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Nata

LumCAT: 2-2432-M	
Luminaire: 99.70.131.00	
Report No: 220816-B004	Voltage(V): 35.4500
Test No: 220816-C004	Current(A): 0.4810
LampCAT: CITIZEN CLU038	Power (W): 17.0510
Lamp flux(lm): 2249.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1919.19
Efficiency(%): 85.34%
Lumens(lm)/Power(W): 112.56
Central intensity(cd): 4432.022
Maximum intensity(cd): 4432.022
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.4
 [C90/270]Total=36.4
Field angle(10%Imax): [C0/180]Total=62.0
 [C90/270]Total=62.0
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
Maximum s/h(1/4): C0_180=0.60 C90_270=0.60
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.961%

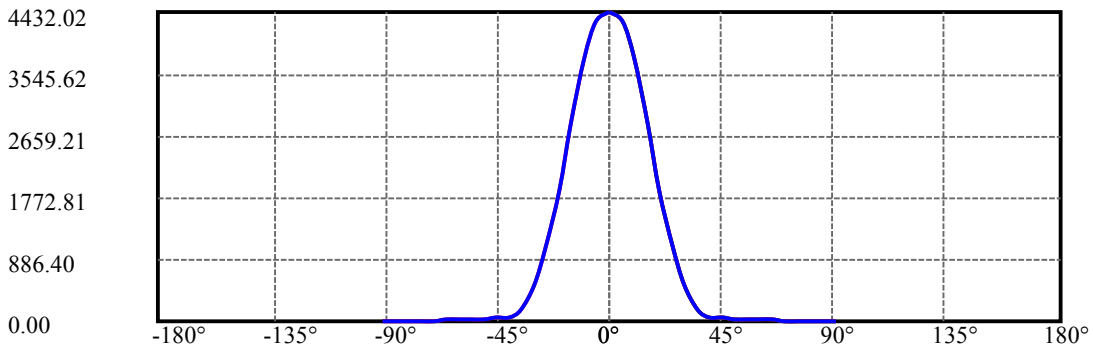
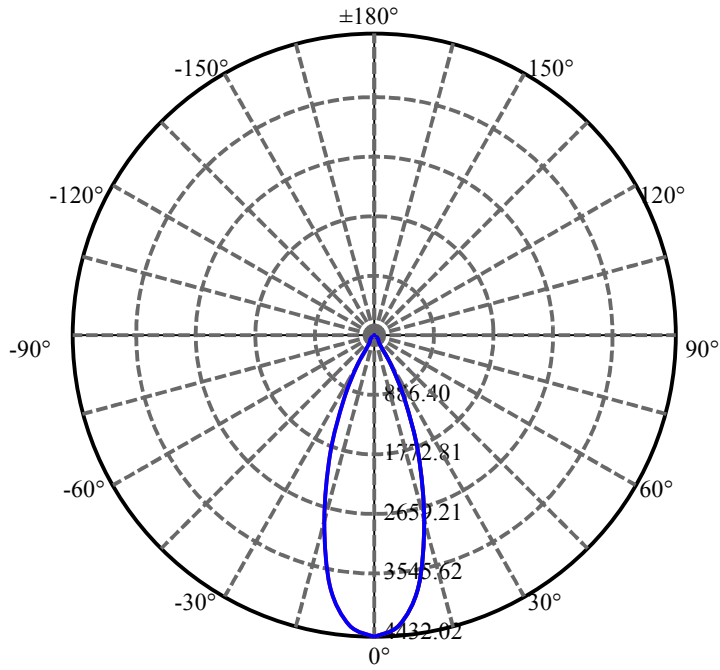
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4432.022	0.000	0	.000%	.000%
5.0	4287.345	104.238	104.238	4.635%	5.431%
10.0	3762.043	287.952	392.189	12.804%	20.435%
15.0	2847.002	392.044	784.234	17.432%	40.863%
20.0	1867.726	388.560	1172.793	17.277%	61.109%
25.0	1069.756	308.088	1480.881	13.699%	77.162%
30.0	510.686	200.006	1680.887	8.893%	87.583%
35.0	168.496	100.014	1780.902	4.447%	92.794%
40.0	66.281	39.171	1820.072	1.742%	94.835%
45.0	44.381	20.490	1840.562	.911%	95.903%
50.0	33.424	15.722	1856.284	.699%	96.722%
55.0	26.097	12.942	1869.226	.575%	97.397%
60.0	20.742	10.827	1880.053	.481%	97.961%
65.0	16.440	9.039	1889.091	.402%	98.432%
70.0	13.713	7.635	1896.726	.339%	98.830%
75.0	11.659	6.632	1903.358	.295%	99.175%
80.0	10.210	5.852	1909.21	.260%	99.480%
85.0	9.023	5.226	1914.436	.232%	99.752%
90.0	8.336	4.753	1919.189	.211%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1680.89	74.74%	87.58%
0-40	1820.07	80.93%	94.84%
0-60	1880.05	83.60%	97.96%
0-90	1914.44	85.13%	99.75%
0-120	1914.44	85.13%	99.75%
0-180	1919.19	85.34%	100.00%
60-90	45.21	2.01%	2.36%
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%
0-26.36	1535.35	68.27%	80.00%

