
Nata

LumCAT: 1406-N	
Luminaire: 92.70.064.00	
Report No: NT2017101704	Voltage(V): 35.7000
Test No: nata-0100	Current(A): 0.3200
LampCAT: CITIZEN CLU028	Power (W): 11.4000
Lamp flux(lm): 1553.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1346.55
Efficiency(%): 86.71%
Lumens(lm)/Power(W): 119.02
Central intensity(cd): 1926.974
Maximum intensity(cd): 1926.974
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=38.3
[C90/270]Total=38.3
Field angle(10%Imax): [C0/180]Total=89.4
[C90/270]Total=89.4
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.67 C90_270=0.67
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.37%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.183%

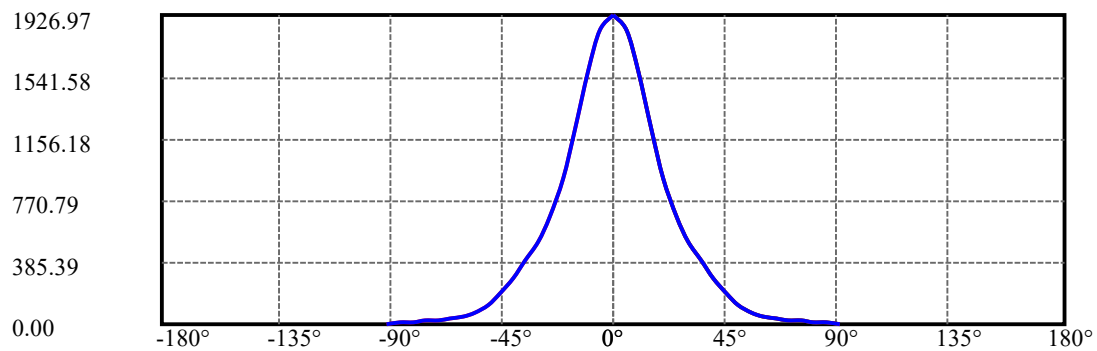
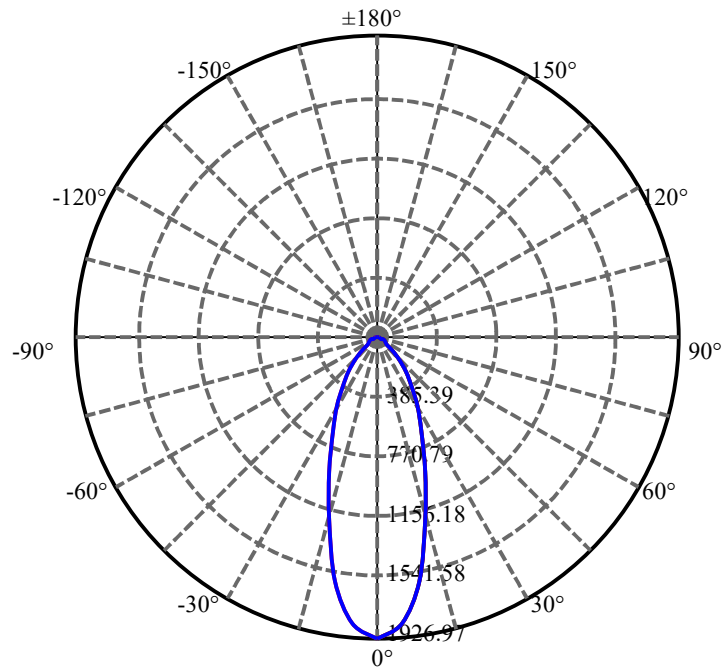
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1926.974	11.524	11.524	.742%	.856%
5.0	1833.378	87.587	99.11	5.640%	7.360%
10.0	1577.641	150.165	249.275	9.669%	18.512%
15.0	1206.843	171.213	420.488	11.025%	31.227%
20.0	914.384	171.423	591.911	11.038%	43.958%
25.0	667.132	154.543	746.454	9.951%	55.435%
30.0	510.022	139.781	886.235	9.001%	65.815%
35.0	389.180	122.358	1008.593	7.879%	74.902%
40.0	285.116	100.457	1109.05	6.469%	82.363%
45.0	187.040	72.495	1181.545	4.668%	87.746%
50.0	119.837	50.319	1231.864	3.240%	91.483%
55.0	76.639	34.411	1266.275	2.216%	94.039%
60.0	52.985	25.152	1291.427	1.620%	95.907%
65.0	37.349	18.554	1309.982	1.195%	97.285%
70.0	27.253	14.037	1324.019	.904%	98.327%
75.0	18.836	9.973	1333.992	.642%	99.068%
80.0	12.560	6.780	1340.772	.437%	99.571%
85.0	7.756	4.235	1345.007	.273%	99.886%
90.0	5.616	1.539	1346.546	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	886.24	57.07%	65.82%
0-40	1109.05	71.41%	82.36%
0-60	1291.43	83.16%	95.91%
0-90	1345.01	86.61%	99.89%
0-120	1345.01	86.61%	99.89%
0-180	1346.55	86.71%	100.00%
60-90	78.73	5.07%	5.85%
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%
0-38.42	1077.24	69.36%	80.00%

