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NATA

LumCAT: CR01D07024BM

Luminaire: 92.70.109.00

Report No: NATA0100

Test No: GC2018112618

LampCAT: CREE CXA1507

Lamp flux(lm): 1171.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 37.0000

Current(A): 0.3000

Power (W): 11.1000

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1016.41

Efficiency(%): 86.80%

Lumens(lm)/Power(W): 93.22

Central intensity(cd): 3230.297

Maximum intensity(cd): 3230.297

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=24.7

[C90/270]Total=24.7

Field angle(10%Imax): [C0/180]Total=51.1

[C90/270]Total=51.1

Maximum s/h(1/2): C0_180=0.42 C90_270=0.42

Maximum s/h(1/4): C0_180=0.44 C90_270=0.44

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.37%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 89.621%

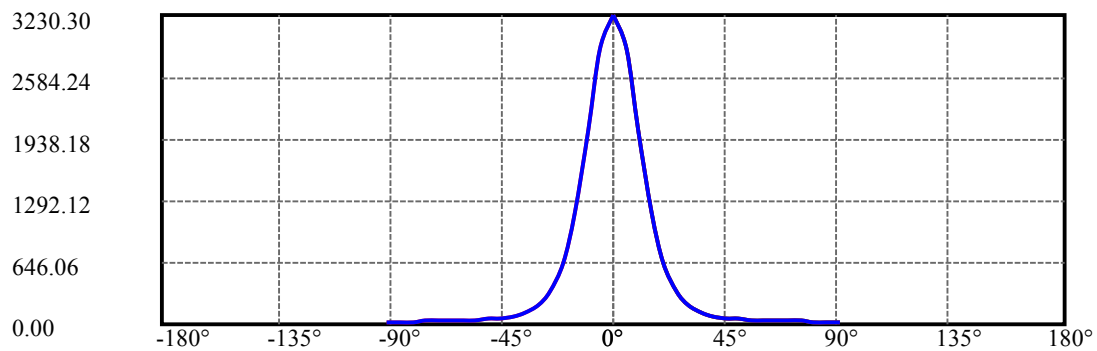
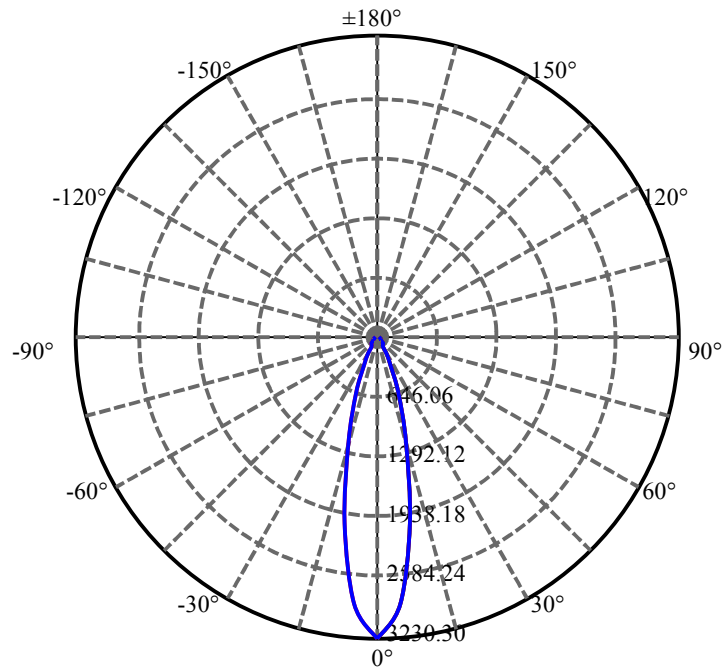
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3230.297	19.318	19.318	1.650%	1.901%
5.0	2867.273	136.979	156.297	11.698%	15.377%
10.0	2017.617	192.043	348.34	16.400%	34.272%
15.0	1168.671	165.797	514.137	14.159%	50.584%
20.0	640.230	120.027	634.164	10.250%	62.393%
25.0	337.563	78.198	712.362	6.678%	70.086%
30.0	207.014	56.736	769.098	4.845%	75.668%
35.0	122.414	38.487	807.584	3.287%	79.455%
40.0	85.852	30.249	837.833	2.583%	82.431%
45.0	66.987	25.963	863.797	2.217%	84.985%
50.0	59.513	24.989	888.786	2.134%	87.444%
55.0	44.951	20.183	908.969	1.724%	89.430%
60.0	38.749	18.394	927.363	1.571%	91.239%
65.0	35.803	17.786	945.15	1.519%	92.989%
70.0	35.733	18.405	963.555	1.572%	94.800%
75.0	40.303	21.339	984.894	1.822%	96.900%
80.0	28.104	15.171	1000.064	1.296%	98.392%
85.0	22.627	12.355	1012.42	1.055%	99.608%
90.0	14.548	3.987	1016.407	.340%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	769.10	65.68%	75.67%
0-40	837.83	71.55%	82.43%
0-60	927.36	79.19%	91.24%
0-90	1012.42	86.46%	99.61%
0-120	1012.42	86.46%	99.61%
0-180	1016.41	86.80%	100.00%
60-90	103.45	8.83%	10.18%
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%
0-35.92	813.13	69.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	348.34
10-20	285.82
20-30	134.93
30-40	68.74
40-50	50.95
50-60	38.58
60-70	36.19
70-80	36.51
80-90	12.36
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

