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NATA

LumCAT: 3-1703-N
Luminaire: 92.70.074.00+92.70.061.00
Report No: NATA0100 Voltage(V): 37.0000
Test No: GC2019012607 Current(A): 0.6000
LampCAT: CREE CXA1816 Power (W): 22.2000
Lamp flux(lm): 2071.0 PF: 0.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 86 Width(mm): 86
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 1596.52
Efficiency(%): 77.09%
Lumens(lm)/Power(W): 72.79
Central intensity(cd): 3494.531
Maximum intensity(cd): 3494.531
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=34.9
 [C90/270]Total=34.9
Field angle(10%Imax): [C0/180]Total=65.4
 [C90/270]Total=65.4
Maximum s/h(1/2): C0_180=0.57 C90_270=0.57
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.03%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.461%

Equipment: GMS1980
Temperature(°C): 10.0

Date: 2019/1/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

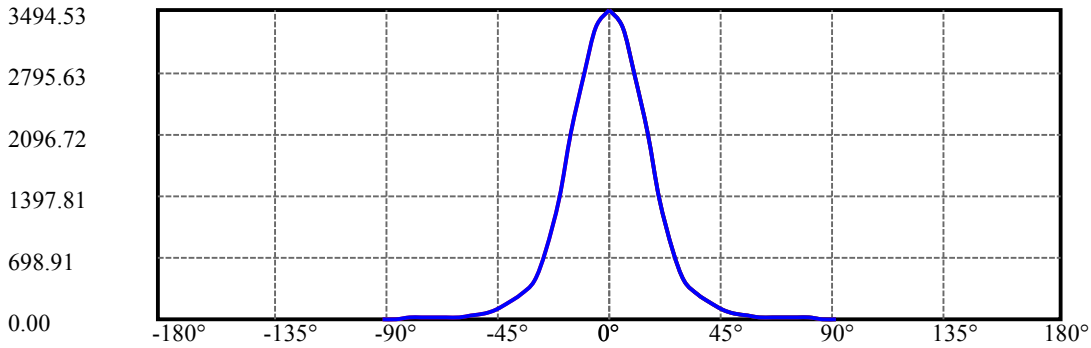
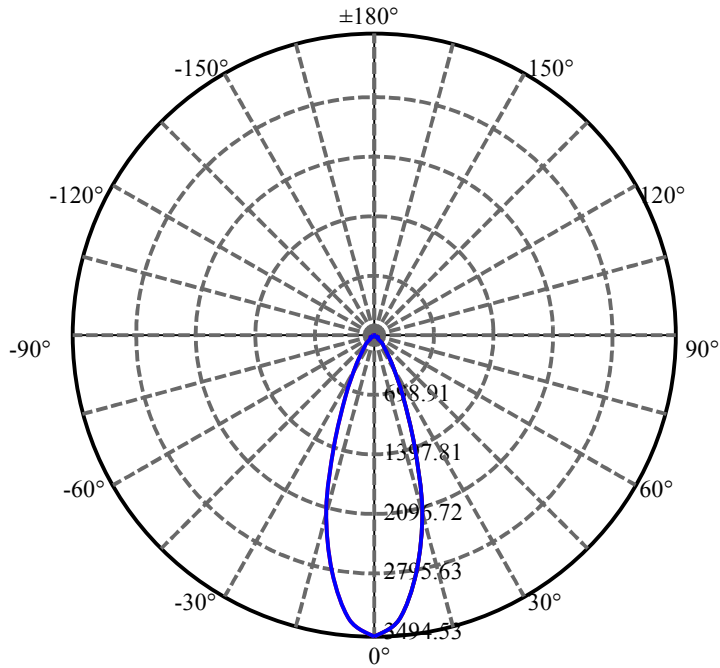
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3494.531	20.898	20.898	1.009%	1.309%
5.0	3298.922	157.600	178.498	7.610%	11.180%
10.0	2774.461	264.082	442.58	12.751%	27.721%
15.0	2108.250	299.094	741.674	14.442%	46.456%
20.0	1366.425	256.169	997.843	12.369%	62.501%
25.0	783.802	181.570	1179.413	8.767%	73.874%
30.0	433.744	118.876	1298.289	5.740%	81.320%
35.0	277.861	87.359	1385.648	4.218%	86.792%
40.0	186.518	65.717	1451.365	3.173%	90.908%
45.0	118.230	45.825	1497.19	2.213%	93.778%
50.0	71.325	29.949	1527.139	1.446%	95.654%
55.0	41.948	18.835	1545.974	.909%	96.834%
60.0	26.824	12.733	1558.708	.615%	97.631%
65.0	19.856	9.864	1568.572	.476%	98.249%
70.0	16.601	8.551	1577.123	.413%	98.785%
75.0	13.542	7.170	1584.293	.346%	99.234%
80.0	10.863	5.864	1590.157	.283%	99.601%
85.0	8.304	4.534	1594.691	.219%	99.885%
90.0	6.687	1.833	1596.524	.088%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1298.29	62.69%	81.32%
0-40	1451.36	70.08%	90.91%
0-60	1558.71	75.26%	97.63%
0-90	1594.69	77.00%	99.89%
0-120	1594.69	77.00%	99.89%
0-180	1596.52	77.09%	100.00%
60-90	48.72	2.35%	3.05%
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%
0-29.11	1277.22	61.67%	80.00%

