
NATA

LumCAT: LM01D03030AE

Luminaire:

Report No: NATA0100

Voltage(V): 36.7000

Test No: GC2018122603

Current(A): 0.2500

LampCAT: LUMILEDS LUXEON 1202S

Power (W): 9.1750

Lamp flux(lm): 1218.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 30

Width(mm): 30

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1128.27

Efficiency(%): 92.63%

Lumens(lm)/Power(W): 125.15

Central intensity(cd): 3526.313

Maximum intensity(cd): 3526.313

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=28.3

[C90/270]Total=28.3

Field angle(10%Imax): [C0/180]Total=53.8

[C90/270]Total=53.8

Maximum s/h(1/2): C0_180=0.47 C90_270=0.47

Maximum s/h(1/4): C0_180=0.49 C90_270=0.49

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.28%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.768%

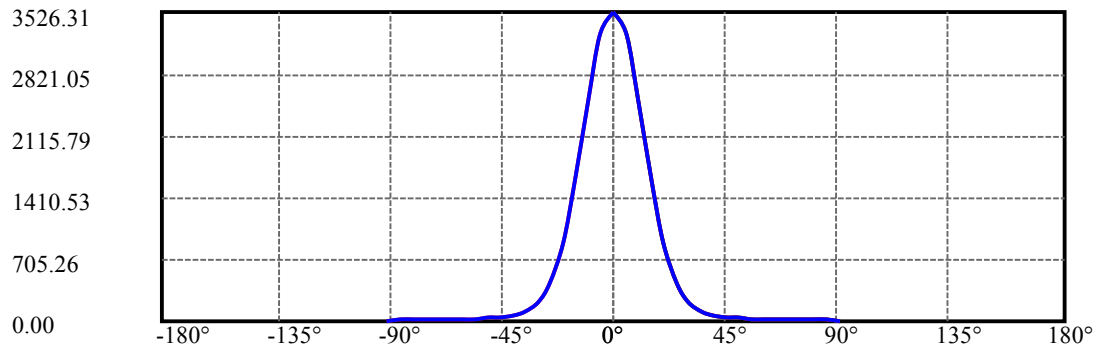
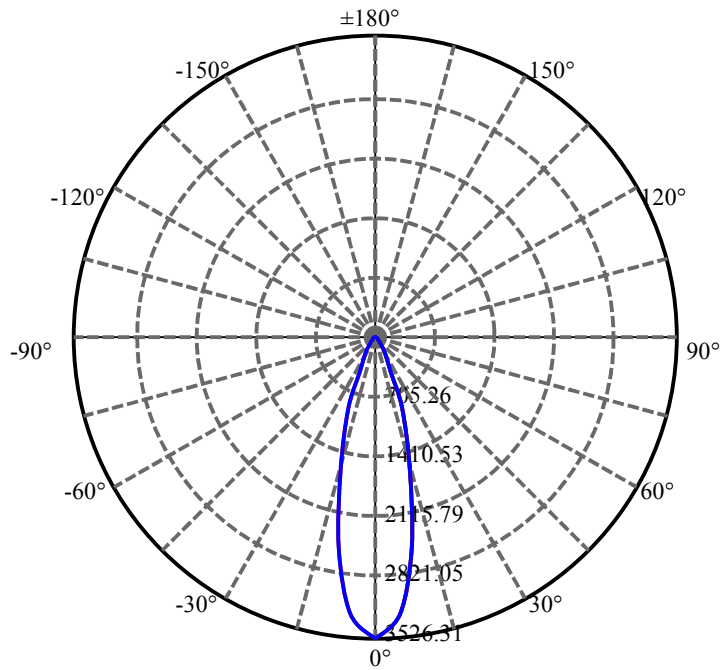
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3526.313	21.088	21.088	1.731%	1.869%
5.0	3257.508	155.622	176.71	12.777%	15.662%
10.0	2514.234	239.313	416.023	19.648%	36.872%
15.0	1604.798	227.670	643.693	18.692%	57.051%
20.0	891.823	167.194	810.886	13.727%	71.870%
25.0	437.442	101.335	912.221	8.320%	80.851%
30.0	212.899	58.349	970.57	4.791%	86.022%
35.0	104.280	32.786	1003.356	2.692%	88.928%
40.0	61.910	21.813	1025.169	1.791%	90.862%
45.0	41.027	15.902	1041.071	1.306%	92.271%
50.0	32.948	13.835	1054.906	1.136%	93.497%
55.0	25.980	11.665	1066.571	.958%	94.531%
60.0	21.396	10.157	1076.728	.834%	95.431%
65.0	19.238	9.557	1086.285	.785%	96.278%
70.0	18.956	9.764	1096.049	.802%	97.144%
75.0	18.998	10.059	1106.108	.826%	98.035%
80.0	20.102	10.851	1116.959	.891%	98.997%
85.0	16.587	9.057	1126.016	.744%	99.800%
90.0	8.241	2.258	1128.275	.185%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	970.57	79.69%	86.02%
0-40	1025.17	84.17%	90.86%
0-60	1076.73	88.40%	95.43%
0-90	1126.02	92.45%	99.80%
0-120	1126.02	92.45%	99.80%
0-180	1128.27	92.63%	100.00%
60-90	59.45	4.88%	5.27%
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%
0-24.53	902.62	74.11%	80.00%