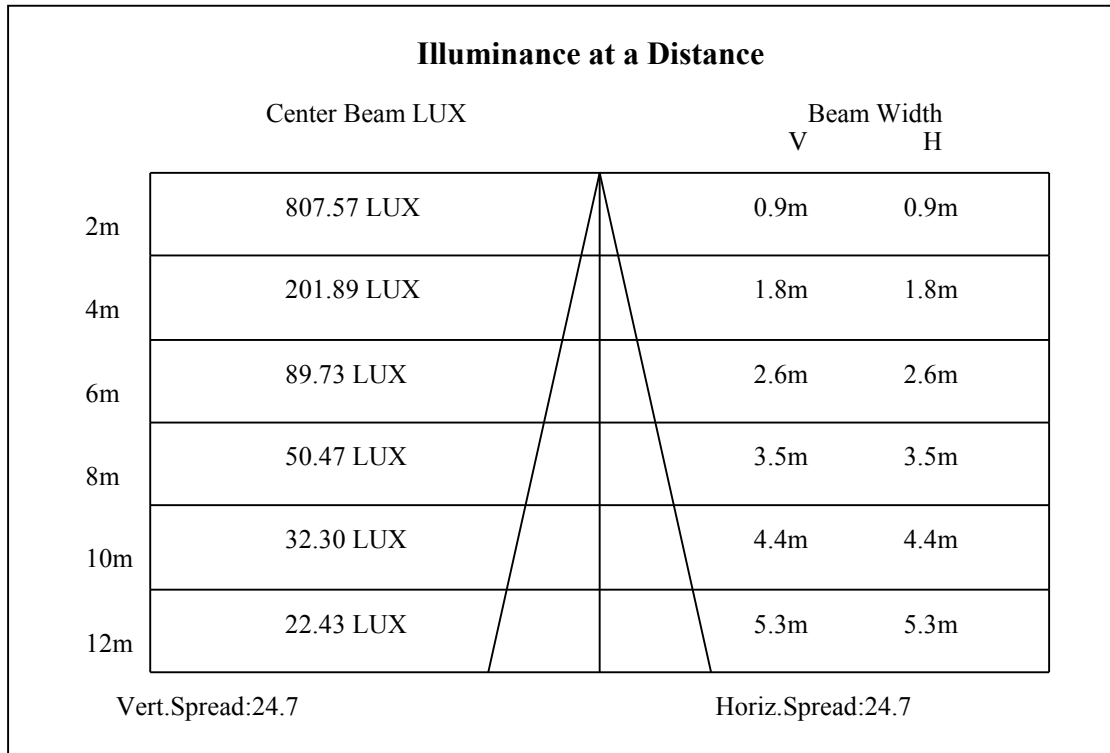
C0(Max): —————C0/C180: —————C90/C270: —————

