
Nata

LumCAT: 1535-E	
Luminaire: 92.70.064.00	
Report No: NT2016062906	Voltage(V): 9.4000
Test No: GC2016062906	Current(A): 0.3000
LampCAT: CITIZEN CLU700	Power (W): 2.8200
Lamp flux(lm): 314.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 25	Width(mm):25
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 278.56
Efficiency(%): 88.71%
Lumens(lm)/Power(W): 98.78
Central intensity(cd): 514.750
Maximum intensity(cd): 514.750
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=37.4
[C90/270]Total=37.4
Field angle(10%Imax): [C0/180]Total=77.6
[C90/270]Total=77.6
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
Maximum s/h(1/4): C0_180=0.63 C90_270=0.63
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.71%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.009%

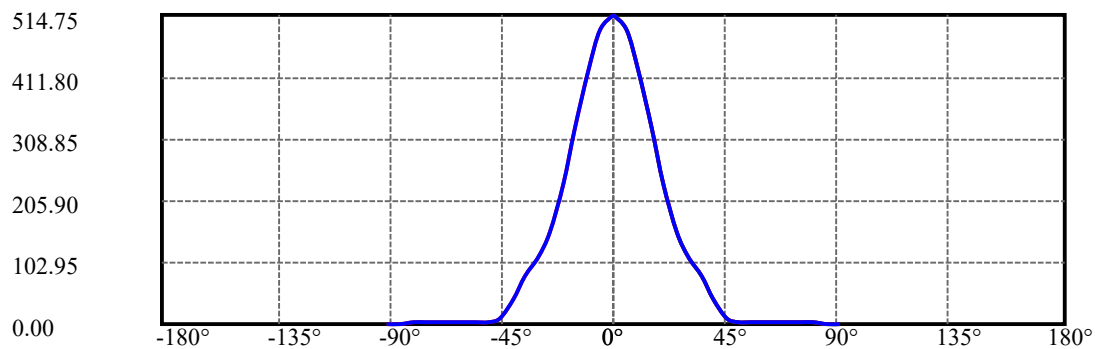
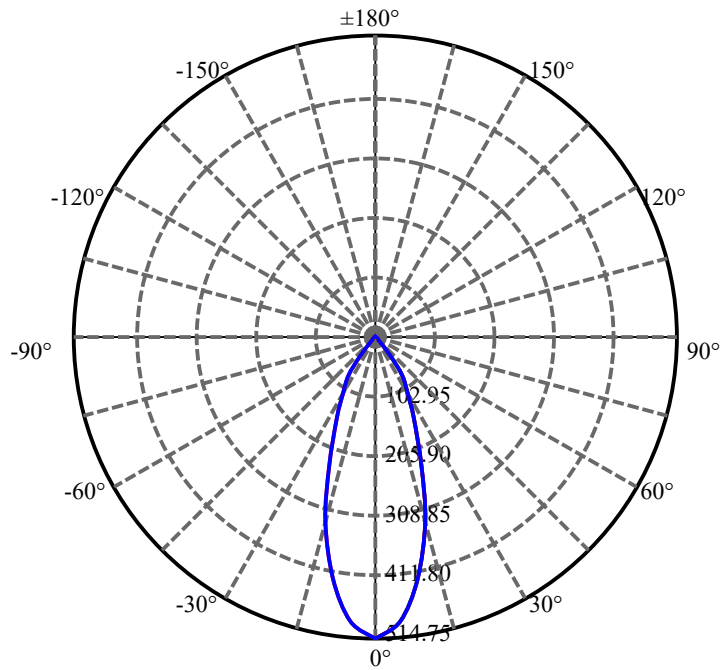
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	514.750	0.000	0	.000%	.000%
5.0	488.109	11.989	11.989	3.818%	4.304%
10.0	420.858	32.517	44.506	10.356%	15.977%
15.0	326.423	44.328	88.834	14.117%	31.890%
20.0	232.620	46.073	134.907	14.673%	48.429%
25.0	152.868	40.431	175.337	12.876%	62.943%
30.0	111.919	33.509	208.846	10.672%	74.973%
35.0	81.153	28.431	237.277	9.055%	85.179%
40.0	41.998	20.547	257.824	6.544%	92.555%
45.0	9.862	9.602	267.427	3.058%	96.002%
50.0	4.019	2.805	270.231	.893%	97.009%
55.0	2.952	1.516	271.747	.483%	97.553%
60.0	2.546	1.271	273.018	.405%	98.009%
65.0	2.223	1.159	274.178	.369%	98.426%
70.0	1.999	1.069	275.247	.340%	98.809%
75.0	1.786	0.989	276.236	.315%	99.165%
80.0	1.607	0.908	277.144	.289%	99.490%
85.0	1.266	0.781	277.925	.249%	99.771%
90.0	1.067	0.639	278.563	.203%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	208.85	66.51%	74.97%
0-40	257.82	82.11%	92.55%
0-60	273.02	86.95%	98.01%
0-90	277.92	88.51%	99.77%
0-120	277.92	88.51%	99.77%
0-180	278.56	88.71%	100.00%
60-90	6.18	1.97%	2.22%
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%
0-32.46	222.85	70.97%	80.00%

