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NATA

LumCAT: LM04L05090BQ

Luminaire:

Report No: NATA0100

Voltage(V): 12.4000

Test No: GC2018113005

Current(A): 0.3000

LampCAT: LUMILEDS LUXEON 3030 2D(ROUND LES) Power (W): 3.7200

Lamp flux(lm): 404.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 50

Width(mm): 50

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 378.88

Efficiency(%): 93.78%

Lumens(lm)/Power(W): 102.02

Central intensity(cd): 168.469

Maximum intensity(cd): 168.469

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=95.8

[C90/270]Total=95.8

Field angle(10%Imax): [C0/180]Total=133.3

[C90/270]Total=133.3

Maximum s/h(1/2): C0_180=1.37 C90_270=1.37

Maximum s/h(1/4): C0_180=1.34 C90_270=1.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.94%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.125%

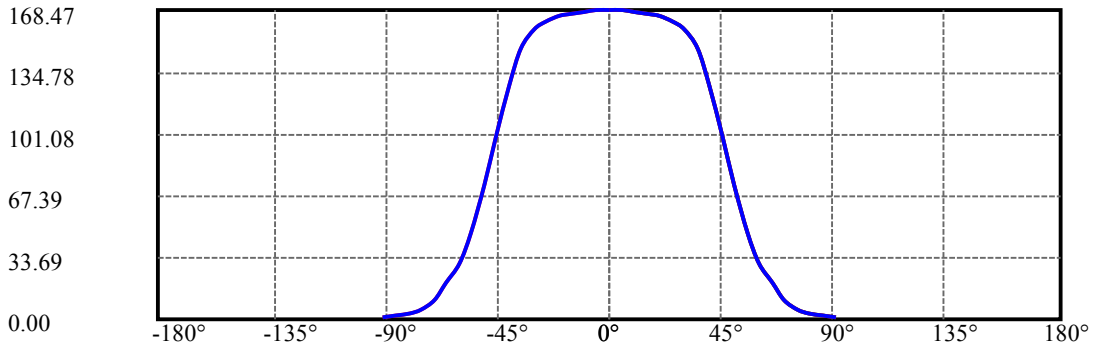
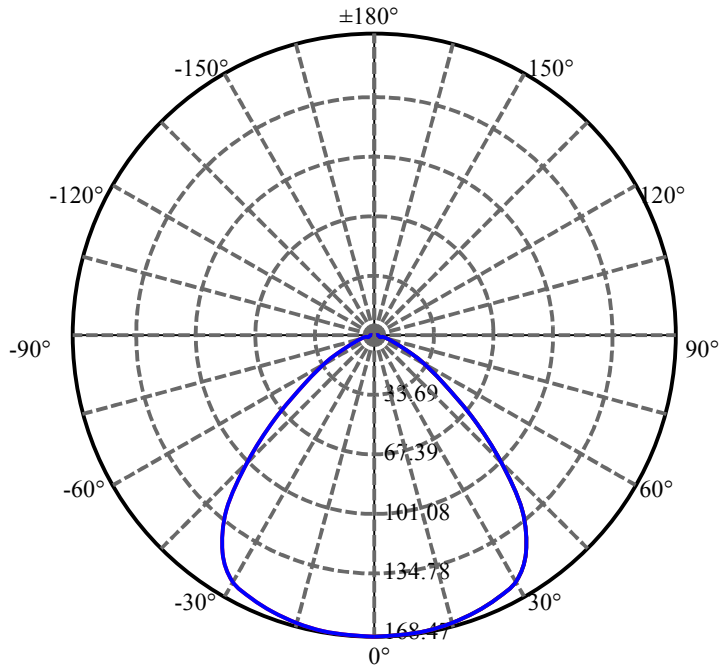
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	168.469	1.007	1.007	.249%	.266%
5.0	168.328	8.042	9.049	1.990%	2.388%
10.0	167.660	15.958	25.007	3.950%	6.600%
15.0	166.282	23.590	48.598	5.839%	12.827%
20.0	164.848	30.905	79.502	7.650%	20.983%
25.0	162.668	37.683	117.185	9.327%	30.929%
30.0	158.449	43.426	160.611	10.749%	42.391%
35.0	147.909	46.503	207.113	11.511%	54.664%
40.0	127.793	45.026	252.139	11.145%	66.548%
45.0	99.759	38.666	290.805	9.571%	76.753%
50.0	73.090	30.690	321.495	7.597%	84.854%
55.0	47.152	21.171	342.667	5.240%	90.441%
60.0	30.684	14.566	357.233	3.605%	94.286%
65.0	20.025	9.948	367.181	2.462%	96.911%
70.0	10.343	5.327	372.508	1.319%	98.318%
75.0	5.217	2.762	375.271	.684%	99.047%
80.0	3.403	1.837	377.108	.455%	99.531%
85.0	2.595	1.417	378.524	.351%	99.905%
90.0	1.308	0.358	378.883	.089%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	160.61	39.76%	42.39%
0-40	252.14	62.41%	66.55%
0-60	357.23	88.42%	94.29%
0-90	378.52	93.69%	99.91%
0-120	378.52	93.69%	99.91%
0-180	378.88	93.78%	100.00%
60-90	35.86	8.88%	9.46%
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%
0-47.00	303.11	75.03%	80.00%

