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NATA

LumCAT: 3-1550-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2018111508
LampCAT: OSRAM SOLERIQ S15
Lamp flux(lm): 2616.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 36.3000
Current(A): 0.5600
Power (W): 20.3280
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 0

Photometric Results

Lumens(lm): 2391.38
Efficiency(%): 91.41%
Lumens(lm)/Power(W): 118.76
Central intensity(cd): 4198.641
Maximum intensity(cd): 4198.641
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=43.0
 [C90/270]Total=43.0
Field angle(10%Imax): [C0/180]Total=73.6
 [C90/270]Total=73.6
Maximum s/h(1/2): C0_180=0.68 C90_270=0.68
Maximum s/h(1/4): C0_180=0.71 C90_270=0.71
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.29%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.795%

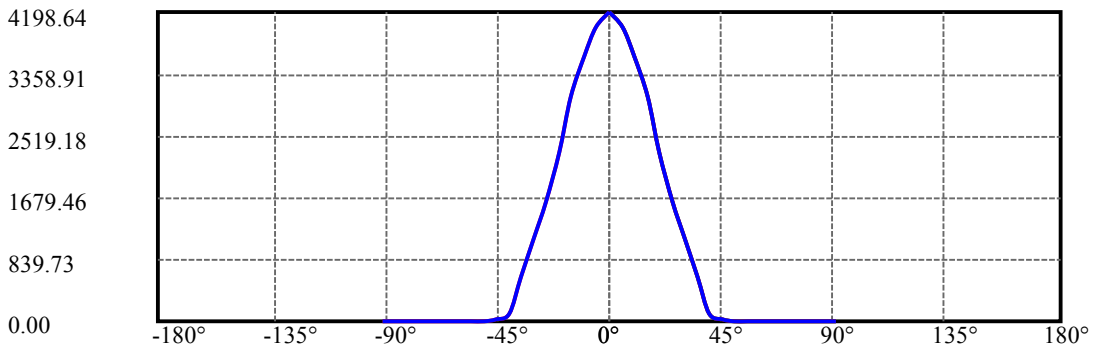
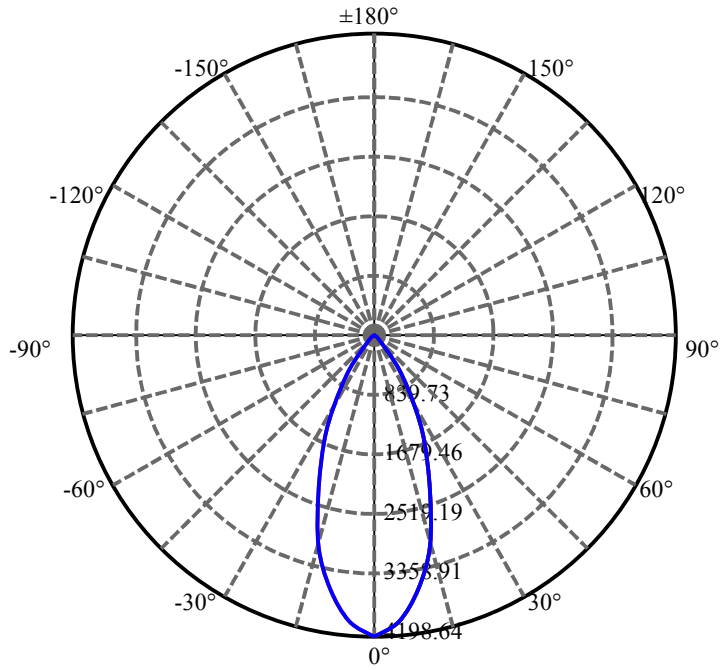
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4198.641	25.109	25.109	.960%	1.050%
5.0	3991.992	190.711	215.819	7.290%	9.025%
10.0	3587.836	341.501	557.321	13.054%	23.305%
15.0	3042.844	431.683	989.004	16.502%	41.357%
20.0	2301.820	431.532	1420.536	16.496%	59.402%
25.0	1627.242	376.955	1797.491	14.410%	75.165%
30.0	1148.070	314.650	2112.141	12.028%	88.323%
35.0	588.586	185.051	2297.191	7.074%	96.061%
40.0	115.376	40.651	2337.842	1.554%	97.761%
45.0	17.641	6.838	2344.68	.261%	98.047%
50.0	12.966	5.444	2350.124	.208%	98.275%
55.0	12.038	5.405	2355.529	.207%	98.501%
60.0	11.475	5.447	2360.976	.208%	98.729%
65.0	11.025	5.477	2366.453	.209%	98.958%
70.0	10.709	5.516	2371.969	.211%	99.188%
75.0	10.463	5.539	2377.509	.212%	99.420%
80.0	10.287	5.553	2383.062	.212%	99.652%
85.0	10.181	5.559	2388.621	.213%	99.885%
90.0	10.069	2.760	2391.381	.105%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2112.14	80.74%	88.32%
0-40	2337.84	89.37%	97.76%
0-60	2360.98	90.25%	98.73%
0-90	2388.62	91.31%	99.88%
0-120	2388.62	91.31%	99.88%
0-180	2391.38	91.41%	100.00%
60-90	33.09	1.26%	1.38%
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%
0-26.84	1913.10	73.13%	80.00%