ZONAL LUMEN SUMMARY

0-10	44.51
10-20	90.40
20-30	73.94
30-40	48.98
40-50	12.41
50-60	2.79
60-70	2.23
70-80	1.90
80-90	0.78
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:

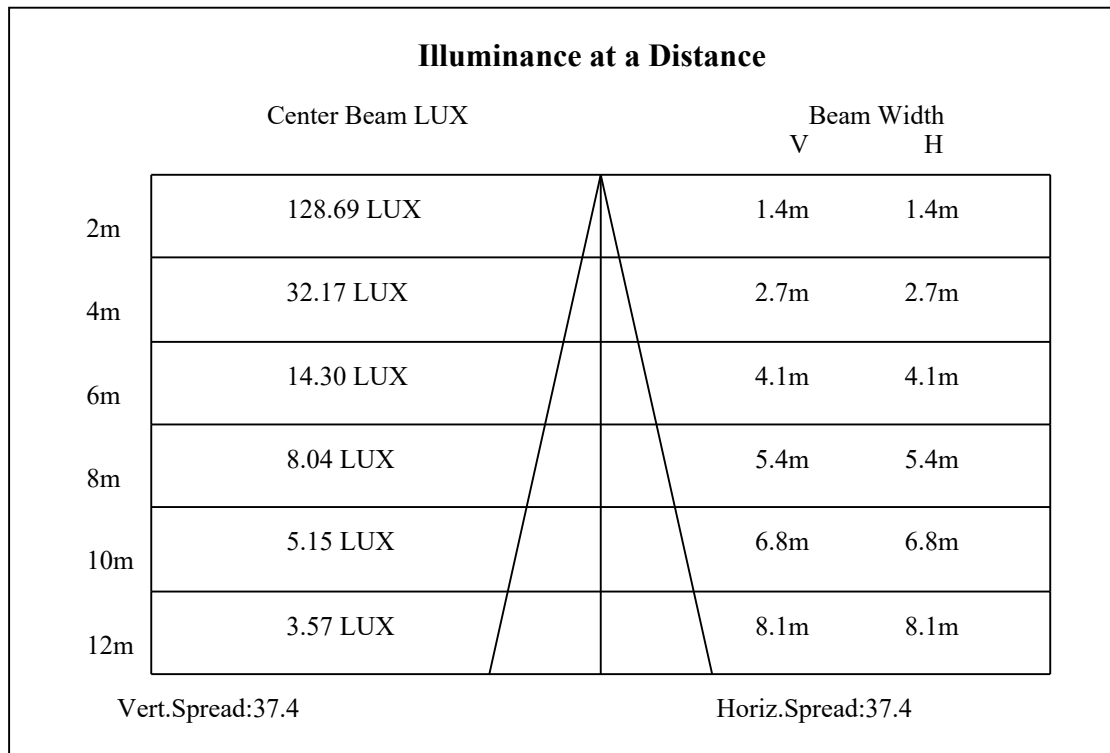
C90/C270:

