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NATA

LumCAT: 3-2056-A
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101209
LampCAT: LUMILEDS 1216
Lamp flux(lm): 3347.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 33.6000
Current(A): 0.6500
Power (W): 21.8400
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 00

Photometric Results

Lumens(lm): 2942.53
Efficiency(%): 87.92%
Lumens(lm)/Power(W): 134.73
Central intensity(cd): 4351.922
Maximum intensity(cd): 4351.922
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=49.8
 [C90/270]Total=49.8
Field angle(10%Imax): [C0/180]Total=77.1
 [C90/270]Total=77.1
Maximum s/h(1/2): C0_180=0.76 C90_270=0.76
Maximum s/h(1/4): C0_180=0.79 C90_270=0.79
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.61%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.455%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

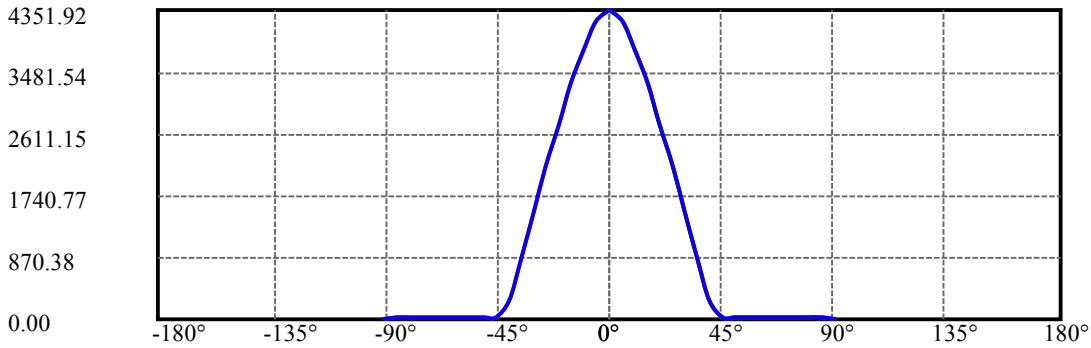
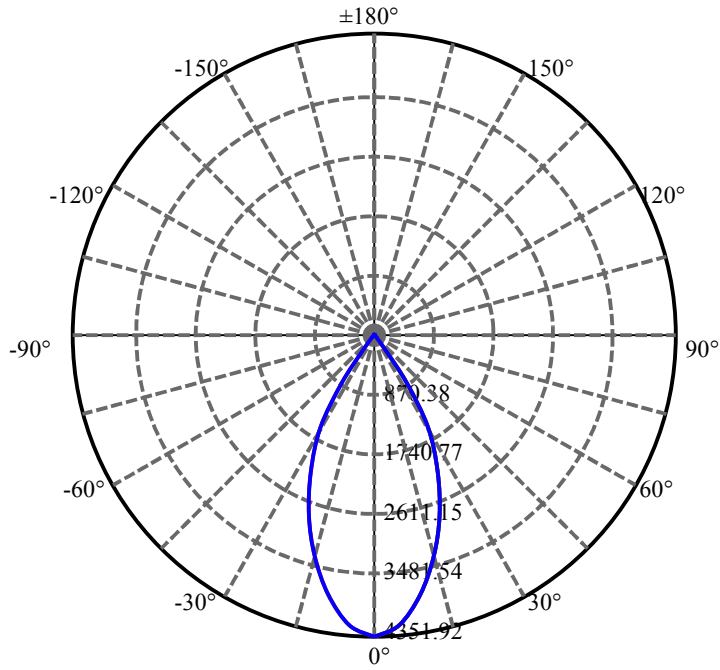
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4351.922	26.025	26.025	.778%	.884%
5.0	4188.656	200.106	226.131	5.979%	7.685%
10.0	3799.969	361.693	587.824	10.806%	19.977%
15.0	3313.547	470.088	1057.912	14.045%	35.952%
20.0	2764.969	518.360	1576.271	15.487%	53.569%
25.0	2166.047	501.771	2078.042	14.992%	70.621%
30.0	1532.862	420.109	2498.152	12.552%	84.898%
35.0	837.956	263.452	2761.604	7.871%	93.851%
40.0	272.798	96.117	2857.721	2.872%	97.118%
45.0	27.788	10.770	2868.491	.322%	97.484%
50.0	17.177	7.213	2875.704	.215%	97.729%
55.0	16.348	7.340	2883.044	.219%	97.978%
60.0	15.195	7.213	2890.257	.216%	98.224%
65.0	18.942	9.410	2899.667	.281%	98.543%
70.0	21.087	10.861	2910.528	.325%	98.913%
75.0	19.997	10.588	2921.116	.316%	99.272%
80.0	18.239	9.846	2930.962	.294%	99.607%
85.0	14.948	8.163	2939.124	.244%	99.884%
90.0	12.417	3.403	2942.527	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2498.15	74.64%	84.90%
0-40	2857.72	85.38%	97.12%
0-60	2890.26	86.35%	98.22%
0-90	2939.12	87.81%	99.88%
0-120	2939.12	87.81%	99.88%
0-180	2942.53	87.92%	100.00%
60-90	56.08	1.68%	1.91%
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%
0-28.28	2354.02	70.33%	80.00%

