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Nata

LumCAT: 1681-S
Luminaire: 92.70.126.00
Report No: NATA0100
Test No: GC2018082005
LampCAT: LUMINUS CHM-9-AA10
Lamp flux(lm): 1813.0
Number of Lamps: 1
Length(mm): 47
Phm Type: C

Voltage(V): 36.2000
Current(A): 0.4000
Power (W): 14.4800
PF: 0.0000
Ballast type: DC
Width(mm): 47
Height(mm): 0

Photometric Results

Lumens(lm): 1584.78
Efficiency(%): 87.41%
Lumens(lm)/Power(W): 110.23
Central intensity(cd): 2158.073
Maximum intensity(cd): 2158.073
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=54.5
 [C90/270]Total=54.5
Field angle(10%Imax): [C0/180]Total=76.0
 [C90/270]Total=76.0
Maximum s/h(1/2): C0_180=0.84 C90_270=0.84
Maximum s/h(1/4): C0_180=0.83 C90_270=0.83
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.04%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.847%

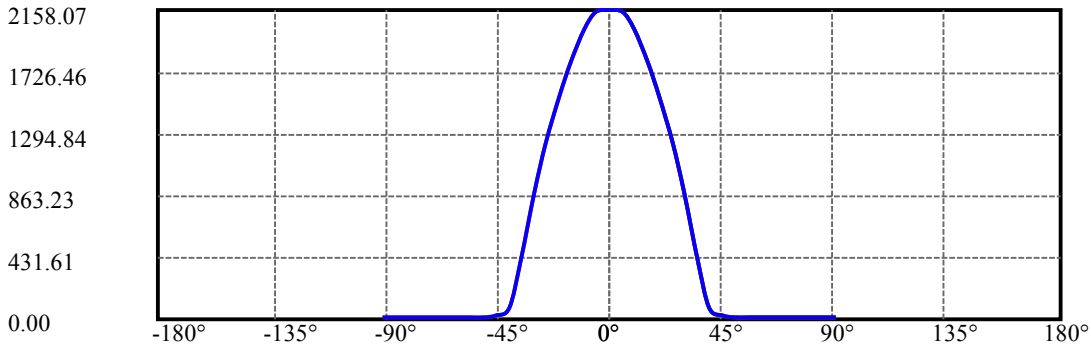
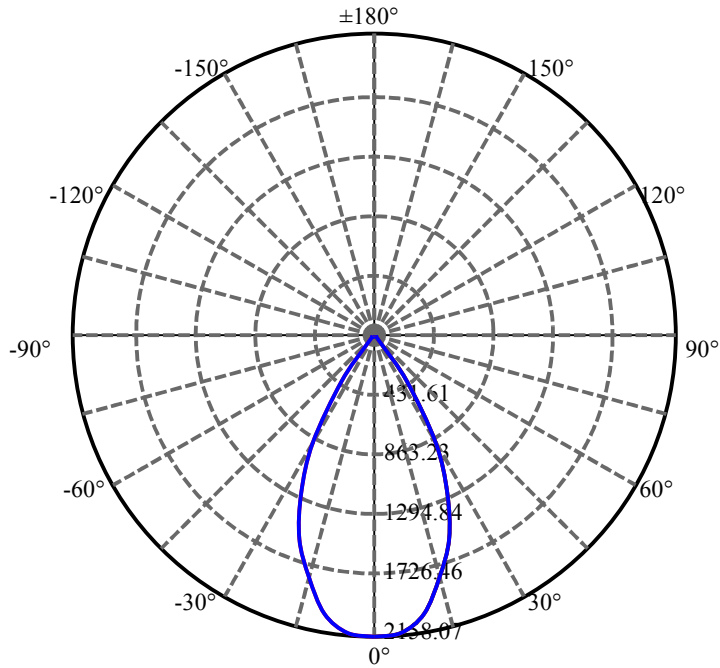
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2158.073	12.906	12.906	.712%	.814%
5.0	2138.184	102.148	115.054	5.634%	7.260%
10.0	2021.740	192.435	307.489	10.614%	19.403%
15.0	1790.847	254.065	561.554	14.013%	35.434%
20.0	1550.182	290.619	852.173	16.030%	53.772%
25.0	1239.388	287.108	1139.281	15.836%	71.889%
30.0	883.896	242.248	1381.529	13.362%	87.175%
35.0	409.386	128.710	1510.239	7.099%	95.296%
40.0	85.069	29.973	1540.212	1.653%	97.188%
45.0	23.137	8.968	1549.18	.495%	97.753%
50.0	11.245	4.722	1553.902	.260%	98.051%
55.0	8.878	3.986	1557.888	.220%	98.303%
60.0	8.286	3.933	1561.821	.217%	98.551%
65.0	7.949	3.949	1565.77	.218%	98.800%
70.0	7.846	4.041	1569.811	.223%	99.055%
75.0	7.935	4.201	1574.012	.232%	99.320%
80.0	7.859	4.243	1578.255	.234%	99.588%
85.0	8.403	4.588	1582.843	.253%	99.878%
90.0	7.075	1.939	1584.782	.107%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1381.53	76.20%	87.17%
0-40	1540.21	84.95%	97.19%
0-60	1561.82	86.15%	98.55%
0-90	1582.84	87.31%	99.88%
0-120	1582.84	87.31%	99.88%
0-180	1584.78	87.41%	100.00%
60-90	24.96	1.38%	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%
0-27.65	1267.83	69.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	307.49
10-20	544.68
20-30	529.36
30-40	158.68
40-50	13.69
50-60	7.92
60-70	7.99
70-80	8.44
80-90	4.59
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: —————