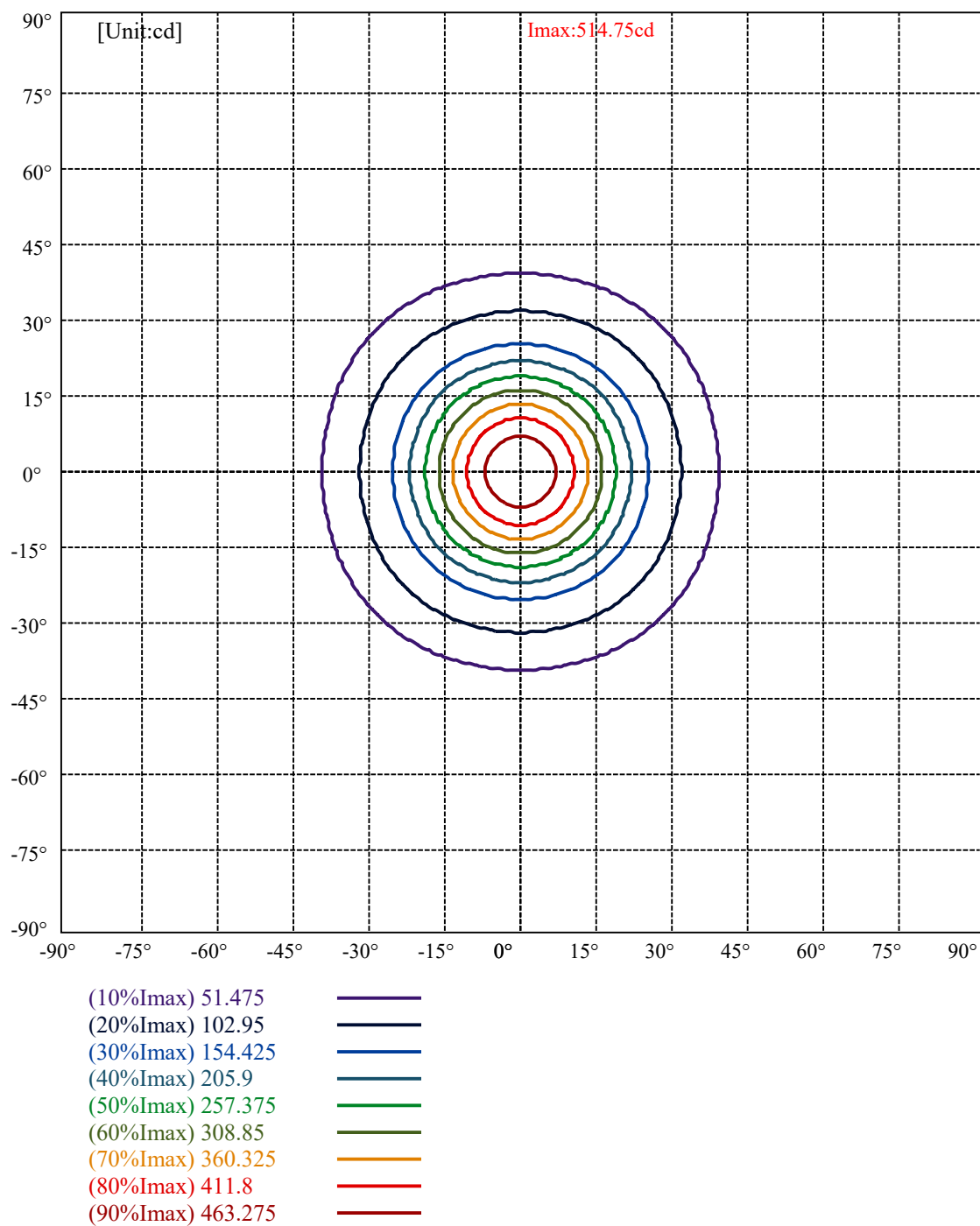
Field angle(10%Imax):C0/180Left:38.8 Right:38.8