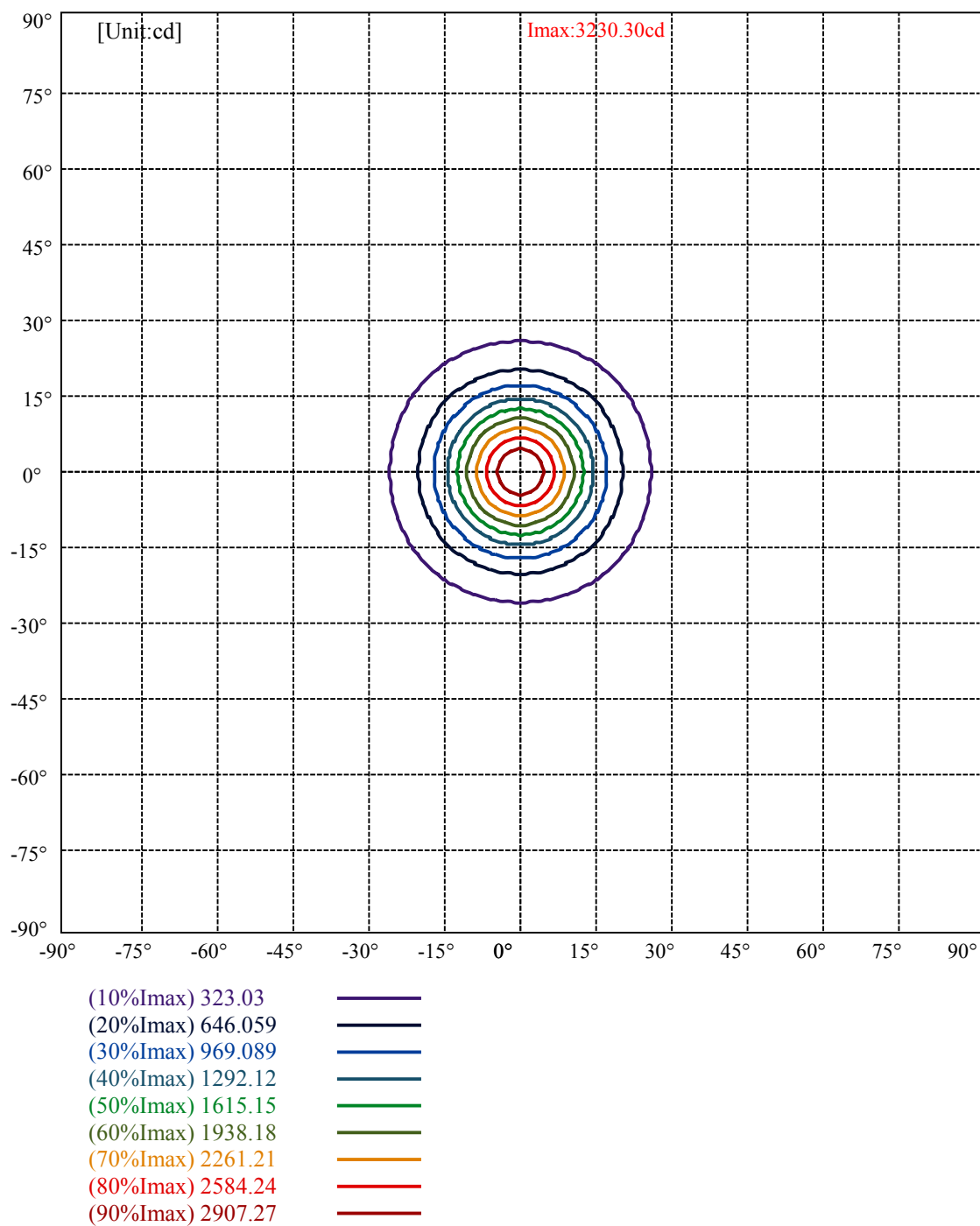
Field angle(10%Imax):C0/180Left:25.6 Right:25.6