ZONAL LUMEN SUMMARY

0-10	416.02
10-20	394.86
20-30	159.68
30-40	54.60
40-50	29.74
50-60	21.82
60-70	19.32
70-80	20.91
80-90	9.06
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



C0(Max):

C0/C180:

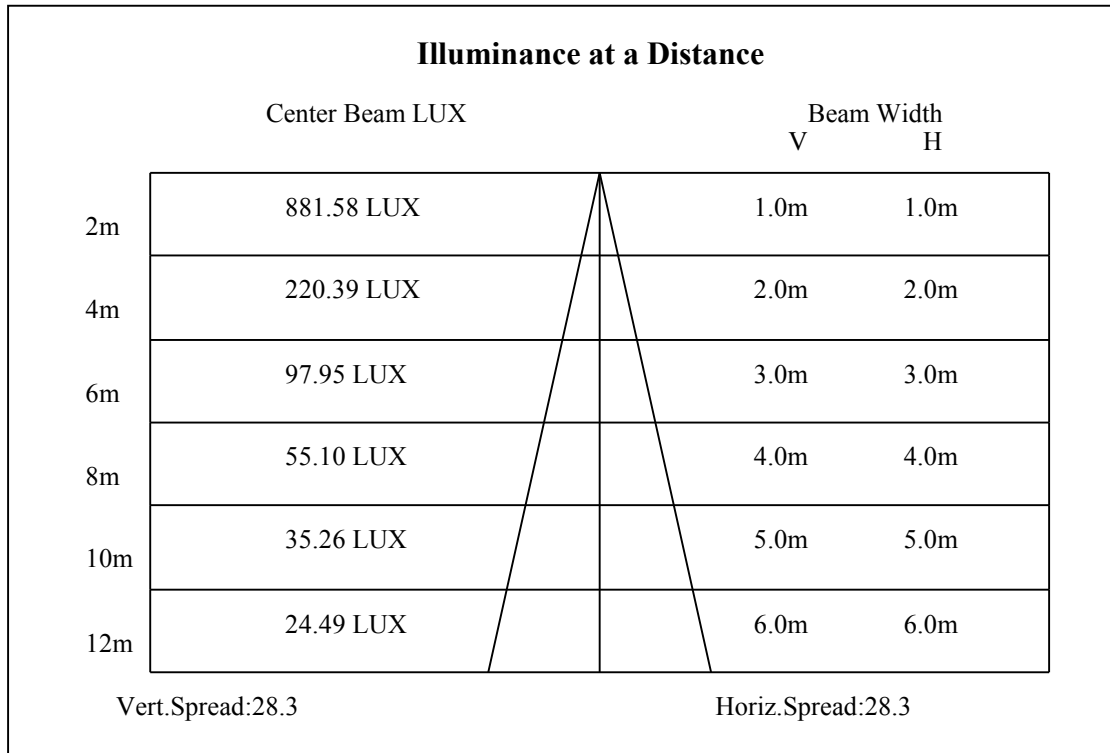
C90/C270:

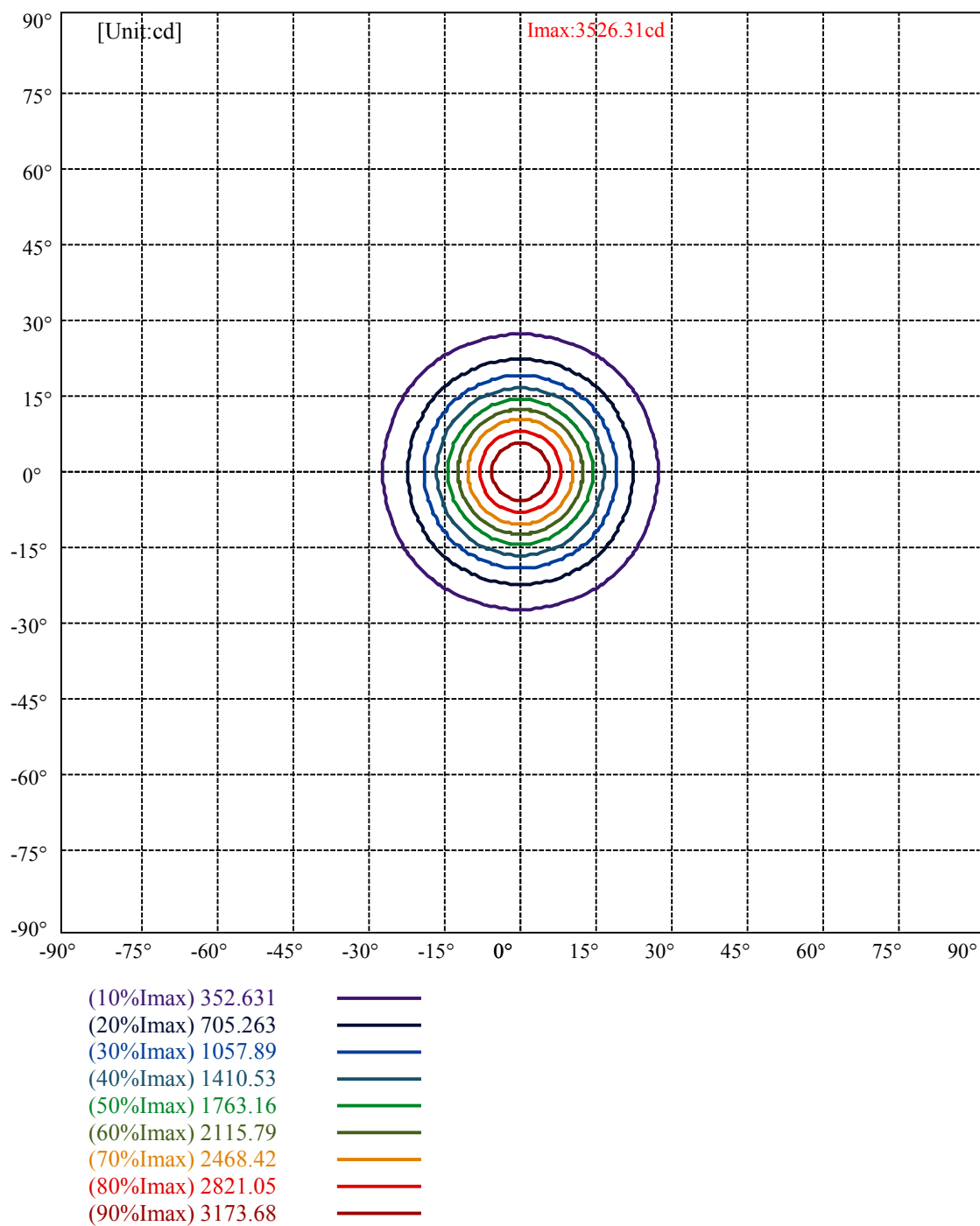
Field angle(10%Imax):C0/180Left:26.9 Right:26.9