ZONAL LUMEN SUMMARY

0-10	587.82
10-20	988.45
20-30	921.88
30-40	359.57
40-50	17.98
50-60	14.55
60-70	20.27
70-80	20.43
80-90	8.16
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: ———

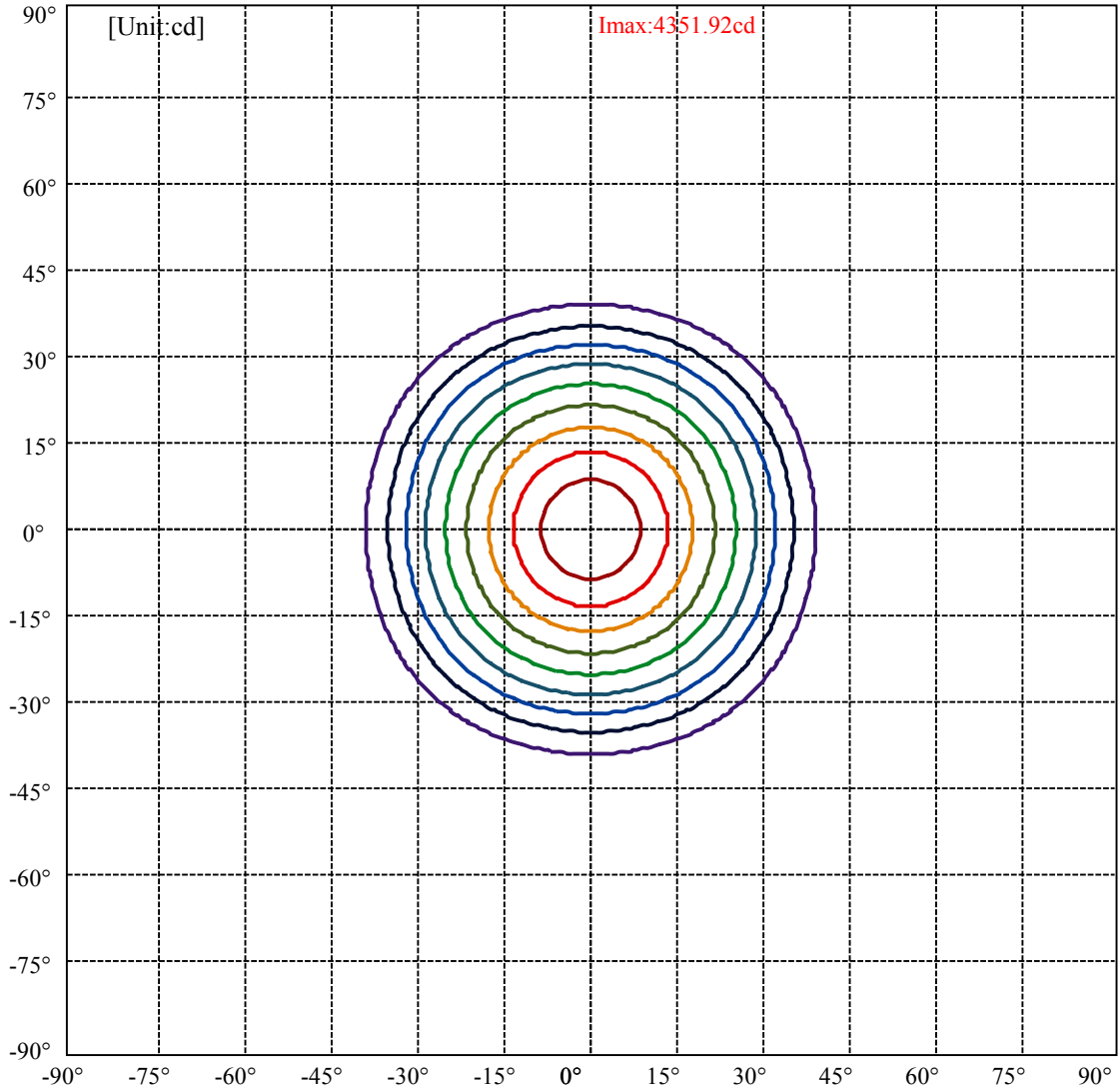
C90/C270: ———

Field angle(10%Imax):C0/180Left:38.6 Right:38.6

:C90/270Left:38.6 Right:38.6