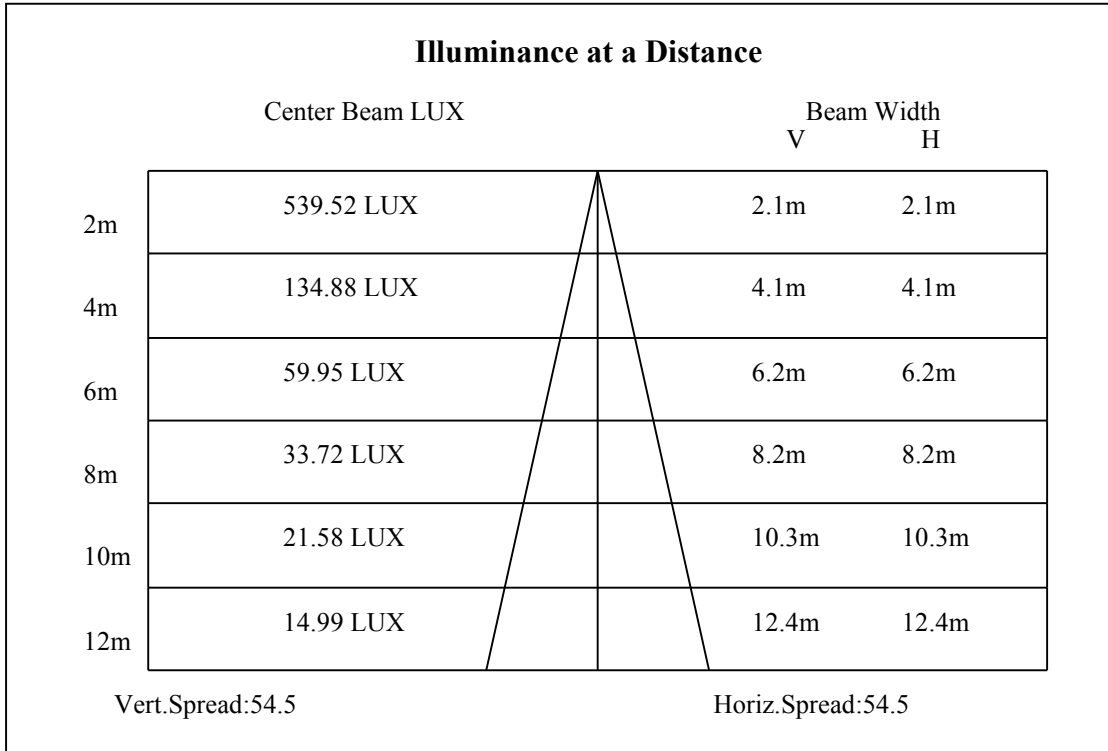
C90/C270: —————

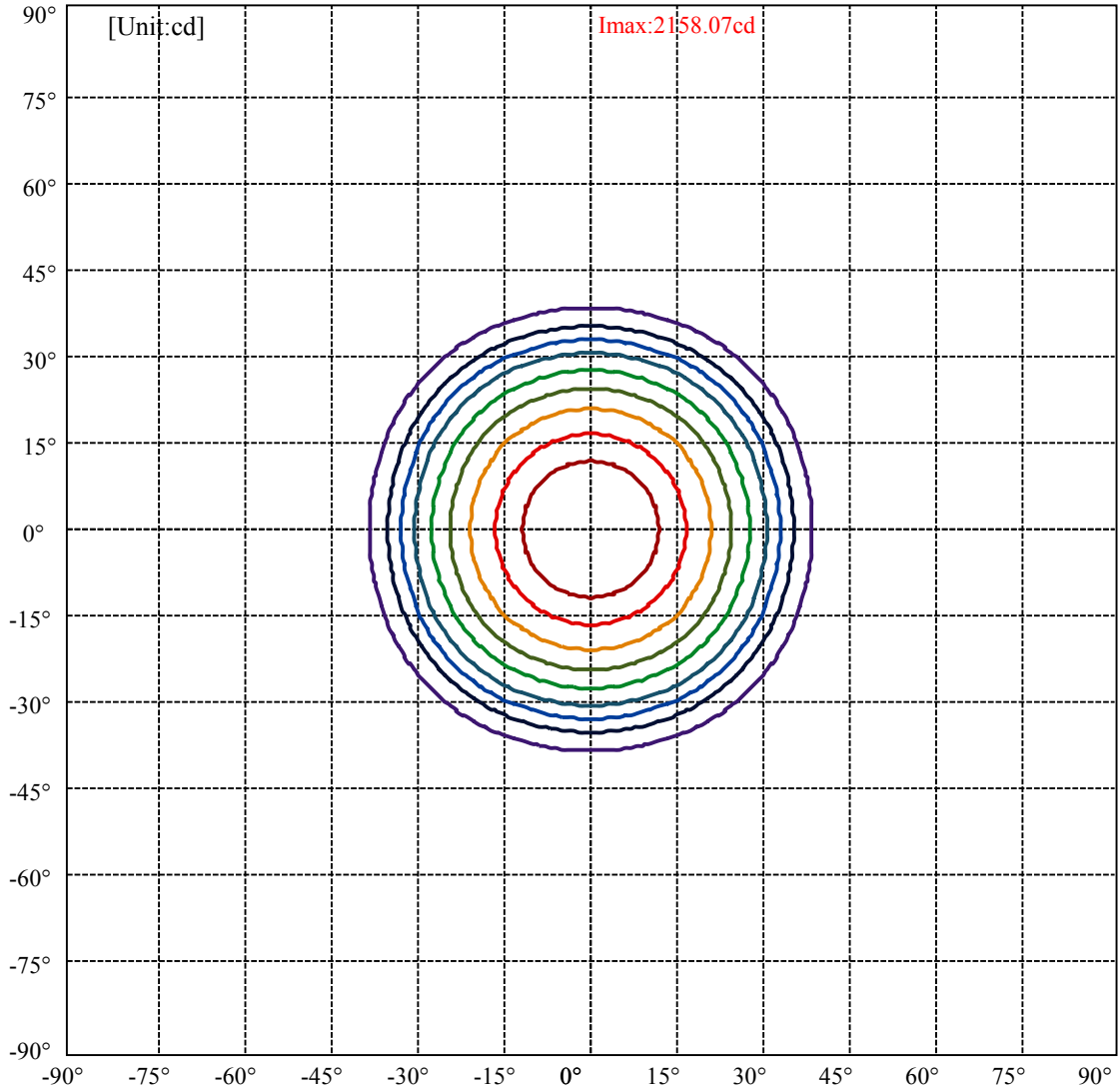
Field angle(10%Imax):C0/180Left:38.0 Right:38.0

