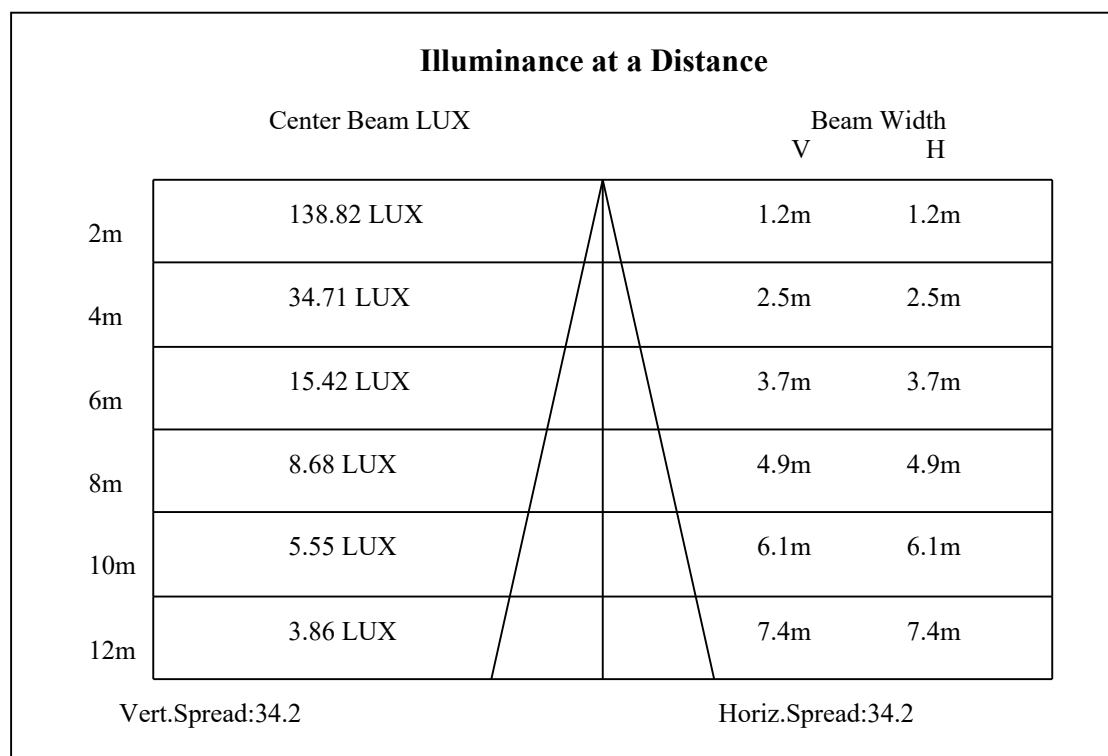
ZONAL LUMEN SUMMARY

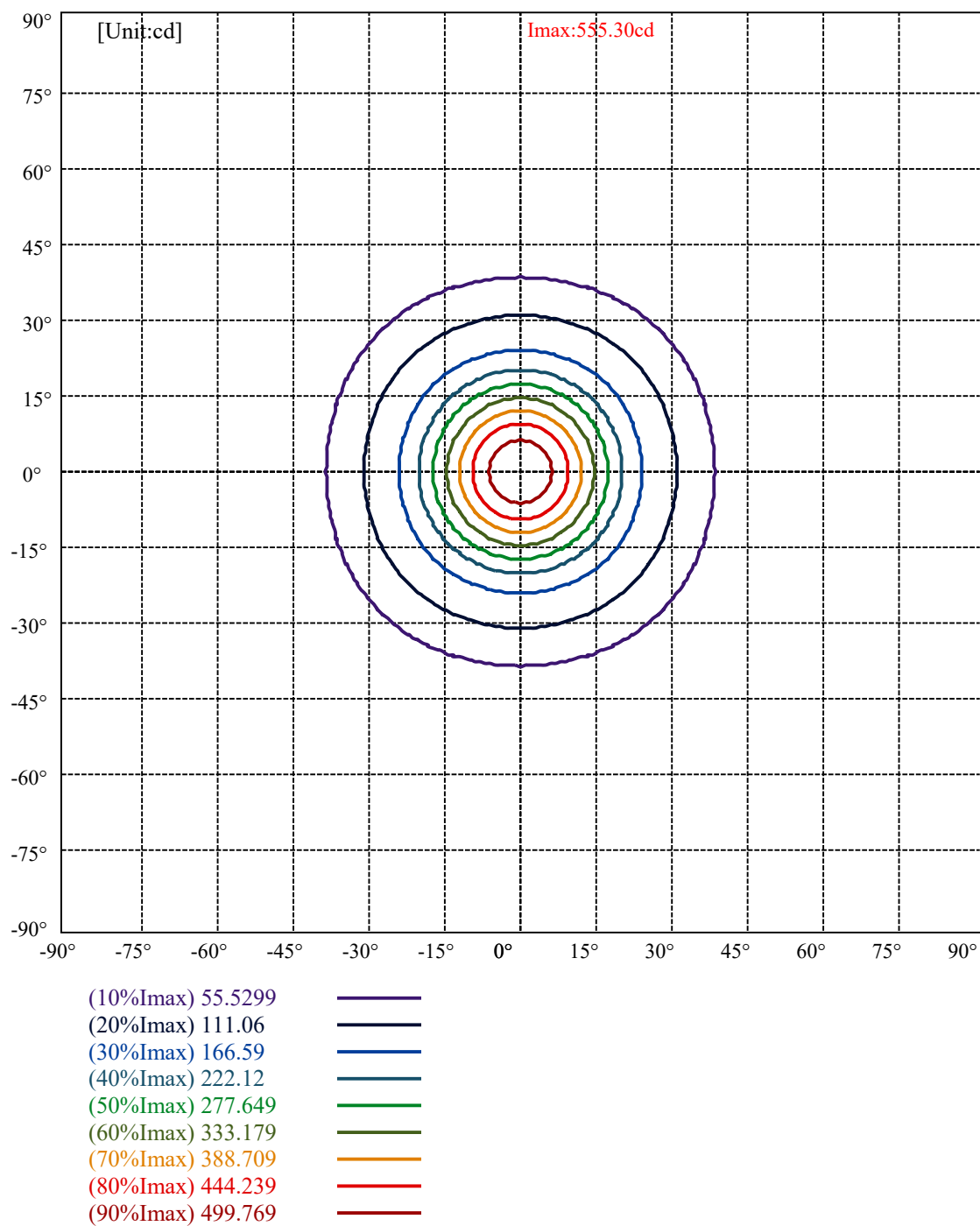
Zone	Lumens	%Lamp	%Fixt
0-30	208.25	62.92%	74.49%
0-40	257.75	77.87%	92.19%
0-60	271.55	82.04%	97.13%
0-90	278.77	84.22%	99.71%
0-120	278.77	84.22%	99.71%
0-180	279.58	84.47%	100.00%
60-90	8.77	2.65%	3.14%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-32.63	223.66	67.57%	80.00%