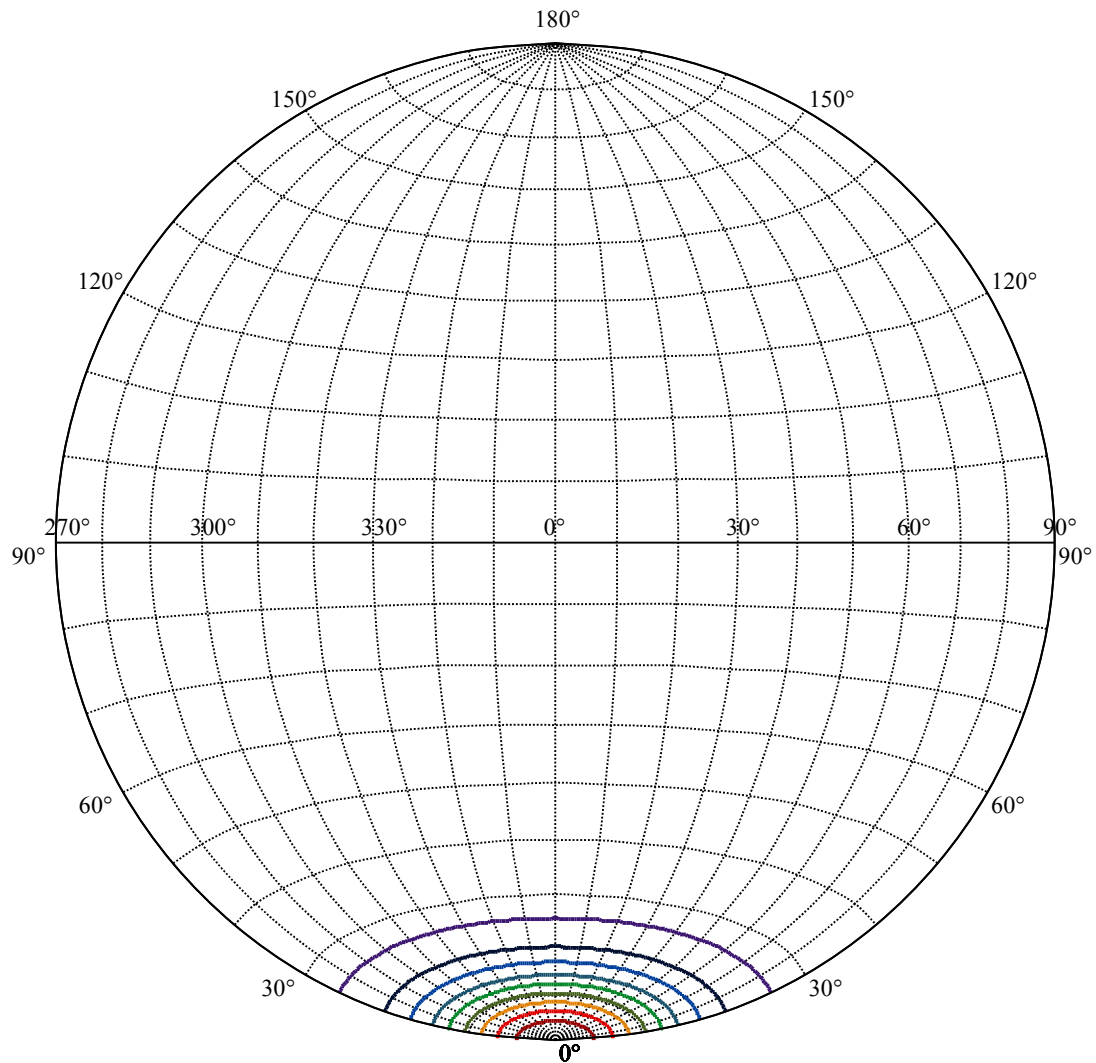
:C90/270Left:25.6 Right:25.6

Beam Angle(50%Imax):C0/180Left:12.4 Right:12.4

:C90/270Left:12.4 Right:12.4







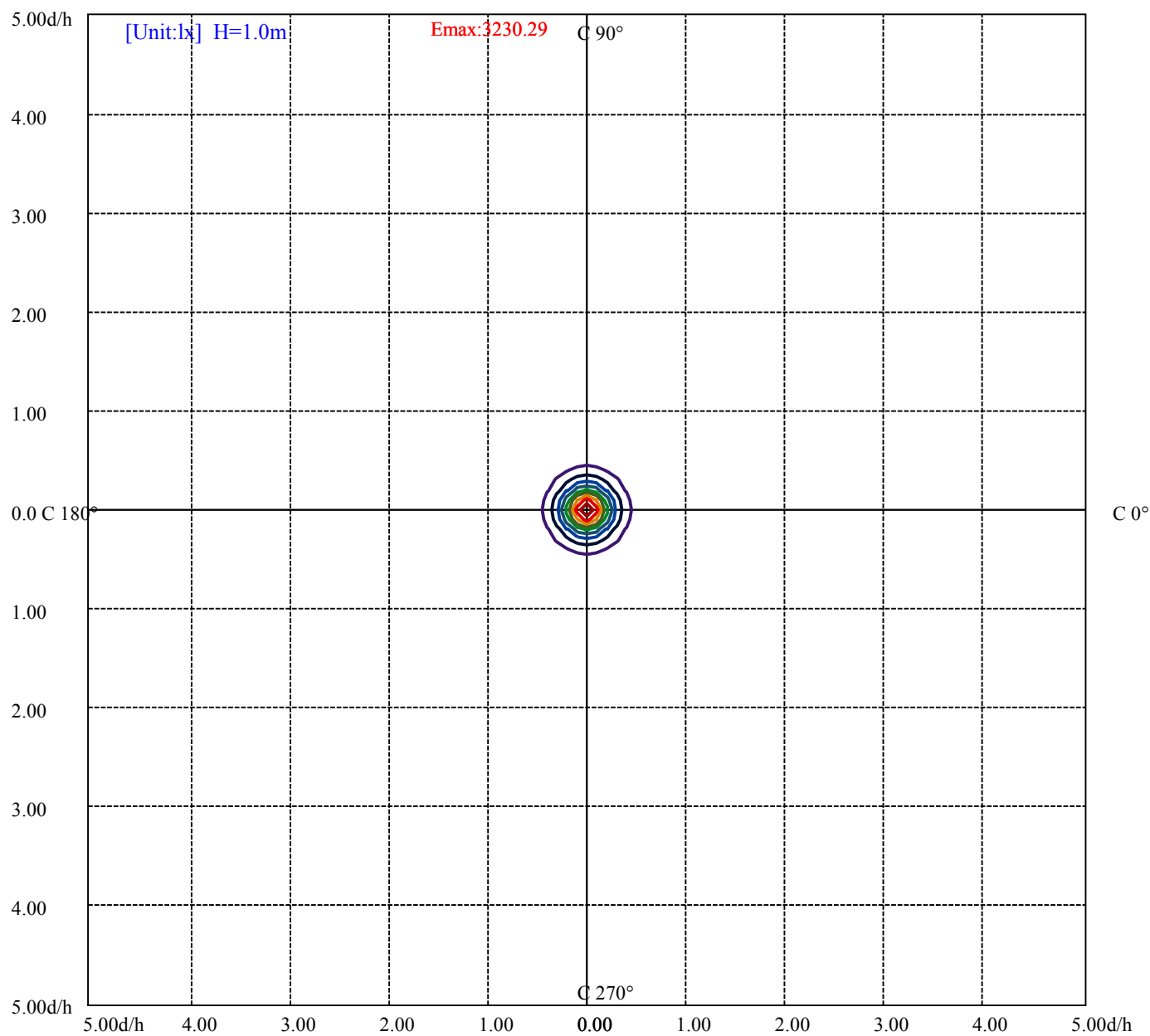
House

[Unit:cd]

