
Nata

LumCAT: 3-1701-N

Luminaire: 92.70.045.00+92.70.061.00

Report No: NT2018041306

Test No: nata-0100

LampCAT: LUXEON COB 1208

Lamp flux(lm): 2587.5

Number of Lamps: 1

Length(mm): 86

Phm Type: C

Voltage(V): 34.9000

Current(A): 0.6000

Power (W): 20.9400

PF: 0.0000

Ballast type: DC

Width(mm): 86

Height(mm): 0

Photometric Results

Lumens(lm): 2172.89

Efficiency(%): 83.98%

Lumens(lm)/Power(W): 103.77

Central intensity(cd): 11904.570

Maximum intensity(cd): 11904.570

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=19.1

[C90/270]Total=19.1

Field angle(10%Imax): [C0/180]Total=38.3

[C90/270]Total=38.3

Maximum s/h(1/2): C0_180=0.33 C90_270=0.33

Maximum s/h(1/4): C0_180=0.33 C90_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.65%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.059%

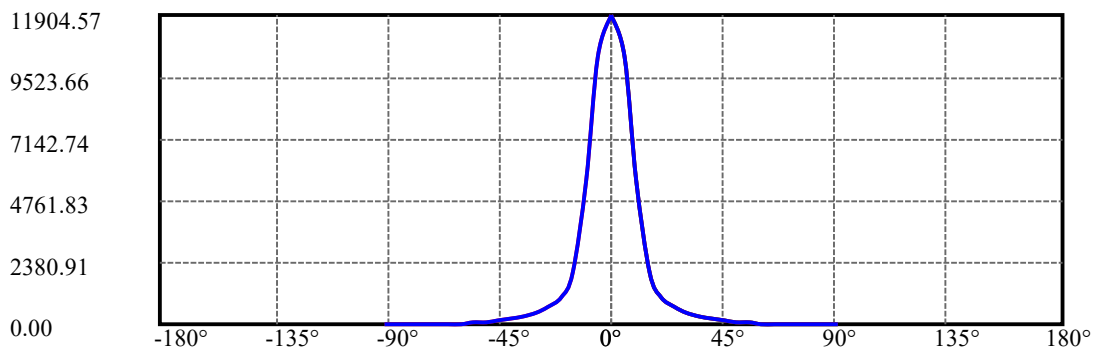
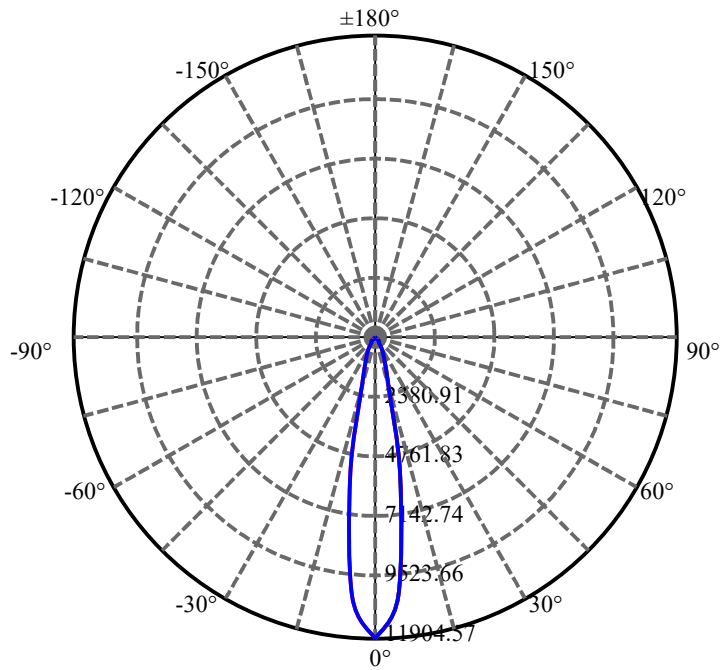
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11904.570	71.192	71.192	2.751%	3.276%
5.0	10300.364	492.083	563.274	19.018%	25.923%
10.0	5508.875	524.352	1087.626	20.265%	50.054%
15.0	2003.227	284.195	1371.82	10.983%	63.133%
20.0	1029.775	193.056	1564.877	7.461%	72.018%
25.0	678.515	157.180	1722.056	6.075%	79.252%
30.0	457.003	125.250	1847.307	4.841%	85.016%
35.0	302.817	95.205	1942.512	3.679%	89.398%
40.0	207.487	73.105	2015.617	2.825%	92.762%
45.0	127.401	49.379	2064.996	1.908%	95.035%
50.0	79.047	33.192	2098.188	1.283%	96.562%
55.0	44.444	19.956	2118.144	.771%	97.481%
60.0	27.563	13.084	2131.228	.506%	98.083%
65.0	20.213	10.041	2141.269	.388%	98.545%
70.0	17.226	8.873	2150.142	.343%	98.953%
75.0	15.092	7.991	2158.133	.309%	99.321%
80.0	12.945	6.988	2165.12	.270%	99.642%
85.0	10.082	5.505	2170.626	.213%	99.896%
90.0	8.258	2.263	2172.889	.087%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1847.31	71.39%	85.02%
0-40	2015.62	77.90%	92.76%
0-60	2131.23	82.37%	98.08%
0-90	2170.63	83.89%	99.90%
0-120	2170.63	83.89%	99.90%
0-180	2172.89	83.98%	100.00%
60-90	52.48	2.03%	2.42%
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%
0-25.65	1738.31	67.18%	80.00%