Beam Angle(50%Imax):C0/180Left:24.9 Right:24.9

:C90/270Left:24.9 Right:24.9

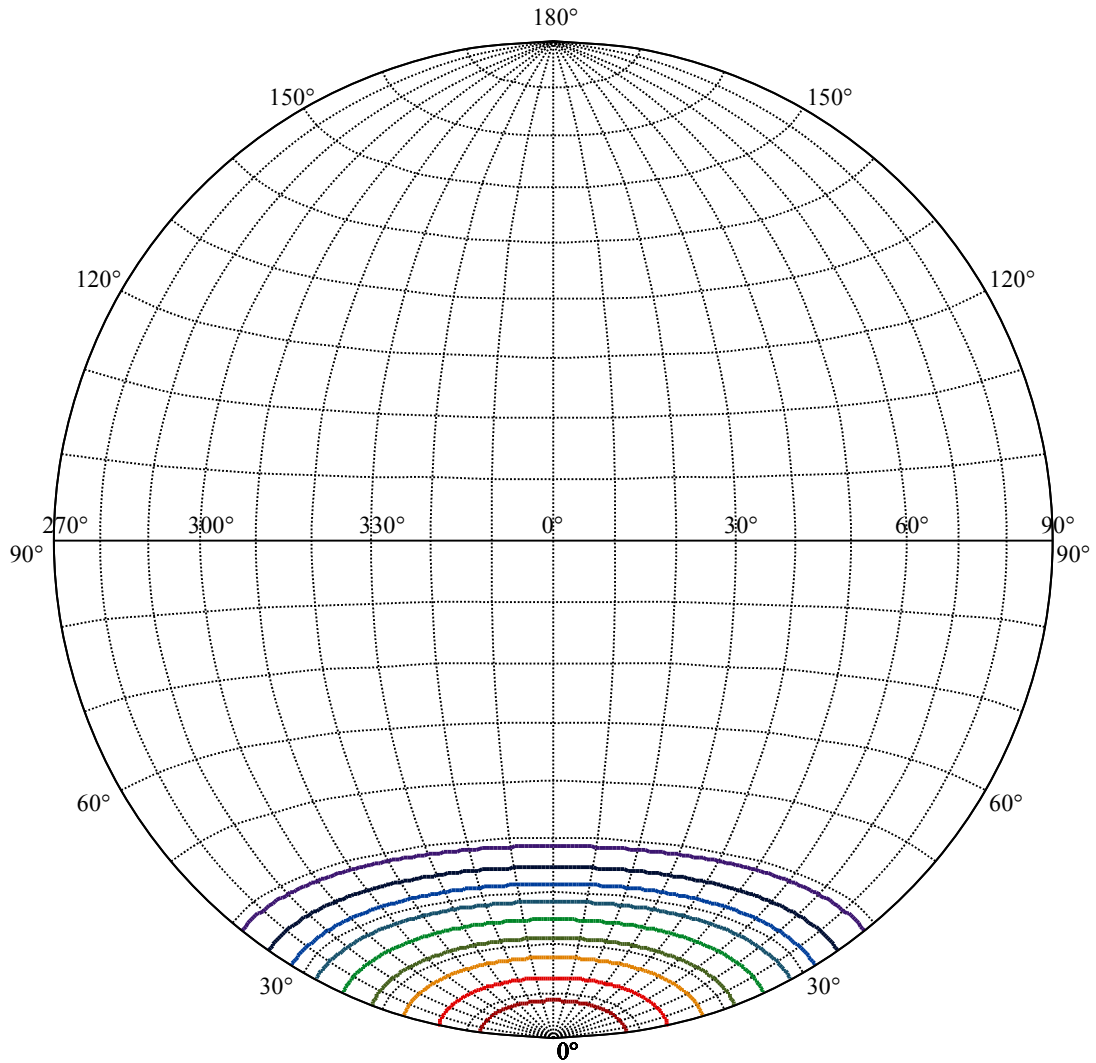


(10%Imax) 435.192	—
(20%Imax) 870.384	—
(30%Imax) 1305.58	—
(40%Imax) 1740.77	—
(50%Imax) 2175.96	—
(60%Imax) 2611.15	—
(70%Imax) 3046.35	—
(80%Imax) 3481.54	—
(90%Imax) 3916.73	—