ZONAL LUMEN SUMMARY

0-10	557.32
10-20	863.21
20-30	691.61
30-40	225.70
40-50	12.28
50-60	10.85
60-70	10.99
70-80	11.09
80-90	5.56
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: —————

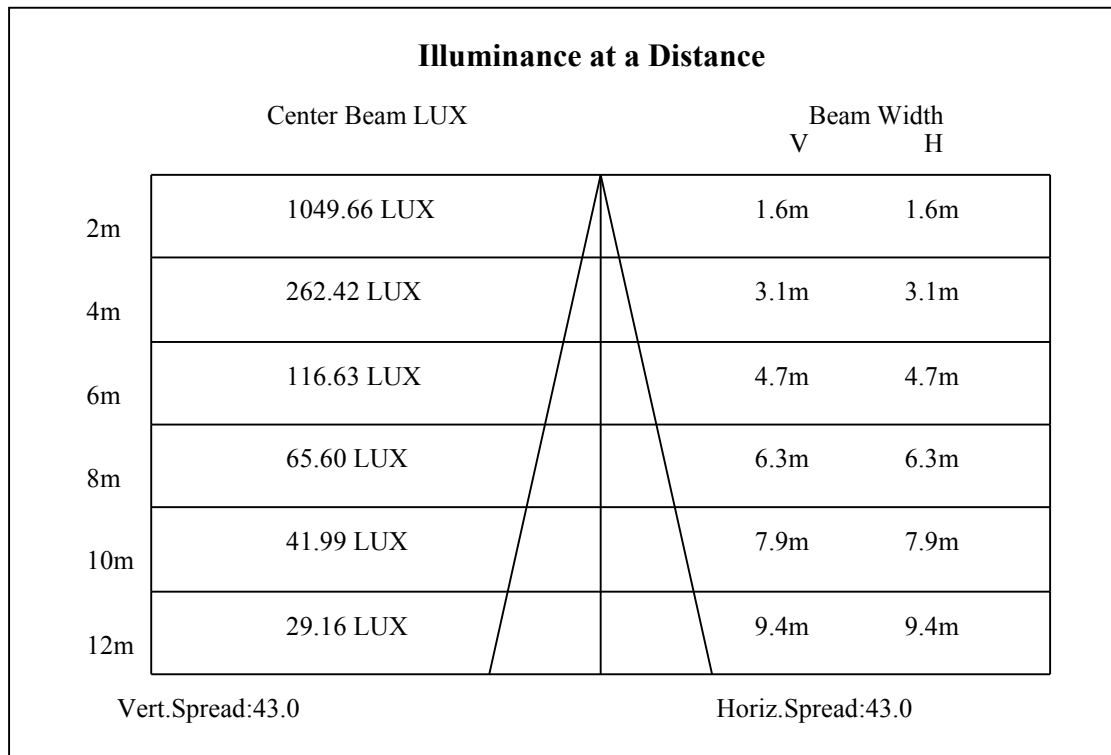