ZONAL LUMEN SUMMARY

0-10	1087.63
10-20	477.25
20-30	282.43
30-40	168.31
40-50	82.57
50-60	33.04
60-70	18.91
70-80	14.98
80-90	5.51
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:

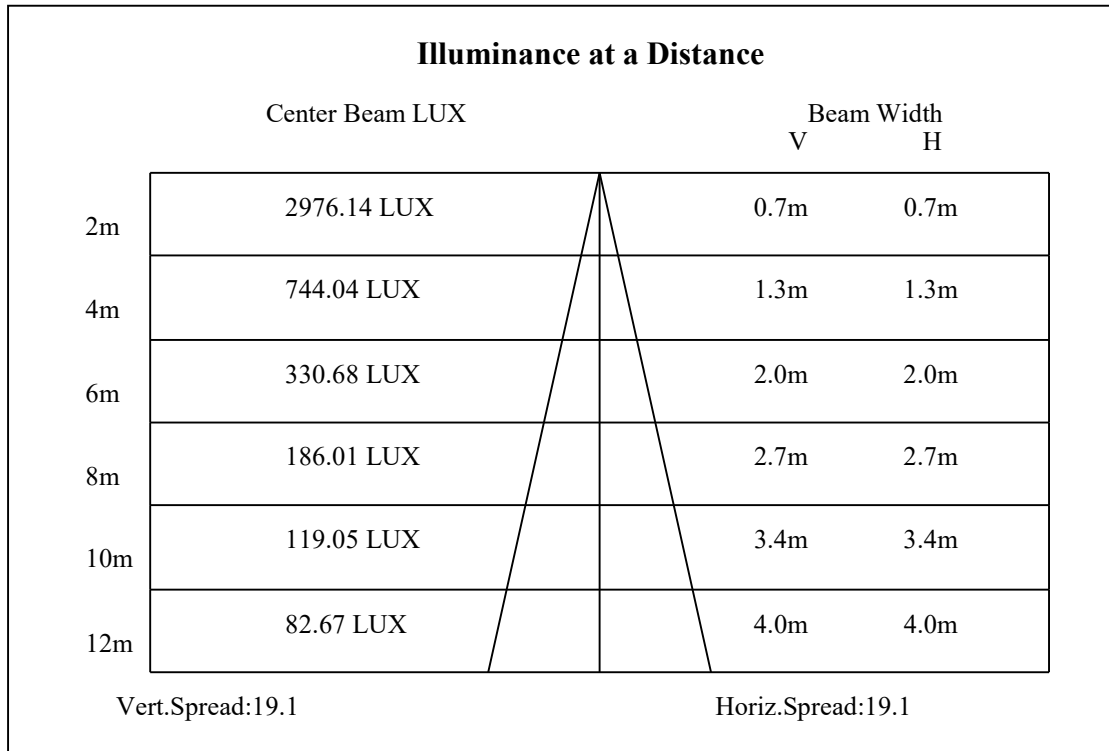
C90/C270:

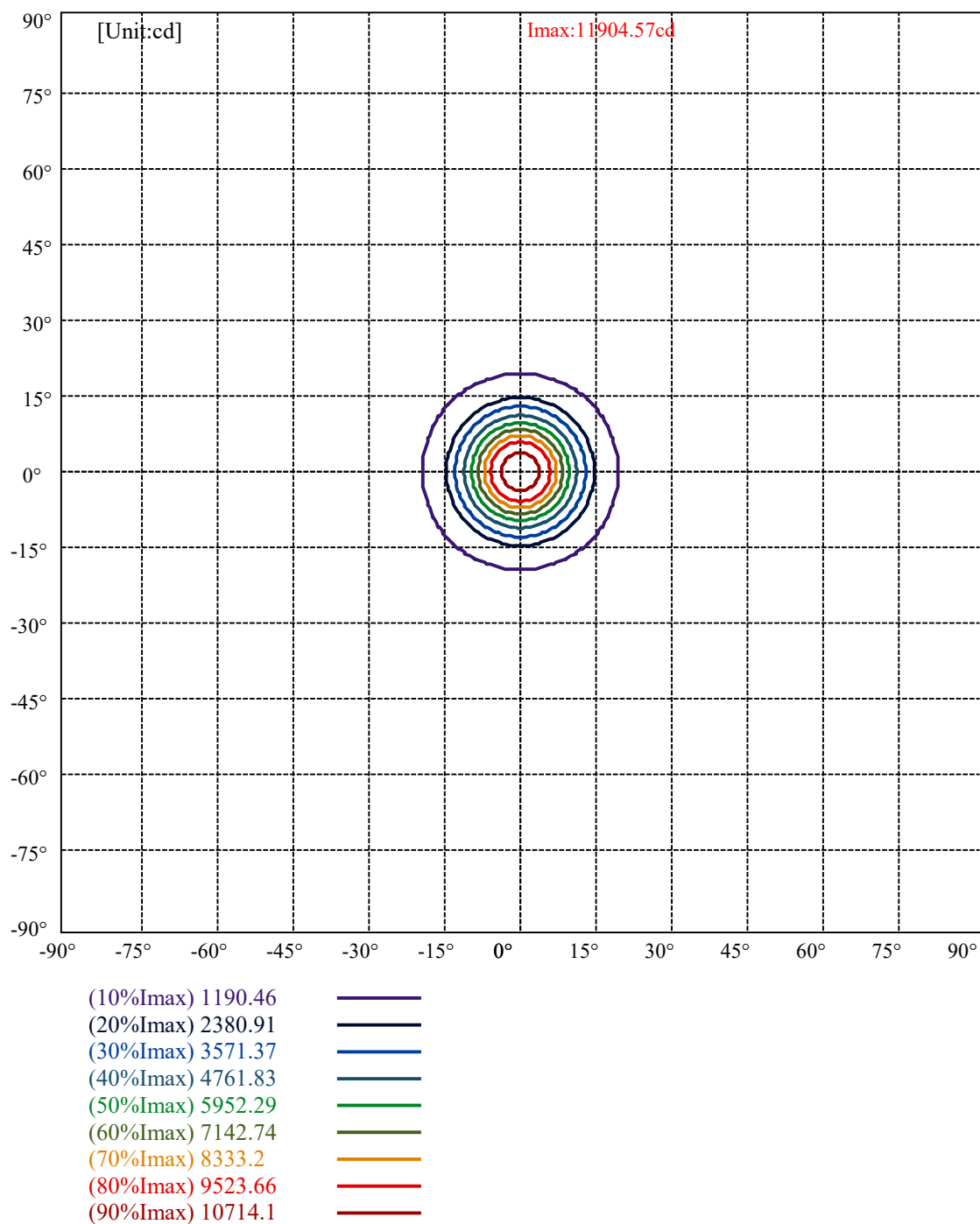
Field angle(10%Imax):C0/180Left:19.2 Right:19.2