ZONAL LUMEN SUMMARY

0-10	249.27
10-20	342.64
20-30	294.32
30-40	222.81
40-50	122.81
50-60	59.56
60-70	32.59
70-80	16.75
80-90	4.24
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:

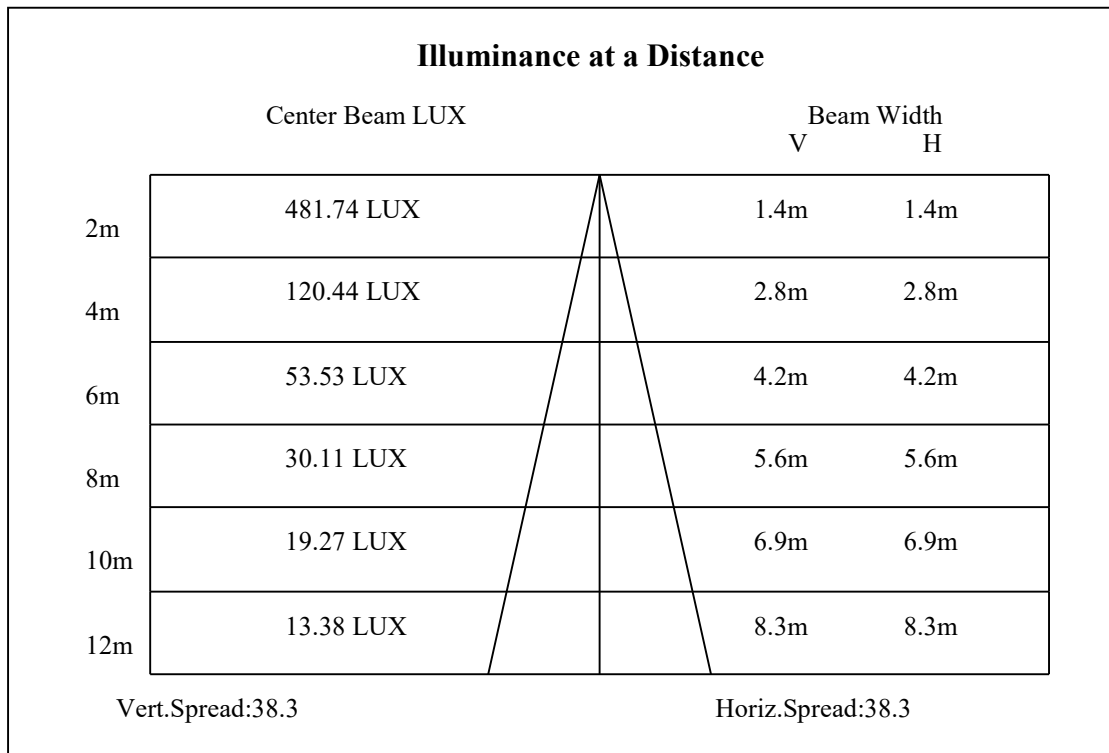
C90/C270:

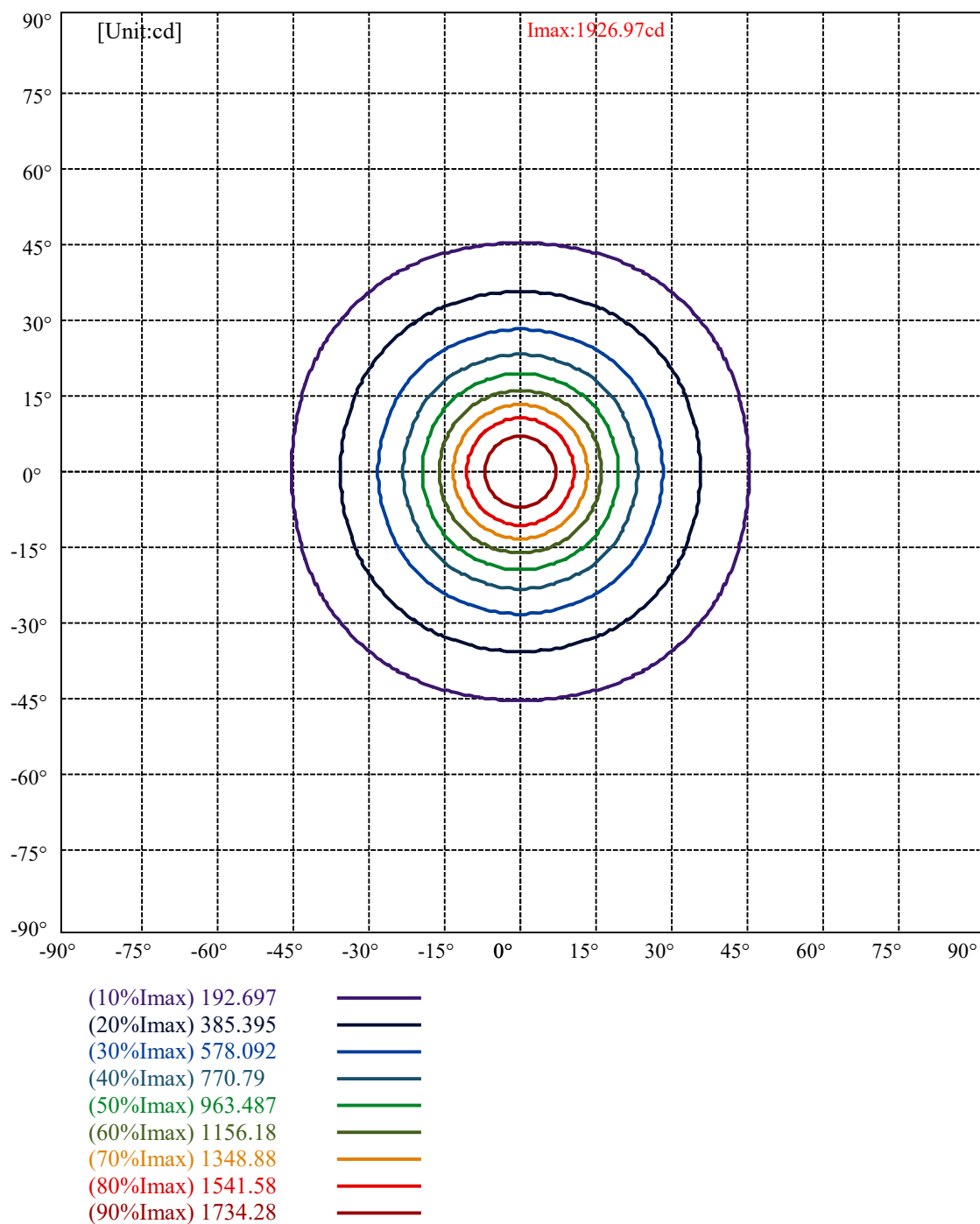
Field angle(10%Imax):C0/180Left:44.7 Right:44.7