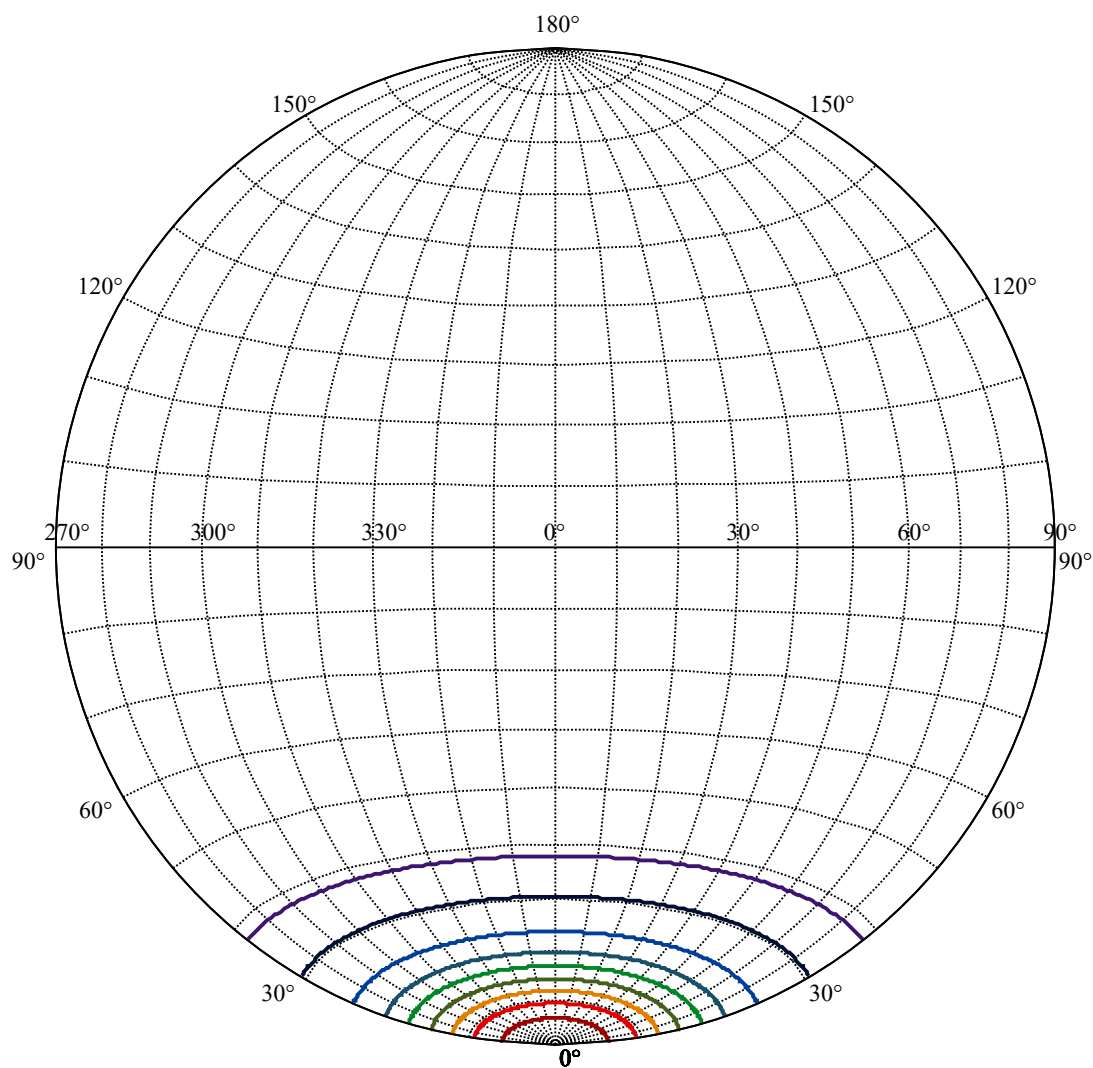
ZONAL LUMEN SUMMARY

0-10	46.92
10-20	89.00
20-30	72.33
30-40	49.50
40-50	10.52
50-60	3.28
60-70	3.15
70-80	3.02
80-90	1.06
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









House

[Unit:cd]