ZONAL LUMEN SUMMARY

0-10	25.01
10-20	54.49
20-30	81.11
30-40	91.53
40-50	69.36
50-60	35.74
60-70	15.28
70-80	4.60
80-90	1.42
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: —————

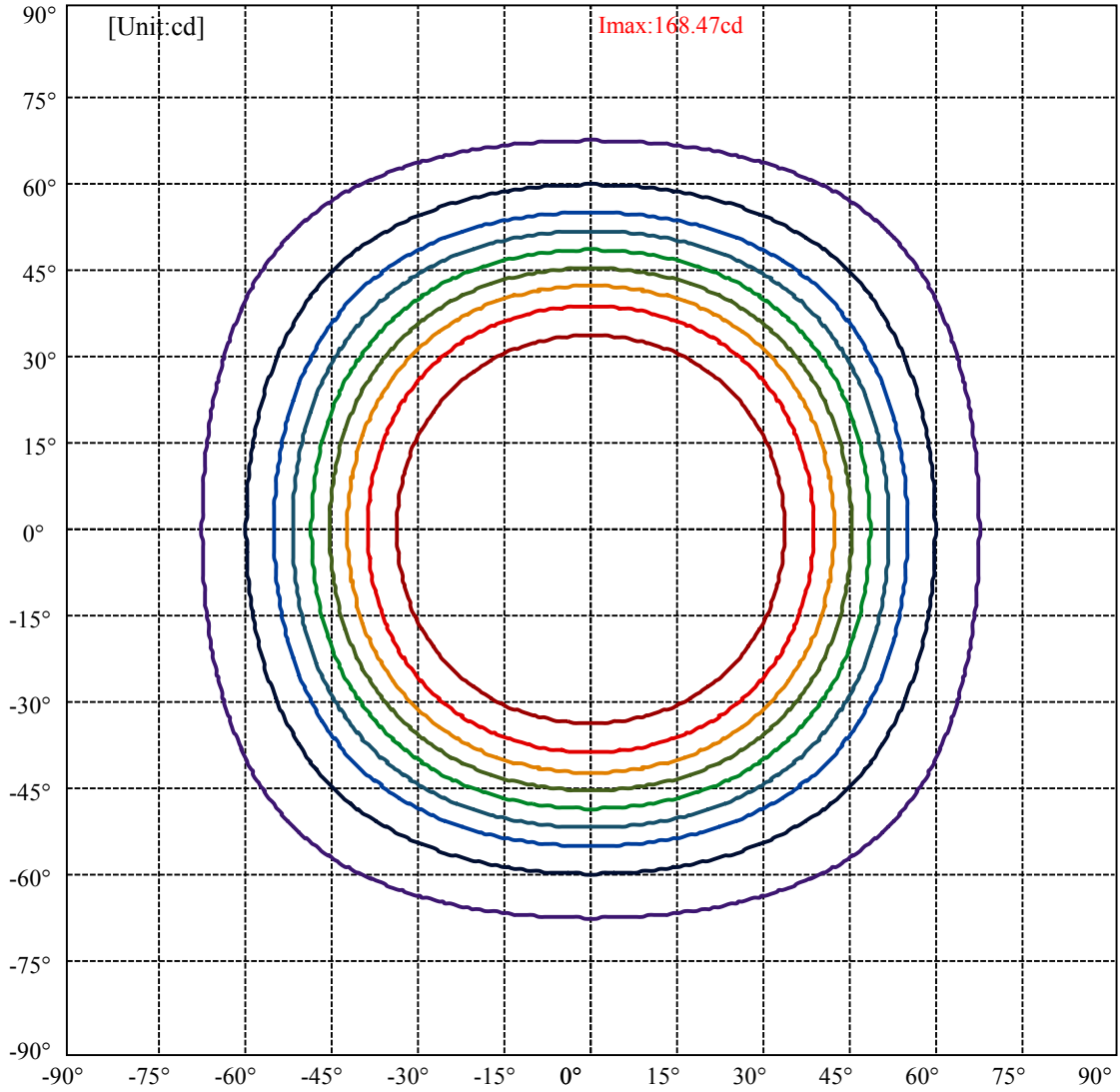
C90/C270: —————

Field angle(10%Imax):C0/180Left:66.6 Right:66.6

