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Nata

LumCAT: 1657-S	
Luminaire: 92.70.126.00	
Report No: NATA0100	Voltage(V): 36.1000
Test No: GC2018082003	Current(A): 0.4000
LampCAT: LUMINUS CHM-9-AA10	Power (W): 15.4400
Lamp flux(lm): 1813.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1619.22
Efficiency(%): 89.31%
Lumens(lm)/Power(W): 107.35
Central intensity(cd): 6648.749
Maximum intensity(cd): 6648.749
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=22.9
 [C90/270]Total=22.9
Field angle(10%Imax): [C0/180]Total=50.7
 [C90/270]Total=50.7
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.39 C90_270=0.39
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.42%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.320%

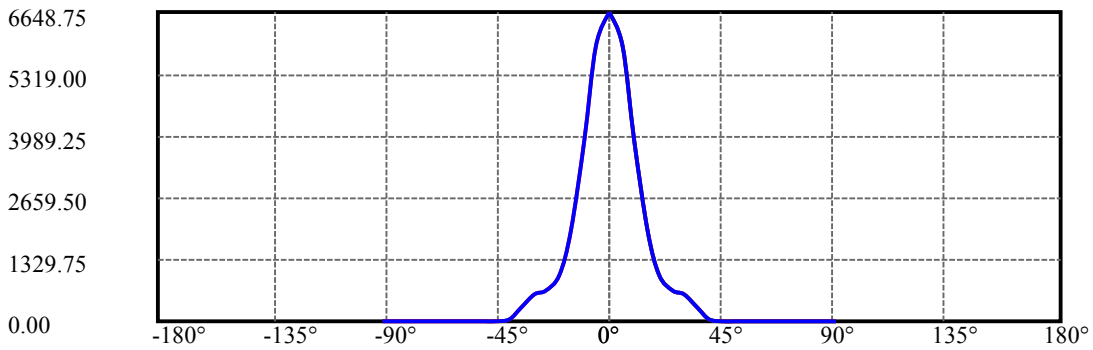
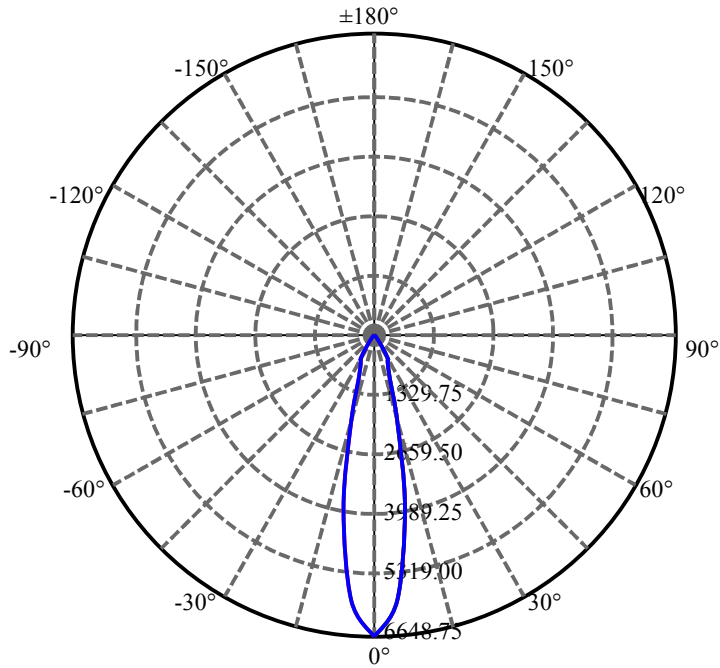
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6648.749	39.761	39.761	2.193%	2.456%
5.0	5885.323	281.161	320.922	15.508%	19.820%
10.0	3874.319	368.770	689.692	20.340%	42.594%
15.0	1960.696	278.161	967.853	15.343%	59.773%
20.0	970.920	182.022	1149.875	10.040%	71.014%
25.0	671.502	155.555	1305.43	8.580%	80.621%
30.0	582.896	159.754	1465.184	8.812%	90.487%
35.0	303.361	95.376	1560.56	5.261%	96.377%
40.0	43.412	15.296	1575.856	.844%	97.322%
45.0	15.264	5.916	1581.772	.326%	97.687%
50.0	12.567	5.277	1587.049	.291%	98.013%
55.0	10.819	4.858	1591.906	.268%	98.313%
60.0	9.566	4.541	1596.447	.250%	98.593%
65.0	8.699	4.321	1600.769	.238%	98.860%
70.0	8.141	4.194	1604.962	.231%	99.119%
75.0	7.777	4.117	1609.08	.227%	99.374%
80.0	7.605	4.105	1613.185	.226%	99.627%
85.0	7.481	4.085	1617.27	.225%	99.879%
90.0	7.130	1.954	1619.224	.108%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1465.18	80.82%	90.49%
0-40	1575.86	86.92%	97.32%
0-60	1596.45	88.06%	98.59%
0-90	1617.27	89.20%	99.88%
0-120	1617.27	89.20%	99.88%
0-180	1619.22	89.31%	100.00%
60-90	25.36	1.40%	1.57%
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%
0-24.68	1295.38	71.45%	80.00%