ZONAL LUMEN SUMMARY

0-10	392.19
10-20	780.60
20-30	508.09
30-40	139.18
40-50	36.21
50-60	23.77
60-70	16.67
70-80	12.48
80-90	5.23
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: —————

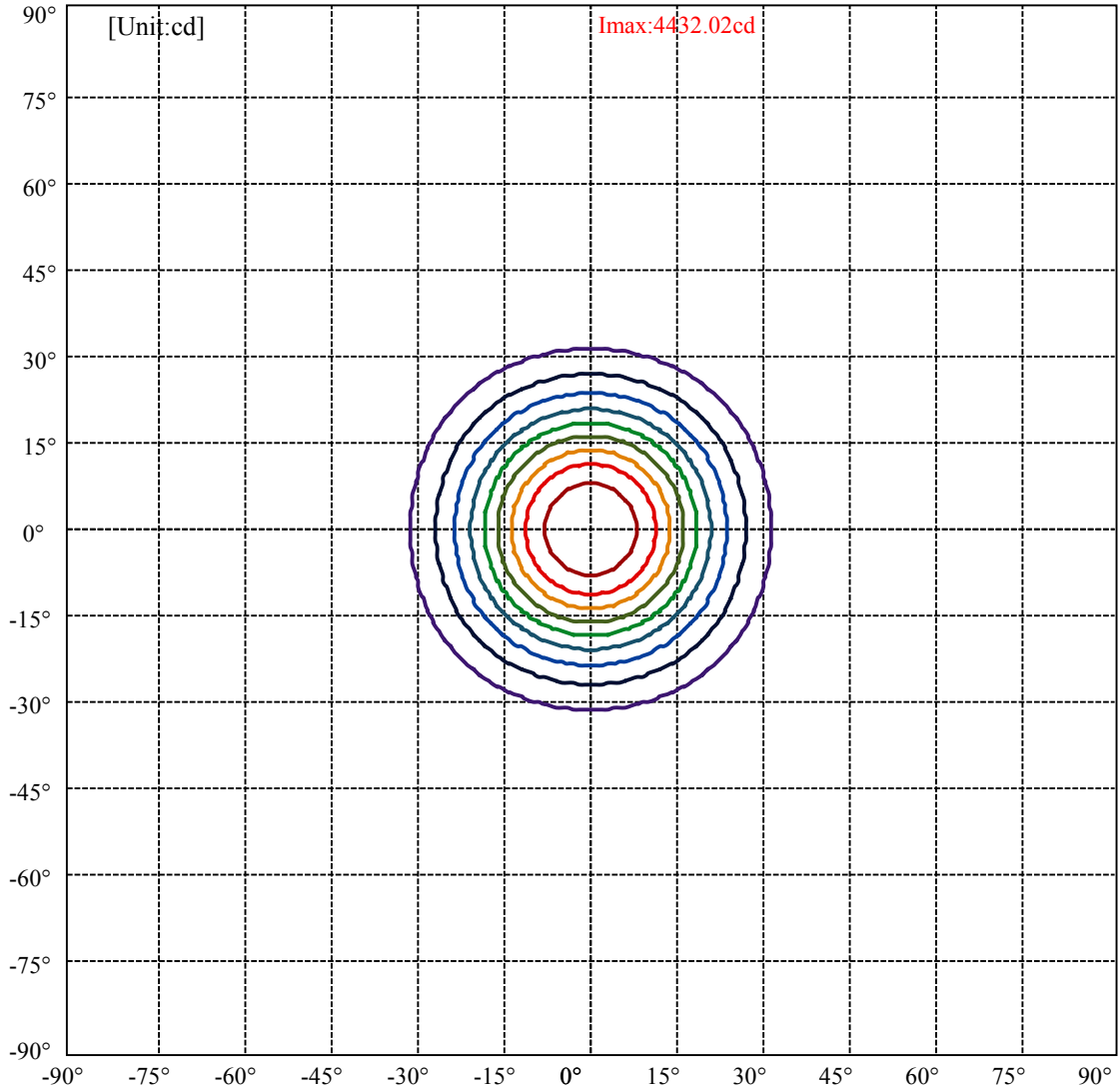
C90/C270: —————

Field angle(10%Imax):C0/180Left:31.0 Right:31.0

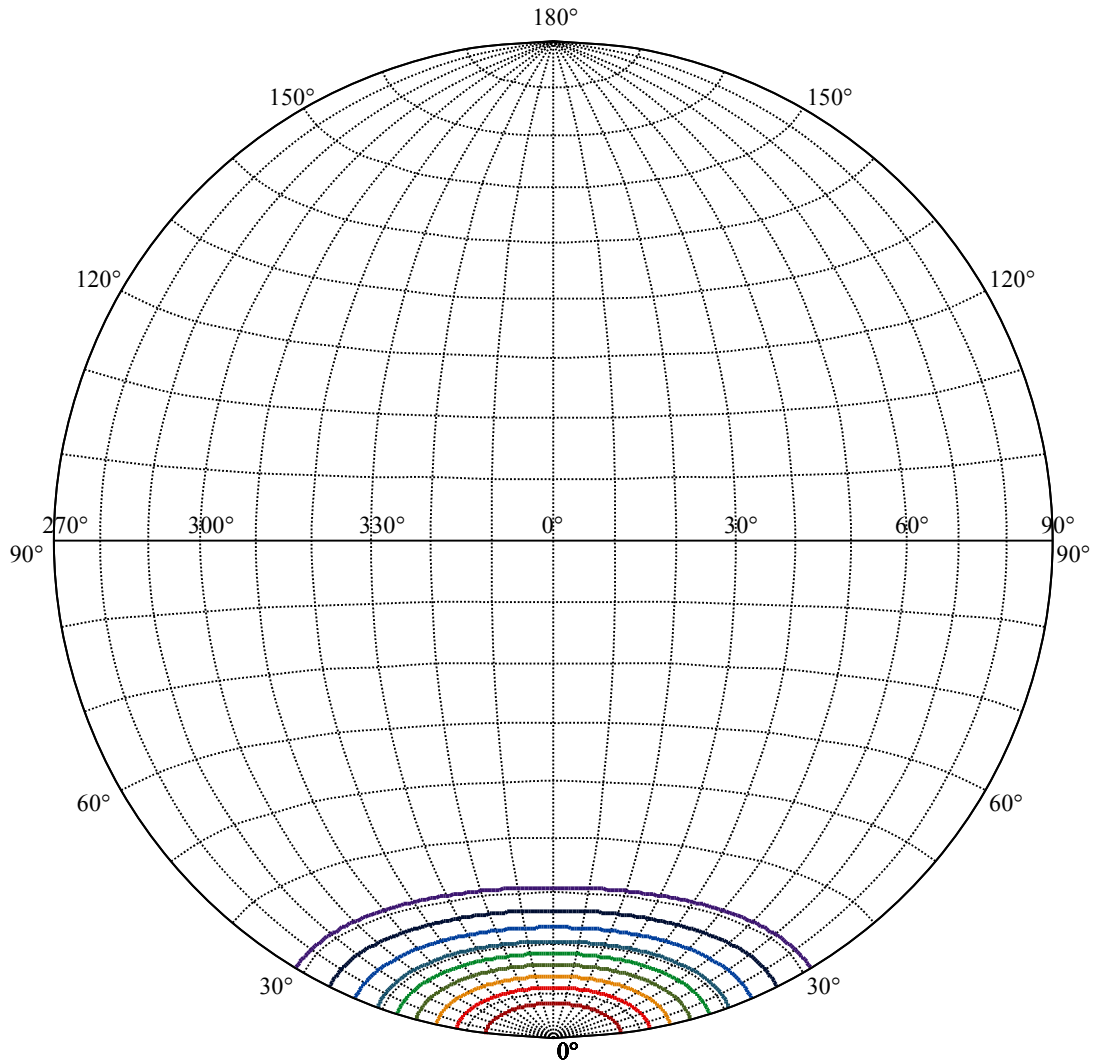
:C90/270Left:31.0 Right:31.0

Beam Angle(50%Imax):C0/180Left:18.2 Right:18.2

:C90/270Left:18.2 Right:18.2



(10%I _{max}) 443.202	—
(20%I _{max}) 886.404	—
(30%I _{max}) 1329.61	—
(40%I _{max}) 1772.81	—
(50%I _{max}) 2216.01	—
(60%I _{max}) 2659.21	—
(70%I _{max}) 3102.42	—
(80%I _{max}) 3545.62	—
(90%I _{max}) 3988.82	—