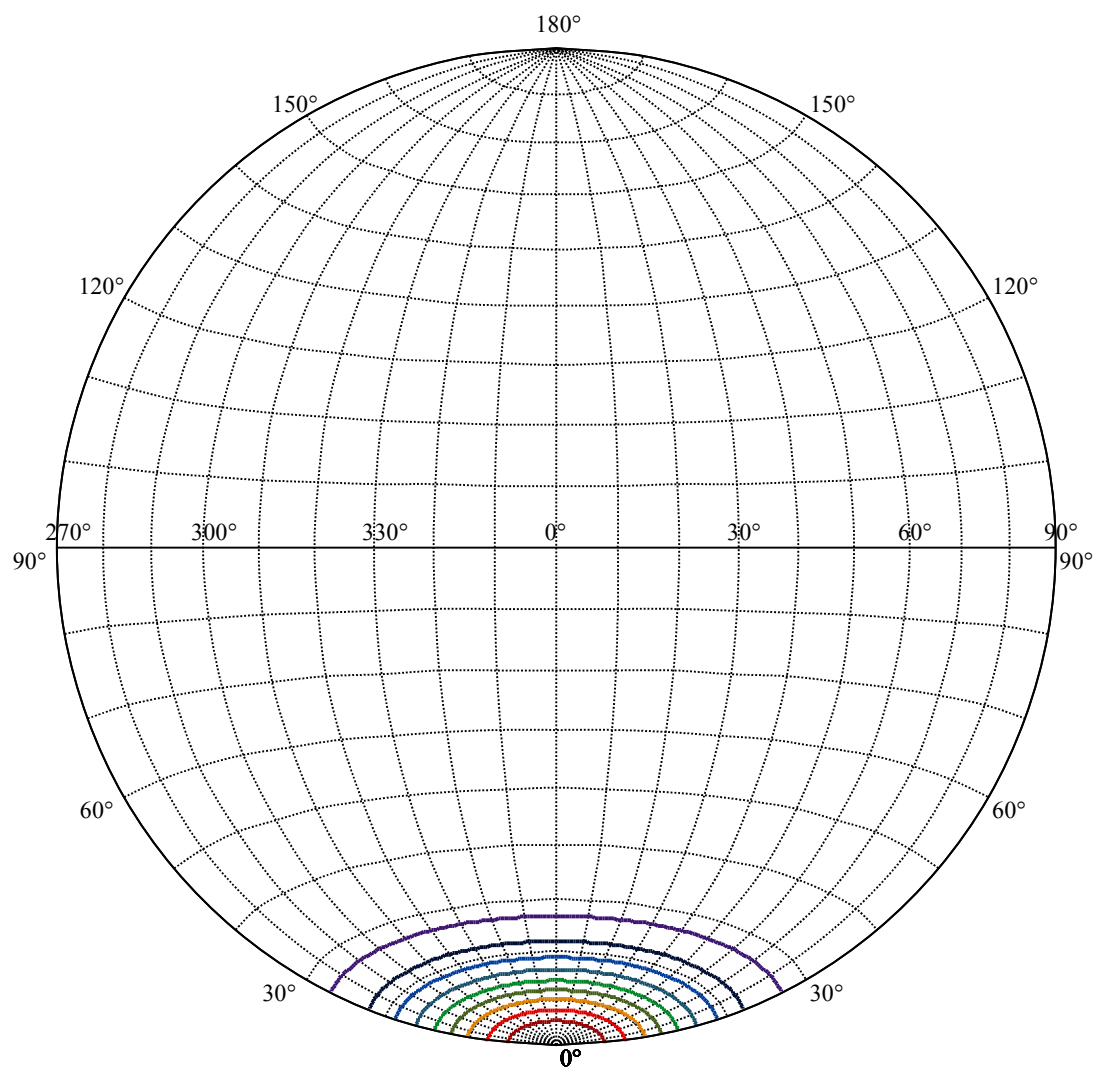
:C90/270Left:26.9 Right:26.9

Beam Angle(50%Imax):C0/180Left:14.1 Right:14.1

:C90/270Left:14.1 Right:14.1







House

[Unit:cd]