ZONAL LUMEN SUMMARY

0-10	689.69
10-20	460.18
20-30	315.31
30-40	110.67
40-50	11.19
50-60	9.40
60-70	8.51
70-80	8.22
80-90	4.08
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: —————

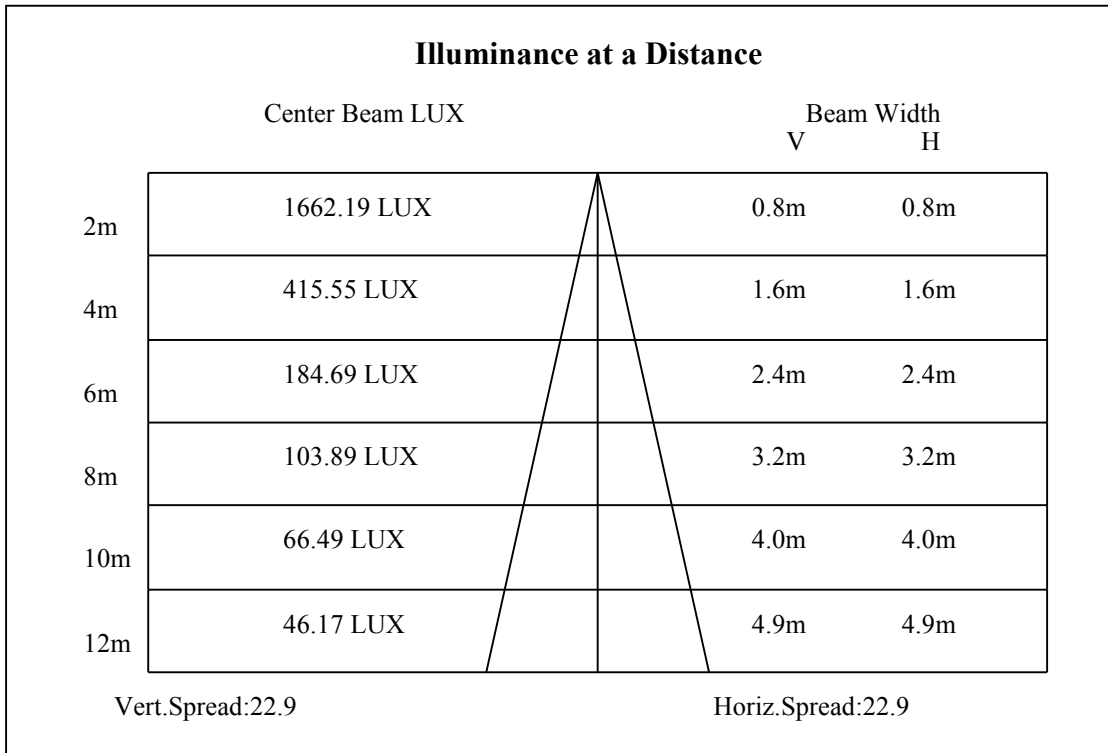