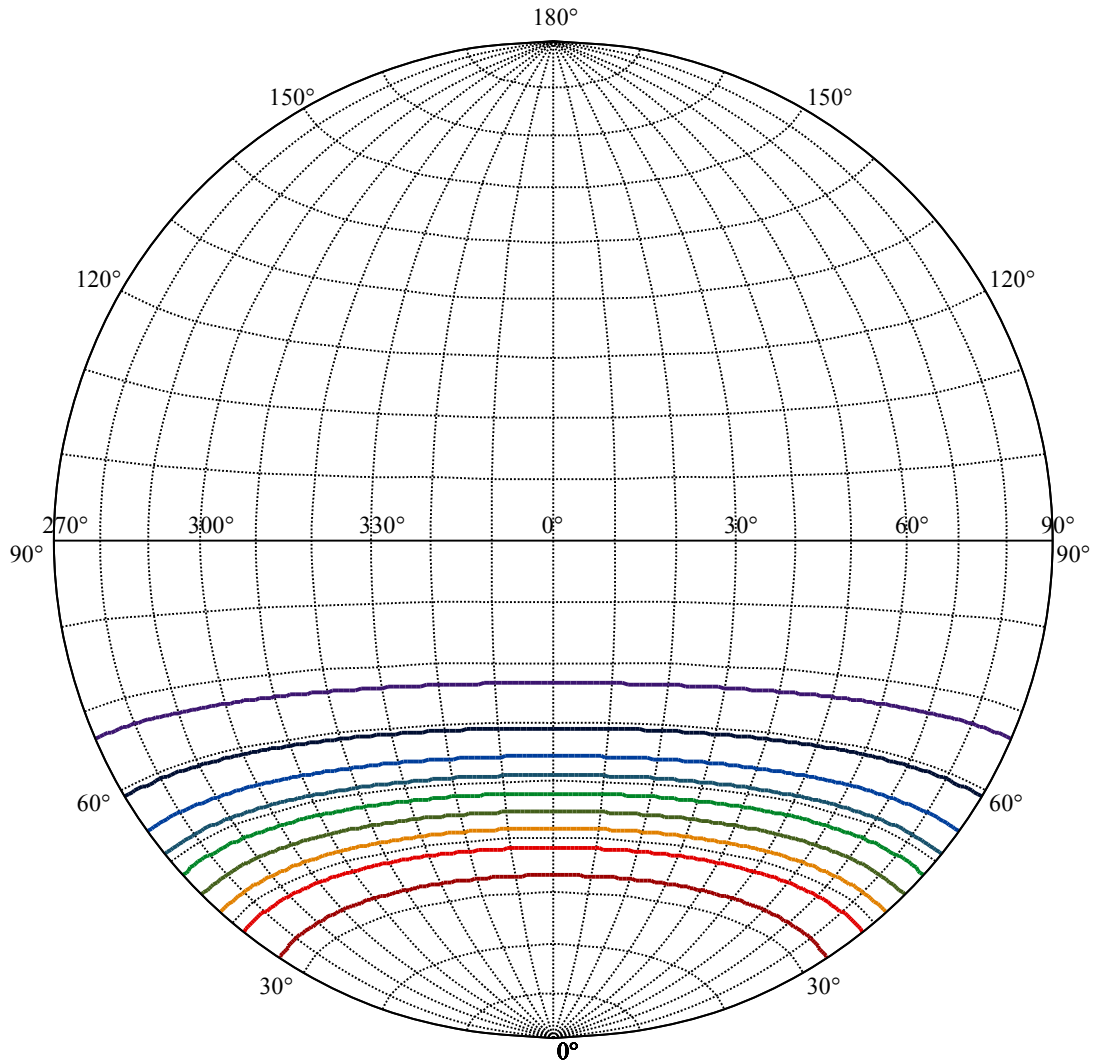
:C90/270Left:66.6 Right:66.6

Beam Angle(50%Imax):C0/180Left:47.9 Right:47.9

:C90/270Left:47.9 Right:47.9



(10%Imax) 16.8469	—
(20%Imax) 33.6938	—
(30%Imax) 50.5406	—
(40%Imax) 67.3875	—
(50%Imax) 84.2344	—
(60%Imax) 101.081	—
(70%Imax) 117.928	—
(80%Imax) 134.775	—
(90%Imax) 151.622	—