C90/C270: —————

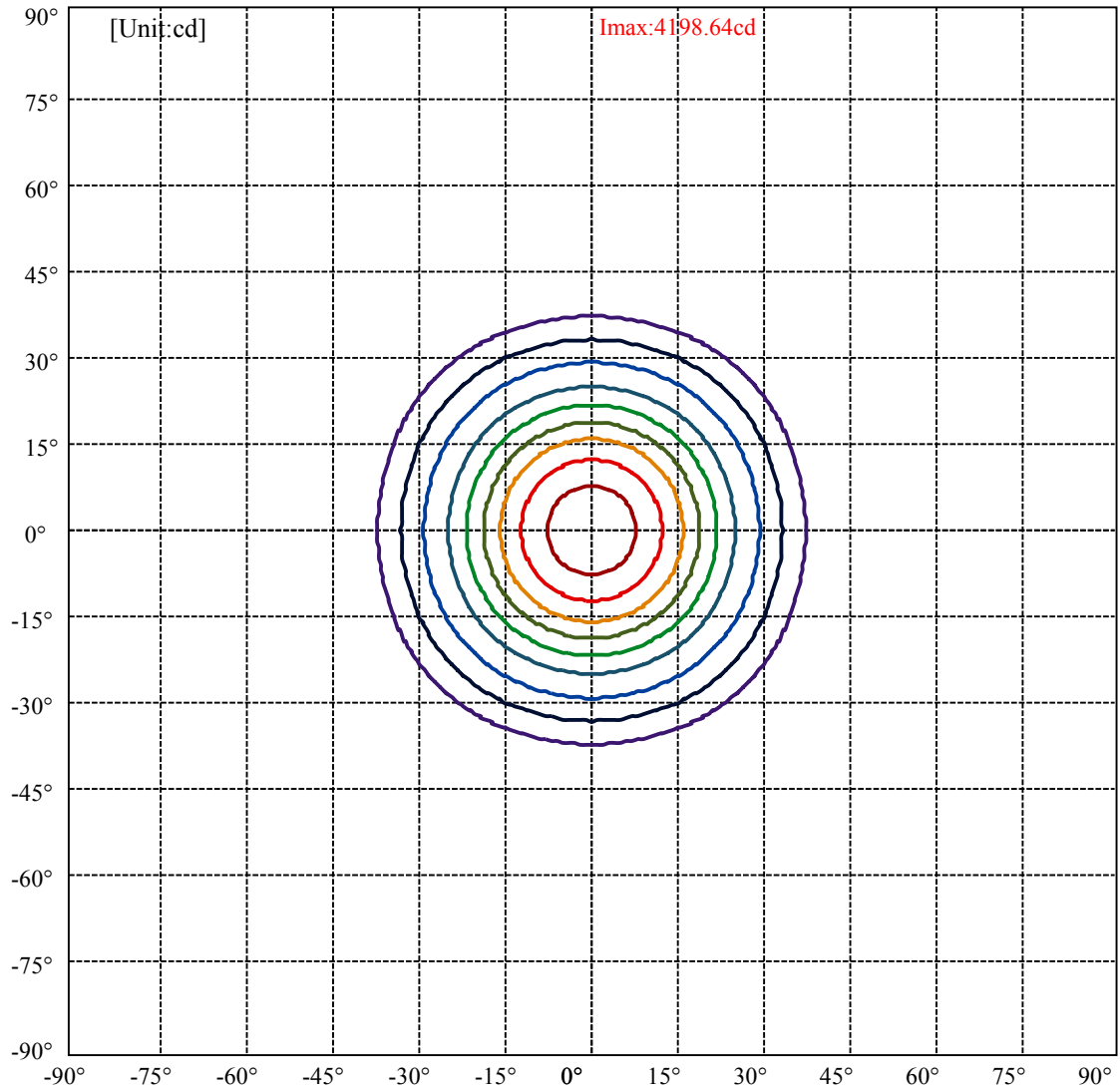
Field angle(10%Imax):C0/180Left:36.8 Right:36.8

:C90/270Left:36.8 Right:36.8

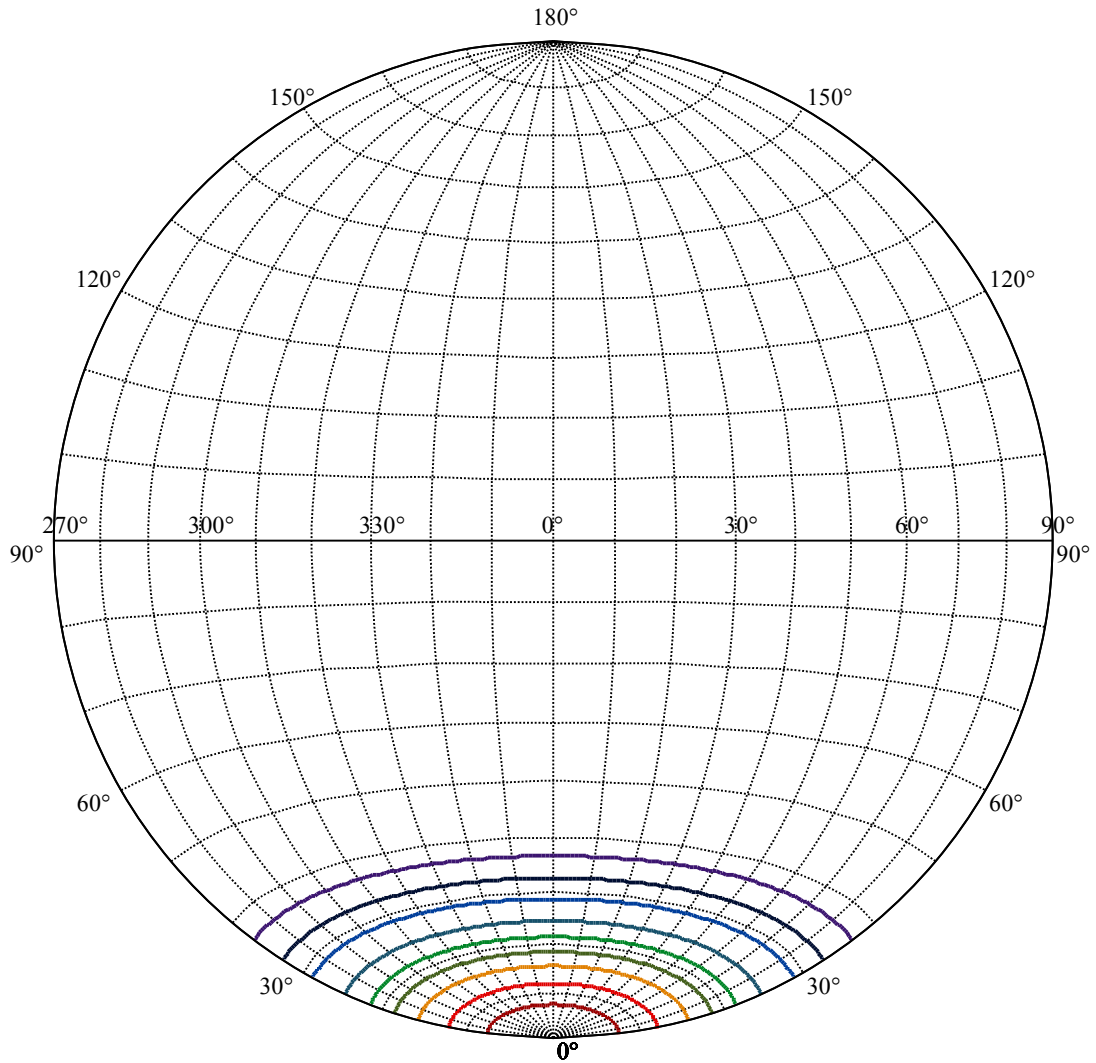
Beam Angle(50%Imax):C0/180Left:21.5 Right:21.5