Equipment:
Temperature(°C): 25.0

Date: 2018/10/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50



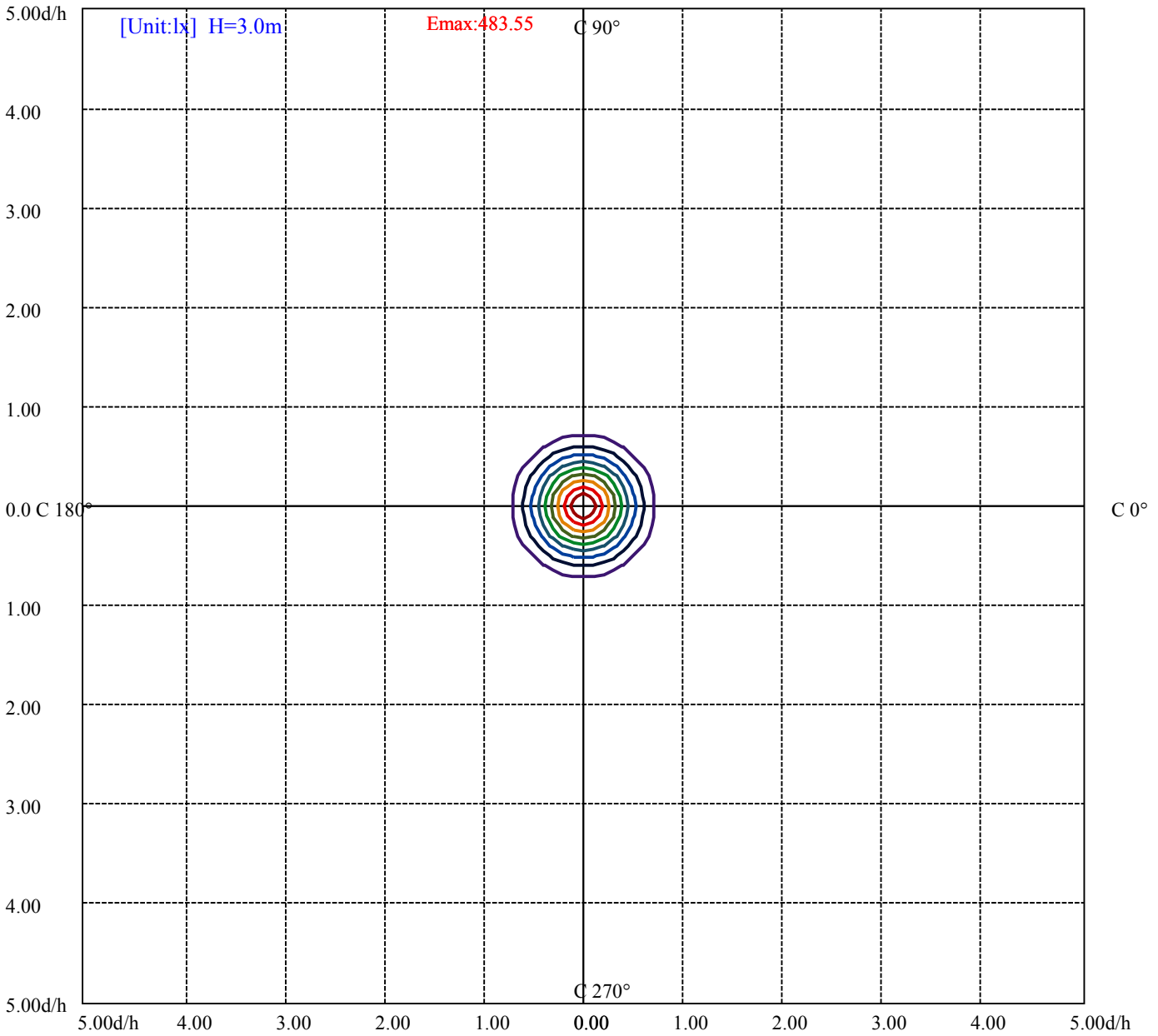
House

[Unit:cd]