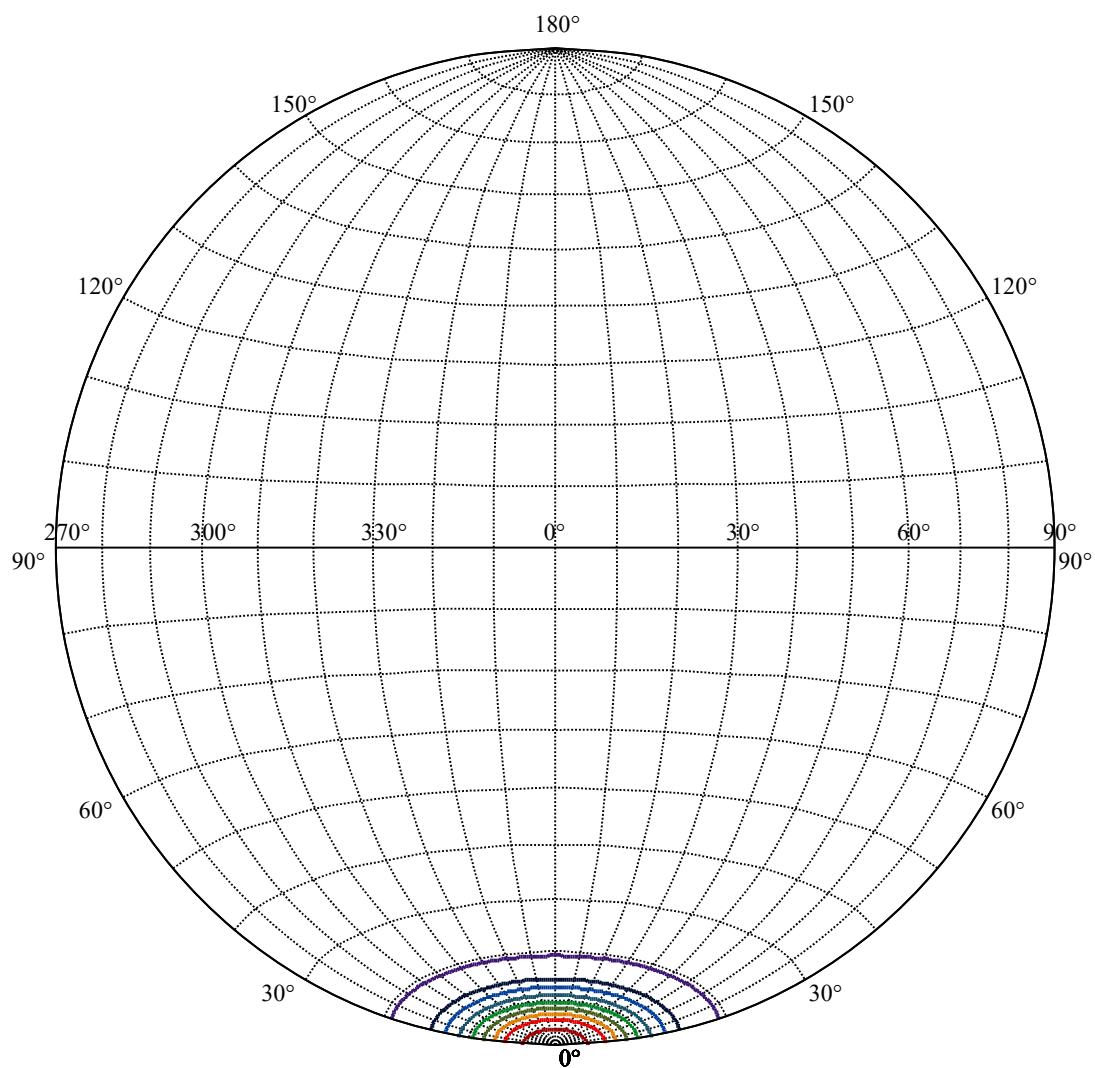
:C90/270Left:19.2 Right:19.2

Beam Angle(50%Imax):C0/180Left:9.5 Right:9.5

:C90/270Left:9.5 Right:9.5







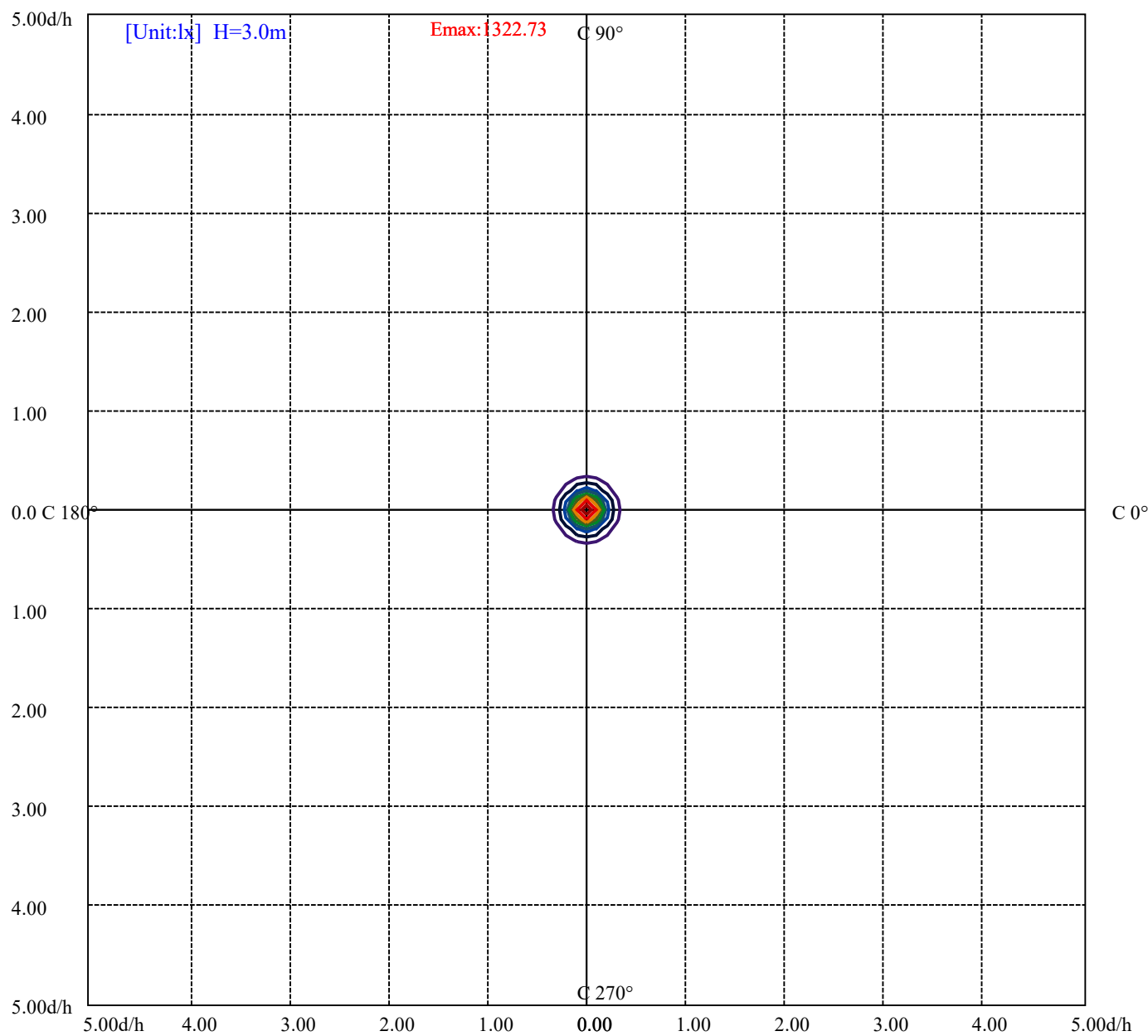
House

[Unit:cd]