Road

Imax:3526.31

(10%Imax) 352.631

(20%Imax) 705.263

(30%Imax) 1057.89

(40%Imax) 1410.53

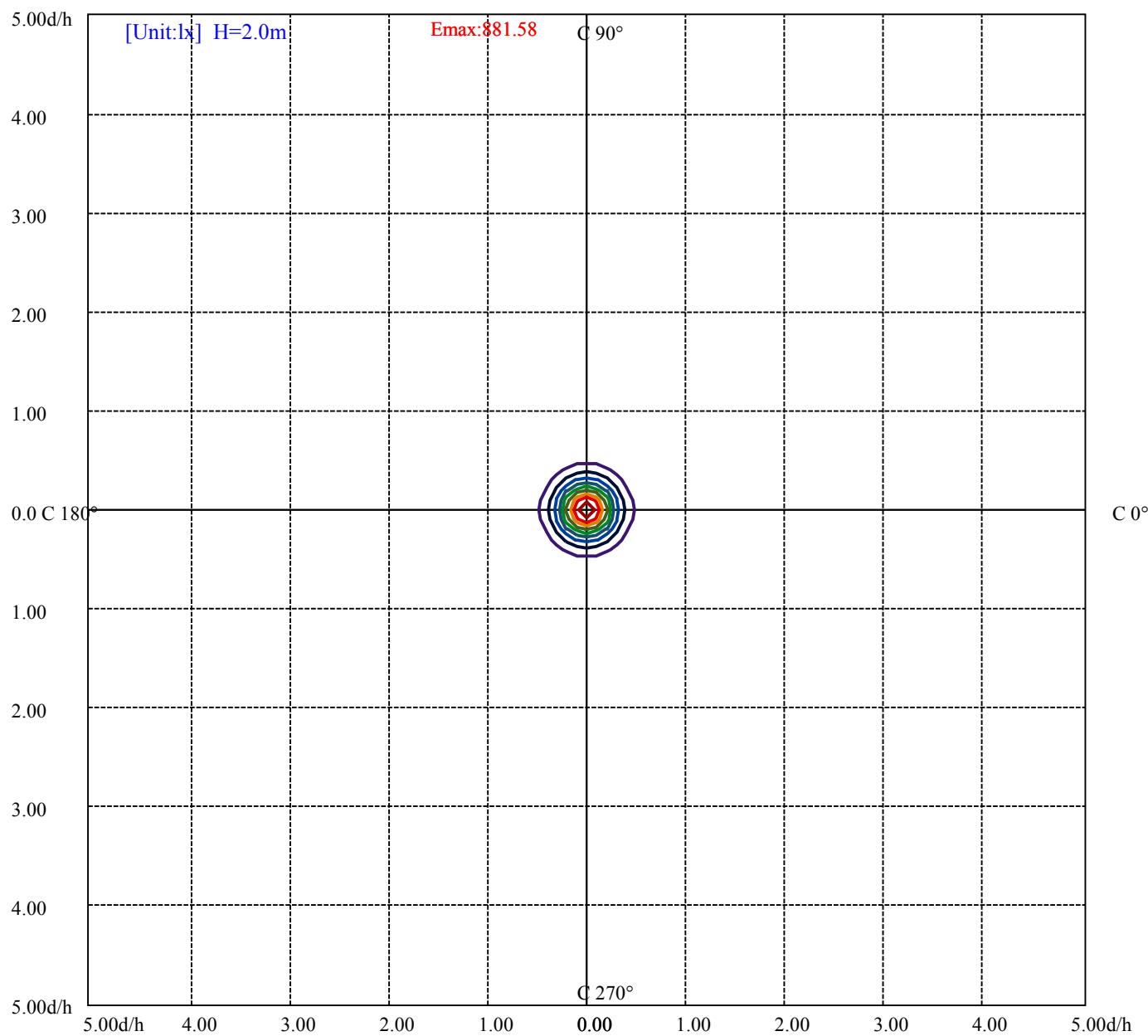
(50%Imax) 1763.16

(60%Imax) 2115.79

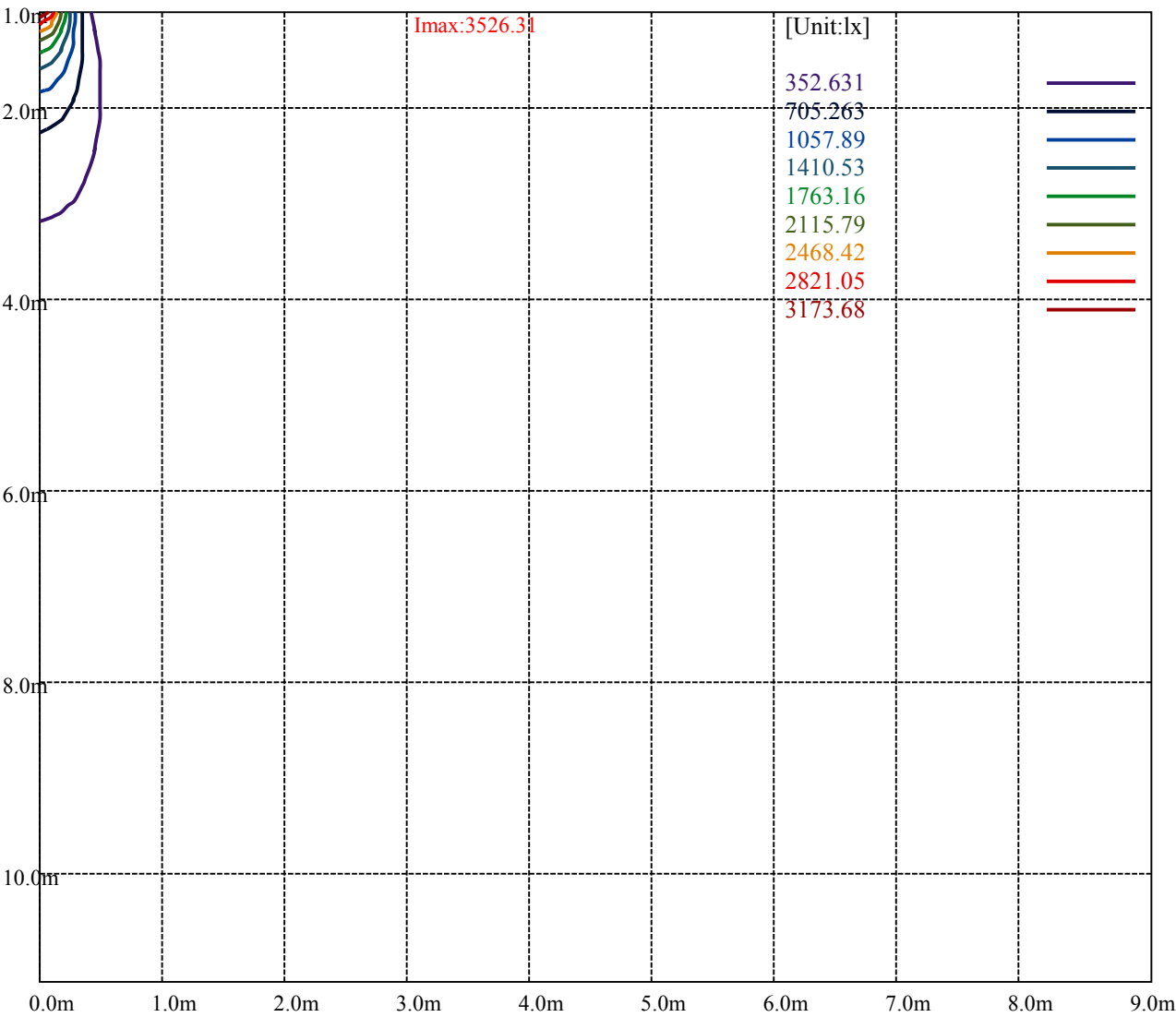
(70%Imax) 2468.42

(80%Imax) 2821.05

(90%Imax) 3173.68



(10%Emax) 88.1575	—
(20%Emax) 176.3152	—
(30%Emax) 264.4725	—
(40%Emax) 352.63	—
(50%Emax) 440.7875	—
(60%Emax) 528.945	—
(70%Emax) 617.1025	—