House

[Unit:cd]

Road

Imax:168.47

(10%Imax) 16.8469

(20%Imax) 33.6938

(30%Imax) 50.5406

(40%Imax) 67.3875

(50%Imax) 84.2344

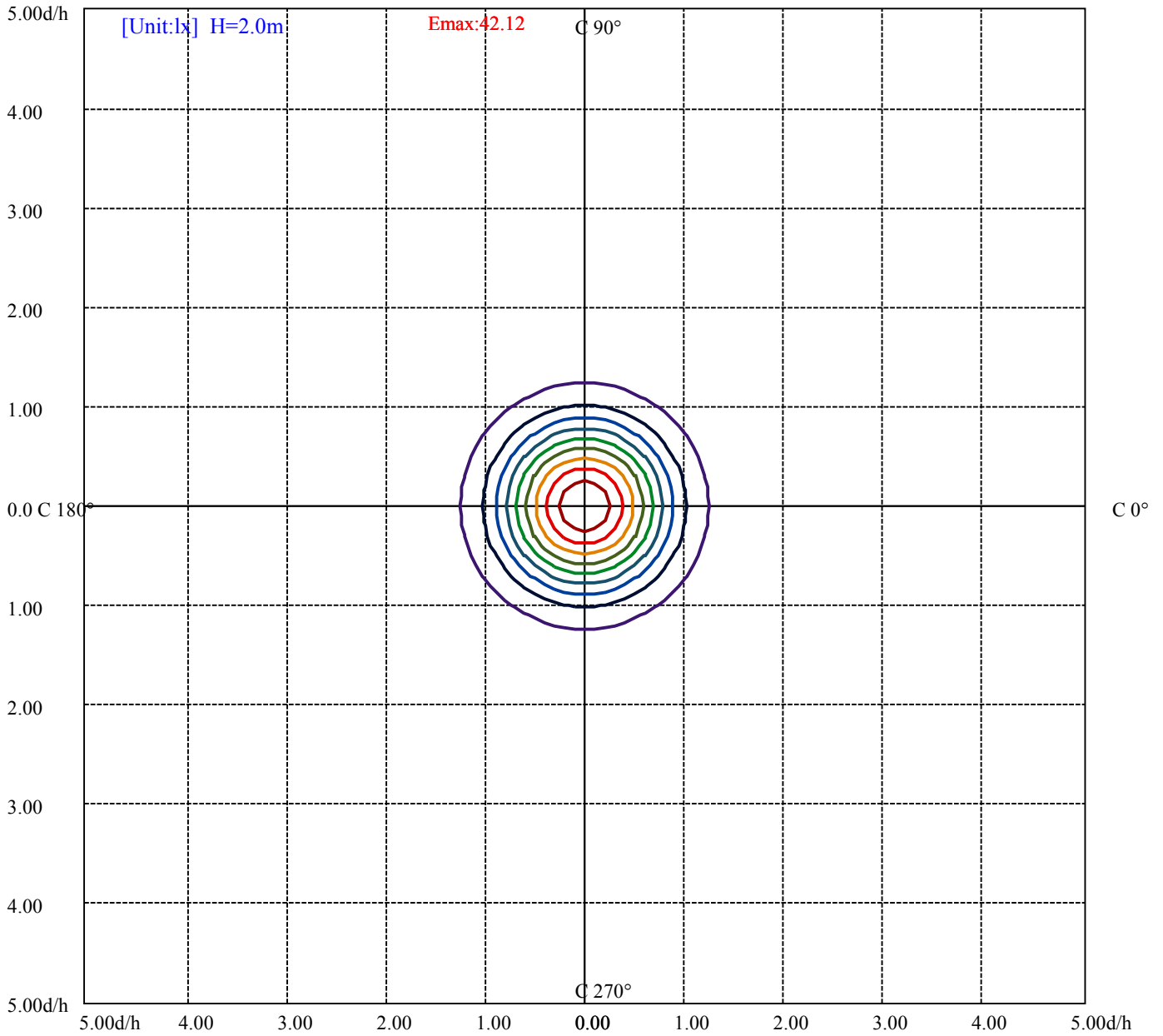
(60%Imax) 101.081

(70%Imax) 117.928

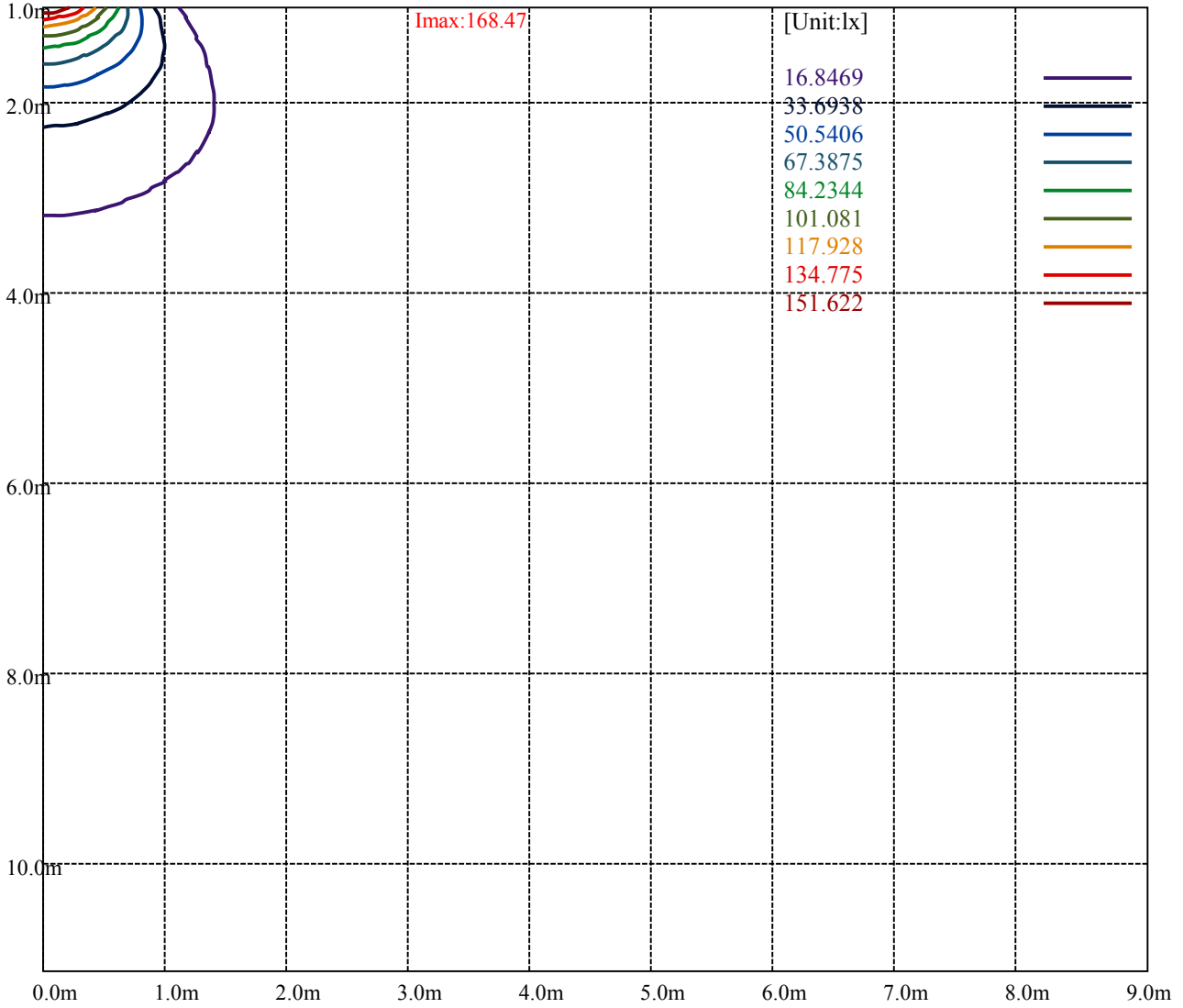
(80%Imax) 134.775

(90%Imax) 151.622





- (10%Emax) 4.211725
- (20%Emax) 8.42345
- (30%Emax) 12.63515
- (40%Emax) 16.84687
- (50%Emax) 21.0586
- (60%Emax) 25.27025
- (70%Emax) 29.482
- (80%Emax) 33.69375
- (90%Emax) 37.9055