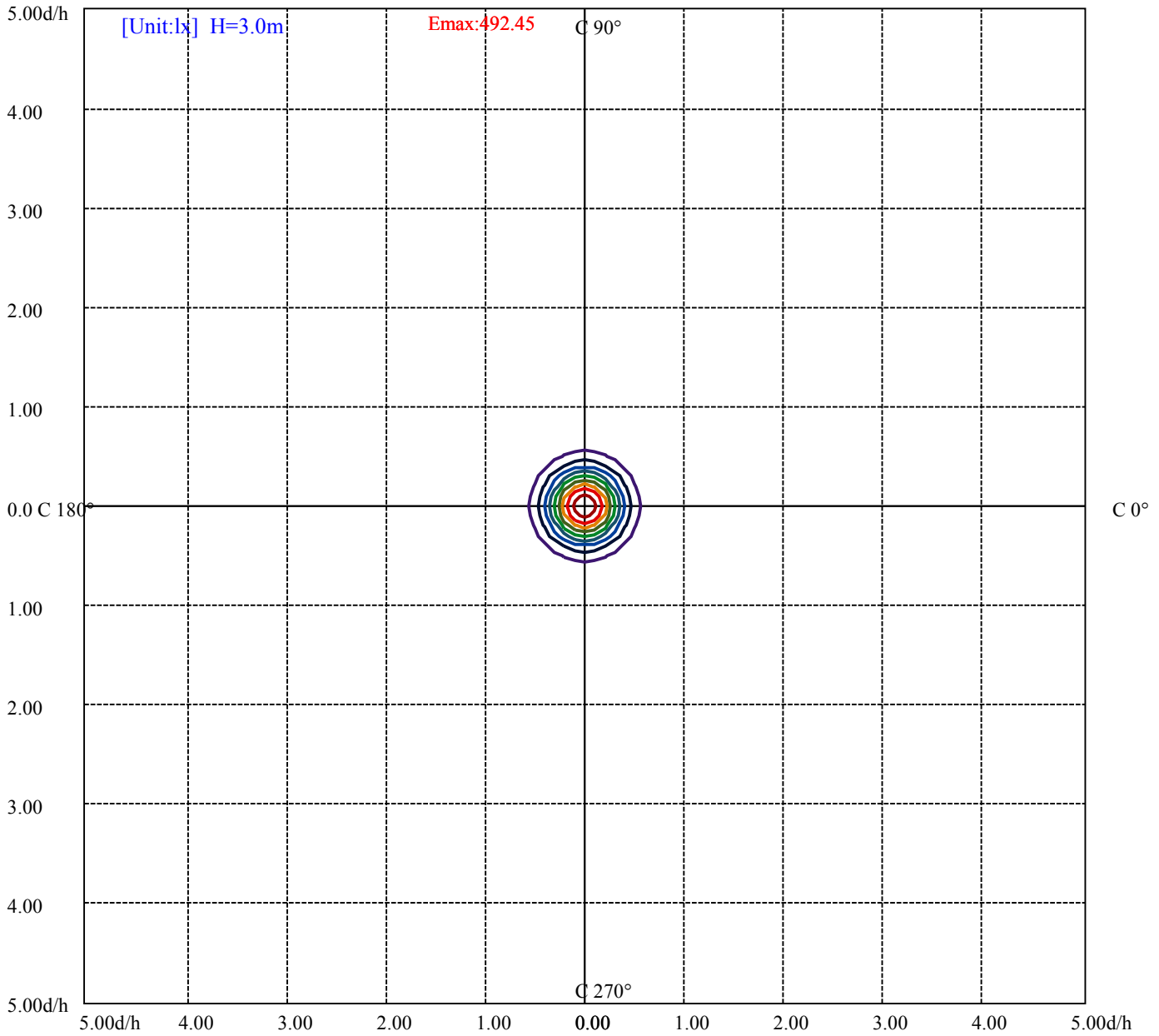
House

[Unit:cd]

