
Nata

LumCAT: 1546-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): 21	Width(mm): 21
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 283.99
Efficiency(%): 85.80%
Lumens(lm)/Power(W): 97.46
Central intensity(cd): 425.641
Maximum intensity(cd): 425.641
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=40.8
[C90/270]Total=40.8
Field angle(10%Imax): [C0/180]Total=86.2
[C90/270]Total=86.2
Maximum s/h(1/2): C0_180=0.65 C90_270=0.65
Maximum s/h(1/4): C0_180=0.69 C90_270=0.69
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.80%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.601%

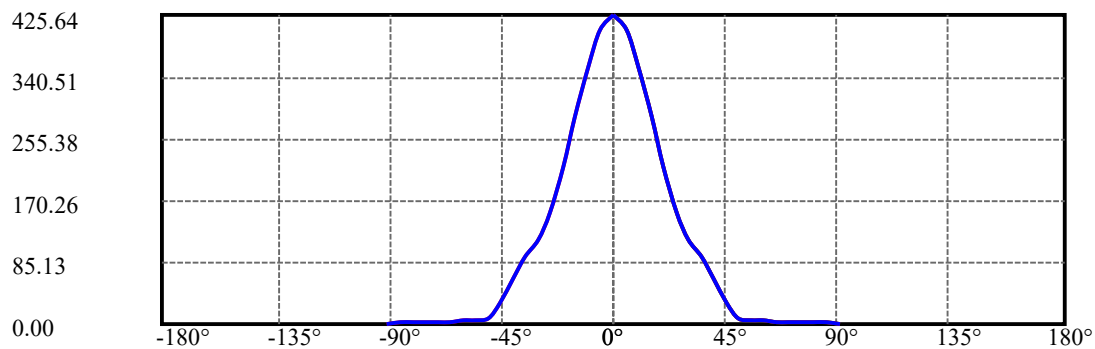
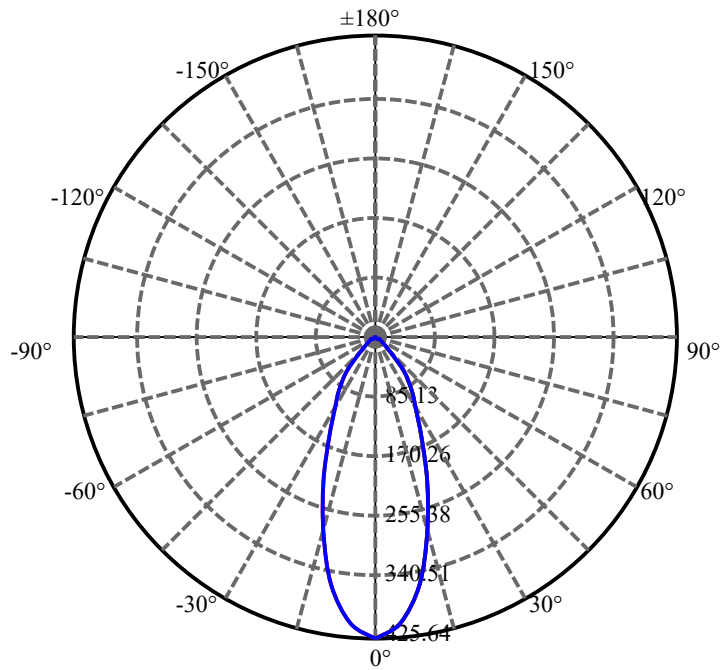
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	425.641	0.000	0	.000%	.000%
5.0	405.773	9.939	9.939	3.003%	3.500%
10.0	354.942	27.213	37.152	8.221%	13.082%
15.0	286.224	38.034	75.186	11.490%	26.475%
20.0	217.782	41.537	116.723	12.549%	41.102%
25.0	154.468	39.042	155.765	11.795%	54.849%
30.0	115.378	34.149	189.915	10.317%	66.874%
35.0	92.027	30.542	220.456	9.227%	77.629%
40.0	64.127	26.053	246.509	7.871%	86.803%
45.0	29.097	17.261	263.771	5.215%	92.881%
50.0	9.071	7.712	271.483	2.330%	95.597%
55.0	6.187	3.317	274.8	1.002%	96.765%
60.0	4.081	2.373	277.174	.717%	97.601%
65.0	2.622	1.630	278.803	.492%	98.175%
70.0	2.395	1.270	280.074	.384%	98.622%
75.0	2.209	1.203	281.277	.364%	99.046%
80.0	1.803	1.074	282.351	.324%	99.424%
85.0	1.528	0.905	283.256	.273%	99.743%
90.0	1.142	0.731	283.987	.221%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	189.91	57.38%	66.87%
0-40	246.51	74.47%	86.80%
0-60	277.17	83.74%	97.60%
0-90	283.26	85.58%	99.74%
0-120	283.26	85.58%	99.74%
0-180	283.99	85.80%	100.00%
60-90	8.46	2.55%	2.98%
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%
0-36.29	227.19	68.64%	80.00%