Luminance Table

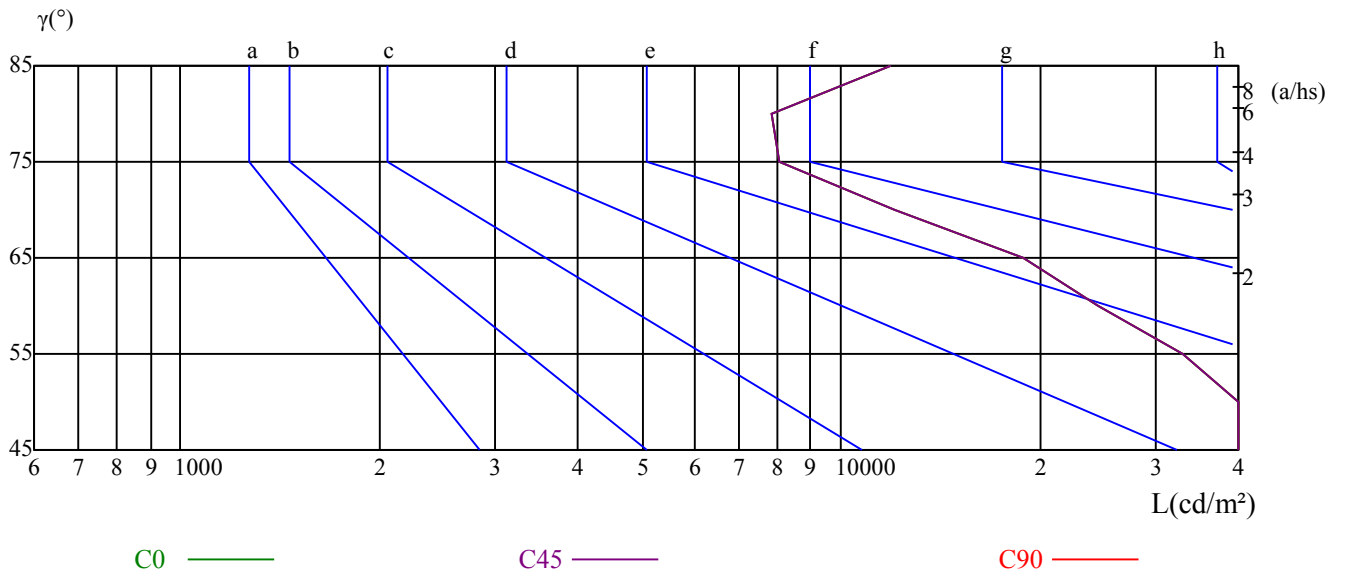
γ	45	50	55	60	65	70	75	80	85
C0	56432	45483	32882	24548	18953	12096	8063	7839	11908
C45	56432	45483	32882	24548	18953	12096	8063	7839	11908
C90	56432	45483	32882	24548	18953	12096	8063	7839	11908

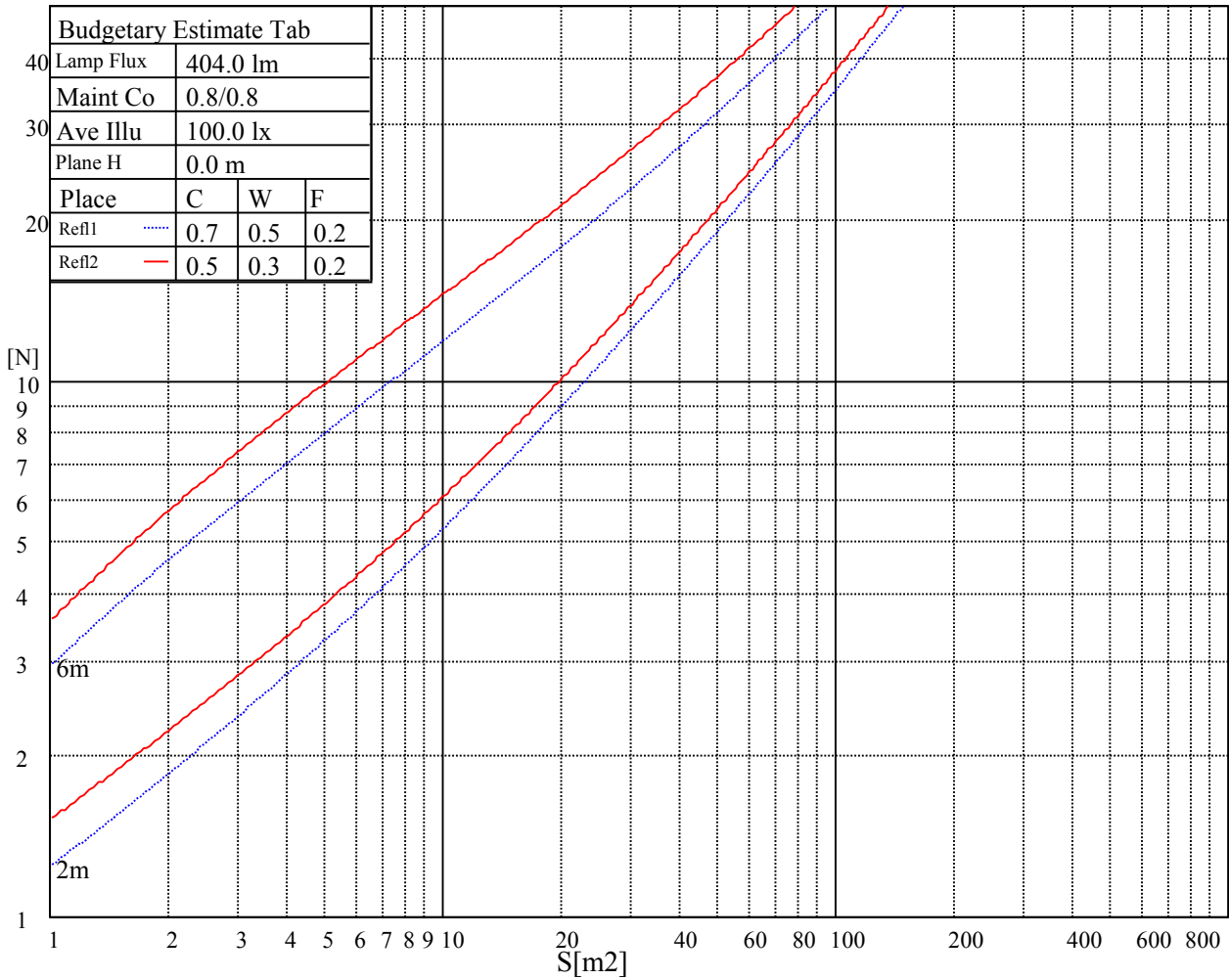
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
18953	18953	18953	8063	8063	8063	11908	11908	11908