ZONAL LUMEN SUMMARY

0-10	442.58
10-20	555.26
20-30	300.45
30-40	153.08
40-50	75.77
50-60	31.57
60-70	18.41
70-80	13.03
80-90	4.53
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: —————

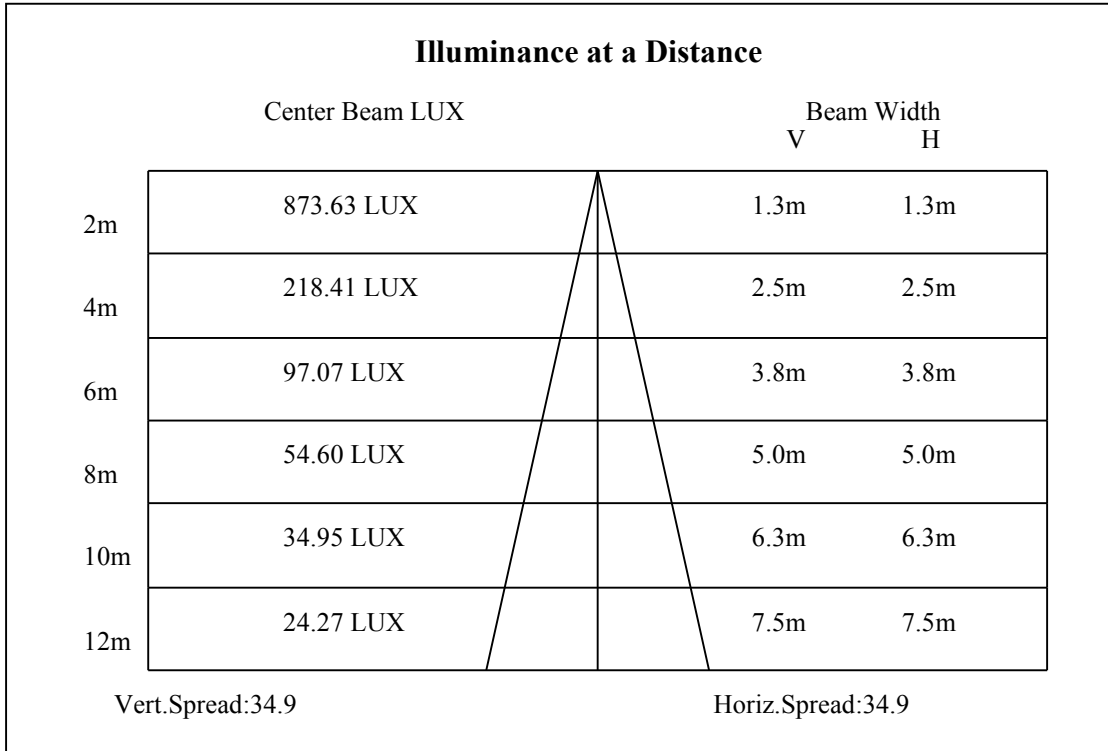
C90/C270: —————

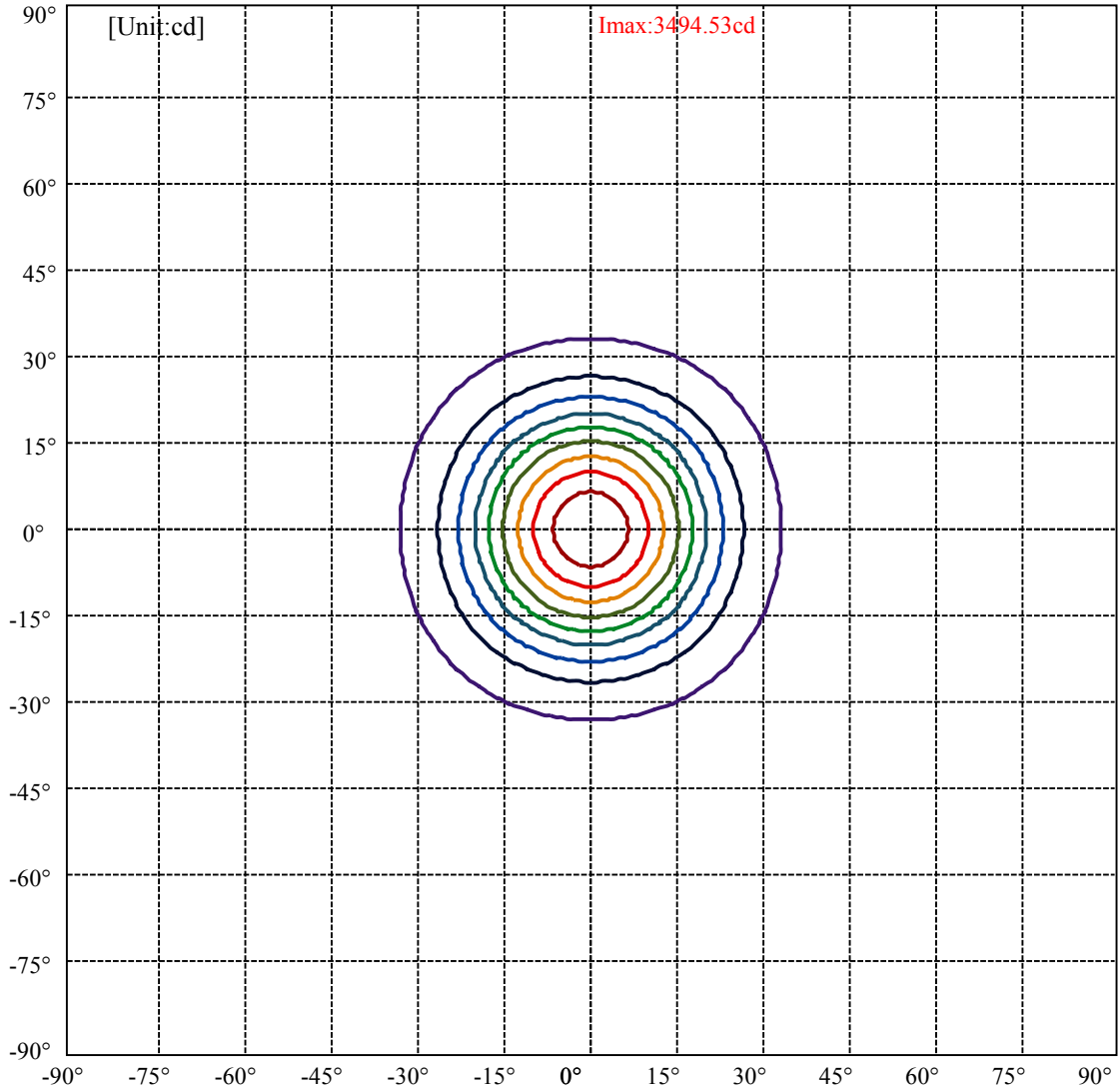
Field angle(10%Imax):C0/180Left:32.7 Right:32.7