(80%Emax) 705.26	—
(90%Emax) 793.4175	—



Luminance Table

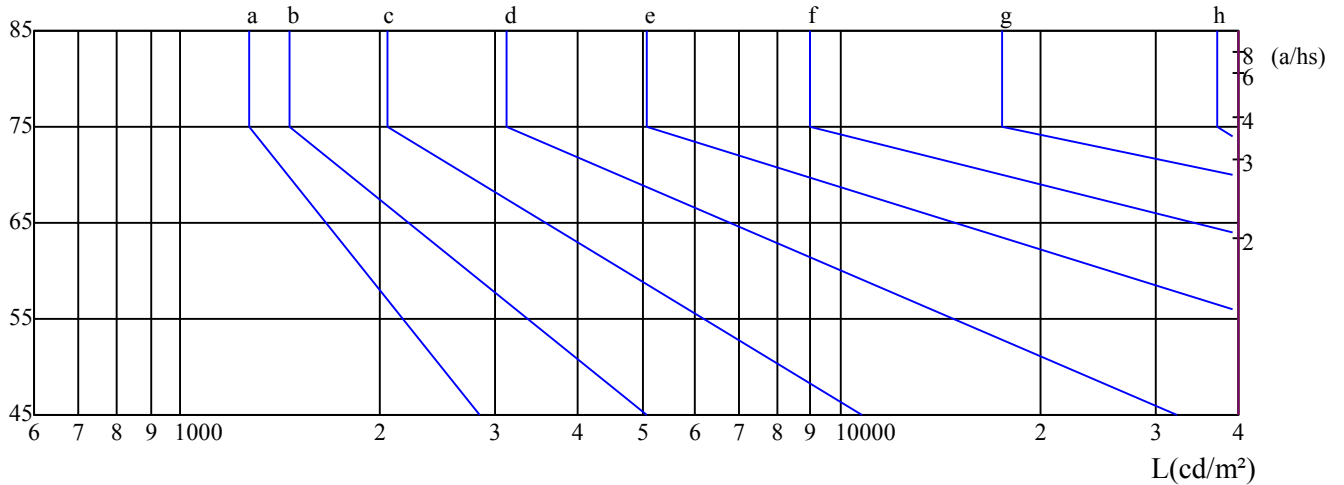
γ	45	50	55	60	65	70	75	80	85
C0	64468	56954	50328	47547	50578	61583	81560	128628	211457
C45	64468	56954	50328	47547	50578	61583	81560	128628	211457
C90	64468	56954	50328	47547	50578	61583	81560	128628	211457

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
50578	50578	50578	81560	81560	81560	211457	211457	211457