ZONAL LUMEN SUMMARY

0-10	37.15
10-20	79.57
20-30	73.19
30-40	56.59
40-50	24.97
50-60	5.69
60-70	2.90
70-80	2.28
80-90	0.91
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:

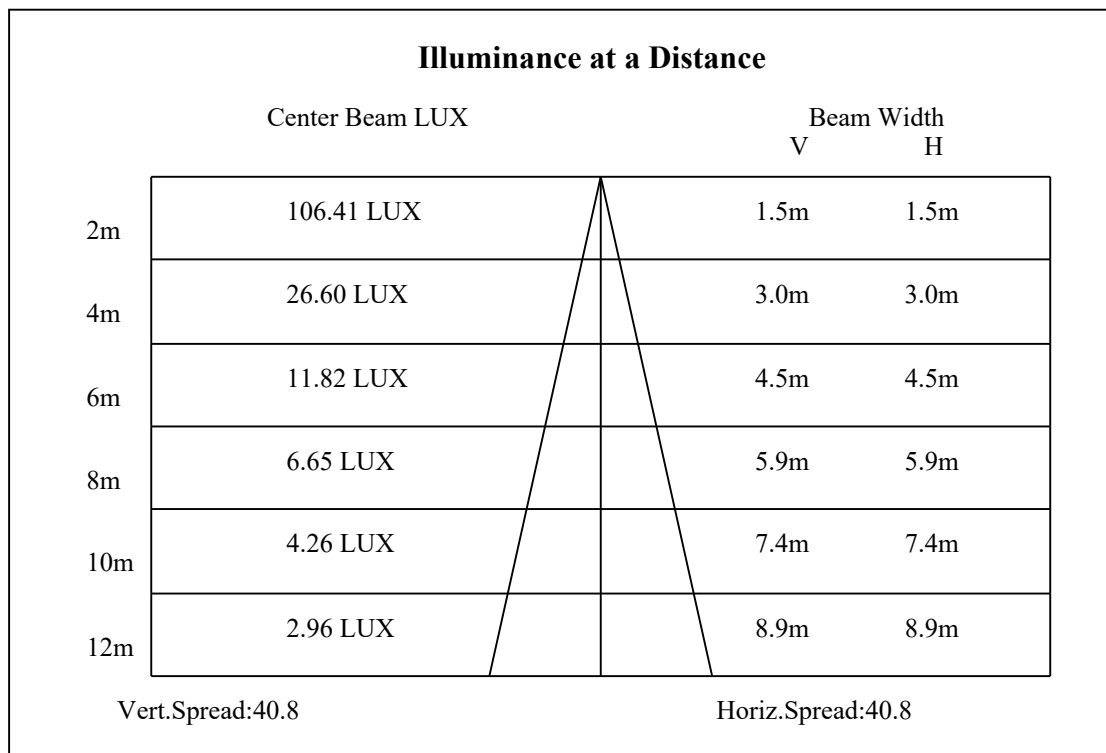
C90/C270:

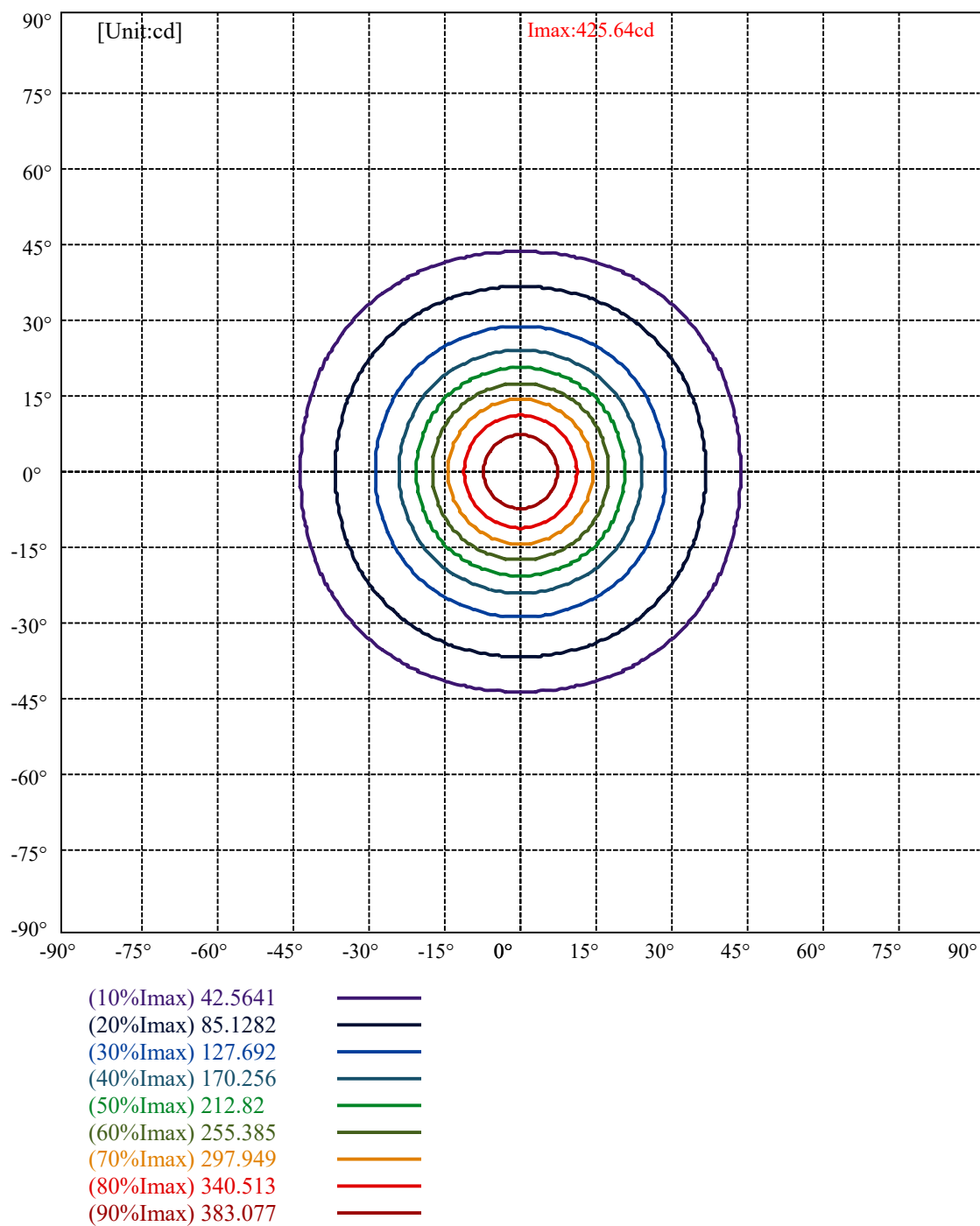
Field angle(10%Imax):C0/180Left:43.1 Right:43.1