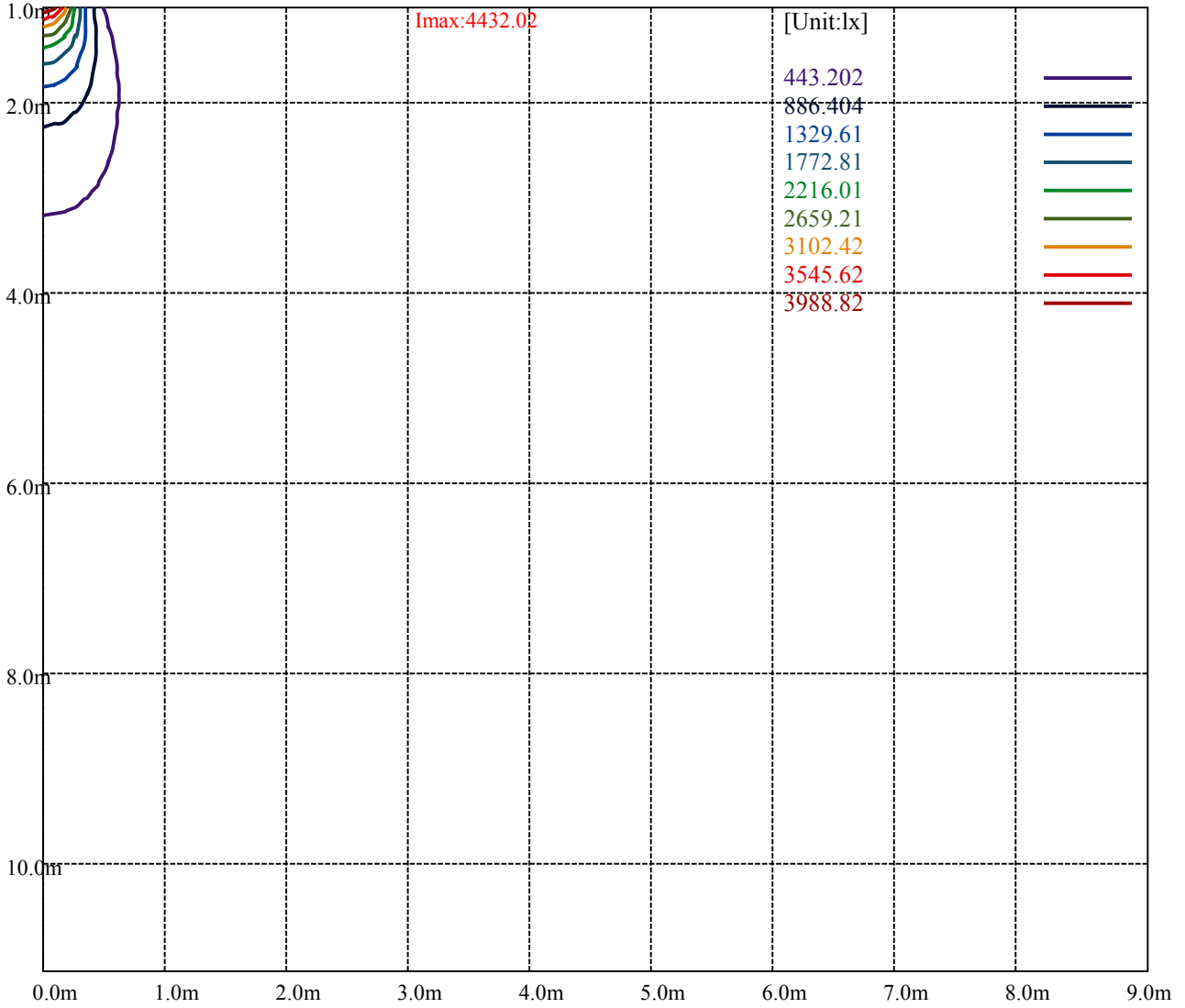
Road

Imax:4432.02

(10%Imax) 443.202	—
(20%Imax) 886.404	—
(30%Imax) 1329.61	—
(40%Imax) 1772.81	—
(50%Imax) 2216.01	—
(60%Imax) 2659.21	—
(70%Imax) 3102.42	—
(80%Imax) 3545.62	—
(90%Imax) 3988.82	—



- (10%Emax) 49.24467
- (20%Emax) 98.48933
- (30%Emax) 147.7344
- (40%Emax) 196.9789
- (50%Emax) 246.2233
- (60%Emax) 295.4678
- (70%Emax) 344.7122
- (80%Emax) 393.9567
- (90%Emax) 443.2022