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

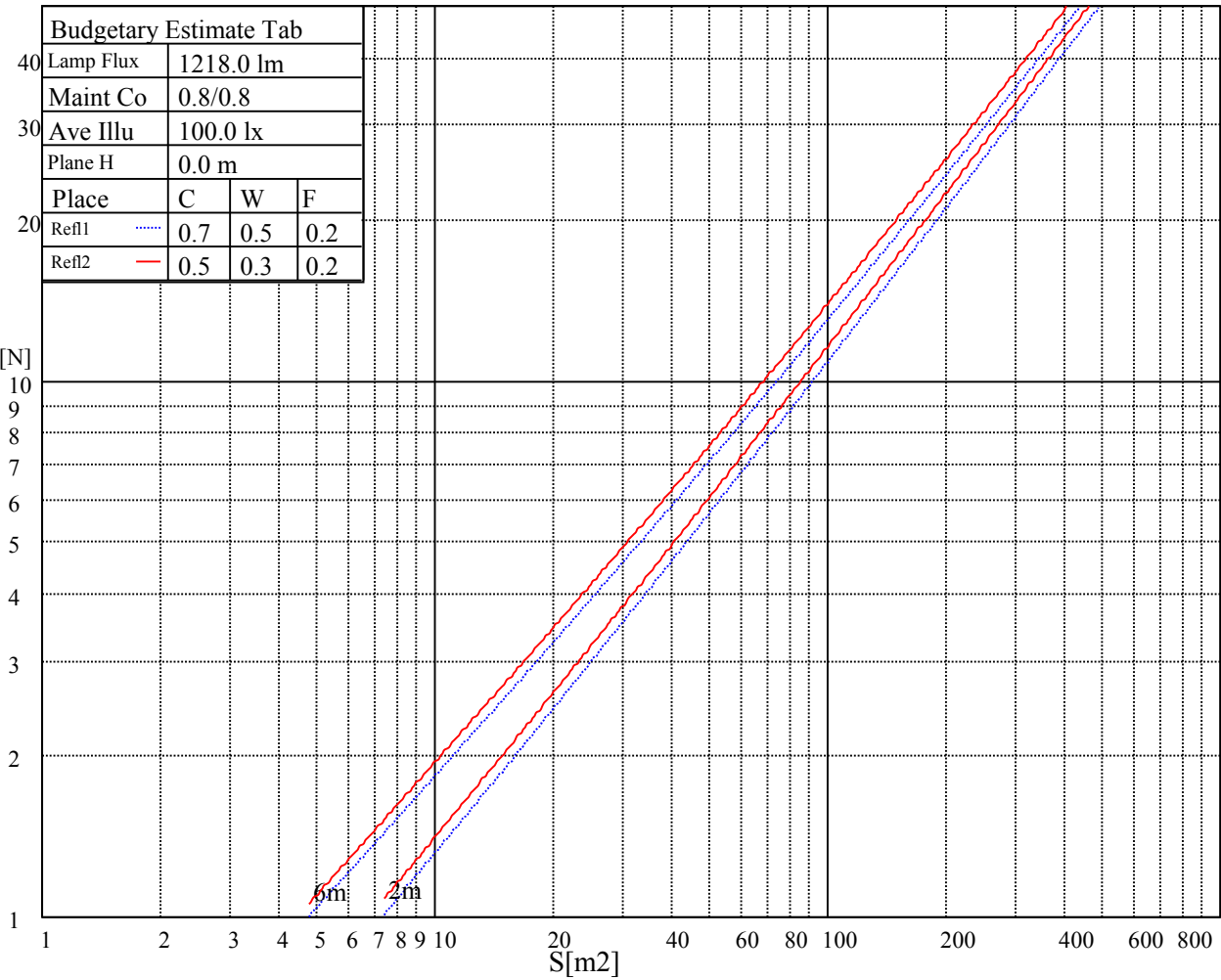
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

