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## NATA

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LumCAT: 3-2046-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 36.2000
Test No: GC2018111303	Current(A): 0.5500
LampCAT: OSRAMSOLERIQ S15	Power (W): 19.9100
Lamp flux(lm): 2619.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2337.27  
Efficiency(%): 89.24%  
Lumens(lm)/Power(W): 119.09  
Central intensity(cd): 6025.641  
Maximum intensity(cd): 6025.641  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=31.8  
                                  [C90/270]Total=31.8  
Field angle(10%Imax): [C0/180]Total=66.8  
                                  [C90/270]Total=66.8  
Maximum s/h(1/2): C0\_180=0.52 C90\_270=0.52  
Maximum s/h(1/4): C0\_180=0.56 C90\_270=0.56  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.53%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.341%

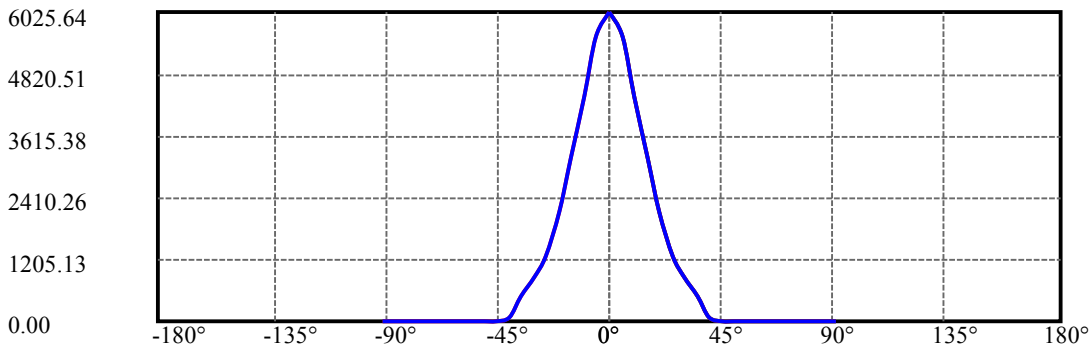
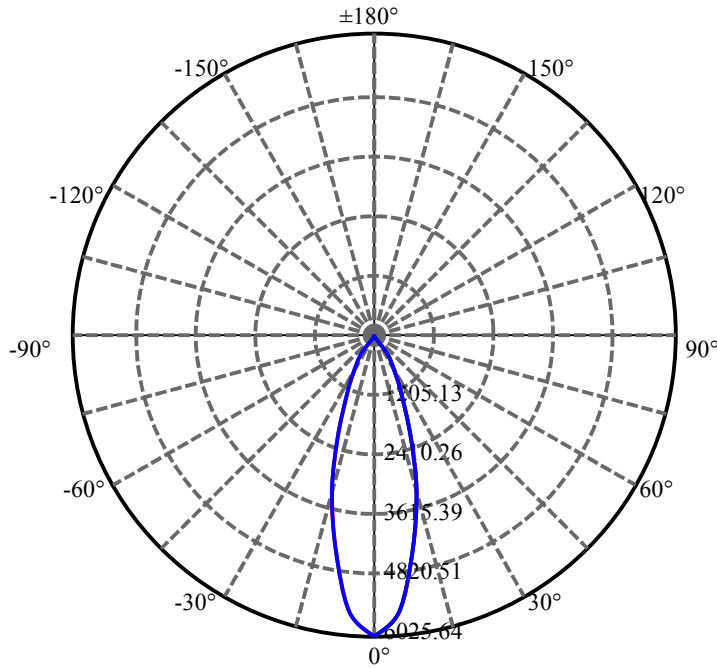
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6025.641	36.035	36.035	1.376%	1.542%
5.0	5532.680	264.314	300.349	10.092%	12.850%
10.0	4361.625	415.153	715.502	15.852%	30.613%
15.0	3198.797	453.808	1169.31	17.328%	50.029%
20.0	2147.133	402.532	1571.842	15.370%	67.251%
25.0	1281.417	296.844	1868.686	11.334%	79.952%
30.0	879.117	240.938	2109.624	9.200%	90.260%
35.0	474.560	149.201	2258.825	5.697%	96.644%
40.0	80.304	28.294	2287.119	1.080%	97.854%
45.0	13.985	5.421	2292.54	.207%	98.086%
50.0	12.263	5.149	2297.689	.197%	98.306%
55.0	11.468	5.149	2302.838	.197%	98.527%
60.0	10.927	5.187	2308.025	.198%	98.749%
65.0	10.512	5.222	2313.247	.199%	98.972%
70.0	10.259	5.284	2318.531	.202%	99.198%
75.0	10.055	5.324	2323.854	.203%	99.426%
80.0	9.942	5.367	2329.221	.205%	99.656%
85.0	9.844	5.375	2334.596	.205%	99.886%
90.0	9.759	2.675	2337.271	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2109.62	80.55%	90.26%
0-40	2287.12	87.33%	97.85%
0-60	2308.02	88.13%	98.75%
0-90	2334.60	89.14%	99.89%
0-120	2334.60	89.14%	99.89%
0-180	2337.27	89.24%	100.00%
60-90	31.76	1.21%	1.36%
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%
0-25.02	1869.82	71.39%	80.00%