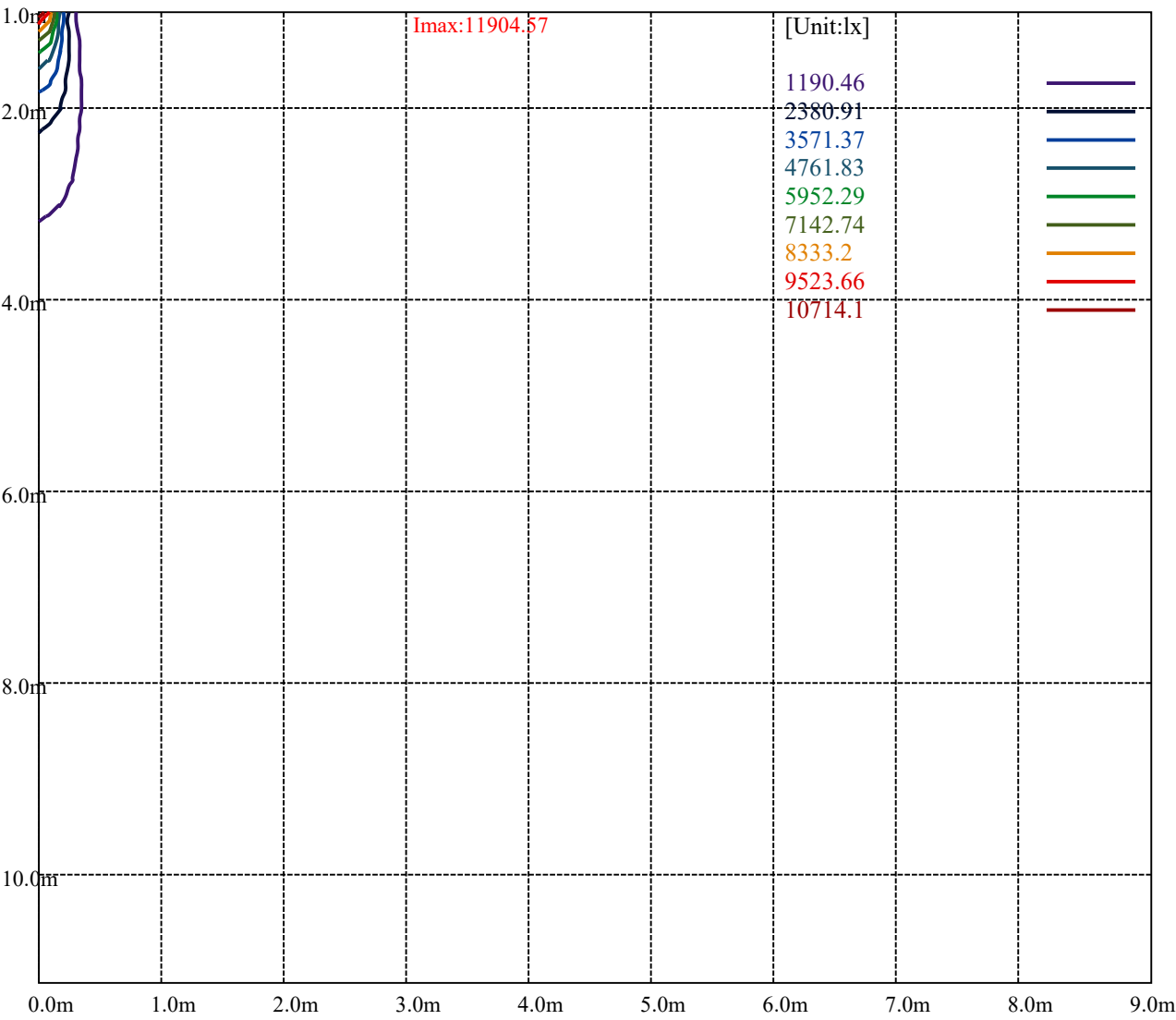
Road

Imax:11904.57

(10%Imax)	1190.46	—
(20%Imax)	2380.91	—
(30%Imax)	3571.37	—
(40%Imax)	4761.83	—
(50%Imax)	5952.29	—
(60%Imax)	7142.74	—
(70%Imax)	8333.2	—
(80%Imax)	9523.66	—
(90%Imax)	10714.1	—