Glare Table

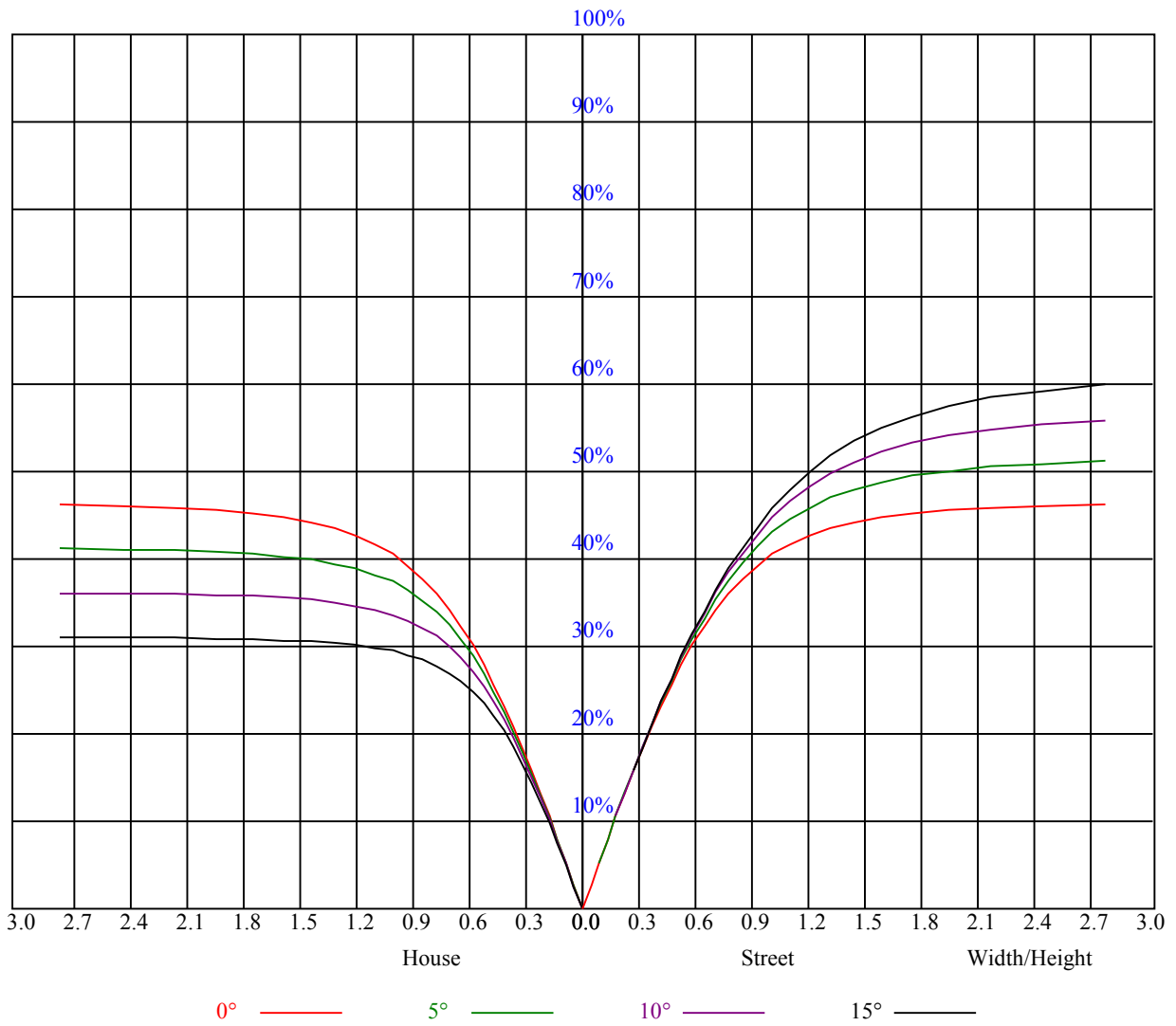
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.01	0.98	0.95	0.99	0.96	0.94	0.95	0.93	0.91	0.92	0.90	0.88	0.88	0.87	0.86	0.84
2	0.91	0.86	0.82	0.90	0.85	0.81	0.87	0.83	0.80	0.84	0.81	0.78	0.81	0.78	0.76	0.74
3	0.83	0.77	0.72	0.81	0.76	0.71	0.79	0.74	0.70	0.76	0.72	0.69	0.74	0.71	0.68	0.66
4	0.75	0.68	0.63	0.74	0.68	0.63	0.72	0.66	0.62	0.70	0.65	0.61	0.68	0.64	0.61	0.59
5	0.69	0.62	0.56	0.68	0.61	0.56	0.66	0.60	0.56	0.64	0.59	0.55	0.62	0.58	0.54	0.53
6	0.63	0.56	0.51	0.62	0.55	0.50	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.49	0.48
7	0.58	0.51	0.46	0.57	0.50	0.46	0.56	0.50	0.45	0.54	0.49	0.45	0.53	0.48	0.45	0.43
8	0.53	0.46	0.42	0.53	0.46	0.41	0.52	0.45	0.41	0.50	0.45	0.41	0.49	0.44	0.41	0.39
9	0.49	0.43	0.38	0.49	0.42	0.38	0.48	0.42	0.38	0.47	0.41	0.38	0.46	0.41	0.37	0.36
10	0.46	0.39	0.35	0.45	0.39	0.35	0.45	0.39	0.35	0.44	0.38	0.35	0.43	0.38	0.34	0.33