ZONAL LUMEN SUMMARY

0-10	715.50
10-20	856.34
20-30	537.78
30-40	177.50
40-50	10.57
50-60	10.34
60-70	10.51
70-80	10.69
80-90	5.38
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: —————

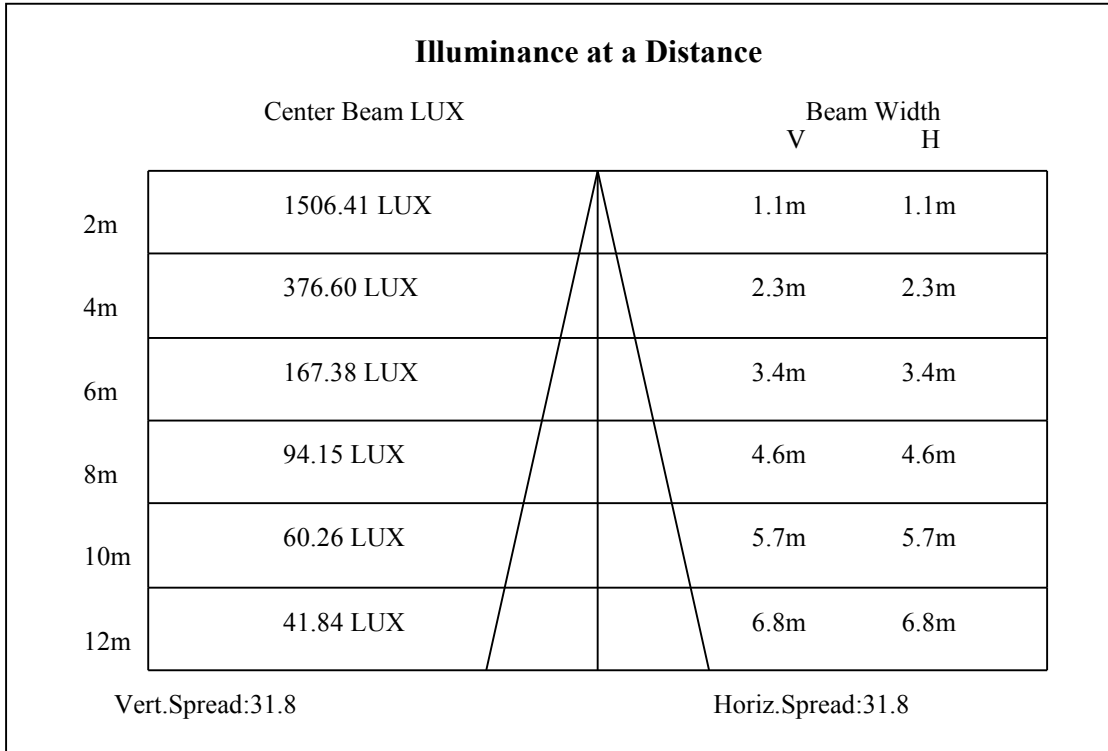
C90/C270: —————

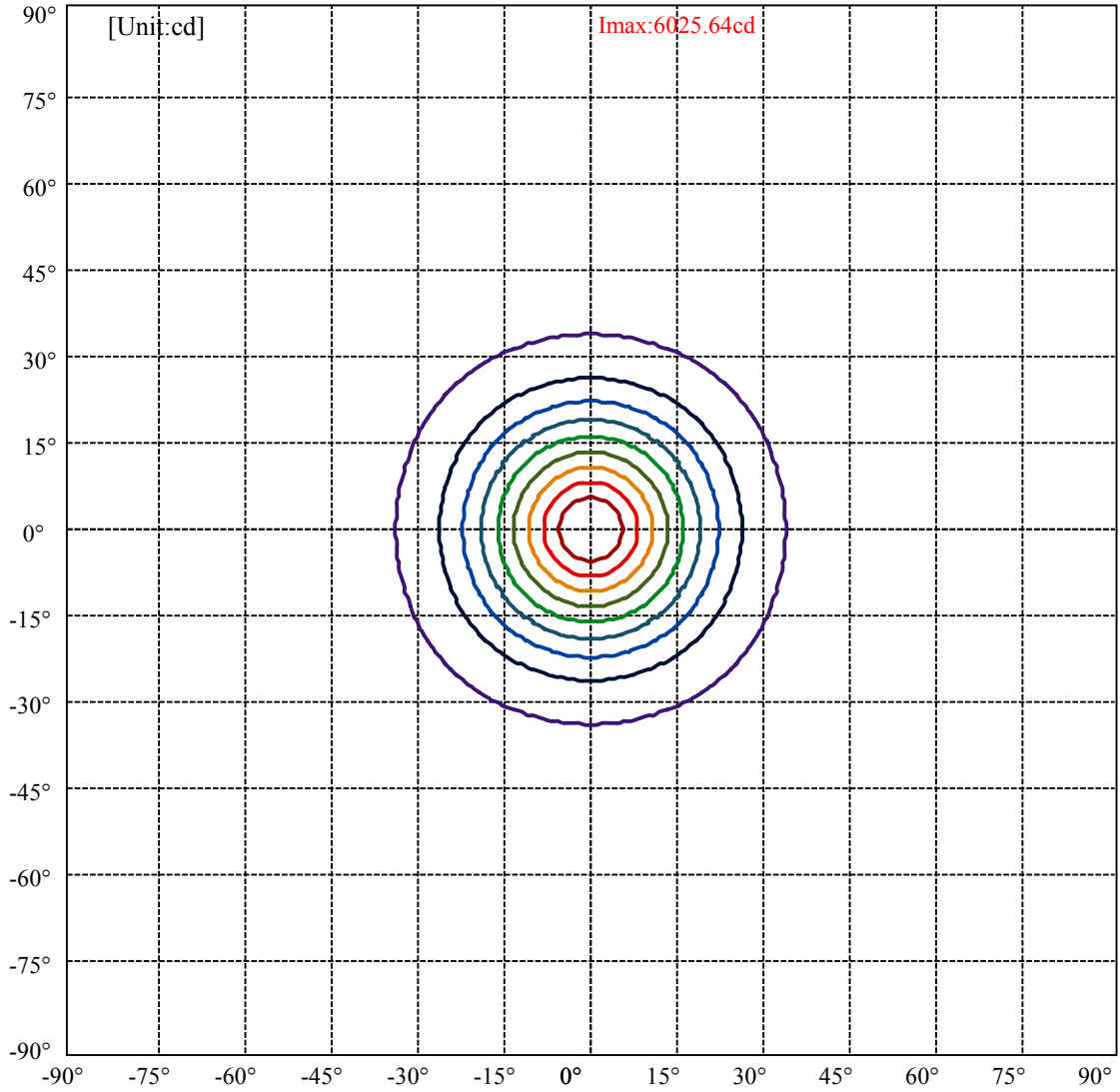
Field angle(10%Imax):C0/180Left:33.4 Right:33.4