Road

Imax:555.30

(10%Imax) 55.5299

(20%Imax) 111.06

(30%Imax) 166.59

(40%Imax) 222.12

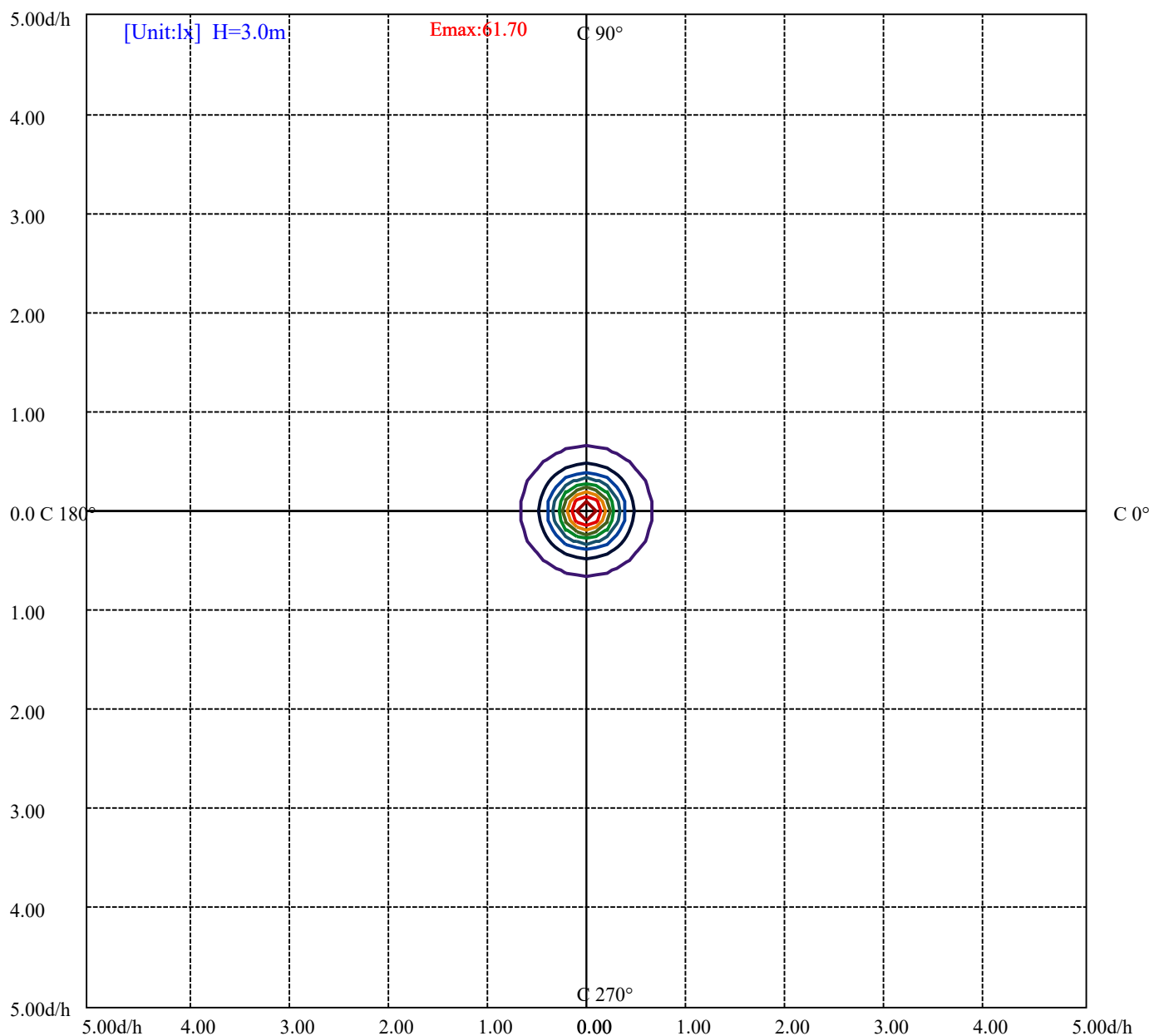
(50%Imax) 277.649

(60%Imax) 333.179

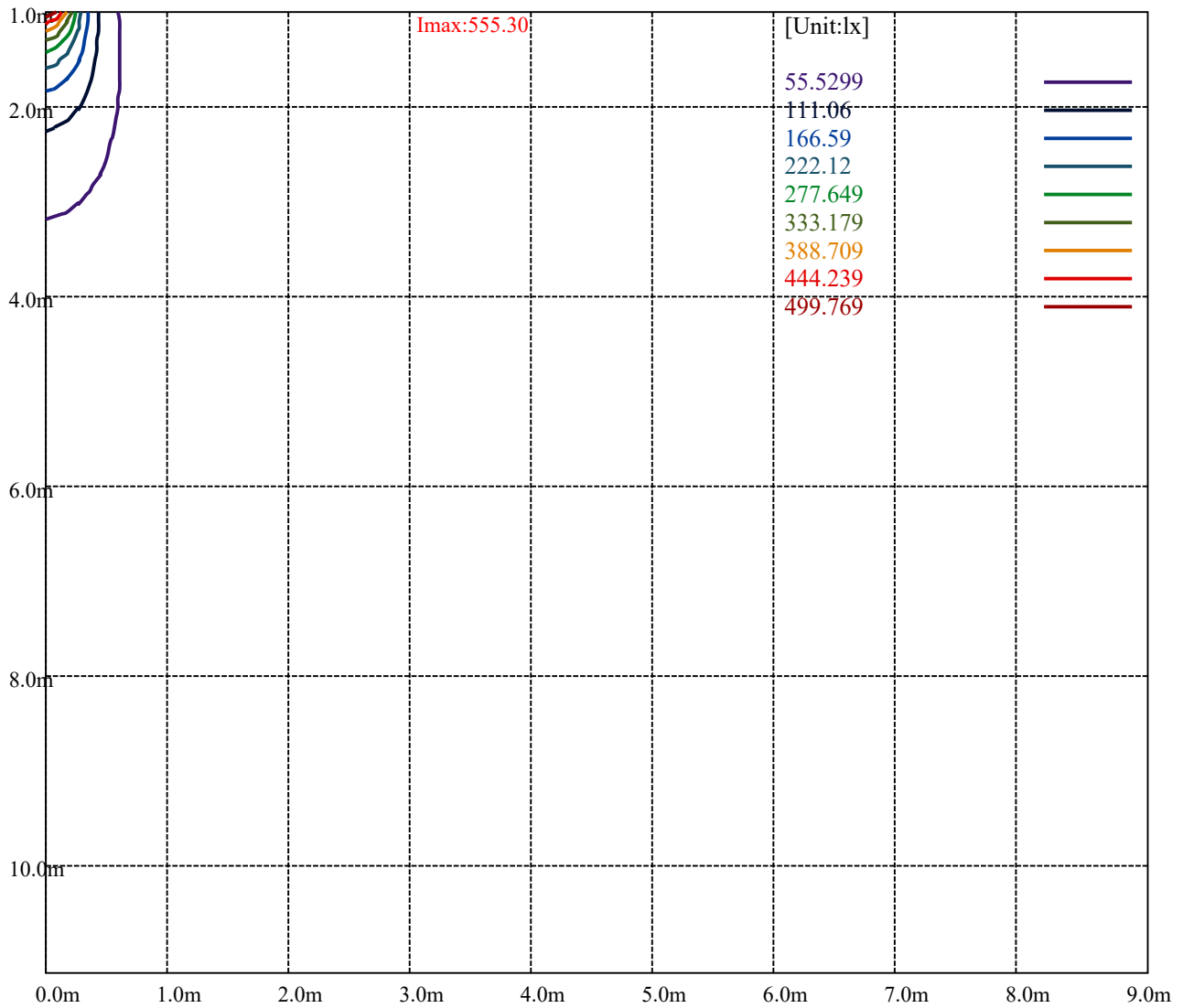
(70%Imax) 388.709

(80%Imax) 444.239

(90%Imax) 499.769



(10%Emax)	6.169978	—
(20%Emax)	12.34	—
(30%Emax)	18.50989	—
(40%Emax)	24.67989	—
(50%Emax)	30.84989	—
(60%Emax)	37.01989	—
(70%Emax)	43.18978	—
(80%Emax)	49.35978	—
(90%Emax)	55.52978	—