(10%Emax) 132.2722	—
(20%Emax) 264.5444	—
(30%Emax) 396.8178	—
(40%Emax) 529.09	—
(50%Emax) 661.3622	—
(60%Emax) 793.6345	—
(70%Emax) 925.9078	—
(80%Emax) 1058.18	—
(90%Emax) 1190.456	—



Luminance Table

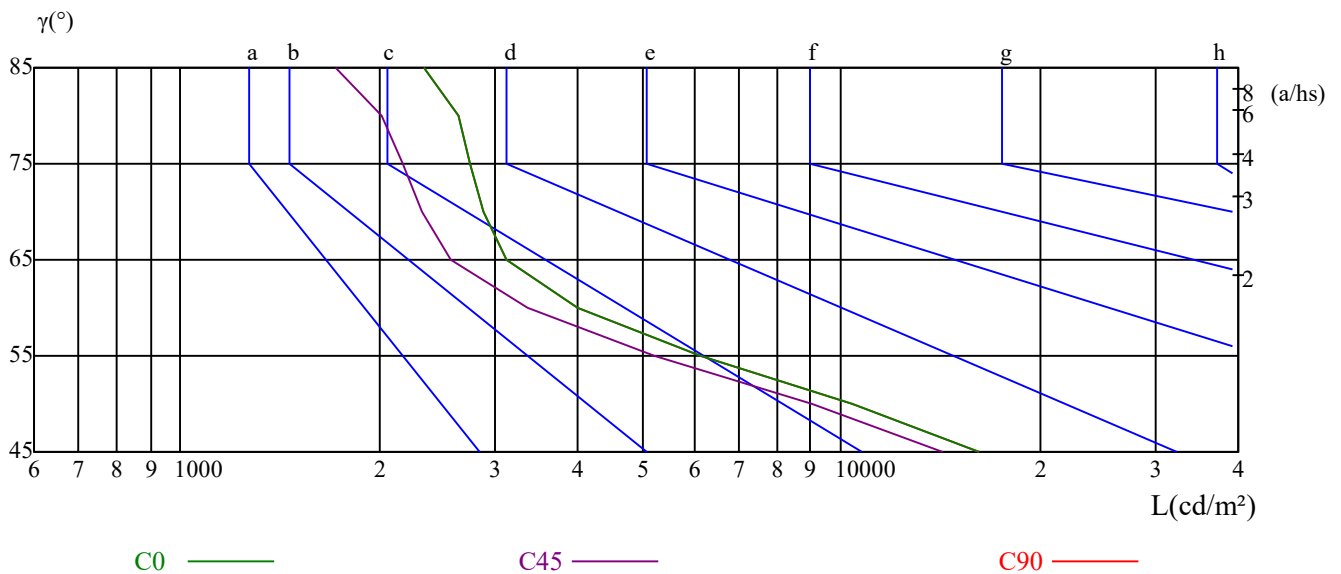
γ	45	50	55	60	65	70	75	80	85
C0	16240	10419	6112	3994	3121	2869	2751	2628	2329
C45	14270	9023	5213	3350	2570	2314	2167	2012	1722
C90	16240	10419	6112	3994	3121	2869	2751	2628	2329