C90/C270: —————

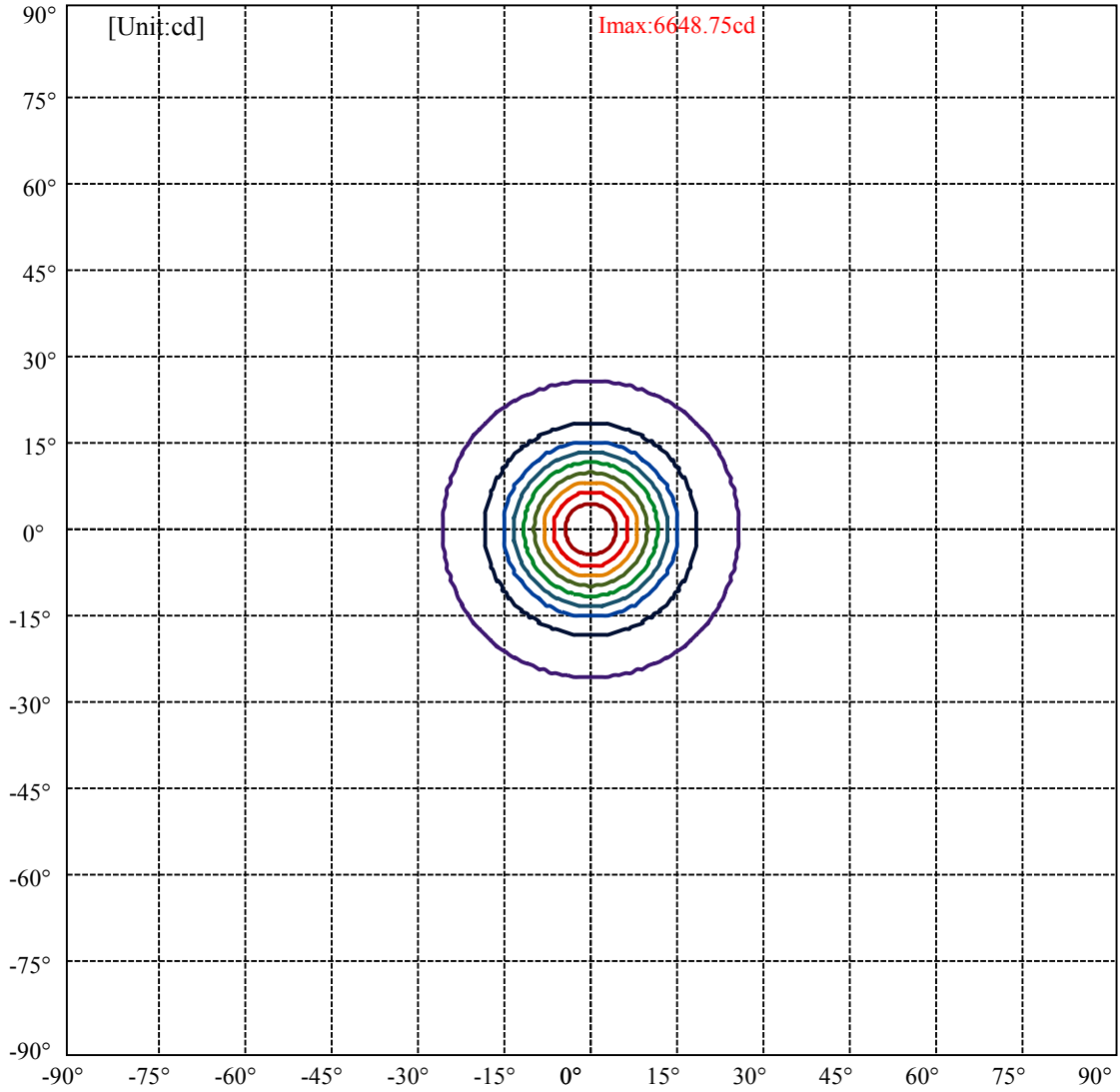
Field angle(10%Imax):C0/180Left:25.4 Right:25.4

:C90/270Left:25.4 Right:25.4

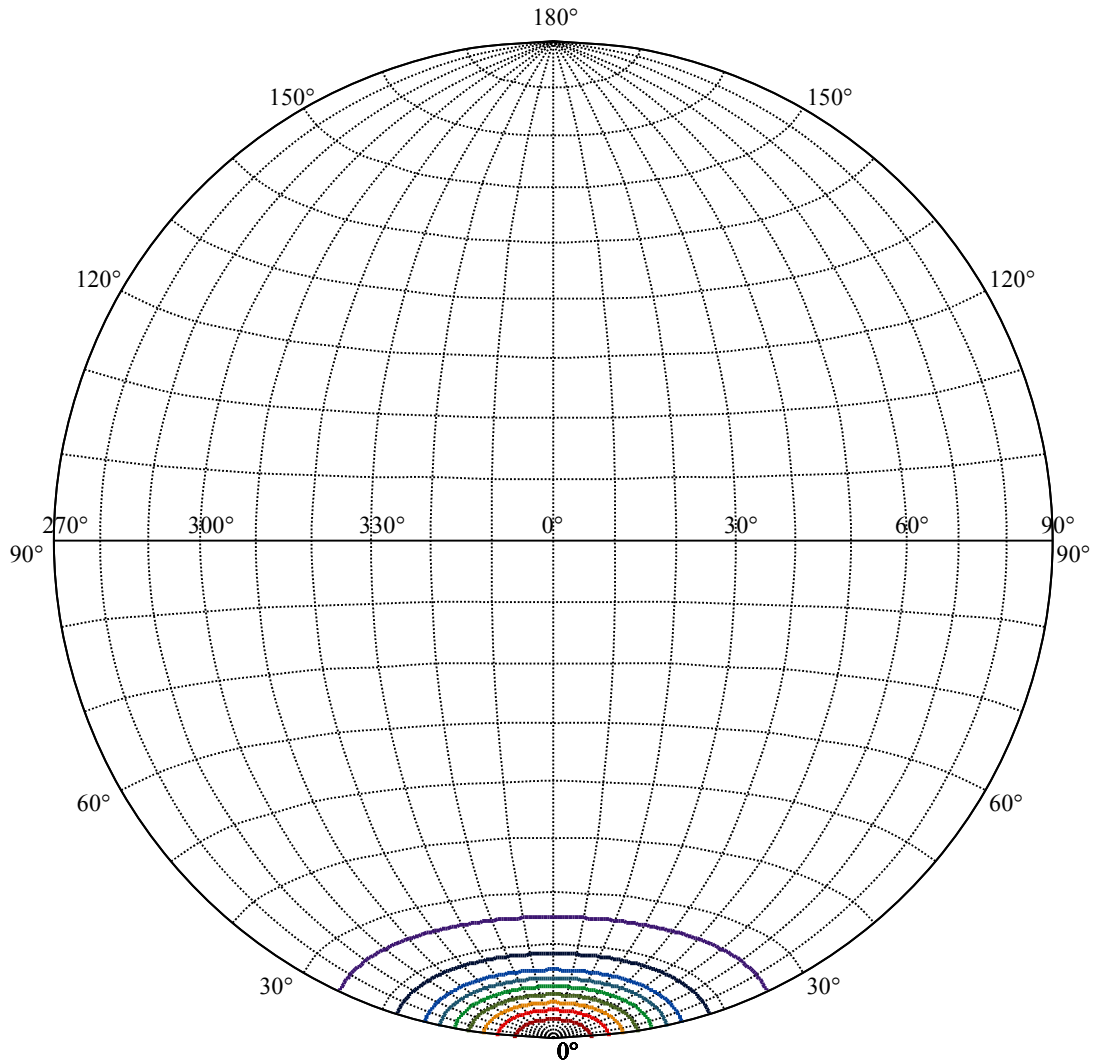
Beam Angle(50%Imax):C0/180Left:11.4 Right:11.4