Luminance Table

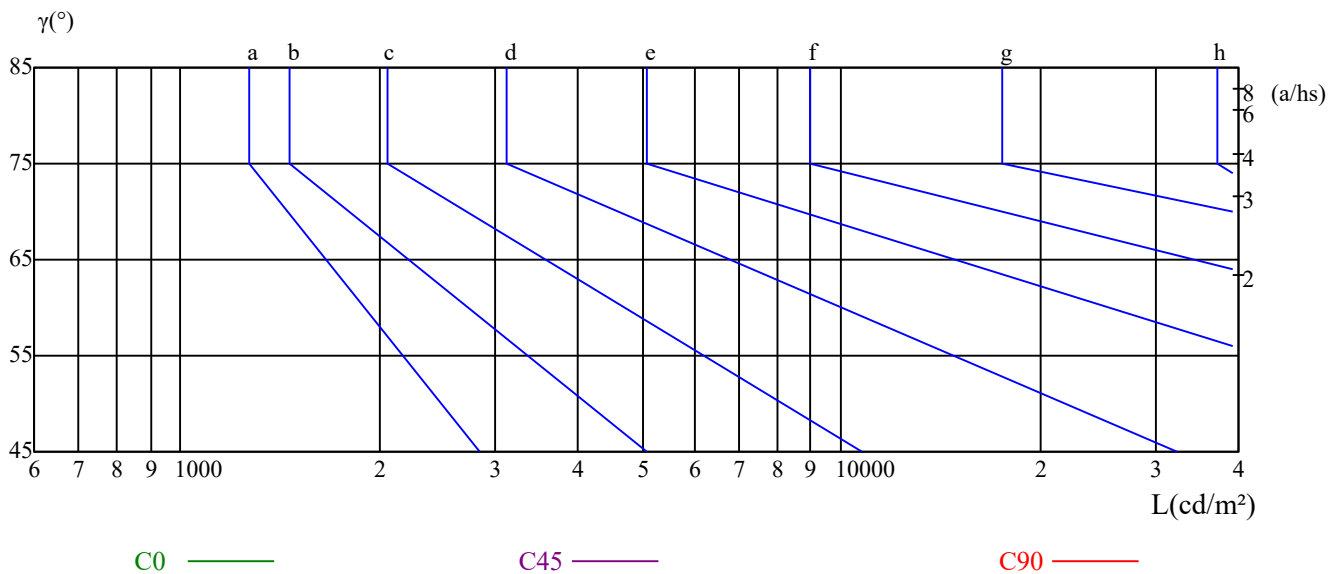
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

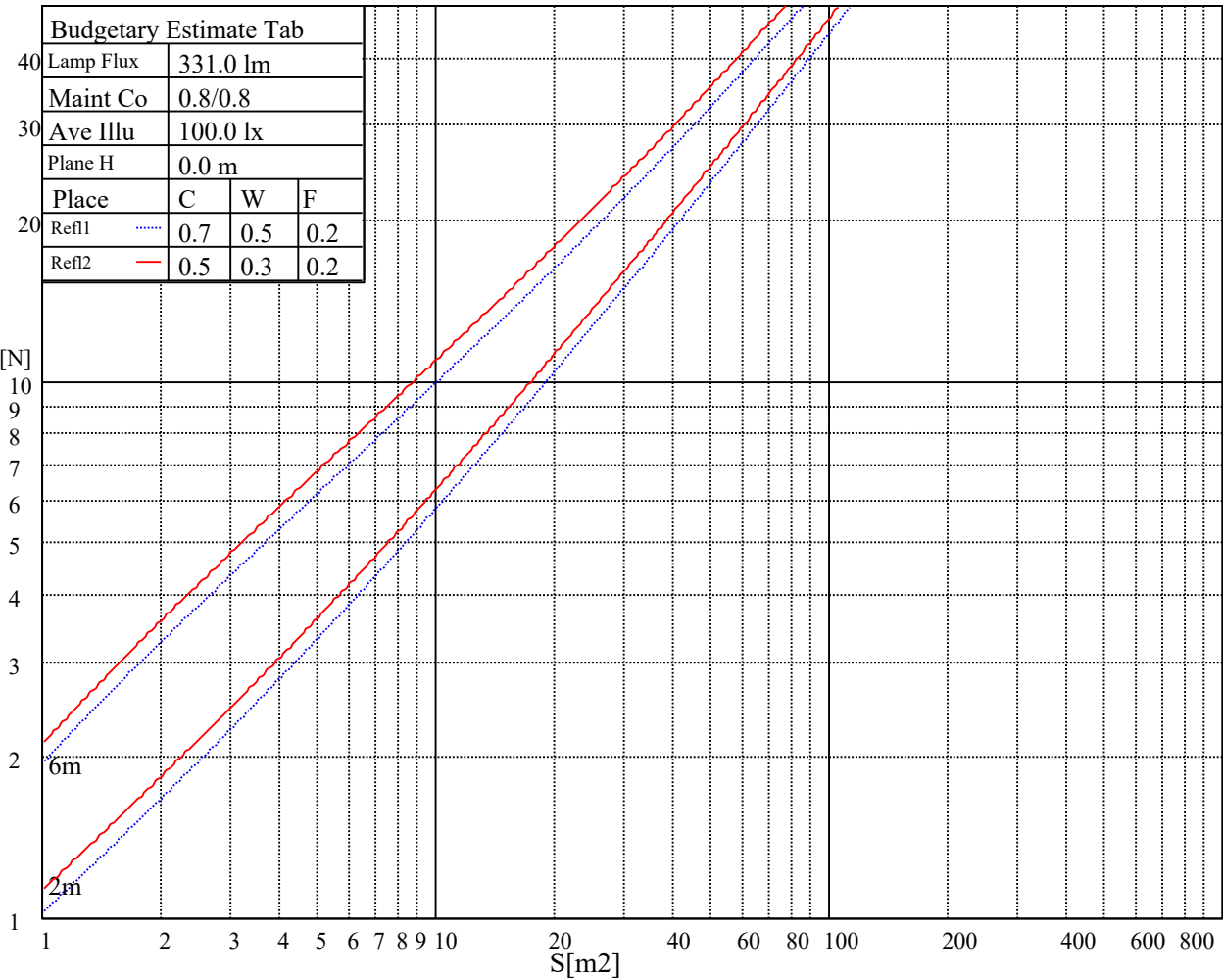
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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