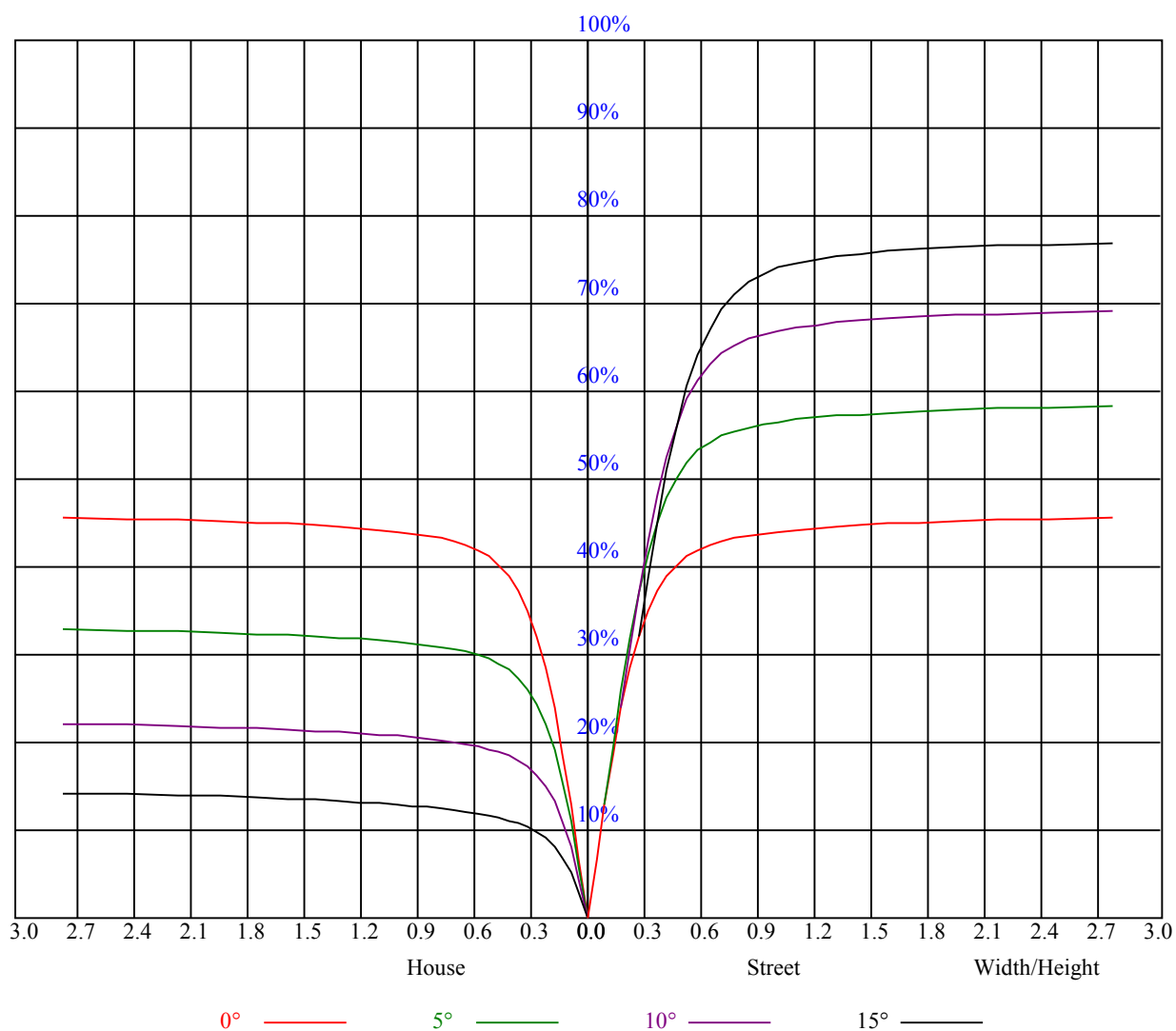
C0 ———

C45 ———

C90 ———



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	1.12	1.12	1.12	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.03	1.00	0.97	1.01	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.87	0.86
2	0.97	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.81
3	0.92	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.78
4	0.88	0.83	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.79	0.77	0.81	0.78	0.76	0.75
5	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.72
6	0.81	0.76	0.72	0.80	0.75	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.67
8	0.75	0.71	0.67	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.65
9	0.73	0.68	0.65	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.64
10	0.71	0.66	0.63	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62



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	3534.75	3125.81	2181.94	1279.69	652.50	318.38	146.48	77.79	49.33	
45.0	3538.69	3306.94	2499.75	1568.81	827.44	377.44	162.39	78.30	49.67	
90.0	3544.88	3387.38	2661.19	1719.00	1004.51	495.84	239.01	113.34	67.33	
135.0	3486.94	3564.00	3132.56	2169.00	1301.06	680.63	351.56	166.05	94.33	
180.0	3534.75	3481.31	2838.94	1950.75	1095.13	564.92	287.55	134.21	78.53	
225.0	3538.69	3228.75	2455.88	1513.13	831.54	376.93	166.89	82.01	53.04	
270.0	3544.88	3130.88	2336.63	1517.63	802.69	387.00	194.46	96.41	56.08	
315.0	3486.94	2835.00	2007.00	1120.39	619.71	298.41	154.86	86.12	46.97	
360.0	3534.75	3125.81	2181.94	1279.69	652.50	318.38	146.48	77.79	49.33	
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	35.27	29.81	25.54	22.67	19.91	16.76	15.58	16.76	14.23	
45.0	37.13	31.28	25.93	21.26	18.62	16.99	15.13	14.79	15.36	
90.0	41.91	31.61	25.59	20.31	17.10	16.09	14.34	15.30	13.61	
135.0	55.58	36.34	29.14	23.46	18.23	16.82	17.10	24.81	24.92	
180.0	52.31	38.53	30.43	24.58	20.36	18.51	15.98	14.01	13.33	
225.0	38.64	31.78	25.43	20.36	17.72	16.88	16.43	15.92	14.34	
270.0	36.56	29.14	24.92	19.97	18.45	16.48	18.34	19.97	16.93	
315.0	30.83	35.10	20.87	18.56	23.51	33.13	39.09	39.26	19.97	
360.0	35.27	29.81	25.54	22.67	19.91	16.76	15.58	16.76	14.23	
C/ γ (°)	90.0									
0.0	7.59									
45.0	7.93									
90.0	8.83									
135.0	9.90									
180.0	9.51									
225.0	7.48									
270.0	7.03									
315.0	7.65									
360.0	7.59									