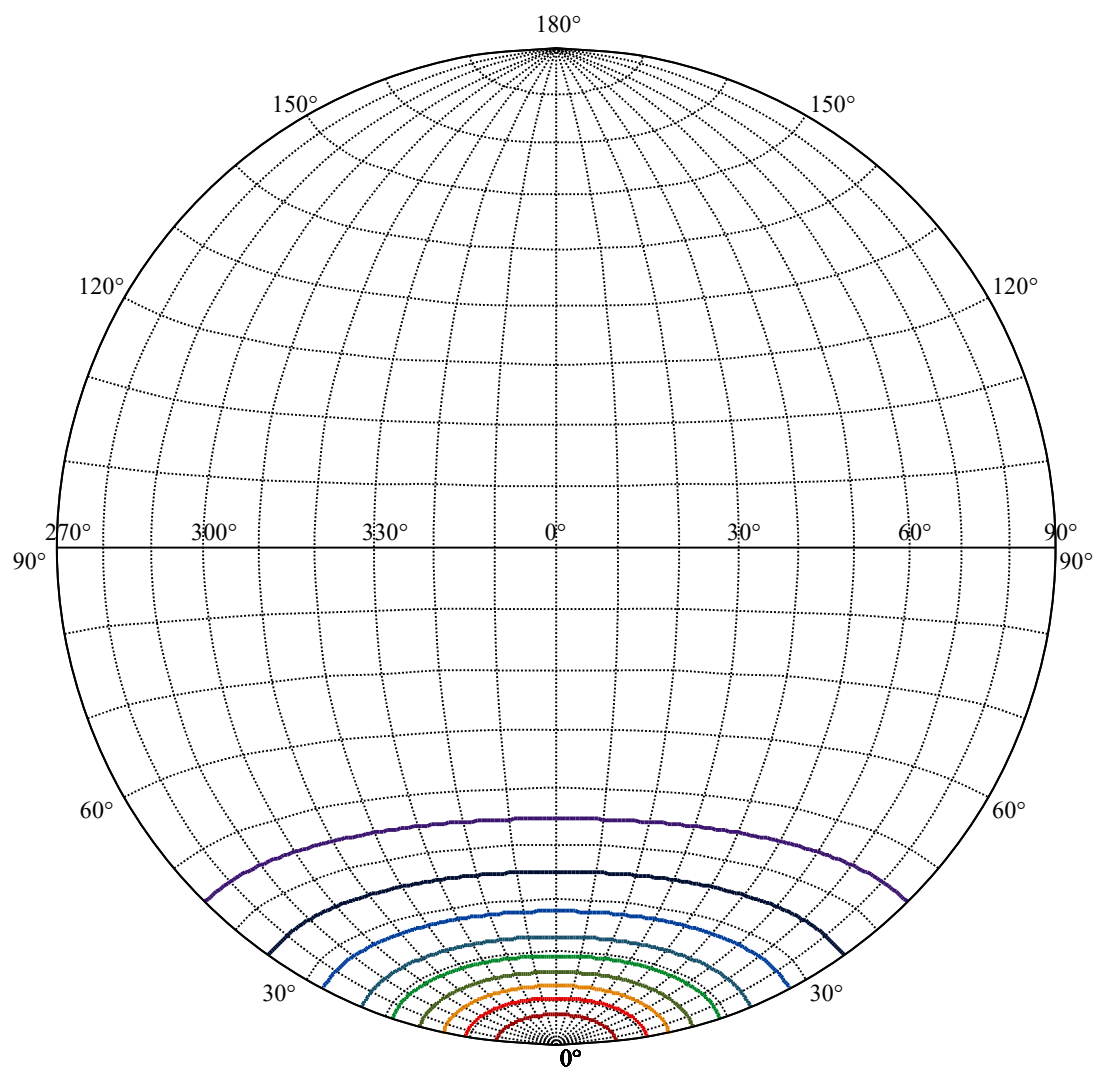
:C90/270Left:44.7 Right:44.7

Beam Angle(50%Imax):C0/180Left:19.2 Right:19.2

:C90/270Left:19.2 Right:19.2







House

[Unit:cd]