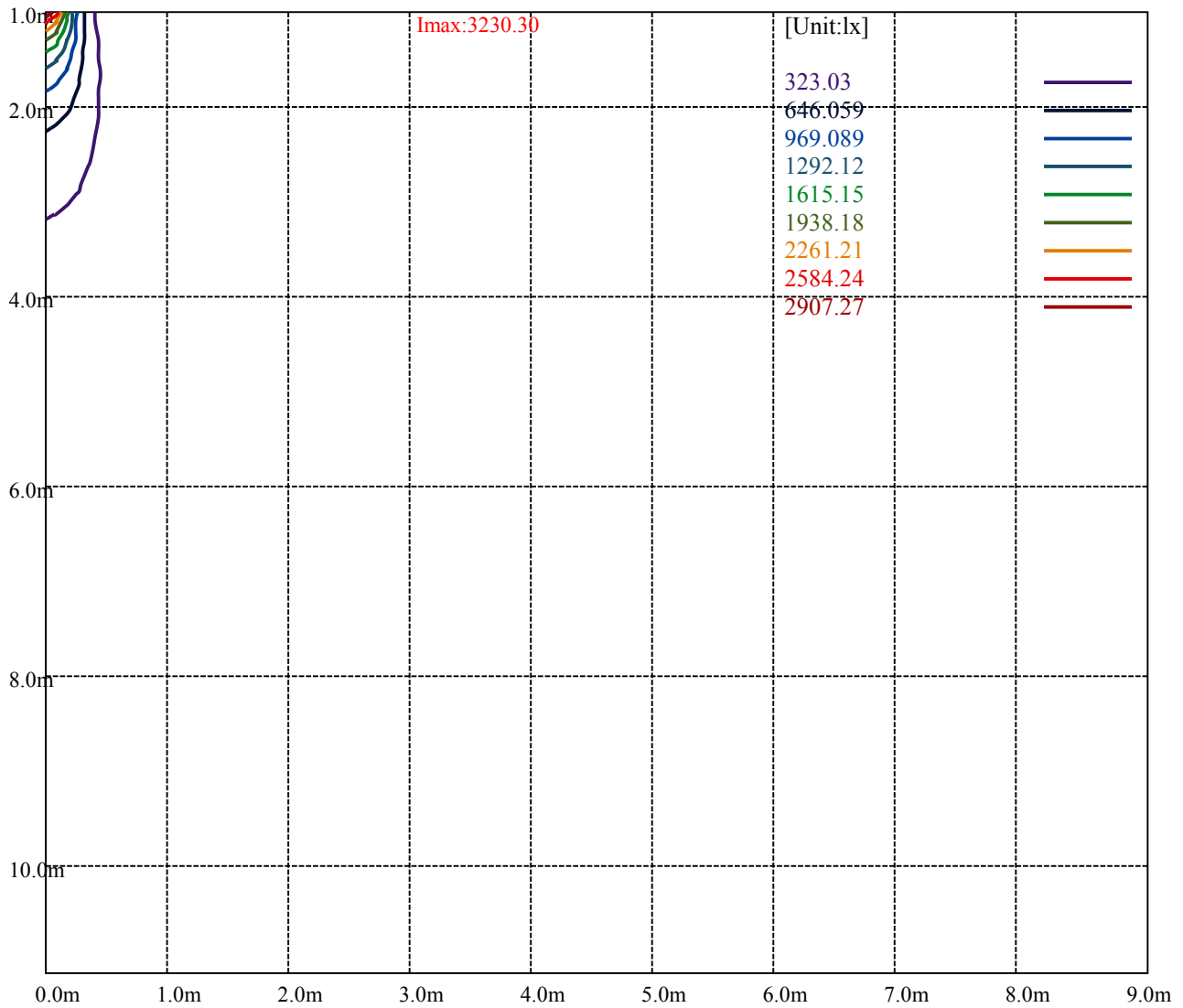
Road

Imax:3230.30

(10%Imax)	323.03	—
(20%Imax)	646.059	—
(30%Imax)	969.089	—
(40%Imax)	1292.12	—
(50%Imax)	1615.15	—
(60%Imax)	1938.18	—
(70%Imax)	2261.21	—
(80%Imax)	2584.24	—
(90%Imax)	2907.27	—