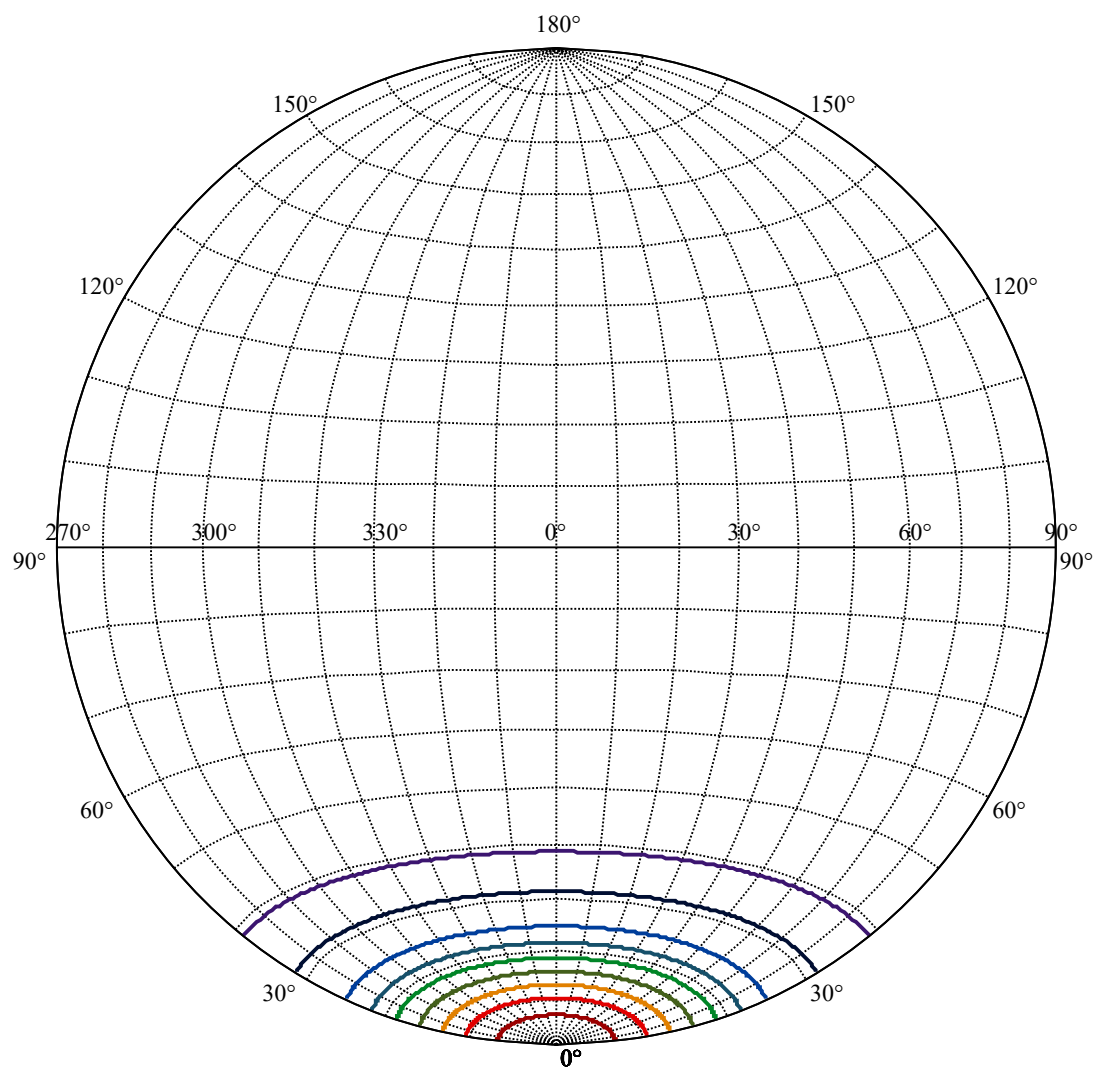
:C90/270Left:38.8 Right:38.8

Beam Angle(50%Imax):C0/180Left:18.7 Right:18.7

:C90/270Left:18.7 Right:18.7







House

[Unit:cd]