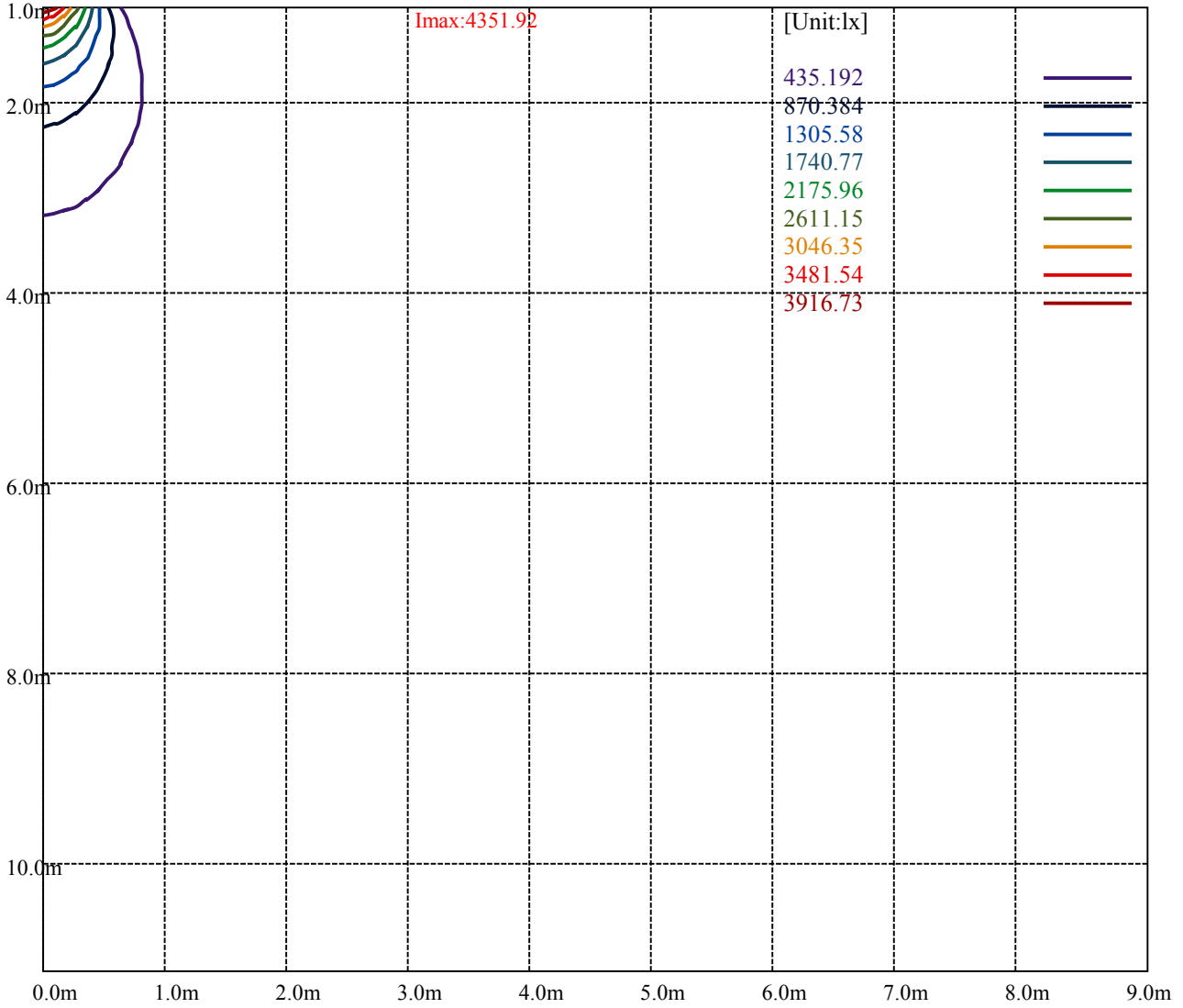
Road

I_{max}:4351.92

(10%I _{max}) 435.192	—
(20%I _{max}) 870.384	—
(30%I _{max}) 1305.58	—
(40%I _{max}) 1740.77	—
(50%I _{max}) 2175.96	—
(60%I _{max}) 2611.15	—
(70%I _{max}) 3046.35	—
(80%I _{max}) 3481.54	—
(90%I _{max}) 3916.73	—



- (10%Emax) 48.35466
- (20%Emax) 96.70922
- (30%Emax) 145.0644
- (40%Emax) 193.4189
- (50%Emax) 241.7733
- (60%Emax) 290.1278
- (70%Emax) 338.4822
- (80%Emax) 386.8367
- (90%Emax) 435.1922