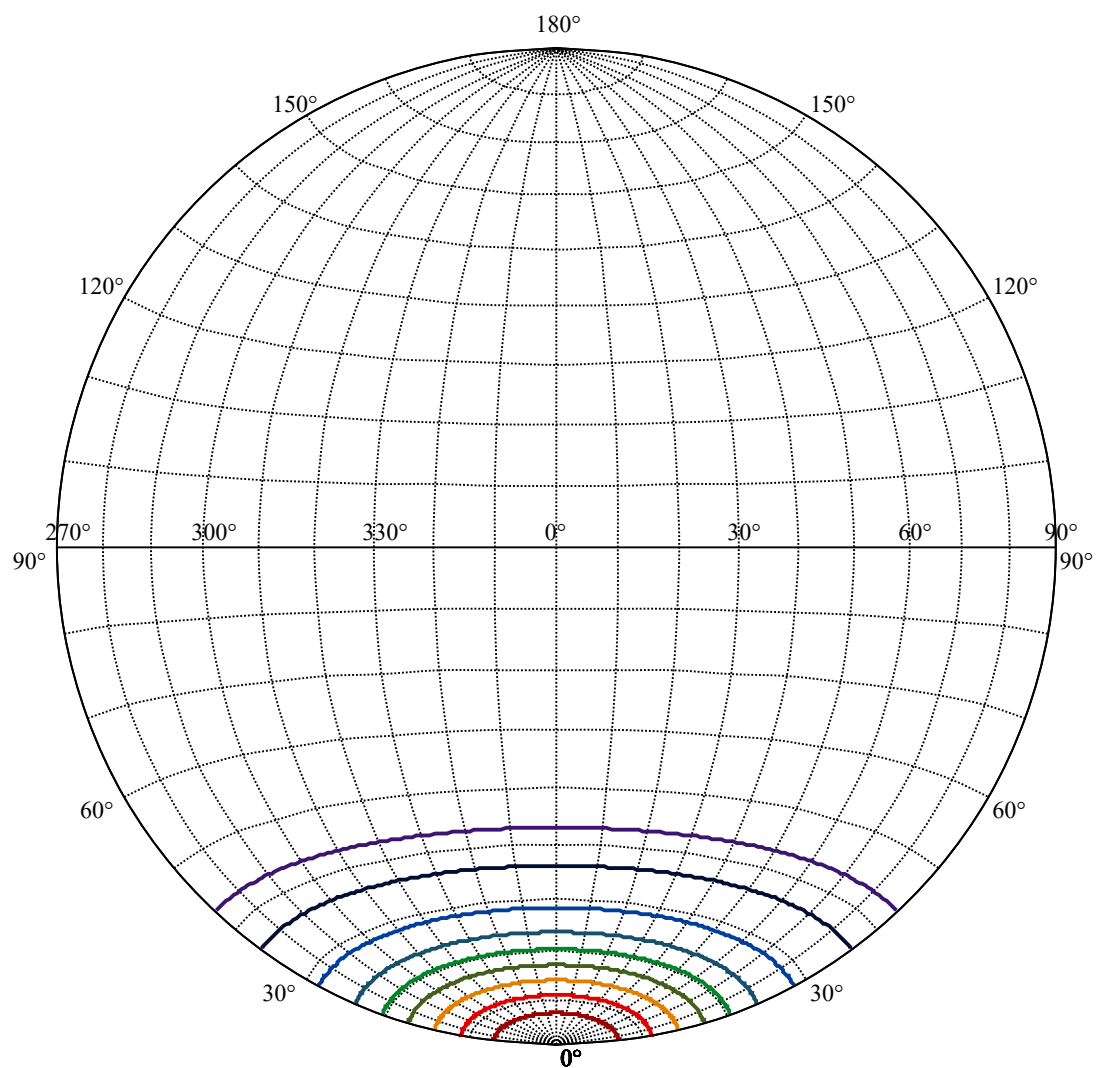
:C90/270Left:43.1 Right:43.1

Beam Angle(50%Imax):C0/180Left:20.4 Right:20.4

:C90/270Left:20.4 Right:20.4







House

[Unit:cd]