Road

Imax:514.75

(10%Imax) 51.475

(20%Imax) 102.95

(30%Imax) 154.425

(40%Imax) 205.9

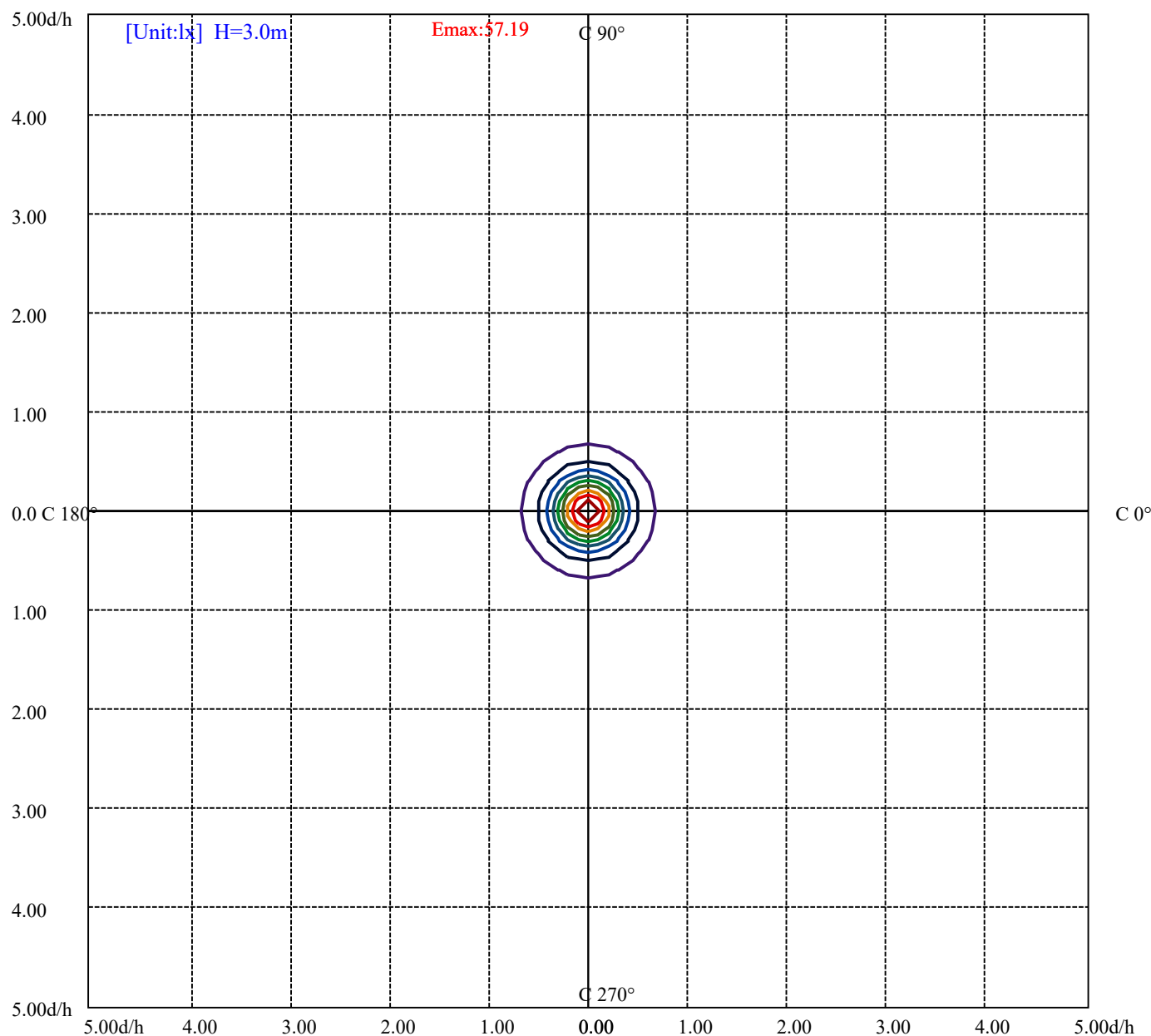
(50%Imax) 257.375

(60%Imax) 308.85

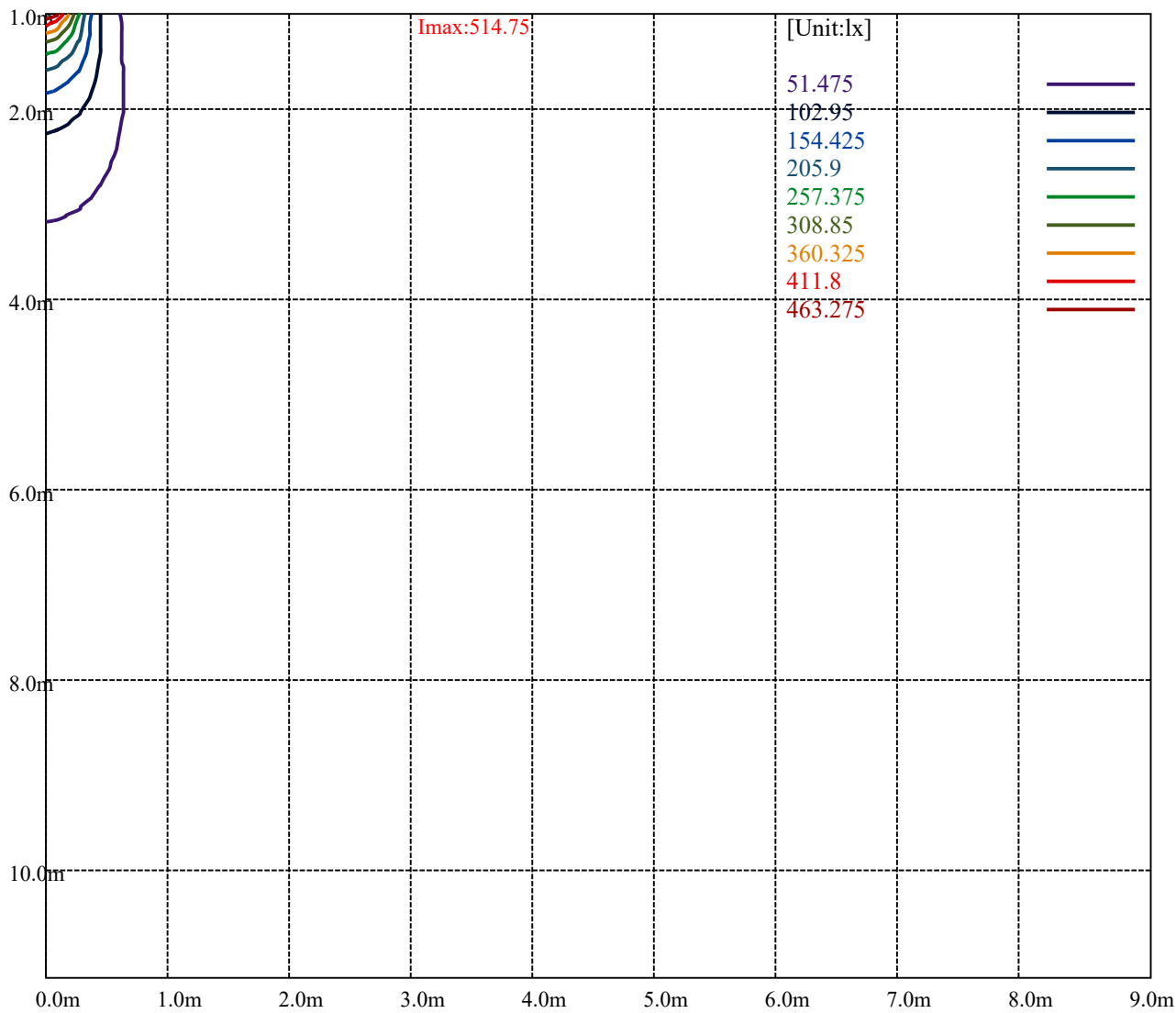
(70%Imax) 360.325

(80%Imax) 411.8

(90%Imax) 463.275



(10%Emax) 5.719433	—
(20%Emax) 11.43889	—
(30%Emax) 17.15833	—
(40%Emax) 22.87778	—