:C90/270Left:11.4 Right:11.4





(10%Imax) 664.875	—
(20%Imax) 1329.75	—
(30%Imax) 1994.62	—
(40%Imax) 2659.5	—
(50%Imax) 3324.37	—
(60%Imax) 3989.25	—
(70%Imax) 4654.12	—
(80%Imax) 5319	—
(90%Imax) 5983.87	—



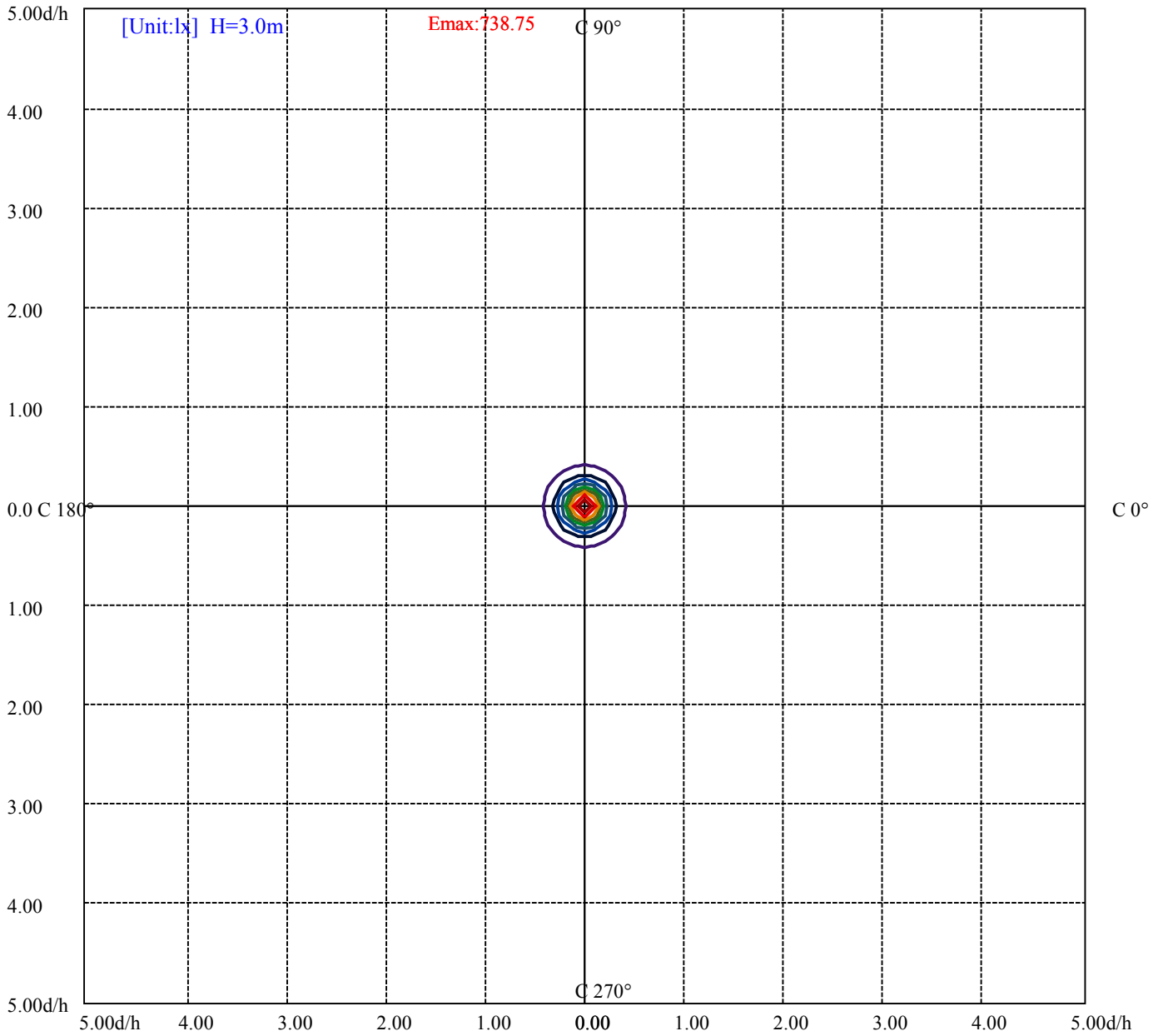
House

[Unit:cd]