Road

Imax:1926.97

(10%Imax) 192.697

(20%Imax) 385.395

(30%Imax) 578.092

(40%Imax) 770.79

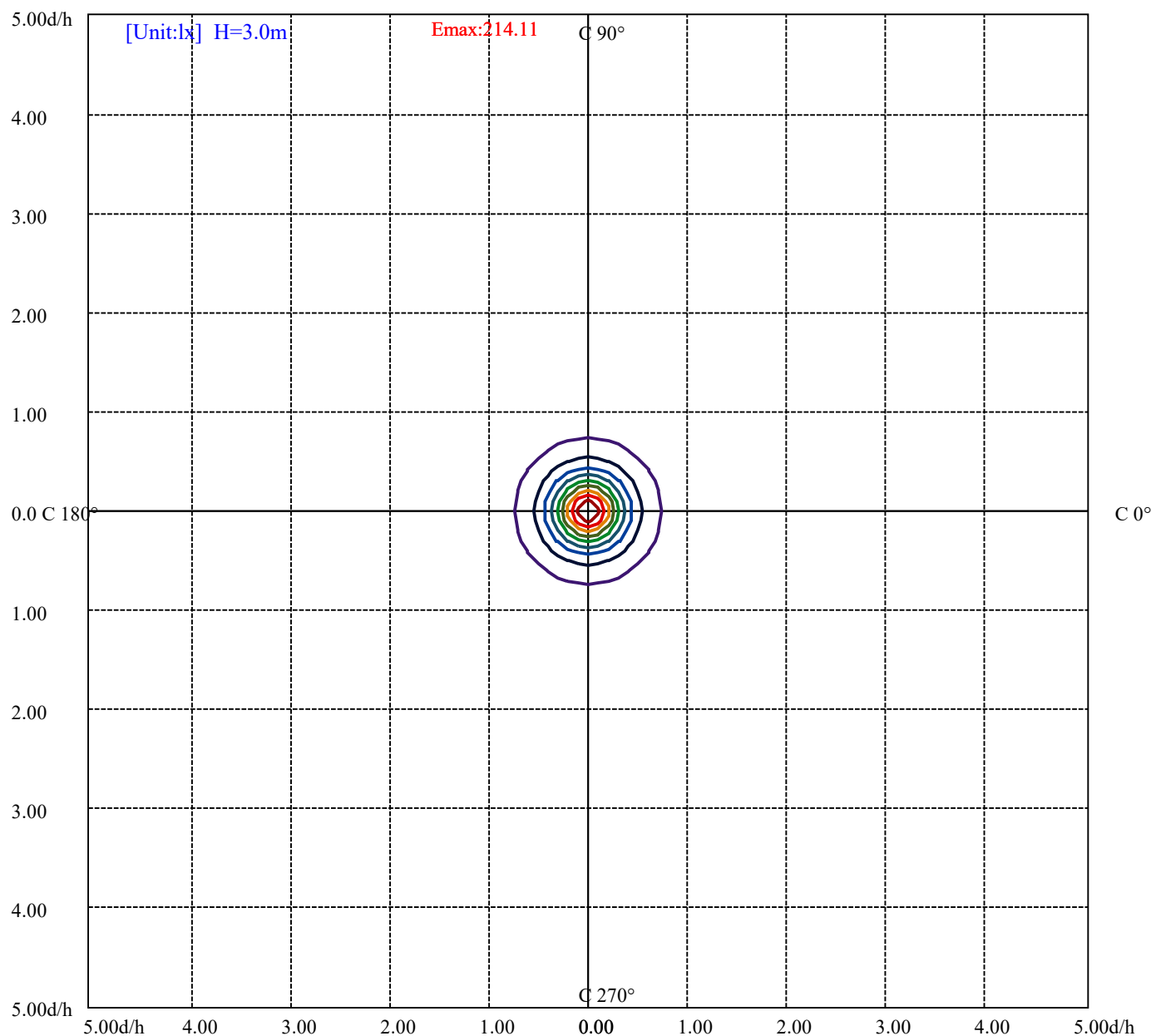
(50%Imax) 963.487

(60%Imax) 1156.18

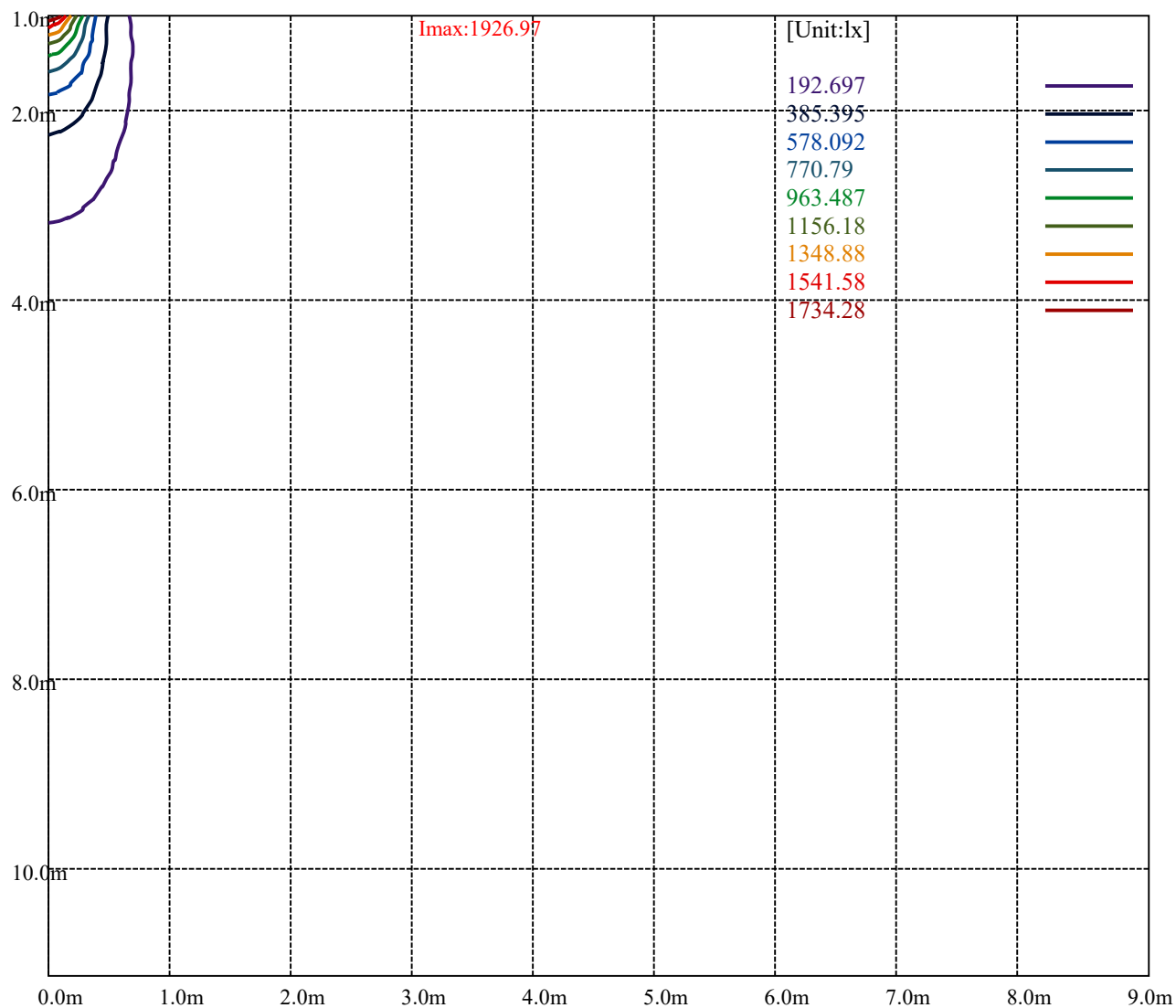
(70%Imax) 1348.88

(80%Imax) 1541.58

(90%Imax) 1734.28



(10%Emax)	21.41078	—
(20%Emax)	42.82156	—
(30%Emax)	64.23233	—
(40%Emax)	85.64311	—
(50%Emax)	107.054	—
(60%Emax)	128.4644	—
(70%Emax)	149.8755	—
(80%Emax)	171.2867	—
(90%Emax)	192.6967	—