(50%Emax) 28.59711	—
(60%Emax) 34.31656	—
(70%Emax) 40.036	—
(80%Emax) 45.75545	—
(90%Emax) 51.47489	—



Luminance Table

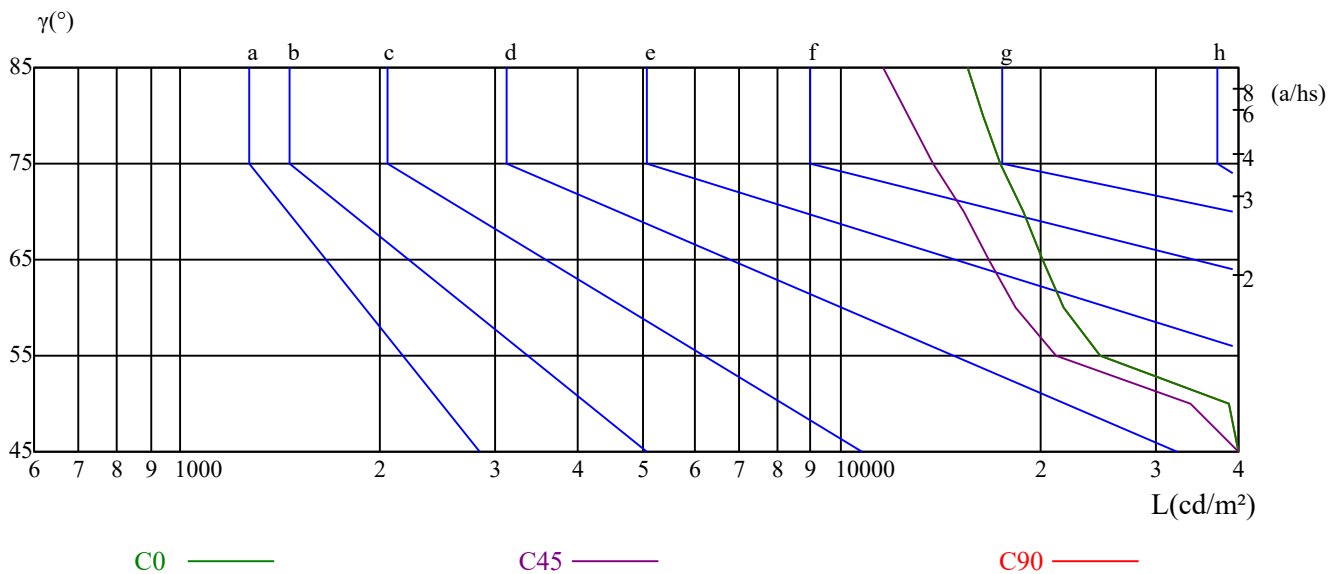
γ	45	50	55	60	65	70	75	80	85
C0	94289	38751	24632	21736	20185	18937	17436	16447	15583
C45	83309	33754	21131	18340	16721	15362	13804	12646	11553
C90	94289	38751	24632	21736	20185	18937	17436	16447	15583