:C90/270Left:38.0 Right:38.0

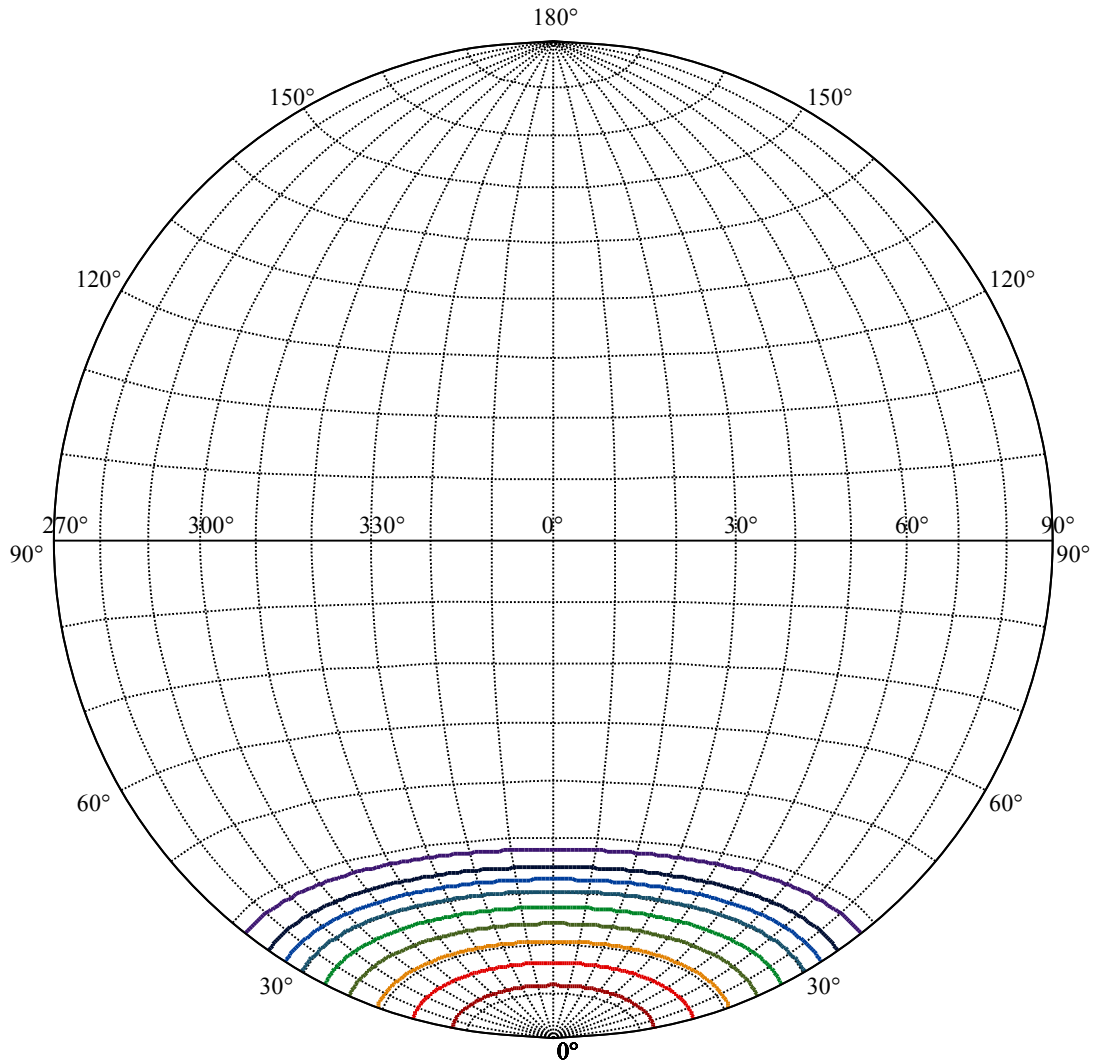
Beam Angle(50%Imax):C0/180Left:27.3 Right:27.3