(10%Emax) 323.029	—
(20%Emax) 646.057	—
(30%Emax) 969.086	—
(40%Emax) 1292.11	—
(50%Emax) 1615.14	—
(60%Emax) 1938.17	—
(70%Emax) 2261.2	—
(80%Emax) 2584.23	—
(90%Emax) 2907.26	—



Luminance Table

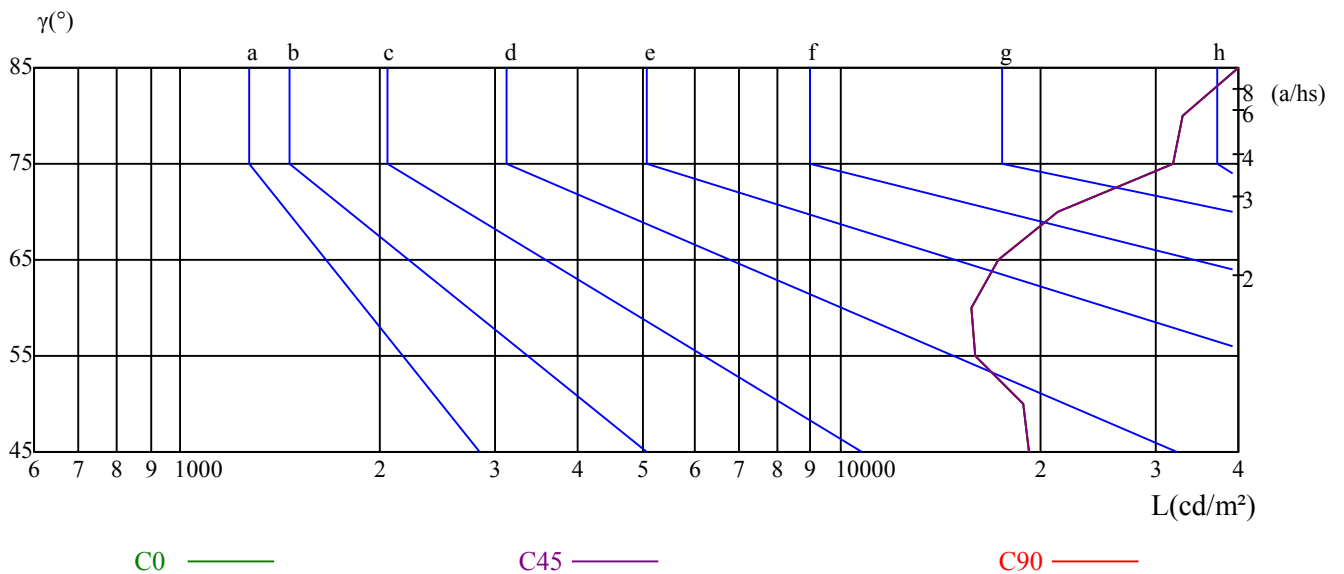
γ	45	50	55	60	65	70	75	80	85
C0	19333	18895	15994	15816	17289	21322	31779	33029	52982
C45	19333	18895	15994	15816	17289	21322	31779	33029	52982
C90	19333	18895	15994	15816	17289	21322	31779	33029	52982