Luminance Table

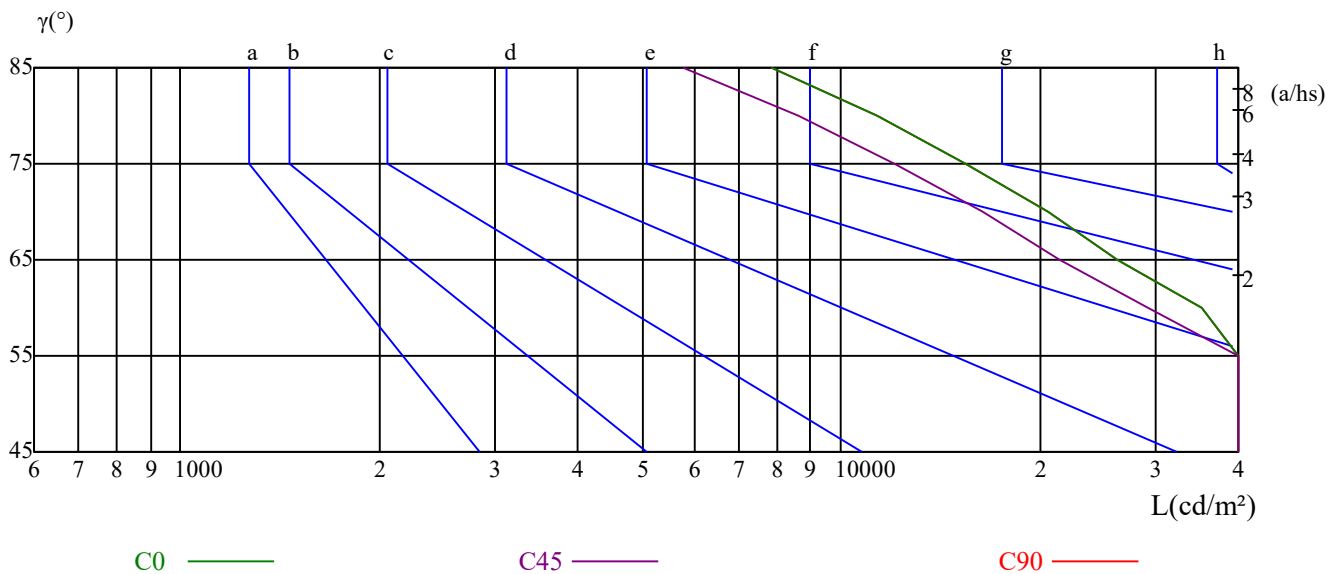
γ	45	50	55	60	65	70	75	80	85
C0	111188	73297	48652	35240	26294	20545	15409	11324	7856
C45	96736	62834	41063	29252	21434	16413	12030	8608	5782
C90	111188	73297	48652	35240	26294	20545	15409	11324	7856