NATA LM04L05090BQ

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	169.20	169.43	168.58	166.95	166.56	166.39	164.70	158.79	142.65
45.0	166.73	167.34	167.96	167.23	166.05	165.43	163.29	155.59	140.18
90.0	168.69	168.98	168.24	167.12	165.66	163.91	160.03	150.64	130.56
135.0	169.26	168.69	166.44	163.41	160.99	158.57	154.07	143.89	125.38
180.0	169.20	168.19	165.83	162.51	159.81	156.15	150.75	138.09	115.43
225.0	166.73	166.84	167.12	166.67	164.87	160.82	155.25	140.57	115.76
270.0	168.69	168.02	167.57	167.01	165.99	163.18	157.16	145.35	124.76
315.0	169.26	169.14	169.54	169.37	168.86	166.89	162.34	150.36	127.63
360.0	169.20	169.43	168.58	166.95	166.56	166.39	164.70	158.79	142.65

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	114.86	85.39	58.33	37.58	26.66	15.69	5.79	3.54	2.98
45.0	112.44	86.29	58.11	37.29	26.21	14.74	7.31	4.67	3.38
90.0	104.57	78.08	49.89	32.06	21.66	10.80	5.06	3.15	2.53
135.0	96.64	71.10	46.80	30.49	19.74	9.62	5.68	3.83	2.64
180.0	85.73	61.93	38.25	25.65	14.85	6.92	3.77	2.70	2.14
225.0	85.89	60.13	37.35	24.98	14.23	6.98	4.50	2.87	2.25
270.0	99.68	69.47	42.58	25.88	15.30	7.65	3.83	2.53	2.03
315.0	98.27	72.34	45.90	31.56	21.54	10.35	5.79	3.94	2.81
360.0	114.86	85.39	58.33	37.58	26.66	15.69	5.79	3.54	2.98

C/γ(°)	90.0
0.0	1.35
45.0	1.24
90.0	1.29
135.0	1.35
180.0	1.35
225.0	1.24
270.0	1.29
315.0	1.35
360.0	1.35