:C90/270Left:21.5 Right:21.5





(10%Imax) 419.864	—
(20%Imax) 839.728	—
(30%Imax) 1259.59	—
(40%Imax) 1679.46	—
(50%Imax) 2099.32	—
(60%Imax) 2519.18	—
(70%Imax) 2939.05	—
(80%Imax) 3358.91	—
(90%Imax) 3778.78	—



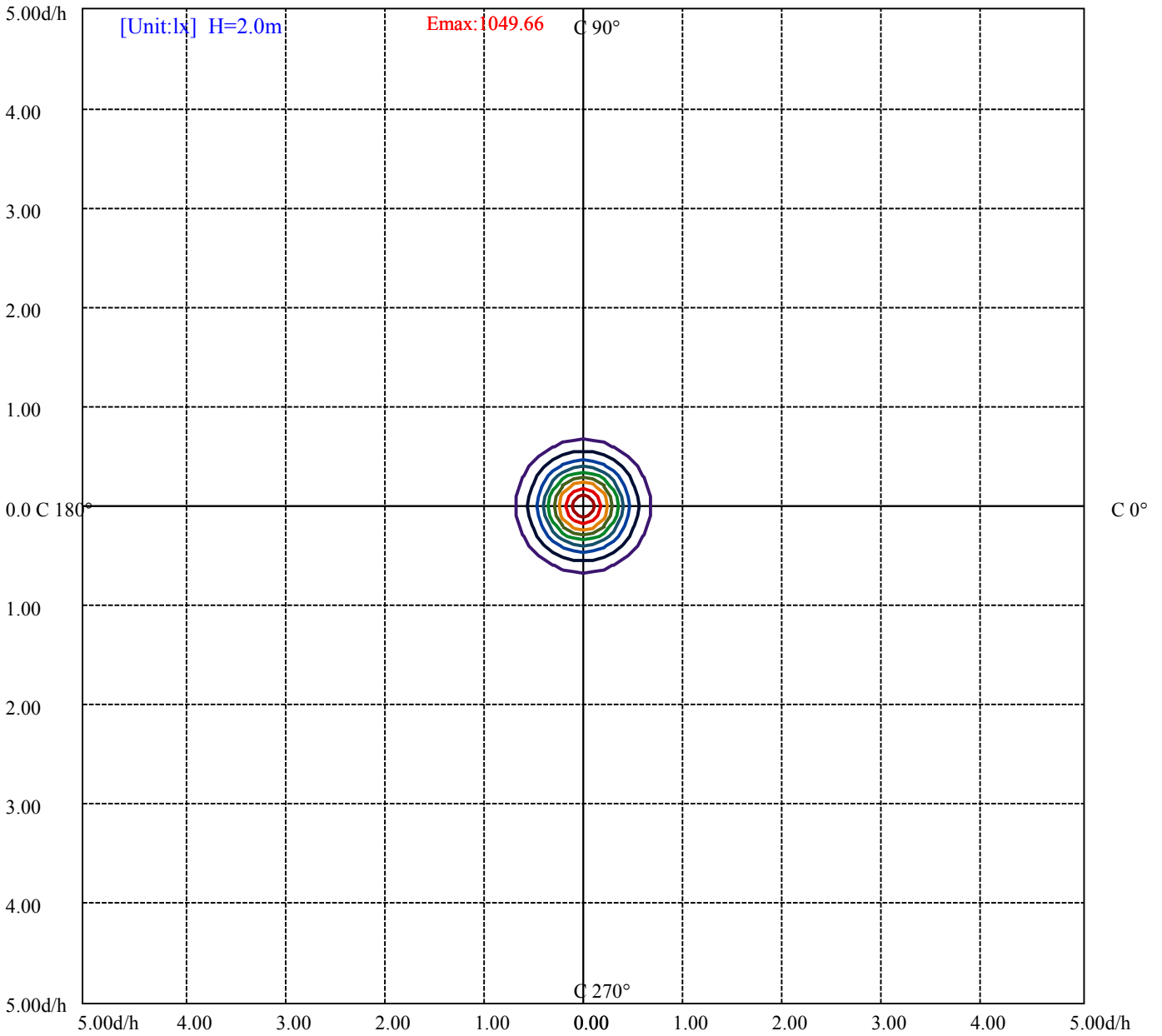
House

[Unit:cd]