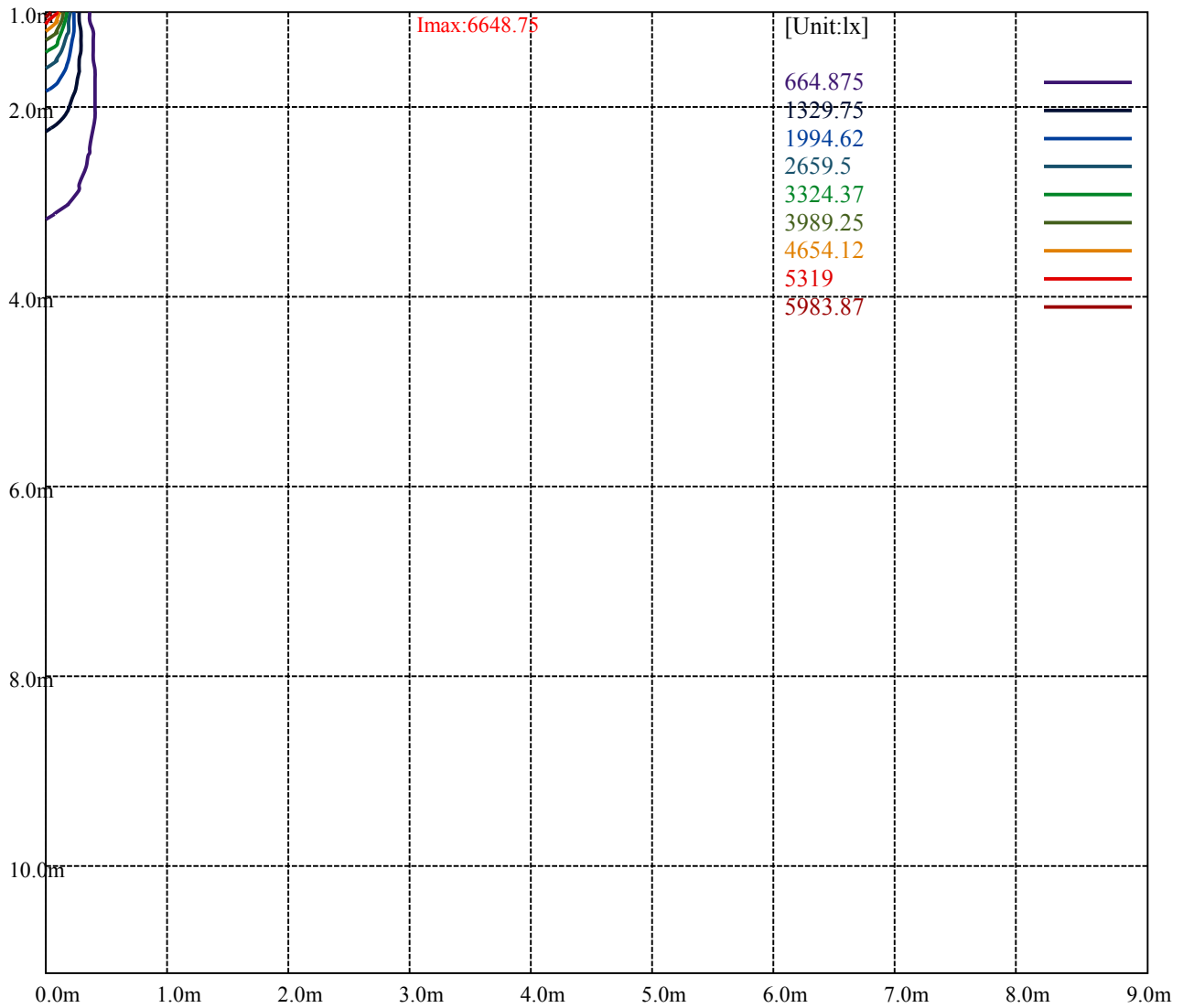
Road

Imax:6648.75

(10%Imax) 664.875	—
(20%Imax) 1329.75	—
(30%Imax) 1994.62	—
(40%Imax) 2659.5	—
(50%Imax) 3324.37	—
(60%Imax) 3989.25	—
(70%Imax) 4654.12	—
(80%Imax) 5319	—
(90%Imax) 5983.87	—



(10%Emax) 73.87478	—
(20%Emax) 147.75	—
(30%Emax) 221.6245	—
(40%Emax) 295.4989	—