:C90/270Left:27.3 Right:27.3





(10%Imax) 215.807	—
(20%Imax) 431.615	—
(30%Imax) 647.422	—
(40%Imax) 863.229	—
(50%Imax) 1079.04	—
(60%Imax) 1294.84	—
(70%Imax) 1510.65	—
(80%Imax) 1726.46	—
(90%Imax) 1942.27	—



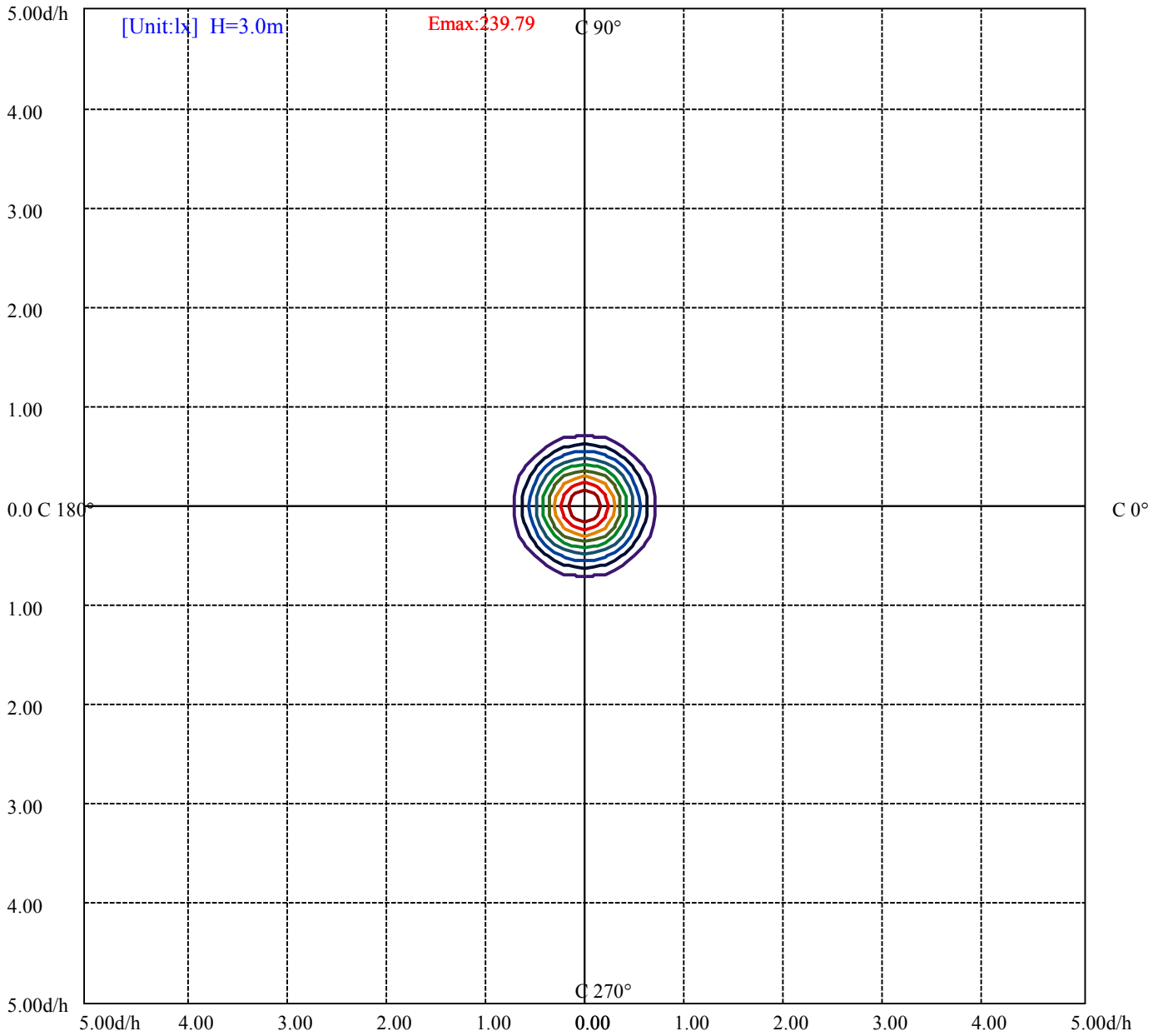
House

[Unit:cd]