Road

Imax:425.64

(10%Imax) 42.5641

(20%Imax) 85.1282

(30%Imax) 127.692

(40%Imax) 170.256

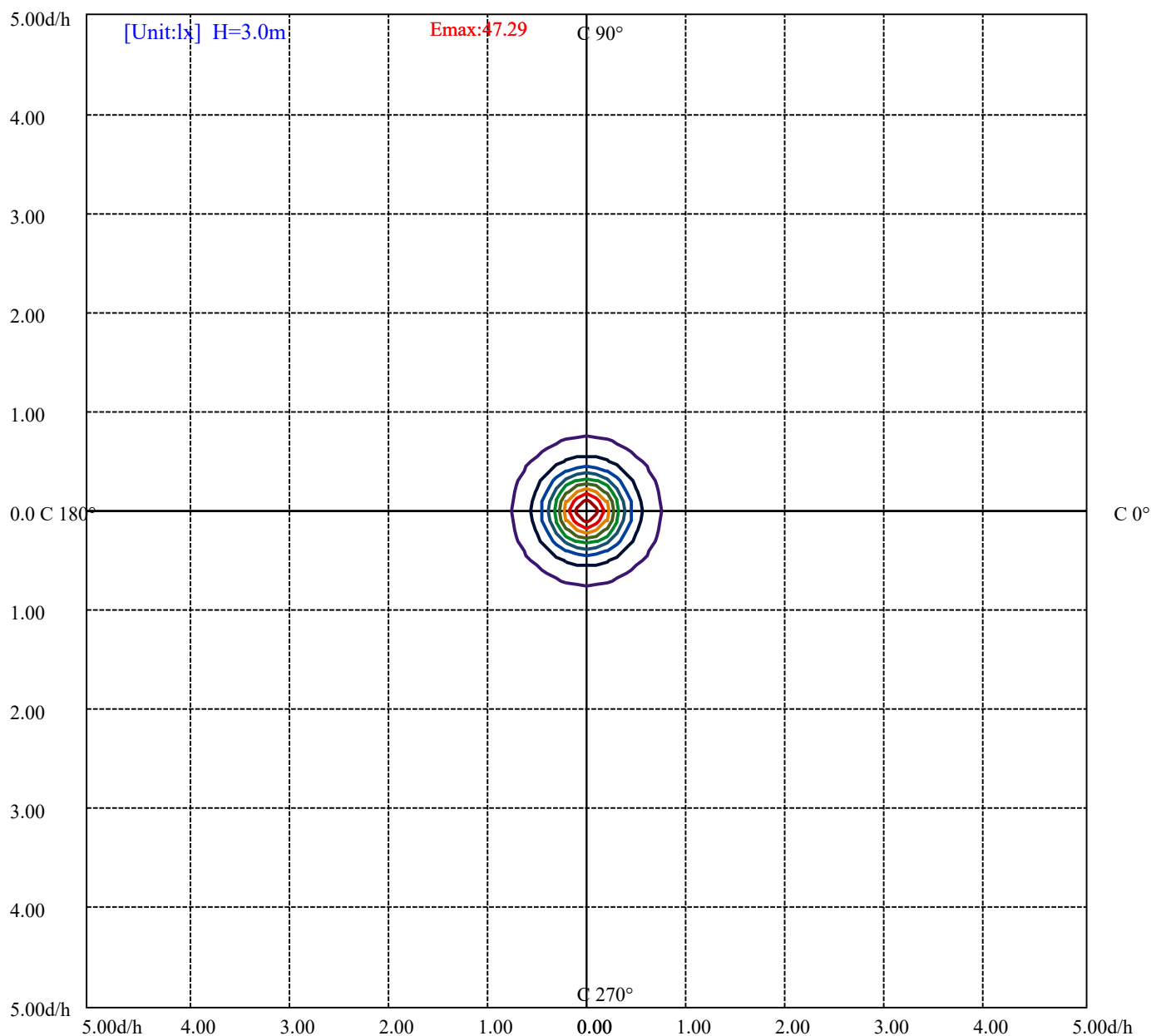
(50%Imax) 212.82

(60%Imax) 255.385

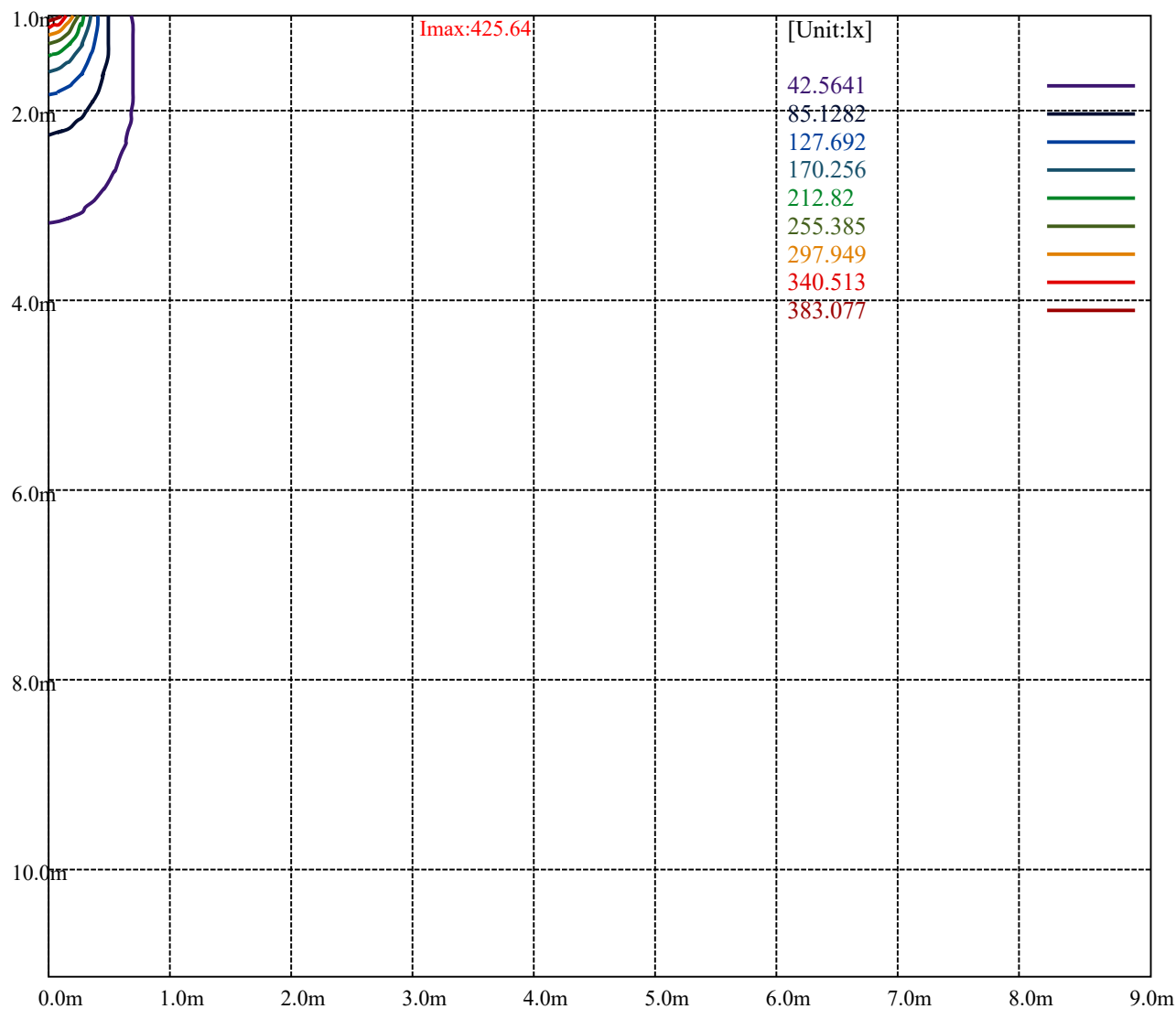
(70%Imax) 297.949

(80%Imax) 340.513

(90%Imax) 383.077



(10%Emax) 4.729333	—
(20%Emax) 9.458677	—
(30%Emax) 14.188	—
(40%Emax) 18.91733	—
(50%Emax) 23.64667	—
(60%Emax) 28.376	—
(70%Emax) 33.10533	—
(80%Emax) 37.83467	—
(90%Emax) 42.564	—