:C90/270Left:33.4 Right:33.4

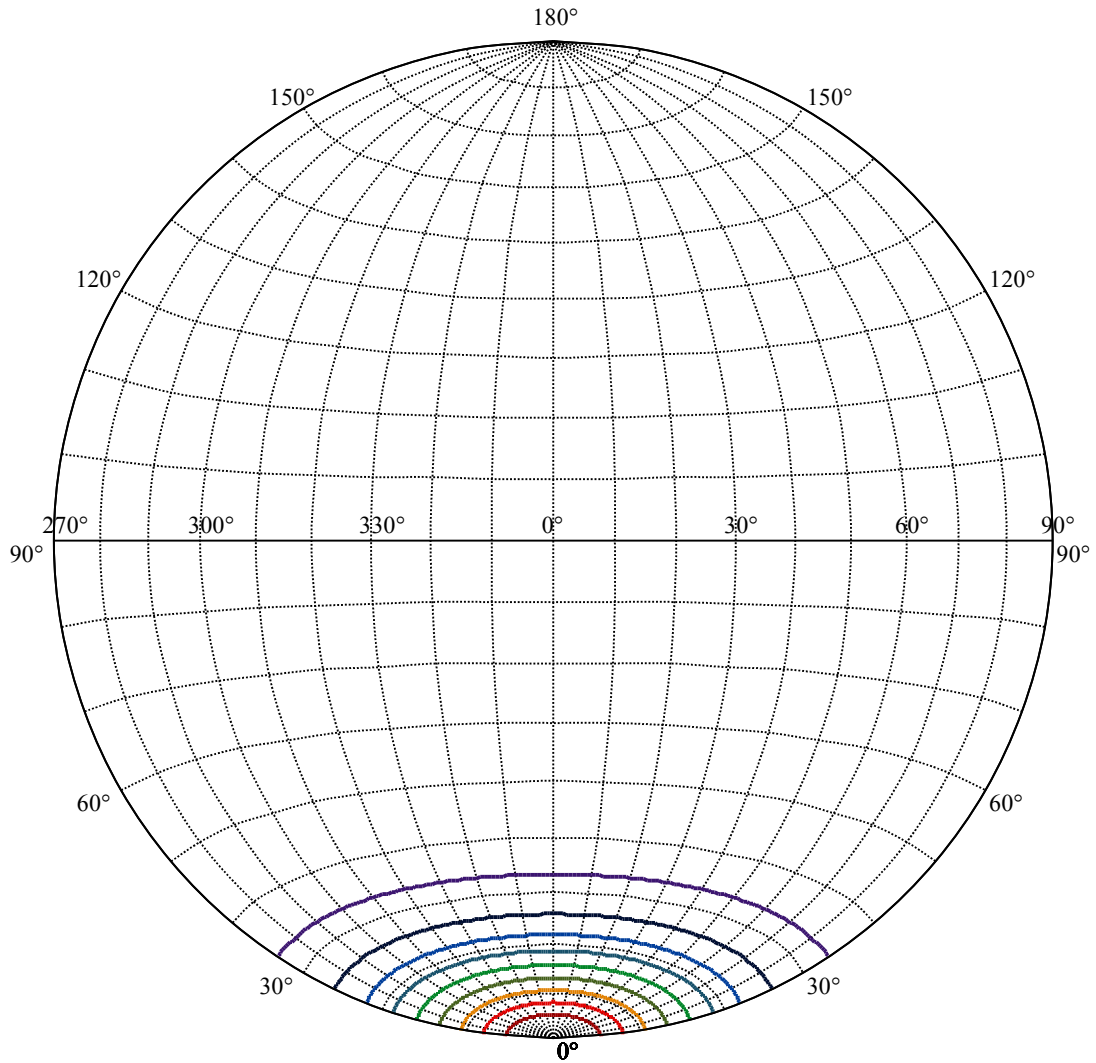
Beam Angle(50%Imax):C0/180Left:15.9 Right:15.9

:C90/270Left:15.9 Right:15.9





(10%Imax) 602.564	—
(20%Imax) 1205.13	—
(30%Imax) 1807.69	—
(40%Imax) 2410.26	—
(50%Imax) 3012.82	—
(60%Imax) 3615.38	—
(70%Imax) 4217.95	—
(80%Imax) 4820.51	—
(90%Imax) 5423.08	—