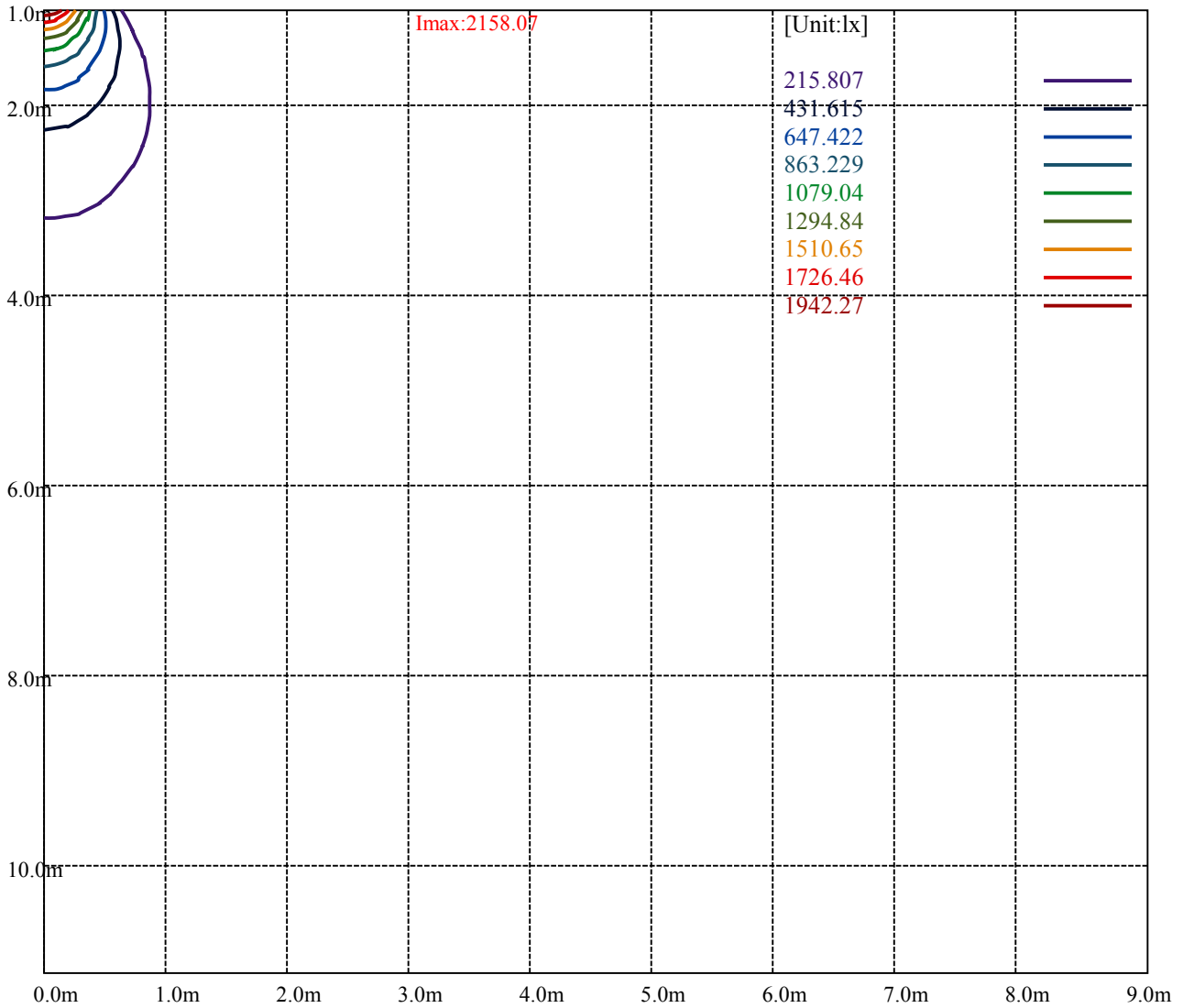
Road

Imax:2158.07

(10%Imax)	215.807	—
(20%Imax)	431.615	—
(30%Imax)	647.422	—
(40%Imax)	863.229	—
(50%Imax)	1079.04	—
(60%Imax)	1294.84	—
(70%Imax)	1510.65	—
(80%Imax)	1726.46	—
(90%Imax)	1942.27	—



- (10%Emax) 23.97856
- (20%Emax) 47.95722
- (30%Emax) 71.93578
- (40%Emax) 95.91434