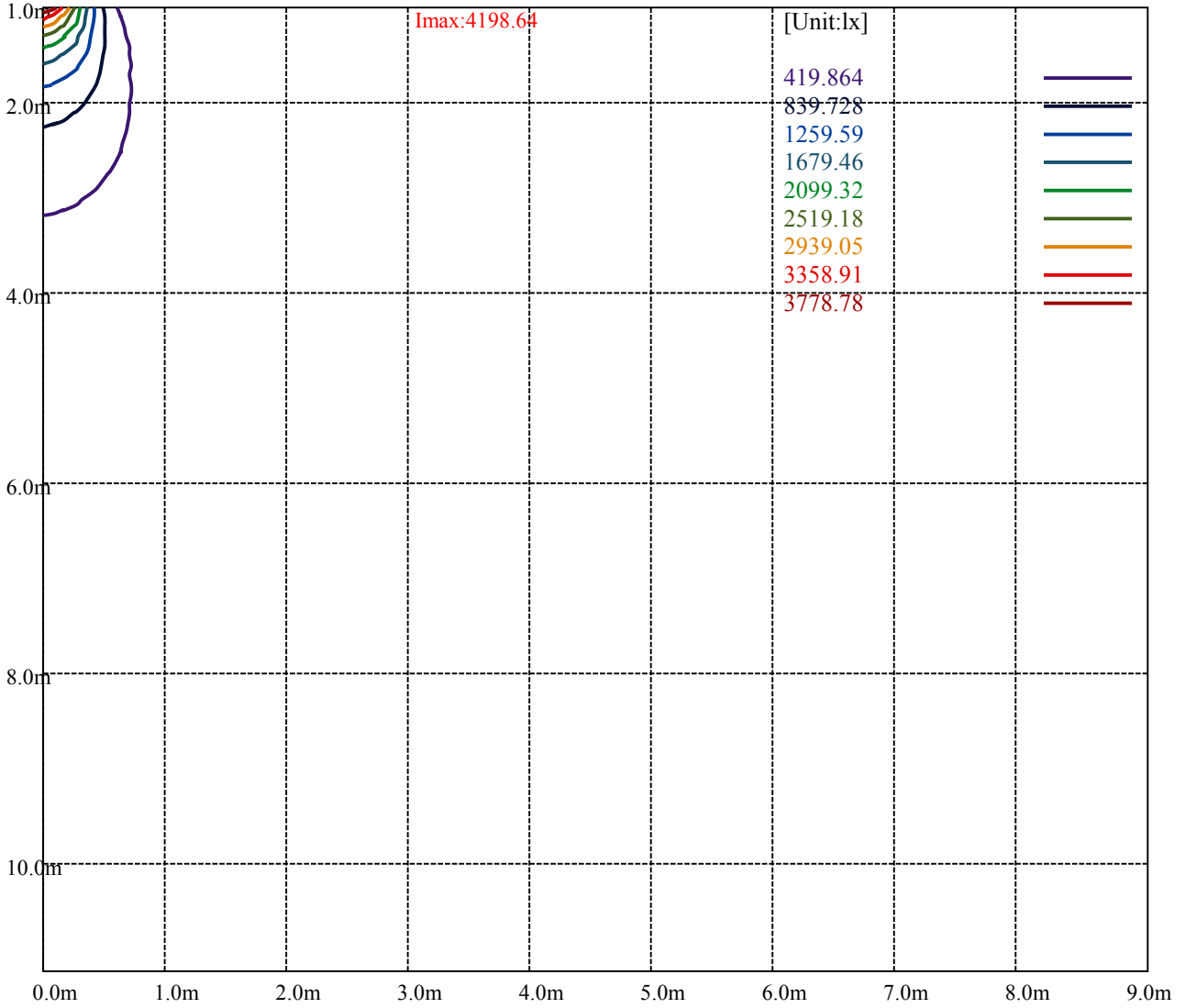
Road

Imax:4198.64

(10%Imax) 419.864	—
(20%Imax) 839.728	—
(30%Imax) 1259.59	—
(40%Imax) 1679.46	—
(50%Imax) 2099.32	—
(60%Imax) 2519.18	—
(70%Imax) 2939.05	—
(80%Imax) 3358.91	—
(90%Imax) 3778.78	—



- (10%Emax) 104.9658
- (20%Emax) 209.9317
- (30%Emax) 314.8975
- (40%Emax) 419.8625