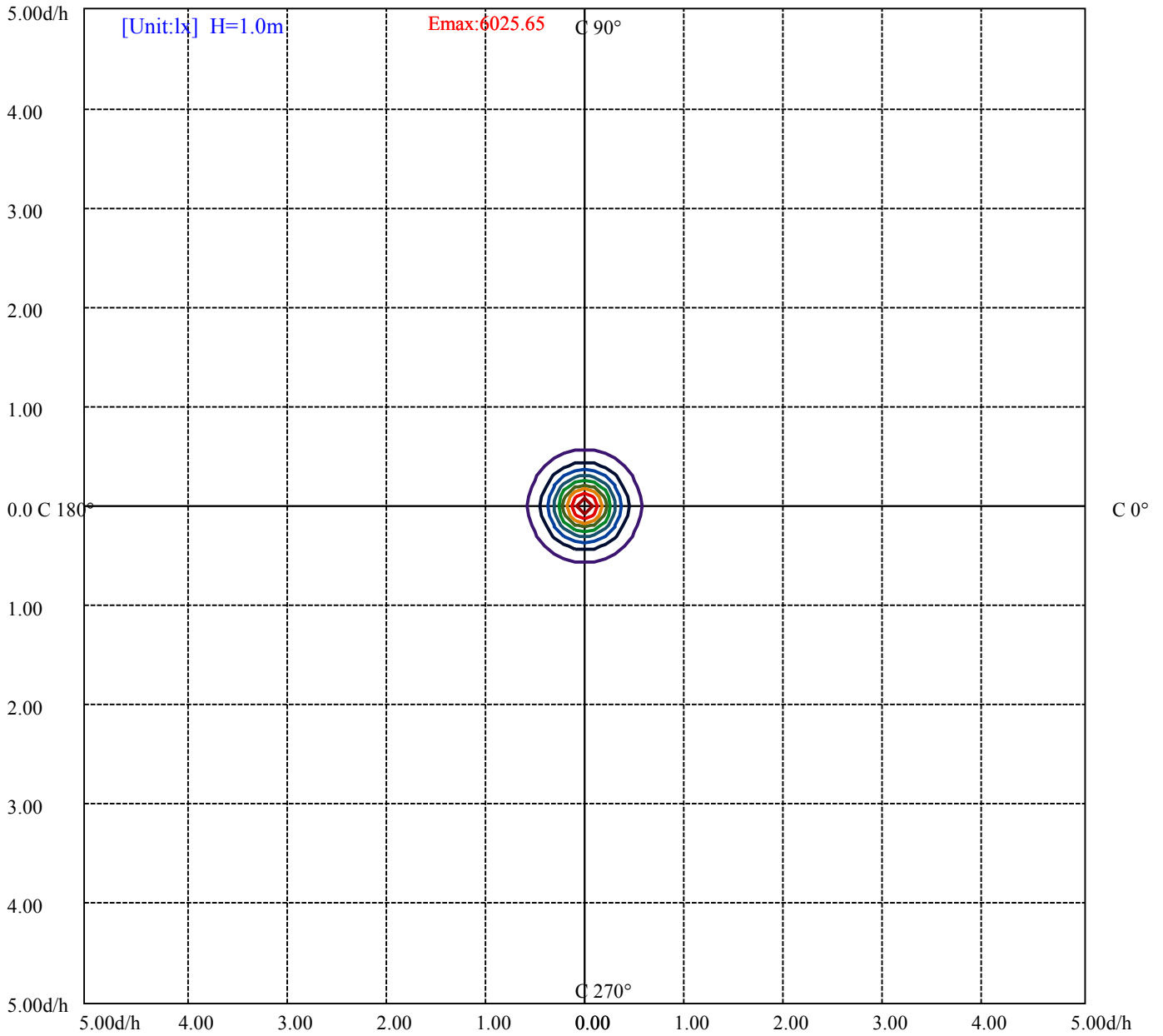
House

[Unit:cd]