(50%Emax) 369.3734	—
(60%Emax) 443.2489	—
(70%Emax) 517.1233	—
(80%Emax) 590.9978	—
(90%Emax) 664.8723	—



Luminance Table

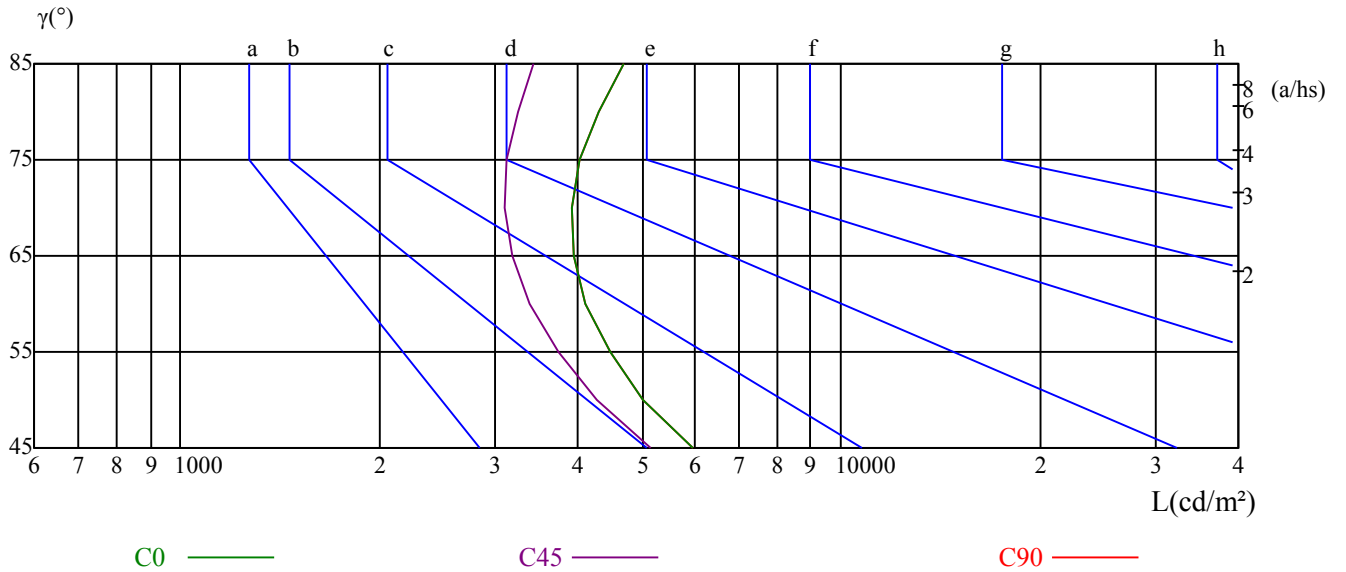
γ	45	50	55	60	65	70	75	80	85
C0	5965	5027	4467	4113	3934	3913	4022	4291	4684
C45	5136	4264	3730	3379	3174	3096	3113	3240	3433
C90	5965	5027	4467	4113	3934	3913	4022	4291	4684