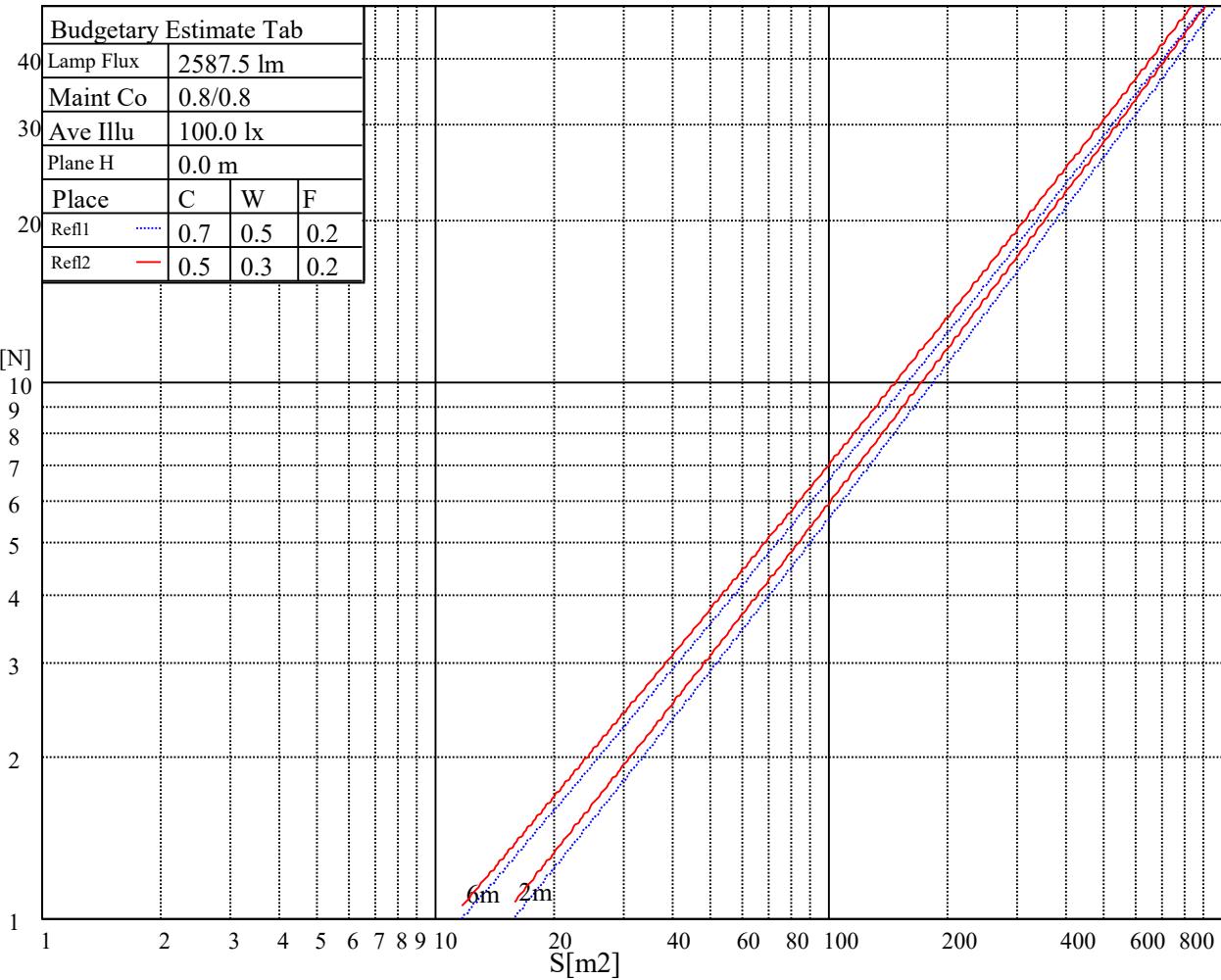
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6467	6467	6467	7884	7884	7884	15641	15641	15641