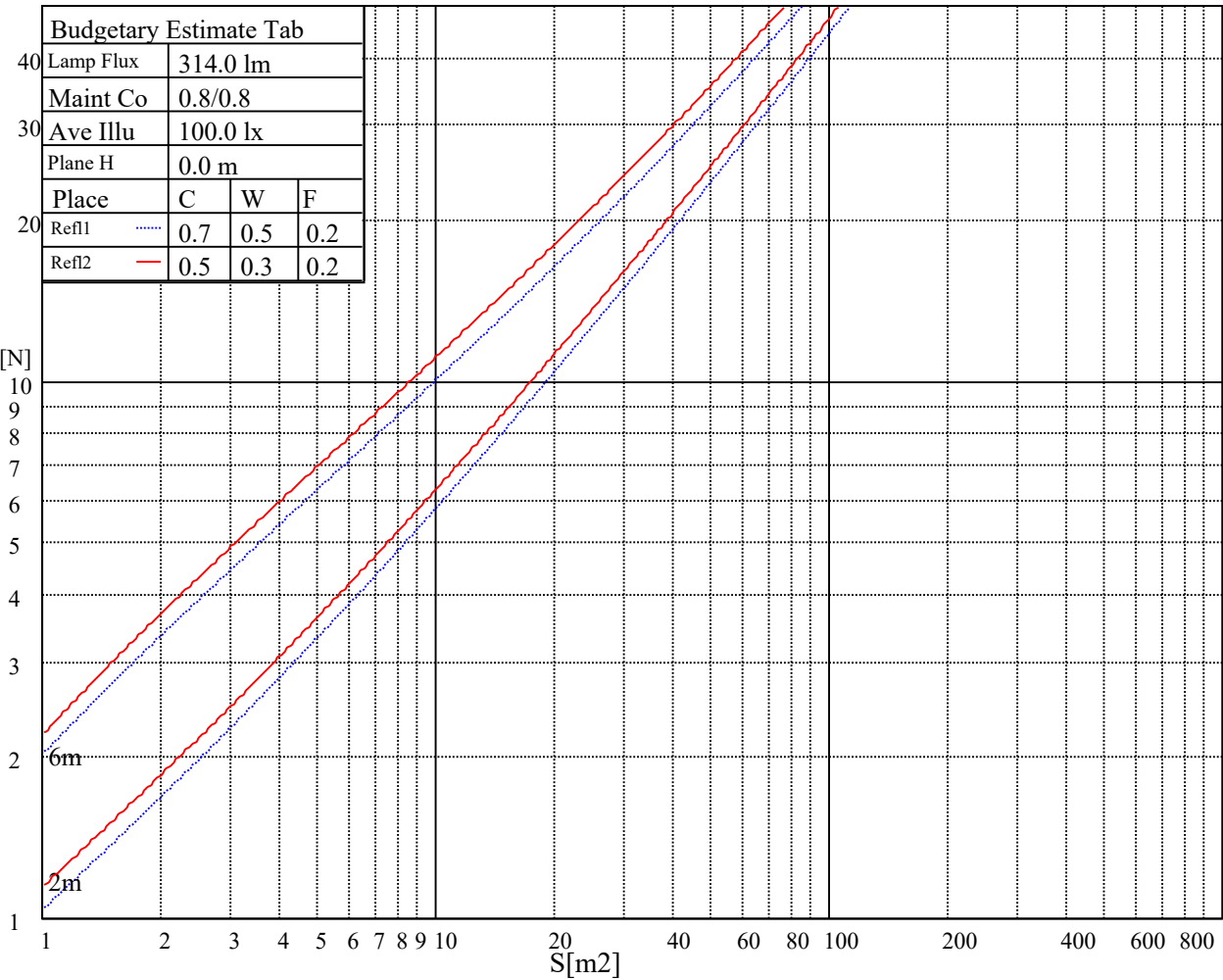
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
40385	40385	40385	47803	47803	47803	98703	98703	98703