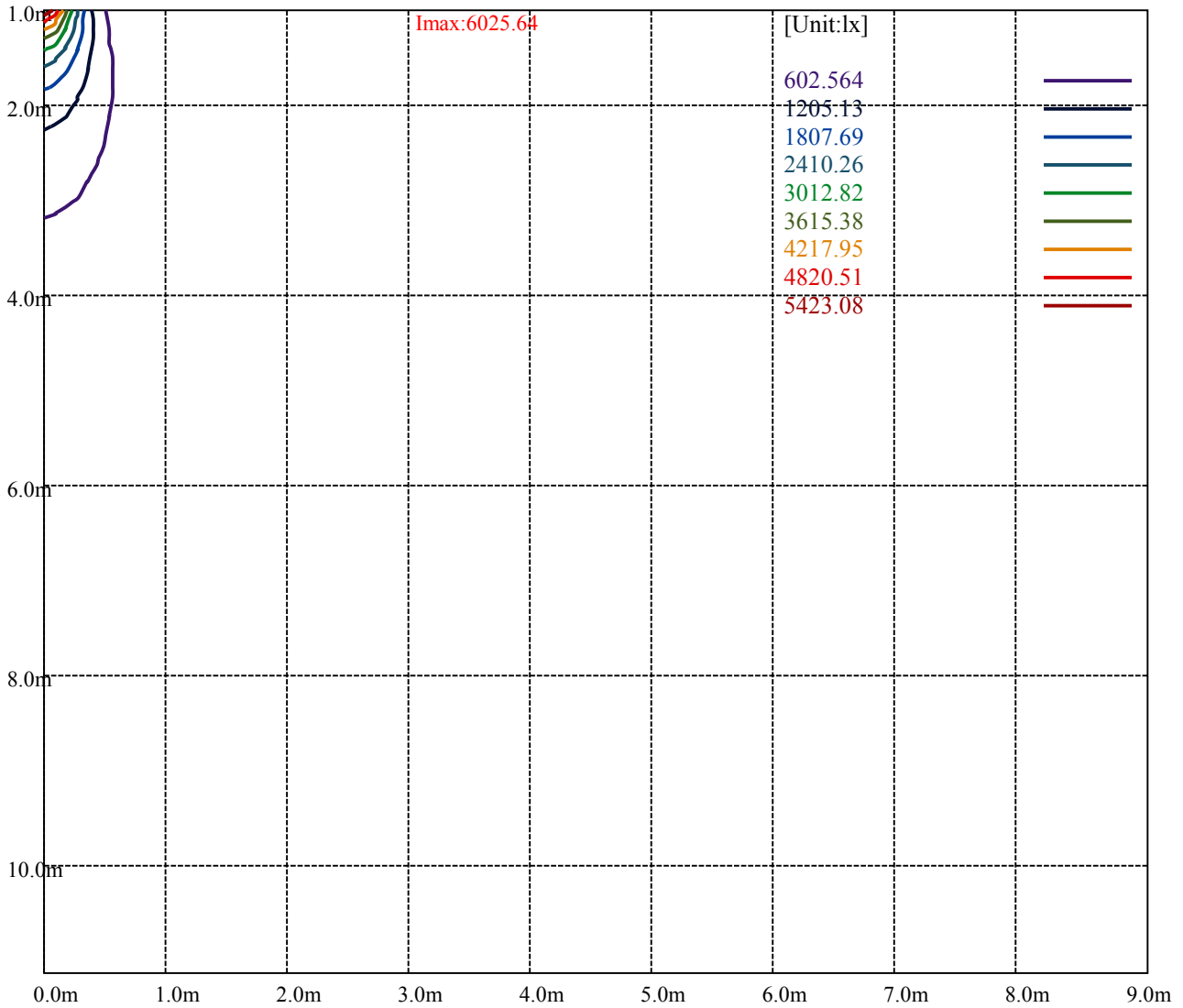
Road

Imax:6025.64

(10%Imax) 602.564	—
(20%Imax) 1205.13	—
(30%Imax) 1807.69	—
(40%Imax) 2410.26	—
(50%Imax) 3012.82	—
(60%Imax) 3615.38	—
(70%Imax) 4217.95	—
(80%Imax) 4820.51	—
(90%Imax) 5423.08	—