- (50%Emax) 524.83
- (60%Emax) 629.795
- (70%Emax) 734.76
- (80%Emax) 839.7275
- (90%Emax) 944.6925



Luminance Table

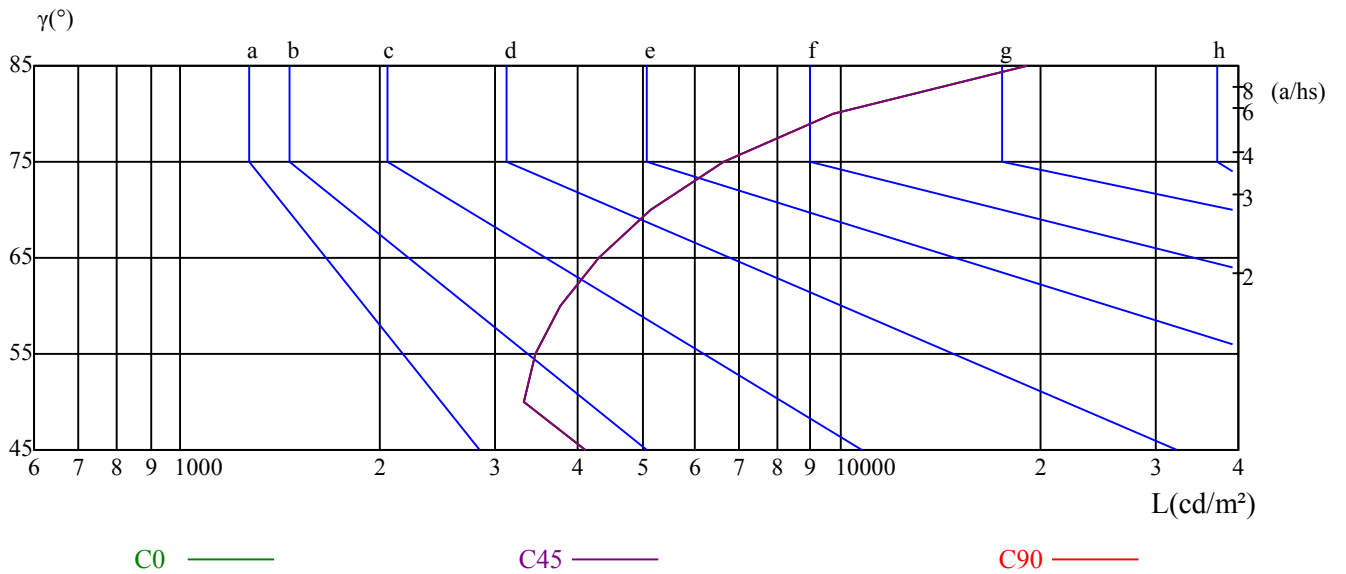
γ	45	50	55	60	65	70	75	80	85
C0	4101	3315	3449	3772	4288	5146	6644	9737	19201
C45	4101	3315	3449	3772	4288	5146	6644	9737	19201
C90	4101	3315	3449	3772	4288	5146	6644	9737	19201