- (50%Emax) 119.8933
- (60%Emax) 143.8711
- (70%Emax) 167.85
- (80%Emax) 191.8289
- (90%Emax) 215.8078



Luminance Table

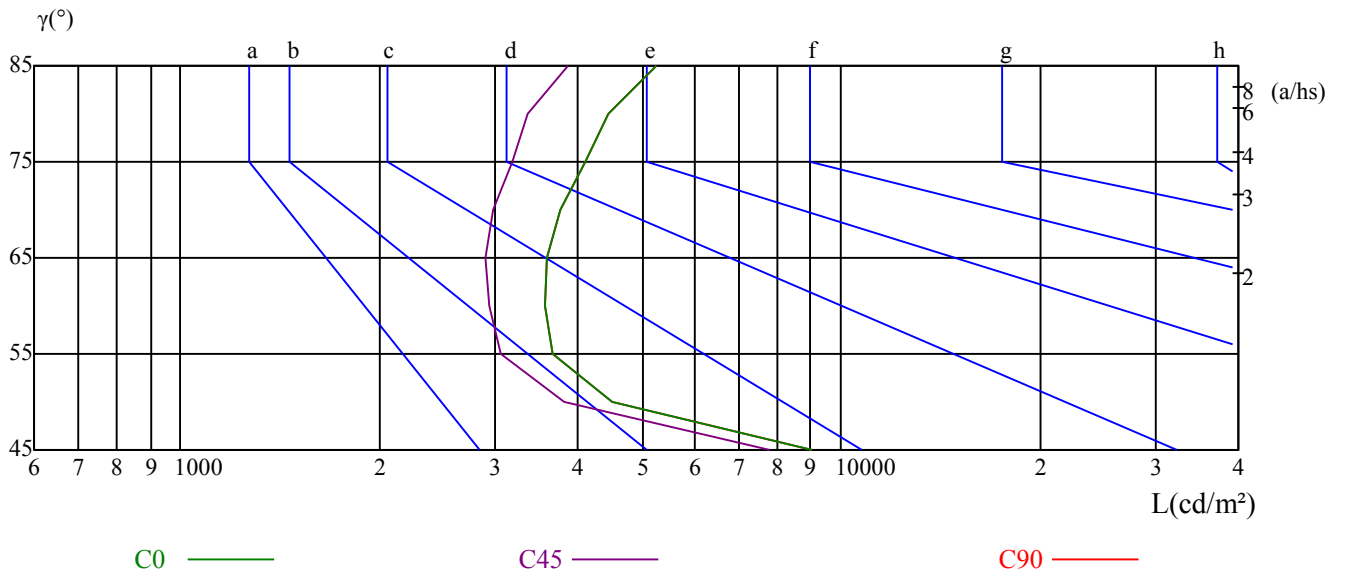
γ	45	50	55	60	65	70	75	80	85
C0	9042	4498	3665	3563	3594	3771	4104	4435	5261
C45	7785	3815	3061	2926	2900	2984	3177	3348	3856
C90	9042	4498	3665	3563	3594	3771	4104	4435	5261