Luminance Table

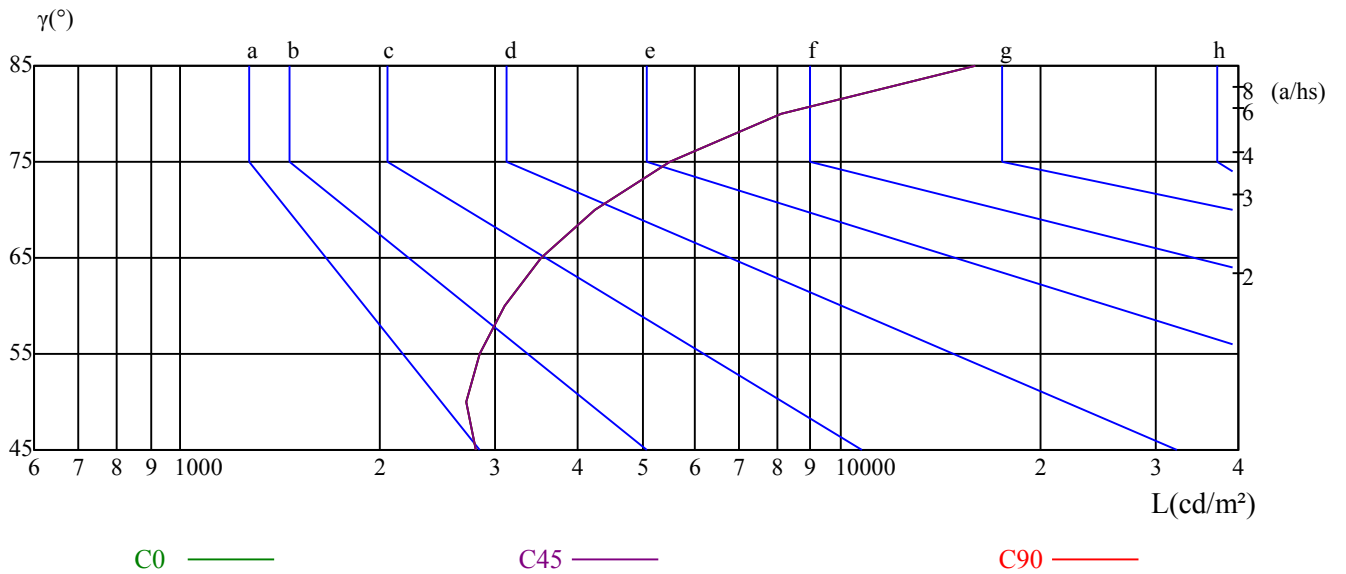
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2803	2704	2834	3097	3525	4251	5506	8114	16007
C45	2803	2704	2834	3097	3525	4251	5506	8114	16007
C90	2803	2704	2834	3097	3525	4251	5506	8114	16007