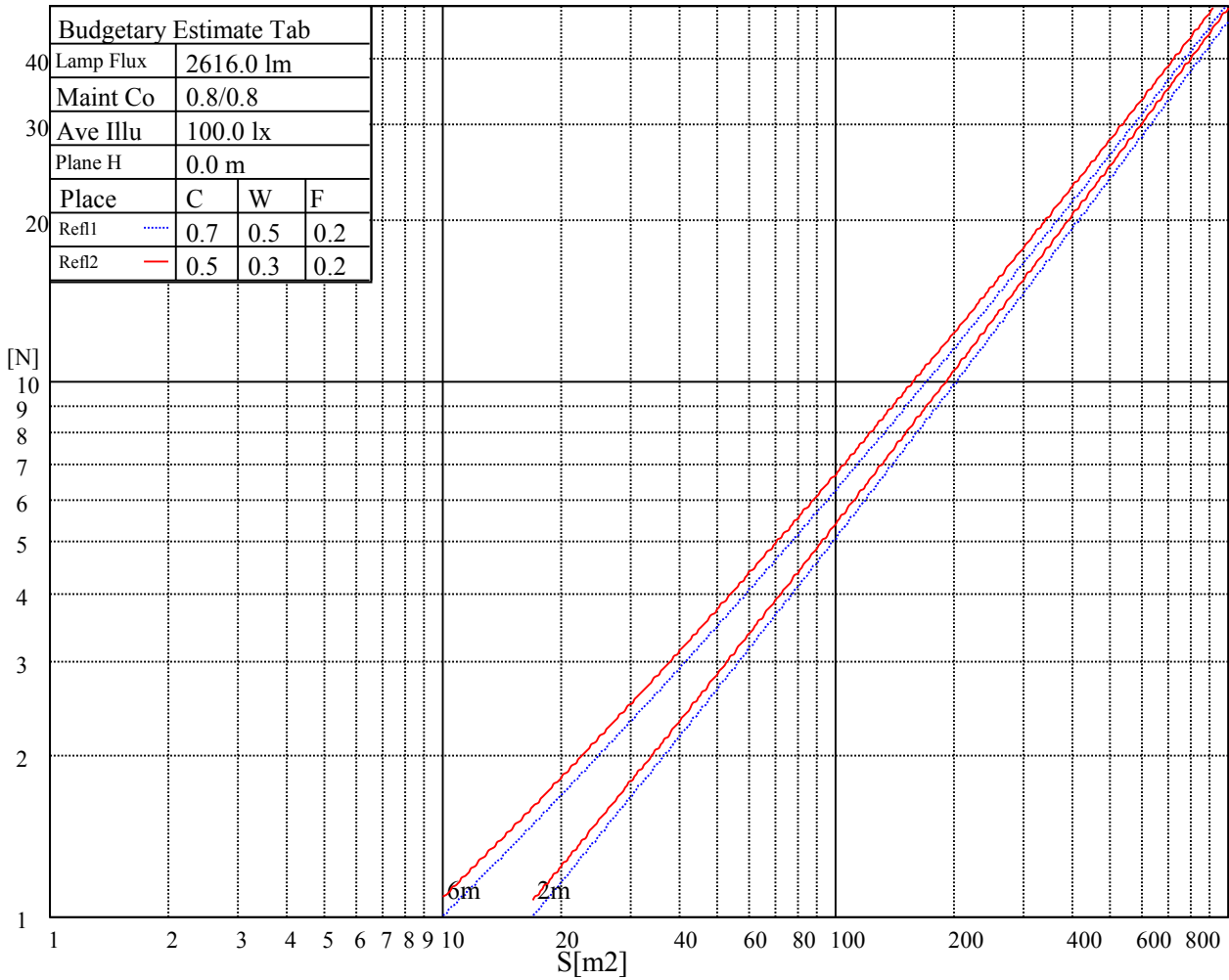
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4288	4288	4288	6644	6644	6644	19201	19201	19201