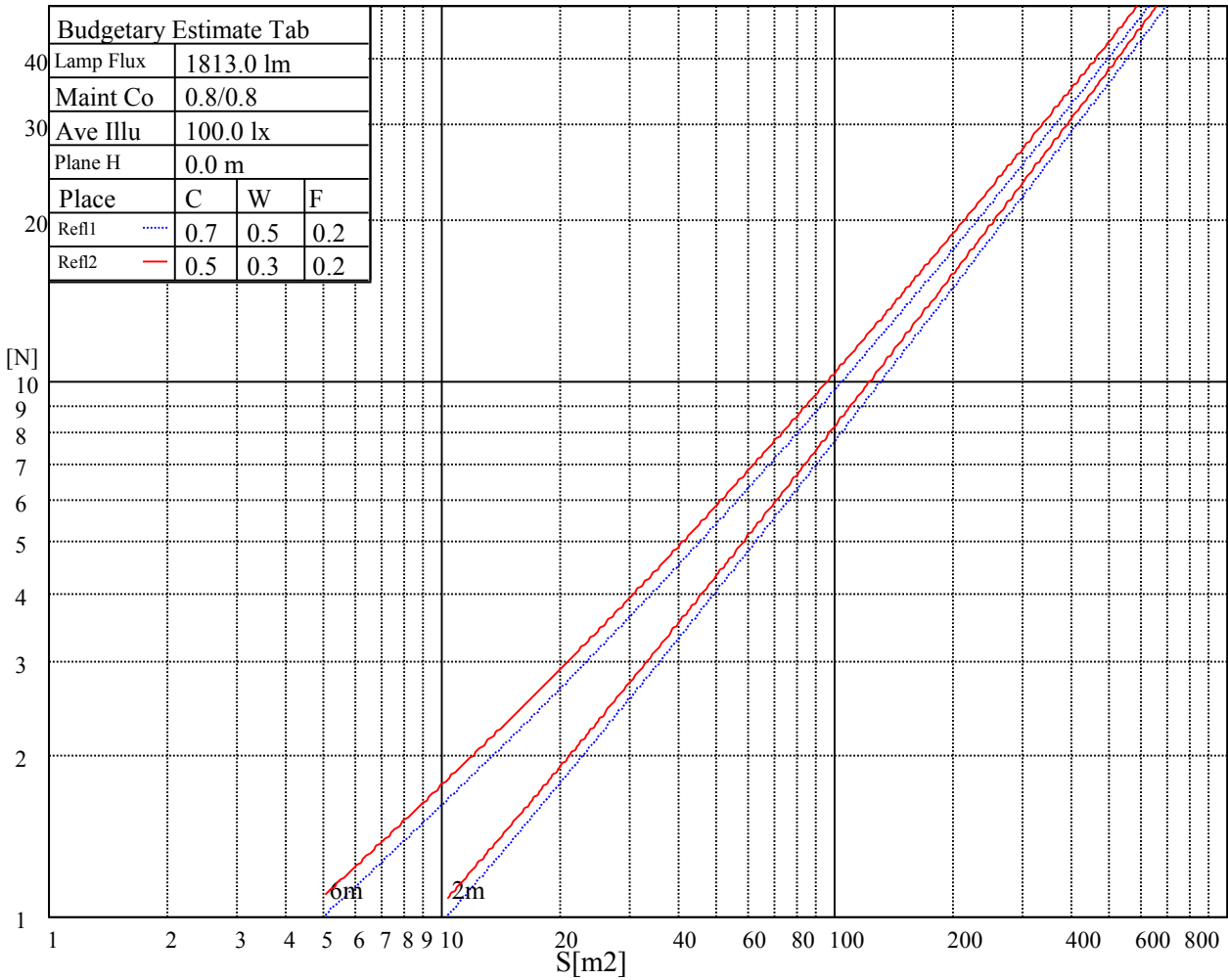
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8514	8514	8514	13879	13879	13879	43646	43646	43646