Luminance Table

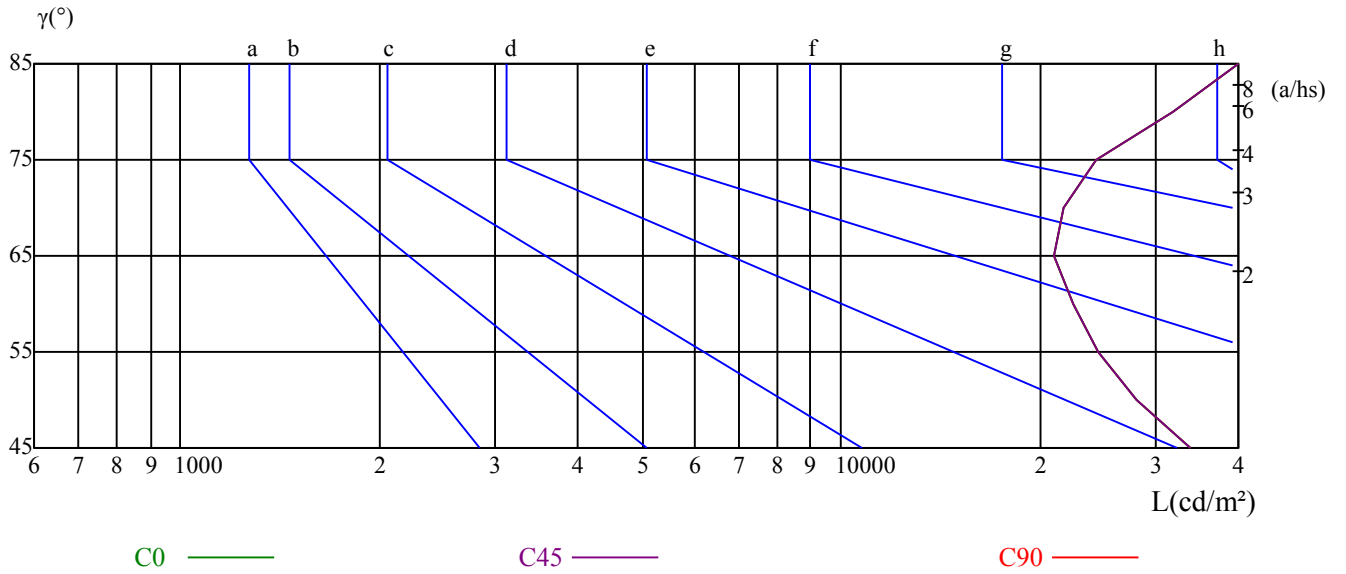
γ	45	50	55	60	65	70	75	80	85
C0	33945	28123	24607	22436	21038	21685	24363	31800	55989
C45	33945	28123	24607	22436	21038	21685	24363	31800	55989
C90	33945	28123	24607	22436	21038	21685	24363	31800	55989