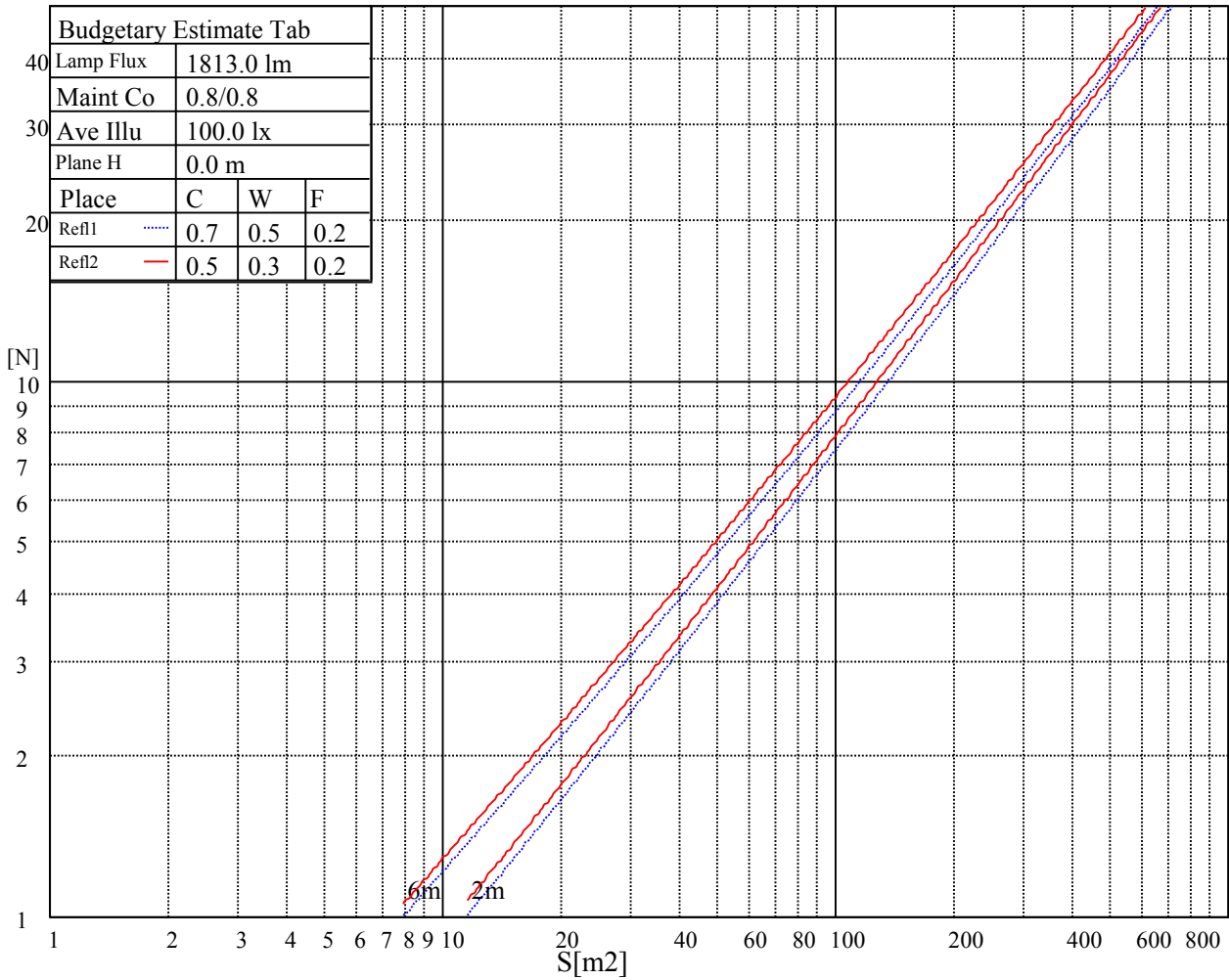
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9318	9318	9318	13602	13602	13602	38856	38856	38856