Glare Table

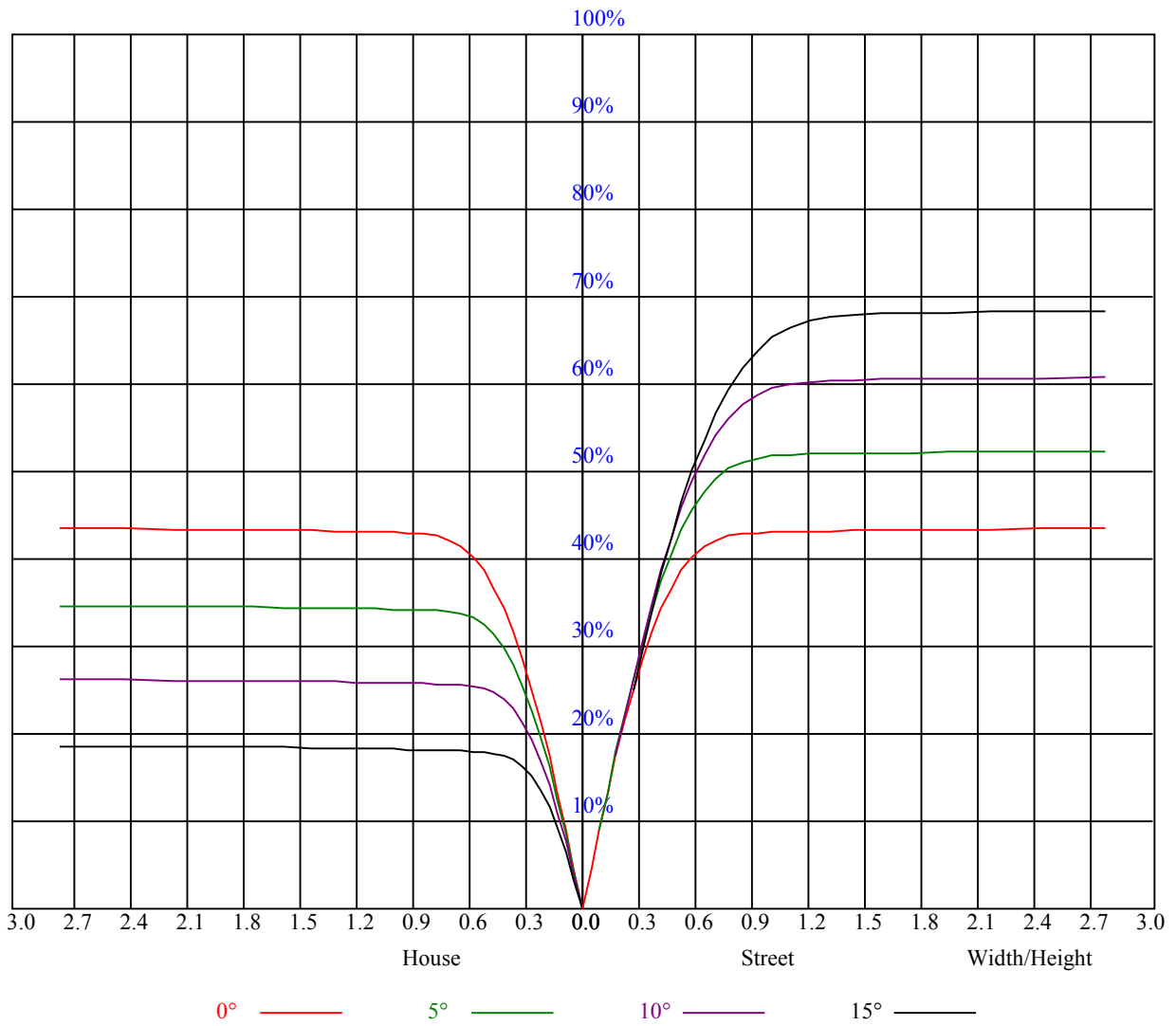
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.97	0.95	0.93	0.95	0.93	0.91	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.85	0.90	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.77
3	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.76	0.75	0.73
4	0.82	0.77	0.74	0.81	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.77	0.73	0.69	0.77	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.72	0.70	0.67	0.66
6	0.74	0.69	0.66	0.73	0.69	0.65	0.72	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
7	0.70	0.65	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.60
8	0.67	0.62	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
9	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52



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	2163.72	2130.68	2013.41	1777.22	1566.35	1291.07	887.51	419.53	71.41
45.0	2157.66	2121.87	1989.19	1755.75	1533.32	1220.60	846.77	321.53	55.77
90.0	2155.46	2125.73	1989.19	1744.19	1505.79	1071.67	753.01	259.10	48.45
135.0	2155.46	2149.40	2041.49	1830.07	1563.60	1300.43	901.82	434.39	80.11
180.0	2163.72	2153.81	2036.54	1795.94	1552.59	1269.60	874.79	439.90	79.56
225.0	2157.66	2159.31	2058.01	1827.87	1568.01	1316.95	935.19	454.16	99.49
270.0	2155.46	2145.00	2058.56	1845.49	1587.83	1348.33	998.72	552.22	173.87
315.0	2155.46	2119.67	1987.54	1750.24	1523.96	1096.45	873.36	394.26	71.90
360.0	2163.72	2130.68	2013.41	1777.22	1566.35	1291.07	887.51	419.53	71.41
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	21.97	11.29	8.75	8.15	7.87	7.82	7.82	8.09	9.30
45.0	19.10	10.79	9.14	8.70	8.48	8.37	8.81	8.26	8.92
90.0	17.23	10.35	9.25	8.97	8.81	8.81	9.19	8.75	9.58
135.0	23.62	11.34	9.08	8.59	8.26	8.15	8.15	8.20	8.81
180.0	23.34	10.90	8.64	8.04	7.60	7.49	7.43	7.43	7.60
225.0	26.21	11.34	8.75	7.93	7.49	7.27	7.27	7.27	7.27
270.0	30.94	12.83	8.81	8.04	7.54	7.43	7.43	7.43	7.49
315.0	22.68	11.12	8.59	7.87	7.54	7.43	7.38	7.43	8.26
360.0	21.97	11.29	8.75	8.15	7.87	7.82	7.82	8.09	9.30
C/ γ (°)	90.0								
0.0	7.05								
45.0	7.10								
90.0	7.05								
135.0	7.10								
180.0	7.05								
225.0	7.10								
270.0	7.10								
315.0	7.05								
360.0	7.05								