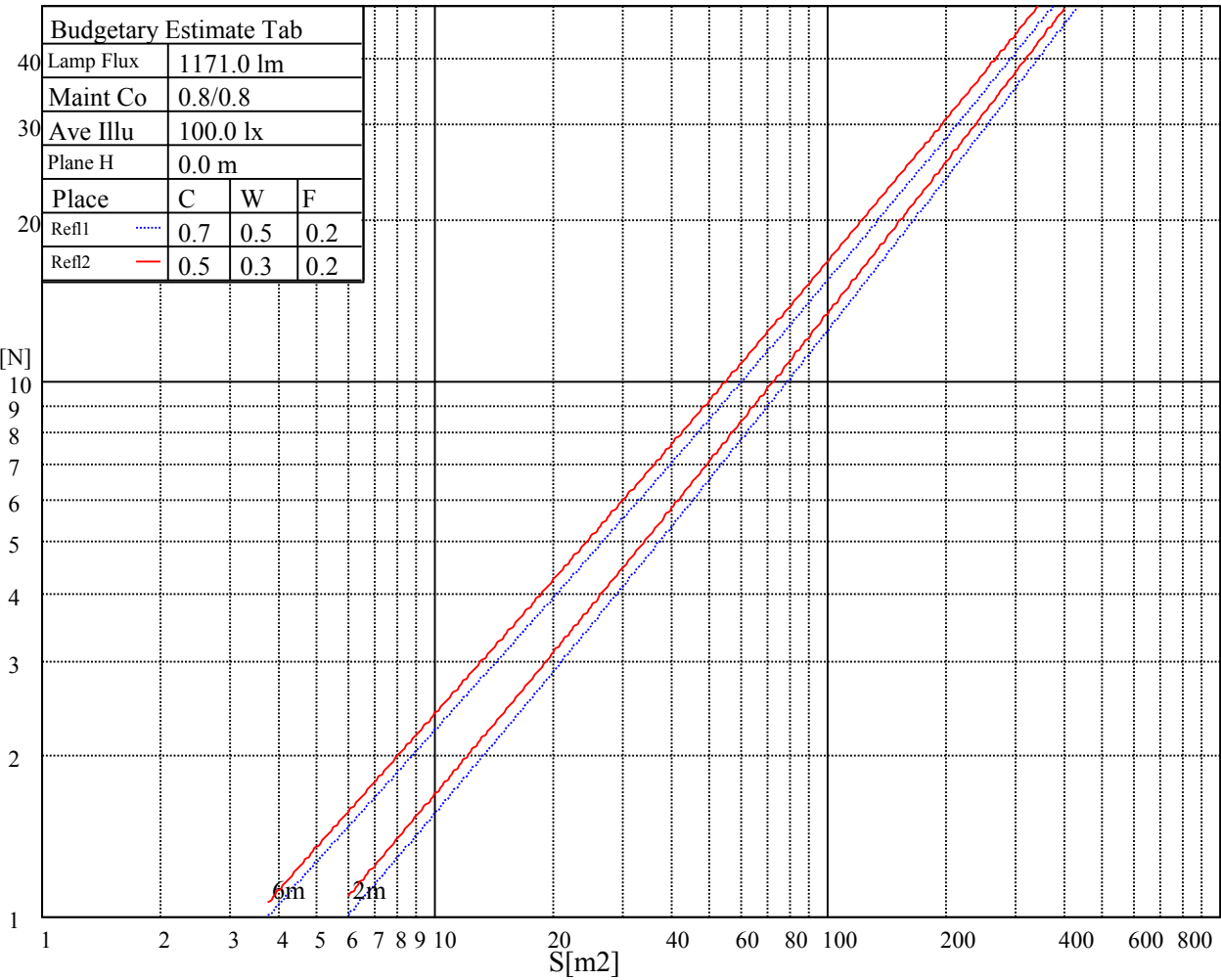
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
17289	17289	17289	31779	31779	31779	52982	52982	52982