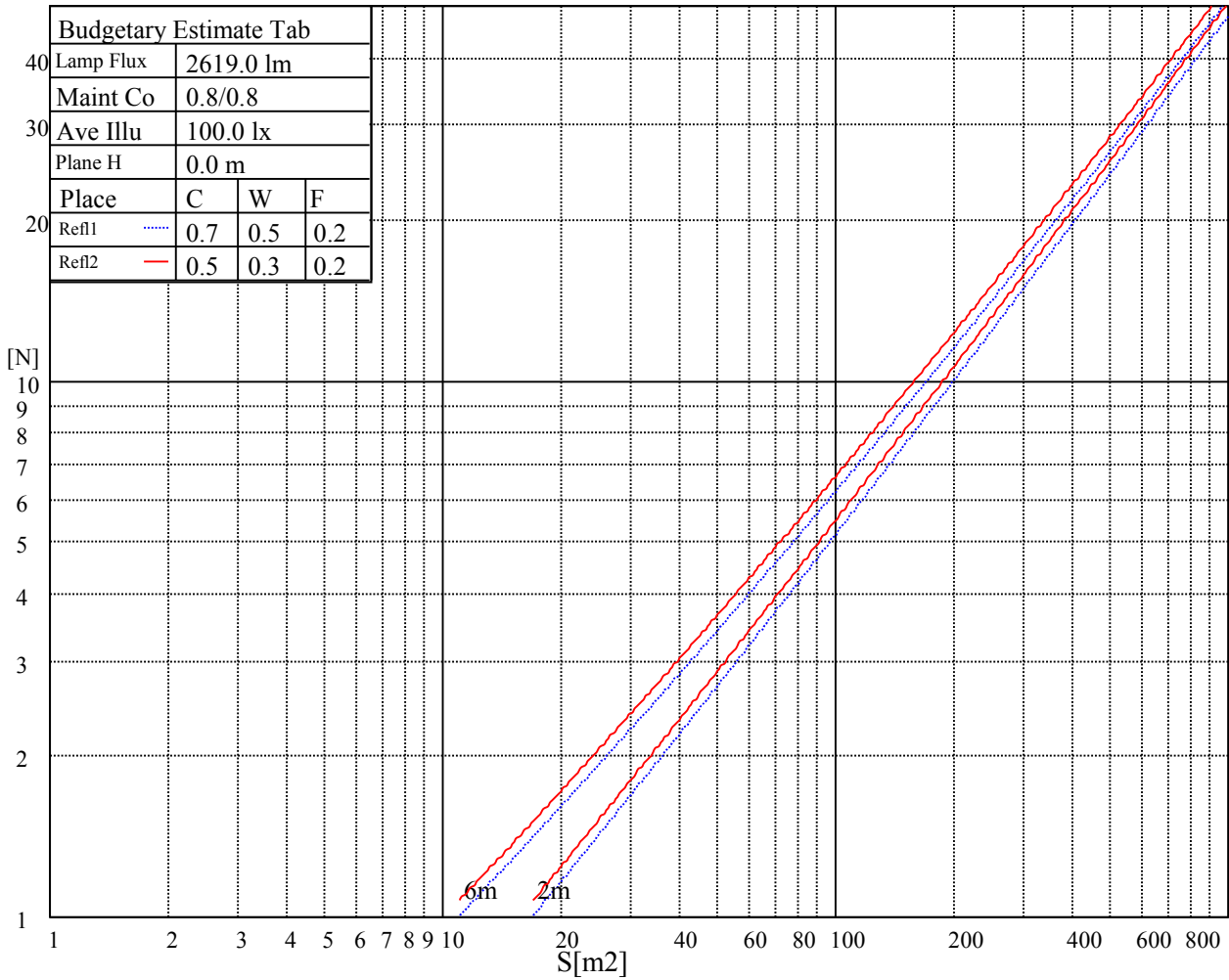
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3525	3525	3525	5506	5506	5506	16007	16007	16007