Glare Table

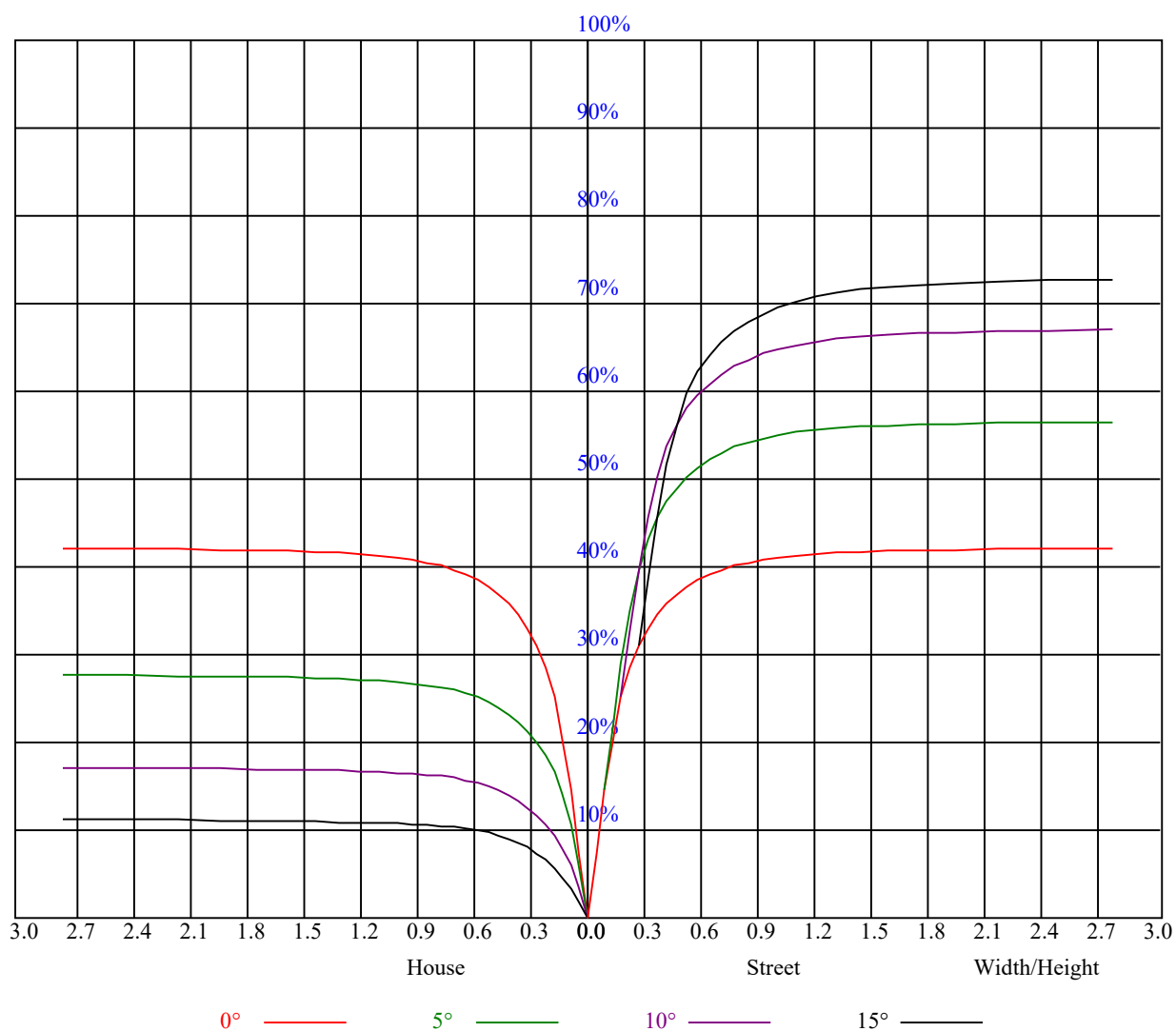
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.87
1	0.94	0.91	0.88	0.92	0.89	0.87	0.88	0.86	0.84	0.85	0.83	0.82	0.82	0.81	0.79	0.78
2	0.89	0.85	0.82	0.87	0.84	0.81	0.84	0.82	0.79	0.82	0.80	0.78	0.79	0.78	0.76	0.75
3	0.85	0.80	0.77	0.83	0.80	0.77	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
4	0.81	0.77	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.71	0.75	0.73	0.71	0.69
5	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
6	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
8	0.70	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60
10	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59



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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	11859.15	11473.75	7030.70	2835.40	1190.87	772.99	508.72	333.09	230.91		
45.0	11897.69	11099.37	7003.17	2785.85	1121.50	765.83	497.16	325.93	229.36		
90.0	11914.20	9889.23	4647.31	1503.04	964.97	623.79	420.96	273.41	188.84		
135.0	11947.24	9965.21	4773.39	1504.69	978.35	636.45	446.51	294.55	195.51		
180.0	11859.15	9109.63	3643.63	1323.01	886.46	565.87	385.28	259.70	179.48		
225.0	11897.69	9319.95	4385.79	1434.77	924.45	610.47	416.83	279.91	191.65		
270.0	11914.20	10873.64	6425.08	2868.44	1107.73	730.05	483.95	323.18	221.60		
315.0	11947.24	10672.13	6161.91	1770.61	1063.85	722.67	496.61	332.76	222.54		
360.0	11859.15	11473.75	7030.70	2835.40	1190.87	772.99	508.72	333.09	230.91		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	145.84	88.53	52.36	31.00	21.20	18.17	15.64	13.82	10.90		
45.0	137.53	85.17	47.57	29.57	20.92	17.78	15.47	13.54	10.41		
90.0	114.85	72.78	40.08	24.94	19.43	16.68	14.59	12.33	9.69		
135.0	120.13	74.82	40.36	25.99	19.93	16.90	15.03	12.66	9.63		
180.0	108.63	67.55	37.27	23.78	19.27	16.46	14.76	12.39	9.52		
225.0	113.97	70.42	38.15	25.11	19.66	16.68	14.81	12.39	9.69		
270.0	141.33	88.75	51.48	31.16	20.76	17.73	15.20	13.21	10.30		
315.0	136.93	84.35	48.28	28.96	20.54	17.40	15.25	13.21	10.52		
360.0	145.84	88.53	52.36	31.00	21.20	18.17	15.64	13.82	10.90		
C/γ(°)	90.0										
0.0	8.42										
45.0	8.15										
90.0	8.20										
135.0	8.26										
180.0	8.31										
225.0	8.15										
270.0	8.20										
315.0	8.37										
360.0	8.42										