Glare Table

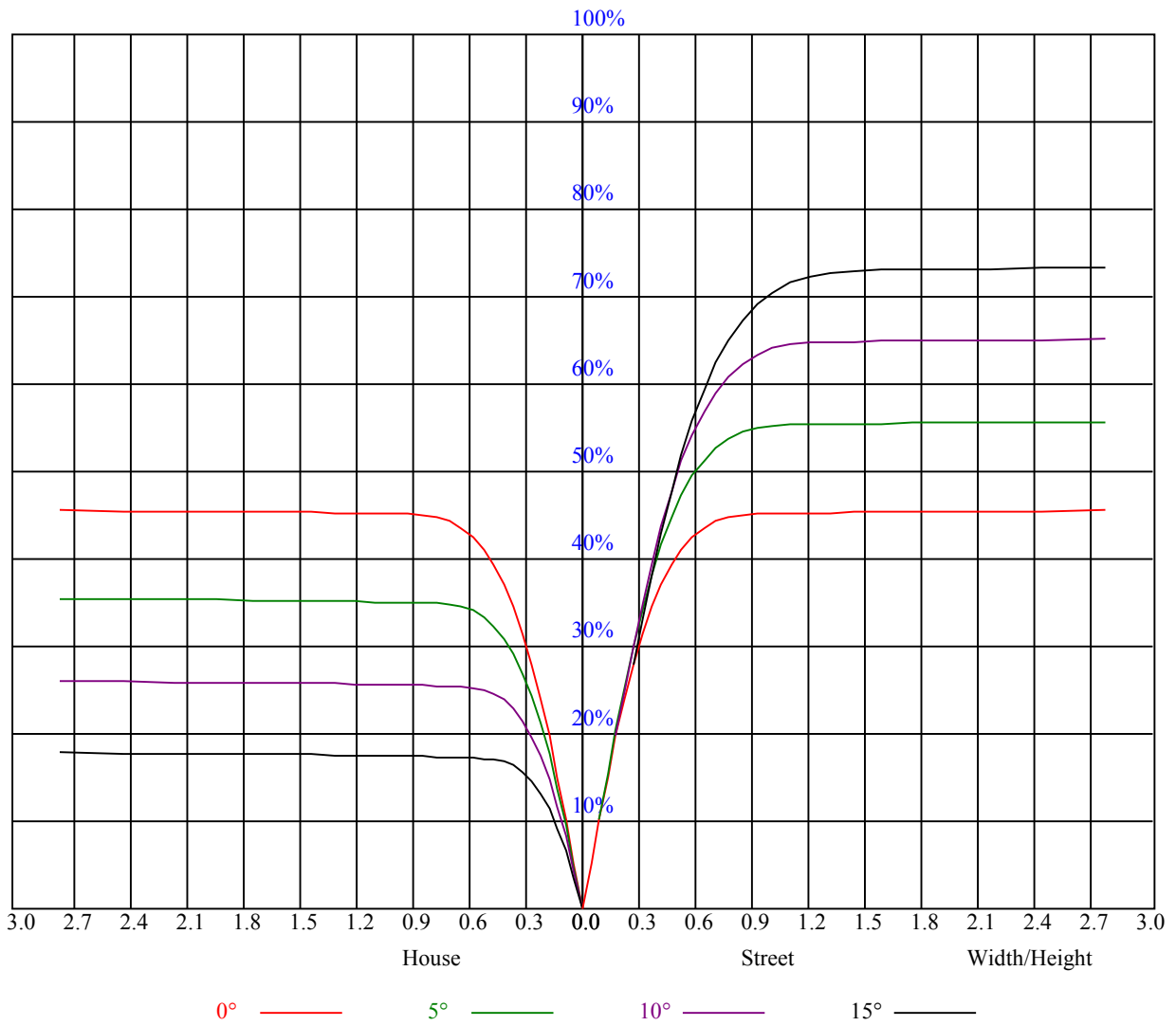
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.10	1.10	1.10	1.07	1.07	1.07	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	0.99	0.97	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86
2	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	0.87	0.83	0.90	0.86	0.83	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
6	0.78	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.67
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
10	0.66	0.62	0.59	0.66	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.61	0.58	0.57



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	4195.13	4087.13	3703.50	3218.06	2557.13	1810.13	1289.25	800.44	292.50
45.0	4201.31	3934.69	3548.25	3029.63	2262.94	1593.56	1124.44	540.00	52.43
90.0	4190.06	3897.00	3497.06	2893.50	2111.63	1505.25	1063.46	417.09	38.03
135.0	4208.06	4014.00	3599.44	3031.31	2241.56	1599.75	1144.69	523.13	56.36
180.0	4195.13	3897.56	3448.13	2836.69	2086.31	1467.00	1044.28	397.07	36.56
225.0	4201.31	4044.94	3639.38	3074.06	2346.19	1652.63	1115.49	654.64	83.87
270.0	4190.06	4070.81	3683.25	3196.69	2476.69	1738.69	1281.38	754.88	288.00
315.0	4208.06	3989.81	3583.69	3062.81	2332.13	1650.94	1121.57	621.45	75.26
360.0	4195.13	4087.13	3703.50	3218.06	2557.13	1810.13	1289.25	800.44	292.50

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	21.04	13.28	12.21	11.59	11.08	10.74	10.46	10.29	10.13
45.0	14.68	12.94	12.04	11.42	11.03	10.74	10.46	10.29	10.35
90.0	14.06	12.71	11.87	11.36	10.97	10.69	10.46	10.29	10.18
135.0	15.13	12.88	12.04	11.48	11.03	10.69	10.52	10.29	10.18
180.0	13.67	12.54	11.81	11.31	10.91	10.63	10.35	10.24	10.13
225.0	19.41	12.88	11.98	11.48	11.03	10.69	10.46	10.29	10.18
270.0	24.53	13.39	12.26	11.70	11.14	10.80	10.52	10.35	10.18
315.0	18.62	13.11	12.09	11.48	11.03	10.69	10.46	10.24	10.13
360.0	21.04	13.28	12.21	11.59	11.08	10.74	10.46	10.29	10.13

C/γ(°)	90.0
0.0	10.07
45.0	10.07
90.0	10.07
135.0	10.07
180.0	10.07
225.0	10.07
270.0	10.07
315.0	10.07
360.0	10.07