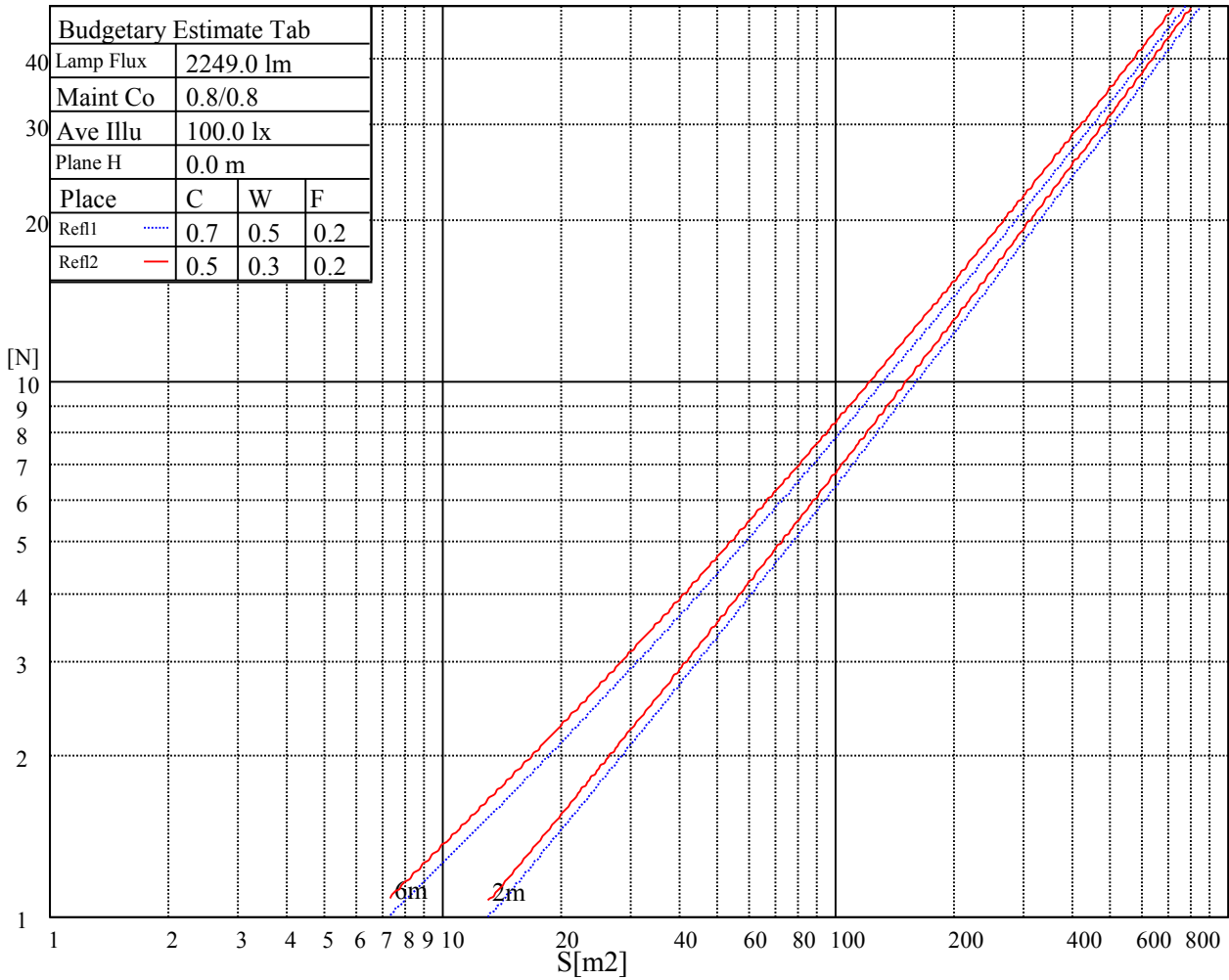
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
21038	21038	21038	24363	24363	24363	55989	55989	55989