Luminance Table

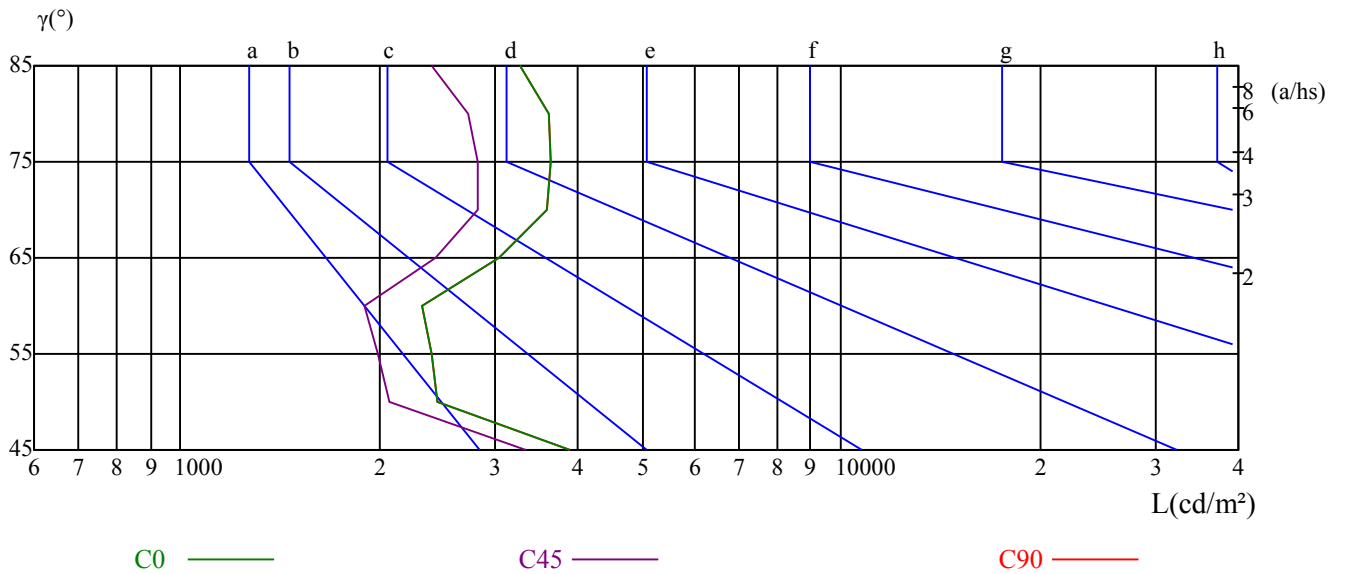
γ	45	50	55	60	65	70	75	80	85
C0	3875	2448	2400	2318	3032	3579	3641	3611	3270
C45	3325	2068	1996	1897	2438	2822	2810	2720	2394
C90	3875	2448	2400	2318	3032	3579	3641	3611	3270