Luminance Table

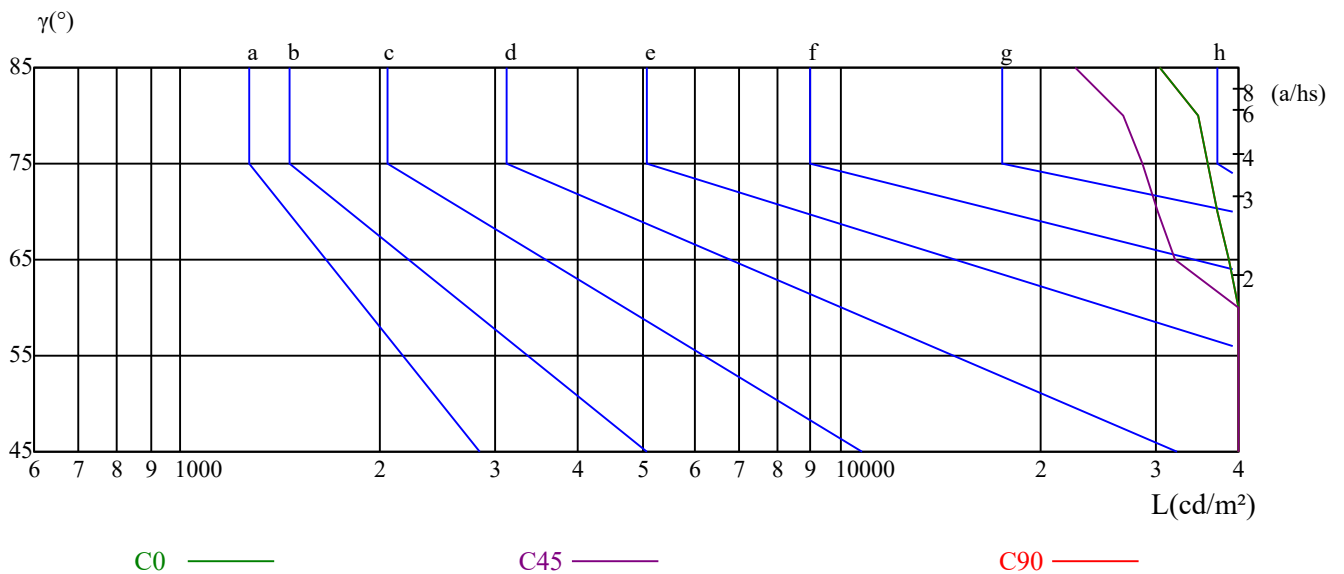
γ	45	50	55	60	65	70	75	80	85
C0	341681	184133	94492	52953	38573	37066	35962	34696	30441
C45	302522	160739	81245	44782	32025	30134	28527	26721	22593
C90	341681	184133	94492	52953	38573	37066	35962	34696	30441

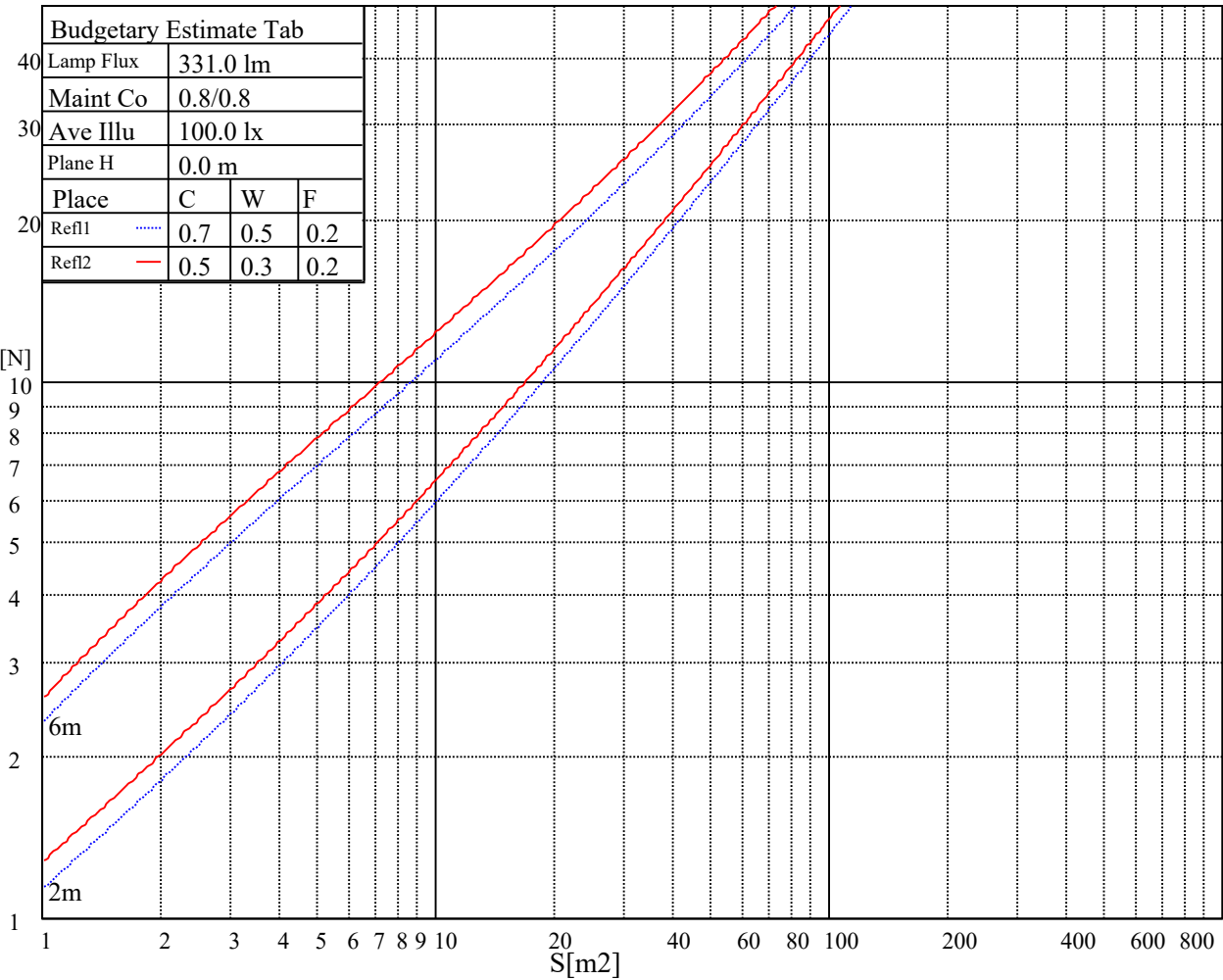
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
76173	76173	76173	96966	96966	96966	188597	188597	188597