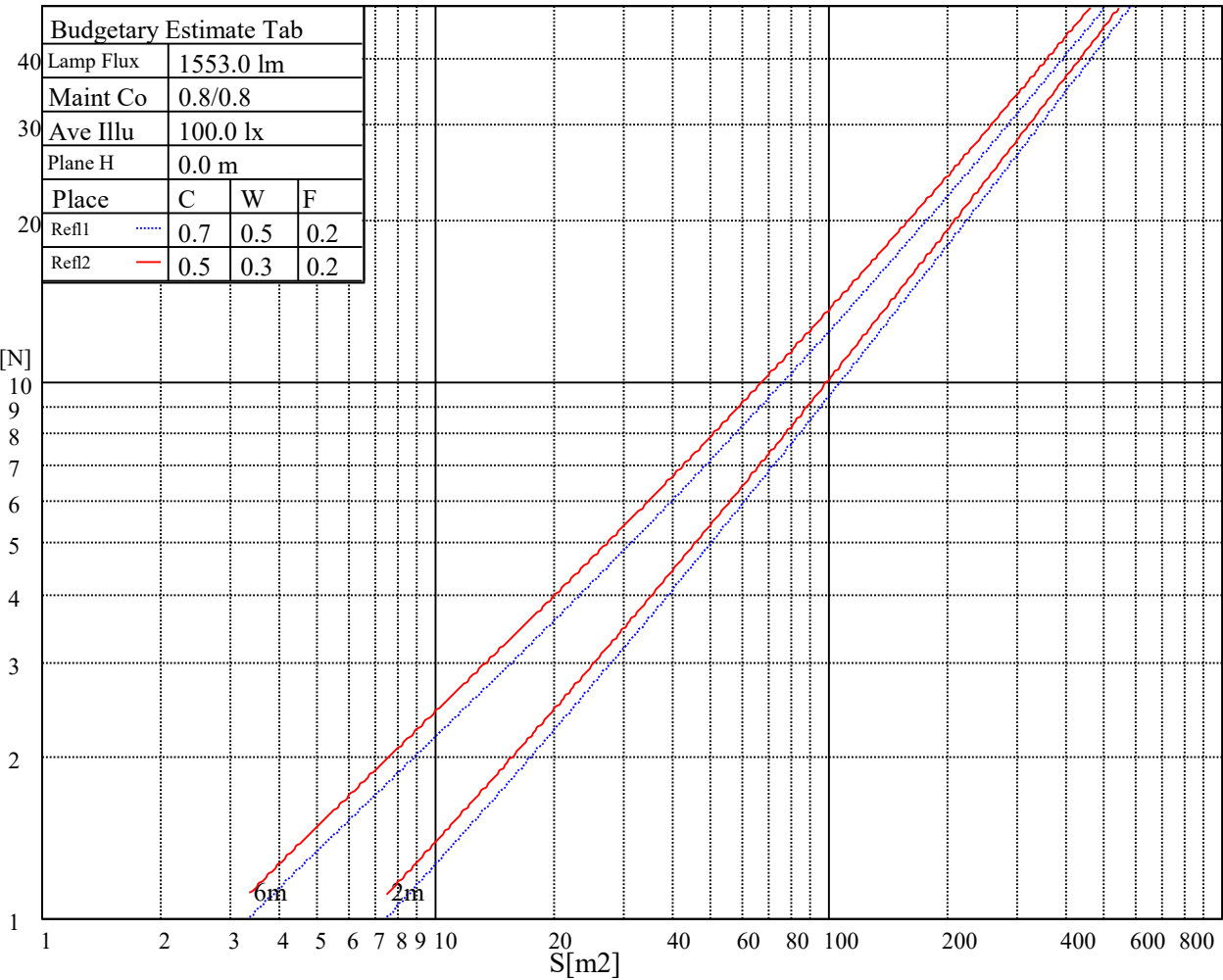
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
58103	58103	58103	47848	47848	47848	58508	58508	58508