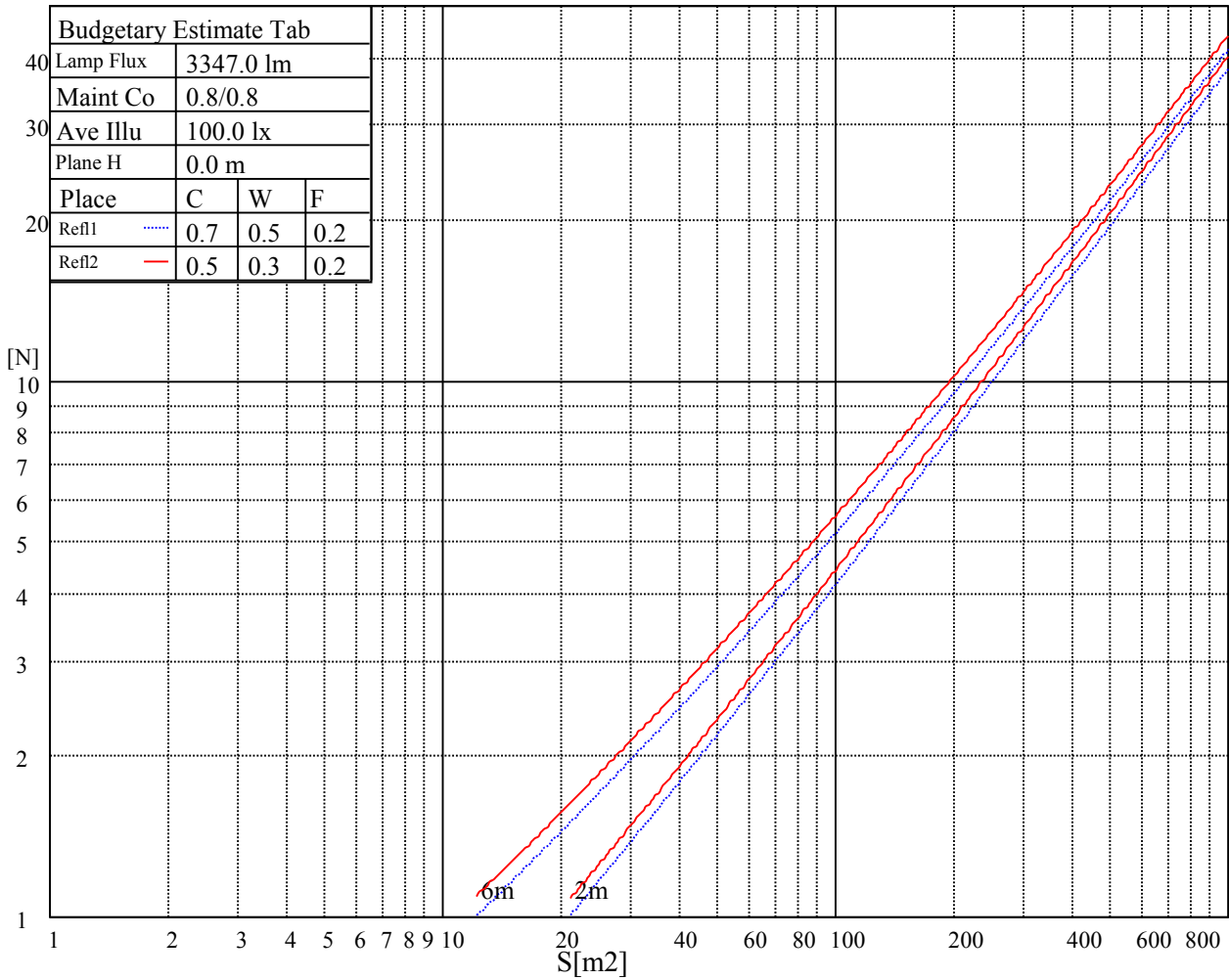
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7367	7367	7367	12699	12699	12699	28191	28191	28191