Glare Table

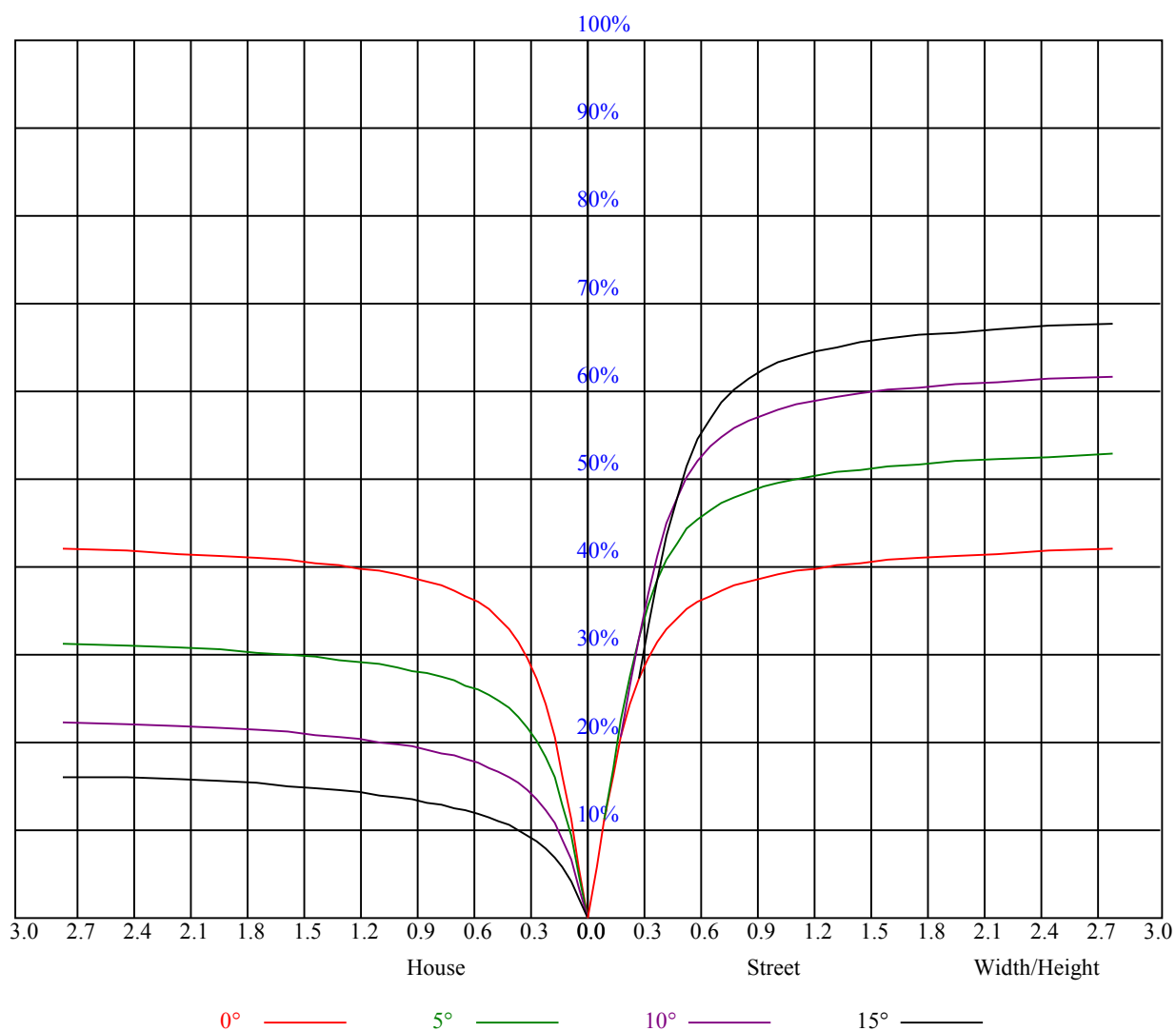
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.95	0.92	0.89	0.93	0.90	0.88	0.89	0.87	0.85	0.86	0.84	0.82	0.83	0.81	0.80	0.78
2	0.88	0.84	0.80	0.87	0.83	0.79	0.84	0.80	0.78	0.81	0.78	0.76	0.78	0.76	0.74	0.73
3	0.83	0.78	0.74	0.81	0.77	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.69
4	0.78	0.73	0.69	0.77	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.66	0.65
5	0.74	0.69	0.65	0.74	0.69	0.65	0.72	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.63	0.62
6	0.71	0.66	0.62	0.70	0.66	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.60
7	0.68	0.63	0.60	0.68	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.57
8	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.55
9	0.63	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.61	0.57	0.55	0.54
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.52



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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	3215.81	3043.13	2258.44	1407.38	781.88	406.13	290.25	140.51	95.12		
45.0	3229.31	2963.25	2225.25	1333.13	737.44	385.31	246.49	134.27	93.32		
90.0	3241.13	2810.25	1938.94	1106.10	620.49	327.43	193.89	119.42	83.08		
135.0	3234.94	2889.00	2037.94	1155.38	641.25	338.63	192.71	121.89	84.43		
180.0	3215.81	2682.56	1772.44	976.39	541.01	290.70	172.80	107.66	79.82		
225.0	3229.31	2711.25	1870.31	1035.17	554.12	294.81	181.01	114.58	81.11		
270.0	3241.13	2977.31	2068.31	1220.63	627.75	338.06	192.66	121.11	85.95		
315.0	3234.94	2861.44	1969.31	1115.21	617.91	319.44	186.30	119.87	83.98		
360.0	3215.81	3043.13	2258.44	1407.38	781.88	406.13	290.25	140.51	95.12		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	71.27	65.03	47.64	39.94	36.68	35.72	39.49	31.61	23.63		
45.0	69.58	61.76	45.84	39.99	37.07	36.39	37.63	29.08	22.44		
90.0	64.91	57.38	44.10	38.53	35.66	35.89	39.38	26.89	22.39		
135.0	65.36	57.38	44.55	39.09	35.44	36.73	43.31	27.17	23.01		
180.0	63.84	54.68	44.16	38.76	36.28	35.83	37.29	26.61	22.28		
225.0	69.53	58.16	43.43	37.46	35.04	35.83	39.83	27.23	22.67		
270.0	66.04	63.34	45.45	38.31	35.33	34.82	41.51	28.01	21.83		
315.0	65.36	58.39	44.44	37.91	34.93	34.65	43.99	28.24	22.78		
360.0	71.27	65.03	47.64	39.94	36.68	35.72	39.49	31.61	23.63		
C/γ(°)	90.0										
0.0	16.37										
45.0	14.91										
90.0	14.18										
135.0	13.95										
180.0	11.31										
225.0	15.08										
270.0	15.08										
315.0	15.53										
360.0	16.37										