Glare Table

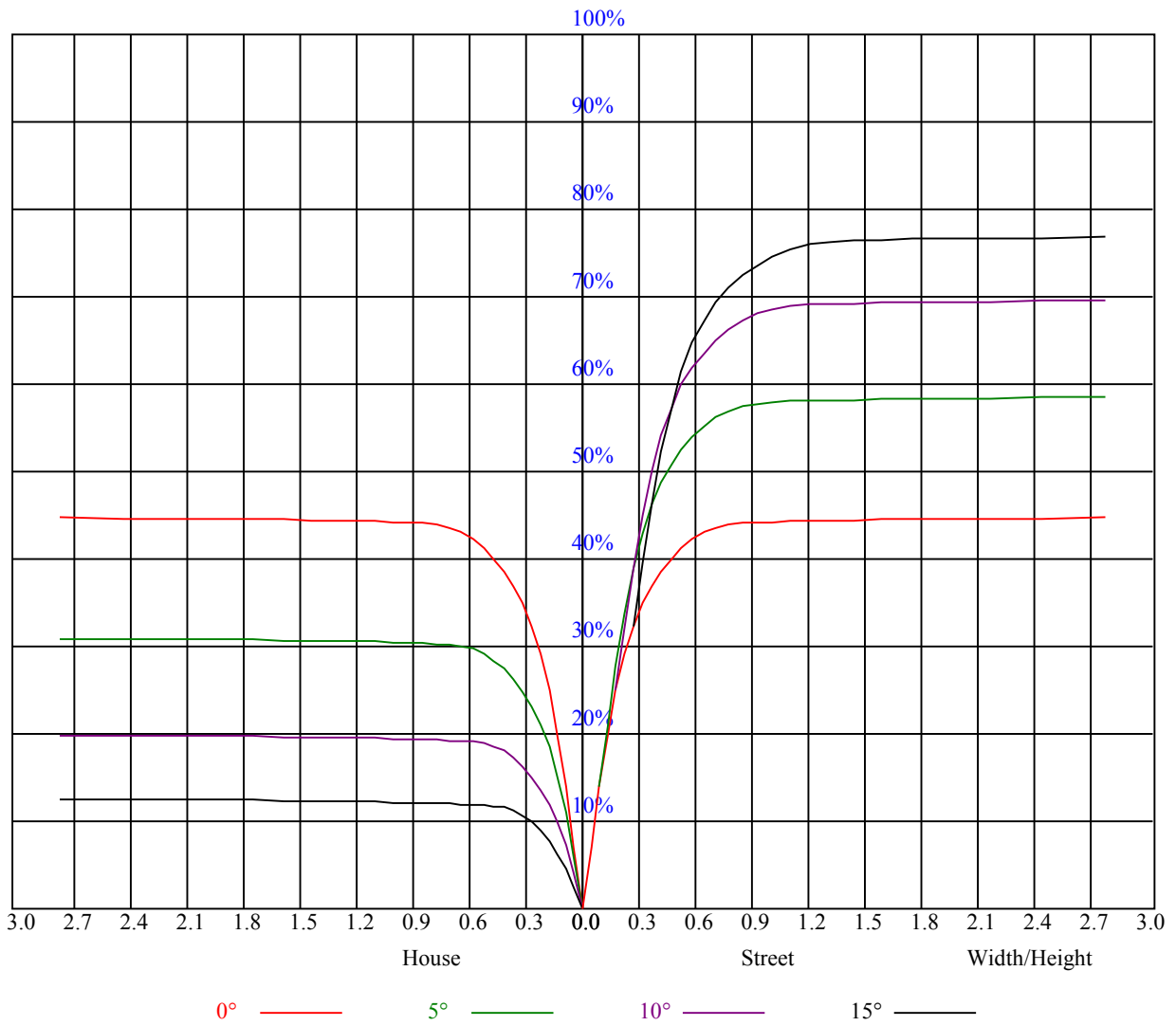
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.97	0.95	0.98	0.96	0.93	0.94	0.92	0.90	0.91	0.89	0.88	0.88	0.86	0.85	0.84
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.88	0.85	0.84	0.85	0.83	0.82	0.80
3	0.90	0.86	0.83	0.89	0.85	0.83	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.77
4	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.73	0.72
6	0.80	0.76	0.73	0.80	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63



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	6644.21	6096.95	4150.70	2274.93	1074.70	717.94	618.28	389.25	52.47
45.0	6637.05	6201.00	4313.67	2183.54	1068.64	703.07	607.82	359.52	66.45
90.0	6667.33	5887.18	3880.93	1798.14	933.98	630.84	519.90	270.60	55.28
135.0	6646.41	6161.91	4240.99	2294.75	1055.43	683.80	607.27	360.07	53.96
180.0	6644.21	5620.16	3673.91	1789.88	901.44	657.37	569.39	249.96	25.71
225.0	6637.05	5568.40	3379.36	1744.74	906.23	667.34	584.86	249.19	26.76
270.0	6667.33	5922.42	3826.97	1929.73	938.16	645.26	567.63	296.20	37.33
315.0	6646.41	5624.56	3528.01	1669.86	888.78	666.40	588.00	252.10	29.35
360.0	6644.21	6096.95	4150.70	2274.93	1074.70	717.94	618.28	389.25	52.47
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	13.21	9.52	8.86	8.53	8.20	7.98	7.76	7.54	7.38
45.0	13.87	11.01	9.97	9.14	8.42	7.98	7.65	7.49	7.32
90.0	21.20	15.91	12.28	10.19	8.97	8.37	8.04	7.98	8.20
135.0	17.51	15.25	12.83	10.57	9.19	8.31	7.76	7.54	7.32
180.0	10.02	9.19	9.08	9.03	8.53	8.04	7.65	7.43	7.32
225.0	13.38	12.11	11.07	9.86	8.86	8.15	7.65	7.49	7.38
270.0	18.17	15.03	11.89	9.97	8.97	8.37	8.04	7.93	7.60
315.0	14.76	12.50	10.57	9.25	8.42	7.93	7.65	7.43	7.32
360.0	13.21	9.52	8.86	8.53	8.20	7.98	7.76	7.54	7.38
C/γ(°)	90.0								
0.0	7.16								
45.0	7.21								
90.0	7.10								
135.0	7.10								
180.0	7.10								
225.0	7.16								
270.0	7.10								
315.0	7.10								
360.0	7.16								