Glare Table

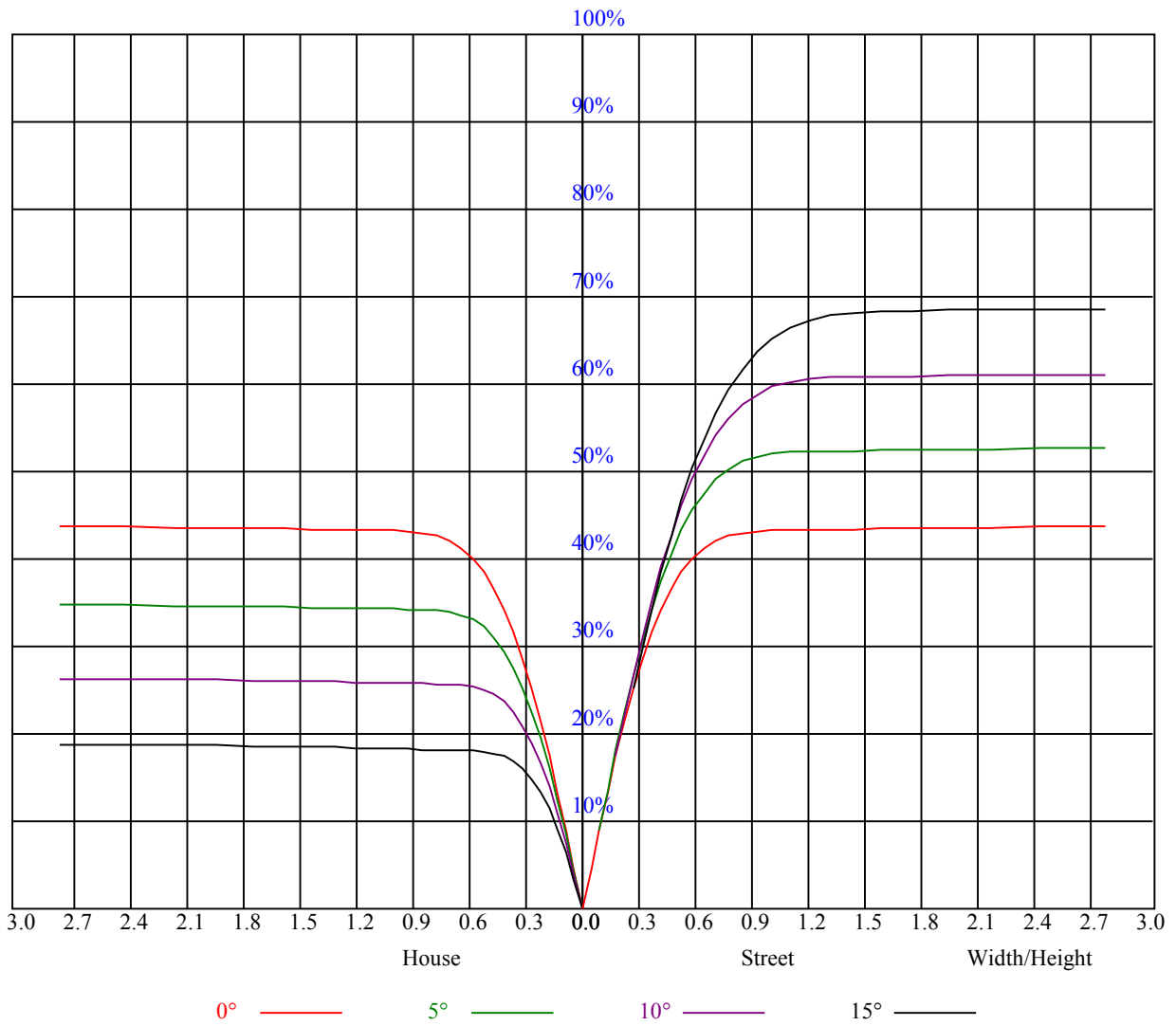
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.98	0.95	0.93	0.96	0.94	0.92	0.92	0.90	0.89	0.89	0.87	0.86	0.86	0.85	0.84	0.82
2	0.92	0.88	0.85	0.90	0.87	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.82	0.81	0.79	0.78
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	0.77	0.75	0.73
4	0.82	0.77	0.74	0.81	0.77	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.73	0.71	0.70
5	0.78	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	0.71	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	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	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	4347.00	4247.44	3906.56	3424.50	2907.00	2323.13	1760.06	996.75	402.19
45.0	4350.94	4271.06	3921.75	3426.75	2923.31	2298.38	1744.88	978.19	392.06
90.0	4356.56	4191.19	3780.00	3279.38	2724.19	2121.75	1526.63	802.80	224.27
135.0	4353.19	4185.00	3829.50	3331.13	2762.44	2159.44	1601.44	841.50	286.88
180.0	4347.00	4116.38	3645.00	3199.50	2621.81	2028.38	1327.50	681.58	158.29
225.0	4350.94	4121.44	3685.50	3211.31	2629.13	2034.56	1100.08	686.14	161.55
270.0	4356.56	4209.75	3832.88	3333.94	2810.25	2194.88	1622.25	902.81	291.94
315.0	4353.19	4167.00	3798.56	3301.88	2741.63	2167.88	1580.06	813.88	265.22
360.0	4347.00	4247.44	3906.56	3424.50	2907.00	2323.13	1760.06	996.75	402.19

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	43.37	17.55	16.59	15.47	16.03	19.91	19.24	16.99	14.29
45.0	37.80	15.69	15.02	14.63	14.40	15.41	16.09	15.47	14.01
90.0	19.58	16.43	15.41	14.51	18.00	19.07	18.39	17.21	14.40
135.0	26.10	16.71	15.58	14.74	18.62	19.63	19.01	18.06	14.51
180.0	18.68	16.37	15.75	14.74	15.24	17.21	16.59	15.64	14.12
225.0	19.74	17.55	16.59	15.24	20.36	22.56	21.88	19.46	15.47
270.0	31.16	19.35	18.62	16.31	24.36	29.53	26.38	23.74	17.27
315.0	25.88	17.78	17.21	15.92	24.53	25.37	22.39	19.35	15.53
360.0	43.37	17.55	16.59	15.47	16.03	19.91	19.24	16.99	14.29

C/γ(°)	90.0
0.0	12.38
45.0	12.49
90.0	12.38
135.0	12.38
180.0	12.32
225.0	12.54
270.0	12.49
315.0	12.38
360.0	12.38