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





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	1.02	1.02	1.02	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.88	0.88	0.88	0.86
1	0.94	0.92	0.90	0.93	0.91	0.89	0.89	0.87	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.79
2	0.88	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.78	0.77	0.75	0.74
3	0.82	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.68
4	0.76	0.71	0.67	0.75	0.71	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.63
5	0.71	0.66	0.62	0.70	0.66	0.62	0.69	0.65	0.61	0.67	0.64	0.61	0.66	0.63	0.60	0.59
6	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.60	0.57	0.64	0.60	0.57	0.62	0.59	0.56	0.55
7	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.52
8	0.59	0.54	0.51	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.49
9	0.56	0.51	0.48	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.50	0.47	0.46
10	0.53	0.48	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.51	0.47	0.44	0.51	0.47	0.44	0.43

Nata 1546-E

Appendix Page: 13 Total:13

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	426.08	413.09	364.36	301.49	225.95	159.00	117.16	94.70	70.86
45.0	424.98	424.93	386.00	319.49	251.22	181.30	134.06	106.59	84.68
90.0	427.57	417.71	377.14	307.77	241.26	171.12	125.03	98.06	71.90
135.0	423.93	413.47	369.10	307.10	238.23	170.40	123.49	95.58	67.06
180.0	426.08	398.88	347.13	278.81	208.88	147.88	108.41	83.47	54.67
225.0	424.98	390.46	327.97	252.27	184.55	130.43	104.83	85.78	53.02
270.0	427.57	396.85	336.95	265.81	197.49	138.25	104.88	86.22	55.17
315.0	423.93	390.79	330.89	257.06	194.68	137.37	105.16	85.83	55.66
360.0	426.08	413.09	364.36	301.49	225.95	159.00	117.16	94.70	70.86
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	35.24	10.85	6.61	3.19	2.59	2.42	2.48	1.93	1.54
45.0	45.15	13.65	6.33	6.33	2.81	2.42	2.15	1.82	1.60
90.0	35.62	10.30	6.00	6.61	2.70	2.31	2.04	1.82	1.60
135.0	32.37	9.52	5.29	4.62	2.75	2.37	2.09	1.82	1.49
180.0	21.80	6.72	5.40	3.19	2.64	2.26	1.98	1.71	1.54
225.0	17.62	6.06	6.39	2.86	2.53	2.31	2.04	1.65	1.49
270.0	22.41	8.26	6.99	3.14	2.59	2.64	2.48	1.93	1.54
315.0	22.57	7.21	6.50	2.70	2.37	2.42	2.42	1.76	1.43
360.0	35.24	10.85	6.61	3.19	2.59	2.42	2.48	1.93	1.54
C/γ(°)	90.0								
0.0	1.10								
45.0	1.27								
90.0	1.21								
135.0	1.16								
180.0	1.10								
225.0	1.10								
270.0	1.10								
315.0	1.10								
360.0	1.10								