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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.83
2	0.92	0.88	0.85	0.90	0.87	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.82	0.81	0.79	0.78
3	0.86	0.82	0.78	0.85	0.81	0.78	0.82	0.79	0.76	0.80	0.78	0.75	0.78	0.76	0.74	0.73
4	0.81	0.76	0.73	0.80	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.68
5	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.64
6	0.72	0.67	0.63	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.61
7	0.68	0.63	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.57
8	0.65	0.60	0.56	0.64	0.60	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.54
9	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.52
10	0.59	0.54	0.51	0.58	0.54	0.51	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.49

Nata 1535-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	511.64	494.13	432.80	348.12	252.60	166.55	118.65	91.83	51.09		
22.5	513.57	499.75	442.54	349.88	260.69	172.27	118.37	94.92	55.06		
45.0	516.48	505.20	441.83	356.38	257.66	167.98	118.92	94.97	54.84		
67.5	513.29	515.71	471.34	385.73	284.53	190.00	128.94	101.69	66.29		
90.0	519.40	517.03	459.12	368.99	270.66	176.07	123.93	83.63	50.32		
112.5	515.05	515.49	466.27	379.45	284.53	186.20	129.71	88.97	50.43		
135.0	516.26	501.07	436.32	353.96	251.77	160.98	117.05	93.71	53.90		
157.5	512.30	493.58	441.22	344.93	250.29	163.02	117.33	91.67	53.13		
180.0	511.64	476.95	399.65	303.64	208.22	140.39	105.82	76.97	37.16		
202.5	513.57	472.88	393.93	293.95	209.27	133.90	104.61	77.08	34.74		
225.0	516.48	475.30	399.43	298.24	204.86	135.82	105.05	72.12	32.98		
247.5	513.29	459.39	377.74	270.82	181.91	122.23	90.40	49.28	14.15		
270.0	519.40	468.47	388.97	287.89	194.35	129.05	100.42	65.90	27.25		
292.5	515.05	462.20	376.15	265.98	185.21	122.83	99.71	63.37	21.75		
315.0	516.26	476.07	403.78	307.60	211.36	138.63	106.04	75.87	37.82		
337.5	512.30	476.51	402.63	307.21	214.00	139.95	105.76	76.47	31.05		
360.0	511.64	494.13	432.80	348.12	252.60	166.55	118.65	91.83	51.09		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	13.10	3.91	2.81	2.53	2.26	1.98	1.65	1.71	1.27		
22.5	13.21	4.07	2.86	2.59	2.26	2.04	1.76	1.49	1.32		
45.0	13.60	4.29	2.97	2.59	2.31	2.04	1.87	1.65	1.38		
67.5	24.61	4.84	3.52	2.86	2.48	2.26	2.04	1.87	1.60		
90.0	13.71	5.12	3.36	2.81	2.42	2.26	2.04	1.82	1.54		
112.5	12.50	5.67	3.80	2.92	2.42	2.20	1.98	1.76	1.43		
135.0	14.98	4.29	3.08	2.48	2.15	1.93	1.65	1.49	1.27		
157.5	13.10	3.85	2.86	2.42	2.04	1.76	1.54	1.38	1.16		
180.0	4.96	3.41	2.64	2.31	1.93	1.65	1.49	1.27	1.10		
202.5	4.68	3.41	2.59	2.26	1.98	1.76	1.60	1.32	1.16		
225.0	5.56	3.69	2.70	2.42	2.15	1.93	1.76	1.49	1.16		
247.5	4.84	3.30	2.75	2.48	2.20	1.98	1.82	1.54	1.16		
270.0	4.57	3.69	2.86	2.59	2.31	2.20	1.98	1.71	1.16		
292.5	4.35	3.30	2.86	2.53	2.26	2.09	1.87	1.60	1.10		
315.0	5.01	3.74	2.86	2.53	2.26	2.04	1.82	1.76	1.21		
337.5	5.01	3.69	2.70	2.42	2.15	1.87	1.71	1.87	1.27		
360.0	13.10	3.91	2.81	2.53	2.26	1.98	1.65	1.71	1.27		
C/γ(°)	90.0										
0.0	1.05										
22.5	1.10										
45.0	1.10										
67.5	1.05										
90.0	1.10										
112.5	1.10										
135.0	1.05										
157.5	1.05										
180.0	1.05										
202.5	1.05										
225.0	1.05										
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360.0	1.05										