Glare Table

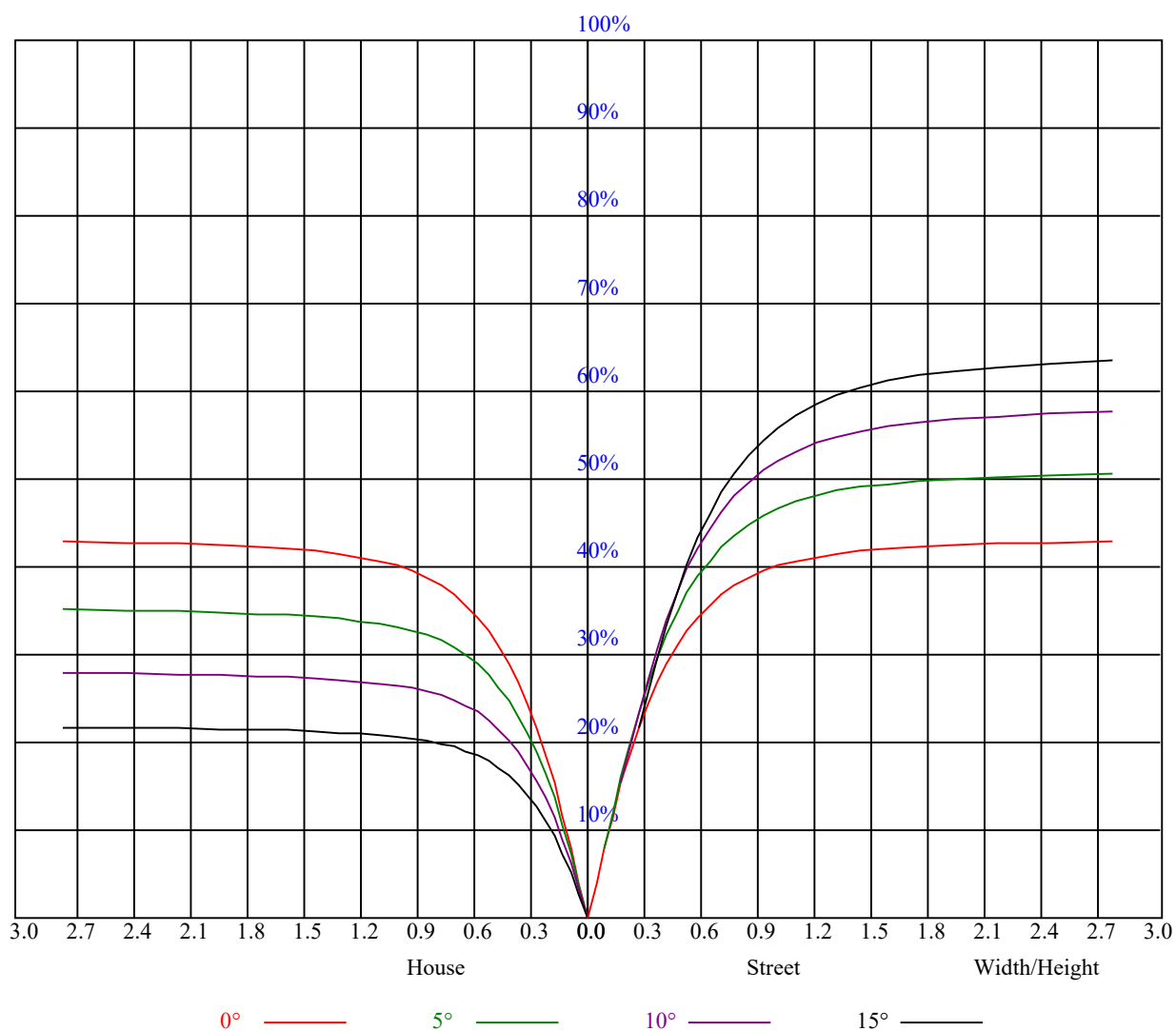
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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 RHOFC=20 CU															
0	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.95	0.93	0.90	0.93	0.91	0.89	0.90	0.88	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	0.84	0.81	0.78	0.81	0.78	0.76	0.78	0.76	0.75	0.73
3	0.82	0.77	0.73	0.80	0.76	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.74	0.71	0.69	0.68
4	0.76	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.64	0.63
5	0.71	0.66	0.62	0.70	0.65	0.62	0.69	0.64	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	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.55
7	0.63	0.58	0.54	0.63	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52
8	0.60	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.57	0.53	0.50	0.57	0.53	0.50	0.49
9	0.57	0.52	0.48	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.47	0.46
10	0.54	0.49	0.46	0.54	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.52	0.48	0.45	0.44



Nata 1406-N

Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1921.47	1891.74	1692.98	1357.69	1019.09	744.36	556.07	423.93	315.47		
45.0	1931.38	1849.34	1586.17	1228.86	907.88	662.88	503.77	379.34	278.03		
90.0	1919.82	1767.86	1473.31	1094.19	827.66	607.22	471.78	366.07	260.75		
135.0	1935.23	1803.10	1511.85	1172.70	863.83	627.09	491.10	375.48	281.89		
180.0	1921.47	1758.50	1466.15	1091.22	811.48	606.83	470.90	357.70	246.98		
225.0	1931.38	1832.83	1566.35	1077.84	909.15	657.65	509.99	387.27	281.06		
270.0	1919.82	1895.04	1674.27	1331.81	1011.94	727.85	546.71	423.38	316.57		
315.0	1935.23	1868.61	1650.04	1300.43	964.04	703.18	529.86	400.26	300.17		
360.0	1921.47	1891.74	1692.98	1357.69	1019.09	744.36	556.07	423.93	315.47		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	217.31	142.54	89.58	61.72	42.67	30.78	21.58	14.76	8.81		
45.0	178.05	115.67	75.81	51.97	36.61	27.53	18.66	11.67	7.21		
90.0	163.63	100.70	65.24	45.53	31.77	24.00	16.41	10.41	6.55		
135.0	175.08	104.00	65.74	46.96	33.47	24.56	16.96	11.34	6.72		
180.0	161.65	99.98	63.81	45.97	32.65	23.67	16.02	10.57	6.55		
225.0	183.06	118.54	75.10	51.92	37.44	26.98	18.61	12.72	7.93		
270.0	214.61	143.97	90.57	60.73	42.89	30.94	21.47	14.76	9.14		
315.0	202.94	133.29	87.26	59.08	41.29	29.57	20.98	14.26	9.14		
360.0	217.31	142.54	89.58	61.72	42.67	30.78	21.58	14.76	8.81		
C/γ(°)	90.0										
0.0	5.67										
45.0	5.56										
90.0	5.45										
135.0	5.45										
180.0	5.51										
225.0	5.45										
270.0	5.78										
315.0	6.06										
360.0	5.67										