Glare Table

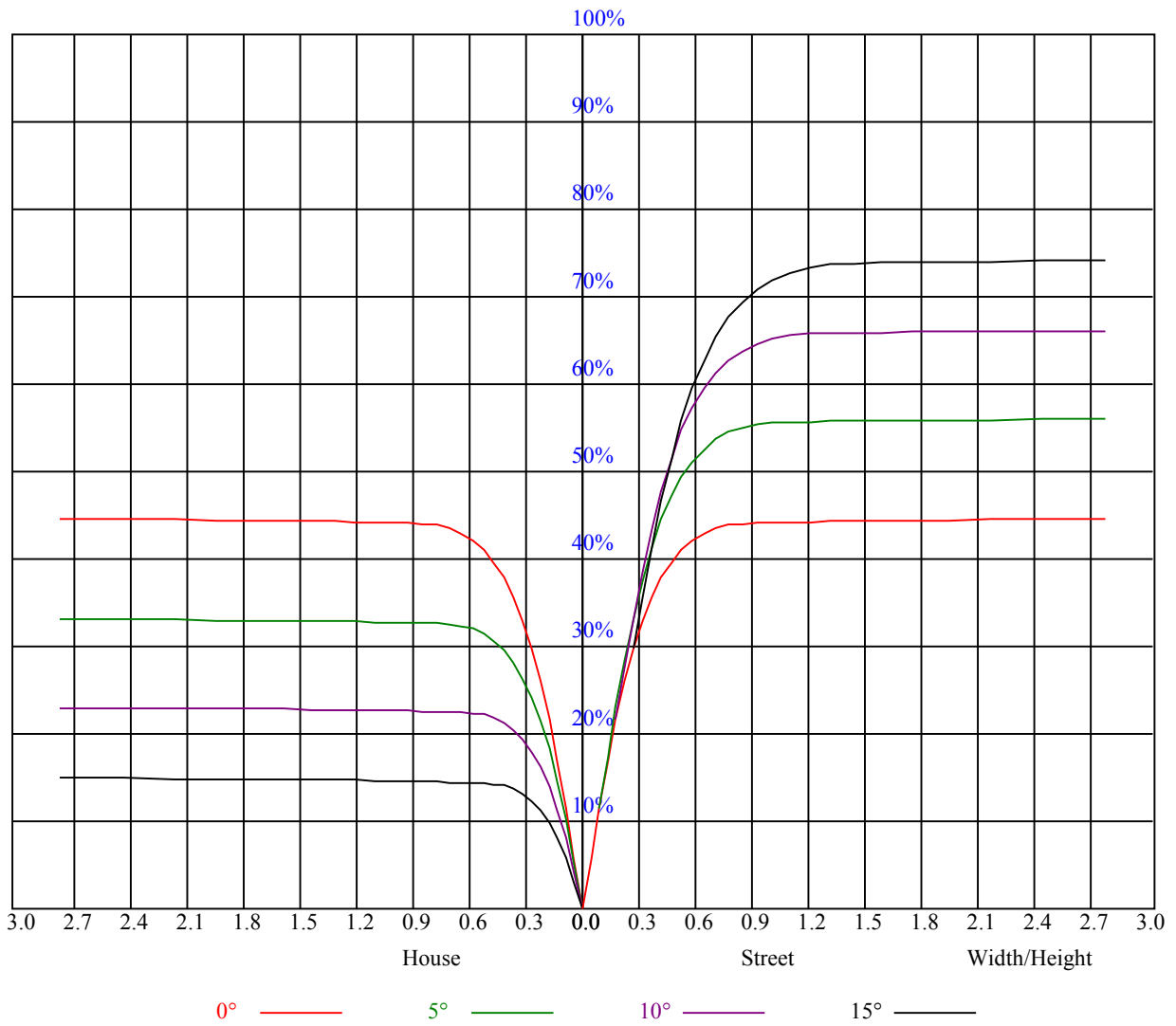
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.86	0.85	0.84
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.90	0.86	0.82	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.85	0.81	0.78	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.63
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.61
10	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.62	0.60	0.59



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	5995.69	5807.81	4673.81	3602.81	2520.00	1545.75	993.38	672.75	294.19
45.0	6033.38	5512.50	4431.38	3265.88	2124.56	1295.44	869.06	478.69	40.89
90.0	6036.19	5409.56	4187.25	3113.44	1909.13	1110.83	819.96	364.56	24.53
135.0	6037.31	5591.81	4365.56	3111.75	2068.31	1227.94	835.31	431.44	26.04
180.0	5995.69	5173.31	4017.38	2818.69	1800.00	1106.27	784.97	268.88	21.43
225.0	6033.38	5510.25	4326.19	3128.06	2121.75	1101.43	875.48	466.99	31.33
270.0	6036.19	5733.00	4520.81	3337.88	2367.00	1476.00	946.69	587.25	163.35
315.0	6037.31	5523.19	4370.63	3211.88	2266.31	1387.69	908.10	525.94	40.67
360.0	5995.69	5807.81	4673.81	3602.81	2520.00	1545.75	993.38	672.75	294.19

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.48	12.49	11.64	11.08	10.63	10.29	10.07	9.96	9.84
45.0	13.56	12.43	11.59	11.03	10.58	10.29	10.07	9.90	9.79
90.0	13.11	12.09	11.31	10.80	10.46	10.24	10.07	10.07	9.79
135.0	13.16	12.15	11.36	10.86	10.46	10.18	10.01	9.90	9.79
180.0	12.99	12.04	11.31	10.74	10.41	10.18	9.96	9.90	9.79
225.0	13.84	12.49	11.64	11.08	10.58	10.29	10.07	9.90	9.84
270.0	15.47	12.38	11.59	11.03	10.58	10.41	10.18	10.07	10.13
315.0	13.28	12.04	11.31	10.80	10.41	10.18	10.01	9.84	9.79
360.0	16.48	12.49	11.64	11.08	10.63	10.29	10.07	9.96	9.84

C/γ(°)	90.0
0.0	9.79
45.0	9.79
90.0	9.73
135.0	9.79
180.0	9.73
225.0	9.79
270.0	9.73
315.0	9.73
360.0	9.79