RHOC	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 RHOC=20 CU															
0	1.01	1.01	1.01	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.93	0.91	0.89	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.87	0.84	0.81	0.86	0.83	0.80	0.83	0.80	0.78	0.80	0.78	0.77	0.78	0.76	0.75	0.74
3	0.82	0.77	0.74	0.80	0.77	0.74	0.78	0.75	0.72	0.76	0.74	0.71	0.74	0.72	0.70	0.69
4	0.77	0.72	0.69	0.76	0.72	0.68	0.74	0.70	0.68	0.72	0.69	0.67	0.71	0.68	0.66	0.65
5	0.72	0.68	0.64	0.72	0.67	0.64	0.70	0.66	0.63	0.69	0.65	0.63	0.67	0.64	0.62	0.61
6	0.68	0.64	0.60	0.68	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.58
7	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.54
8	0.62	0.57	0.54	0.61	0.57	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.59	0.55	0.53	0.52
9	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.51	0.57	0.53	0.50	0.56	0.53	0.50	0.49
10	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.51	0.48	0.54	0.50	0.48	0.47

Nata 1451-E

Intensity data(cd)

Appendix Page: 13 Total:13

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	556.79	505.86	413.91	299.29	202.44	143.37	113.20	84.07	29.90
45.0	555.35	518.69	424.59	320.92	216.26	144.47	113.31	83.74	35.79
90.0	555.19	511.09	421.18	312.17	217.91	150.19	113.20	80.55	36.23
135.0	553.87	534.32	461.37	346.41	242.47	163.74	115.07	81.92	38.76
180.0	556.79	538.29	466.22	354.45	242.14	161.76	120.30	92.00	43.55
225.0	555.35	526.78	445.74	322.96	225.95	169.30	122.72	87.70	41.84
270.0	555.19	525.73	438.52	330.17	224.41	146.95	115.45	95.47	45.20
315.0	553.87	495.34	392.61	269.23	178.82	126.46	102.74	70.97	20.43
360.0	556.79	505.86	413.91	299.29	202.44	143.37	113.20	84.07	29.90
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	6.99	3.69	3.19	2.86	2.70	2.70	2.26	2.09	1.60
45.0	5.18	3.25	2.75	2.59	2.42	2.31	1.87	2.20	1.60
90.0	6.72	4.29	3.85	3.58	3.36	3.25	2.97	1.98	1.76
135.0	11.29	6.55	4.84	4.29	3.96	4.96	3.96	2.64	2.09
180.0	8.70	5.07	3.63	3.25	3.69	5.78	4.90	2.75	2.20
225.0	6.72	4.29	3.14	2.81	3.03	4.18	3.52	2.20	1.93
270.0	6.88	4.07	3.08	2.53	2.20	1.93	1.93	1.65	1.54
315.0	6.77	4.40	3.69	3.30	2.97	2.48	1.98	1.49	1.38
360.0	6.99	3.69	3.19	2.86	2.70	2.70	2.26	2.09	1.60
C/ γ (°)	90.0								
0.0	1.10								
45.0	1.16								
90.0	1.16								
135.0	1.21								
180.0	1.21								
225.0	1.32								
270.0	1.27								
315.0	1.10								
360.0	1.10								