Glare Table

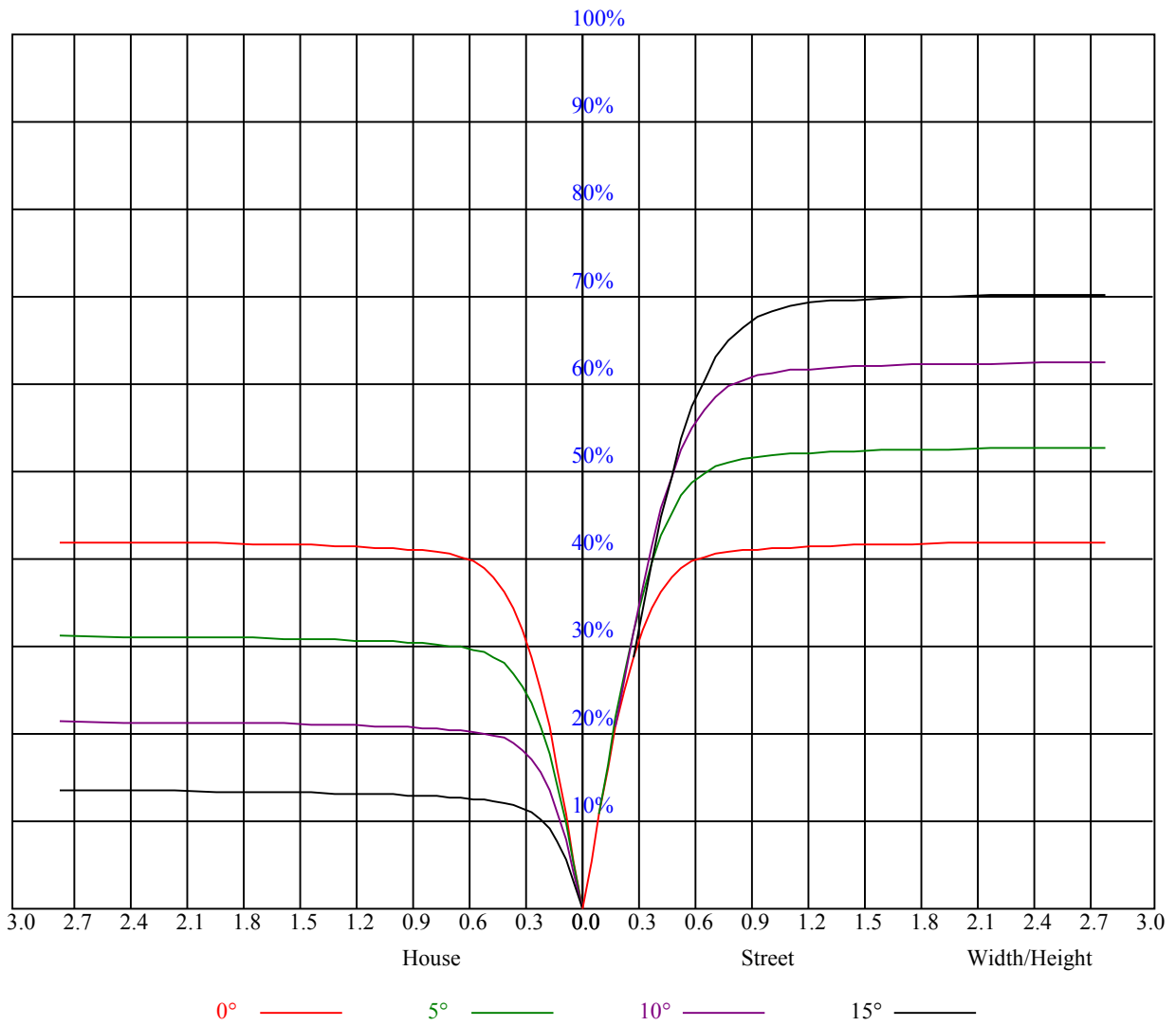
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.02	1.02	1.02	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.95	0.93	0.91	0.93	0.91	0.90	0.90	0.88	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.89	0.86	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.79	0.78	0.76
3	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.72
4	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
5	0.76	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.67	0.71	0.69	0.67	0.66
6	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
7	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60
8	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58
9	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.55	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.59	0.56	0.54	0.53



Intensity data(cd)

C/ γ ($^{\circ}$)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4422.31	4378.09	3998.07	3137.62	2186.36	1270.94	671.03	310.12	76.42
45.0	4444.42	4290.86	3732.76	2813.17	1843.97	1039.10	480.41	123.21	63.64
90.0	4427.09	4206.60	3597.72	2593.87	1636.03	939.49	402.02	100.09	60.89
135.0	4434.26	4277.71	3737.54	2816.75	1785.42	1062.41	469.06	120.58	66.92
180.0	4422.31	4188.68	3490.17	2529.34	1572.10	848.49	368.08	97.52	59.81
225.0	4444.42	4311.77	3790.72	2844.84	1922.85	1081.35	514.35	137.01	66.98
270.0	4427.09	4349.41	3909.63	3132.25	2074.02	1194.46	629.80	320.28	70.87
315.0	4434.26	4295.64	3839.72	2908.17	1921.06	1121.80	550.74	139.16	64.71
360.0	4422.31	4378.09	3998.07	3137.62	2186.36	1270.94	671.03	310.12	76.42
C/ γ ($^{\circ}$)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	48.28	35.31	27.79	22.05	17.27	14.46	12.07	10.52	9.20
45.0	42.25	32.63	25.57	20.32	16.43	13.62	11.59	10.10	8.90
90.0	41.47	31.67	24.68	19.66	15.72	13.09	11.23	9.80	8.84
135.0	44.99	33.88	26.11	20.79	16.31	13.56	11.65	10.10	8.90
180.0	41.17	31.85	24.56	18.94	15.48	12.97	11.05	9.80	8.72
225.0	45.35	34.00	26.83	21.21	16.79	14.22	12.13	10.64	9.26
270.0	47.92	35.31	27.43	22.23	17.15	14.16	12.01	10.58	9.26
315.0	43.62	32.74	25.81	20.73	16.37	13.62	11.53	10.16	9.08
360.0	48.28	35.31	27.79	22.05	17.27	14.46	12.07	10.52	9.20
C/ γ ($^{\circ}$)	90.0								
0.0	8.48								
45.0	8.37								
90.0	8.25								
135.0	8.31								
180.0	8.31								
225.0	8.37								
270.0	8.31								
315.0	8.31								
360.0	8.48								