:C90/270Left:32.7 Right:32.7

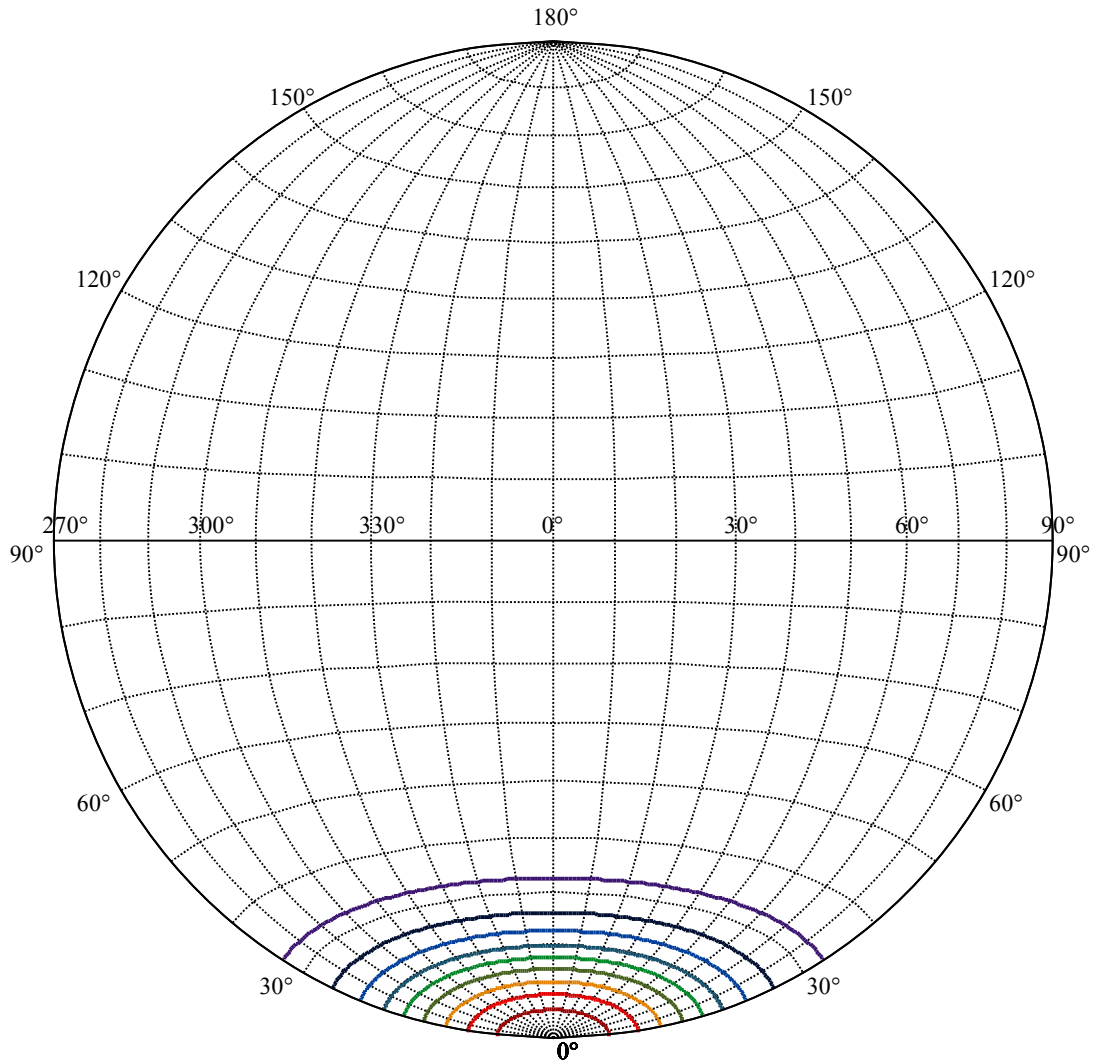
Beam Angle(50%Imax):C0/180Left:17.4 Right:17.4

:C90/270Left:17.4 Right:17.4





(10%I _{max}) 349.453	—
(20%I _{max}) 698.906	—
(30%I _{max}) 1048.36	—
(40%I _{max}) 1397.81	—
(50%I _{max}) 1747.27	—
(60%I _{max}) 2096.72	—
(70%I _{max}) 2446.17	—
(80%I _{max}) 2795.63	—
(90%I _{max}) 3145.08	—



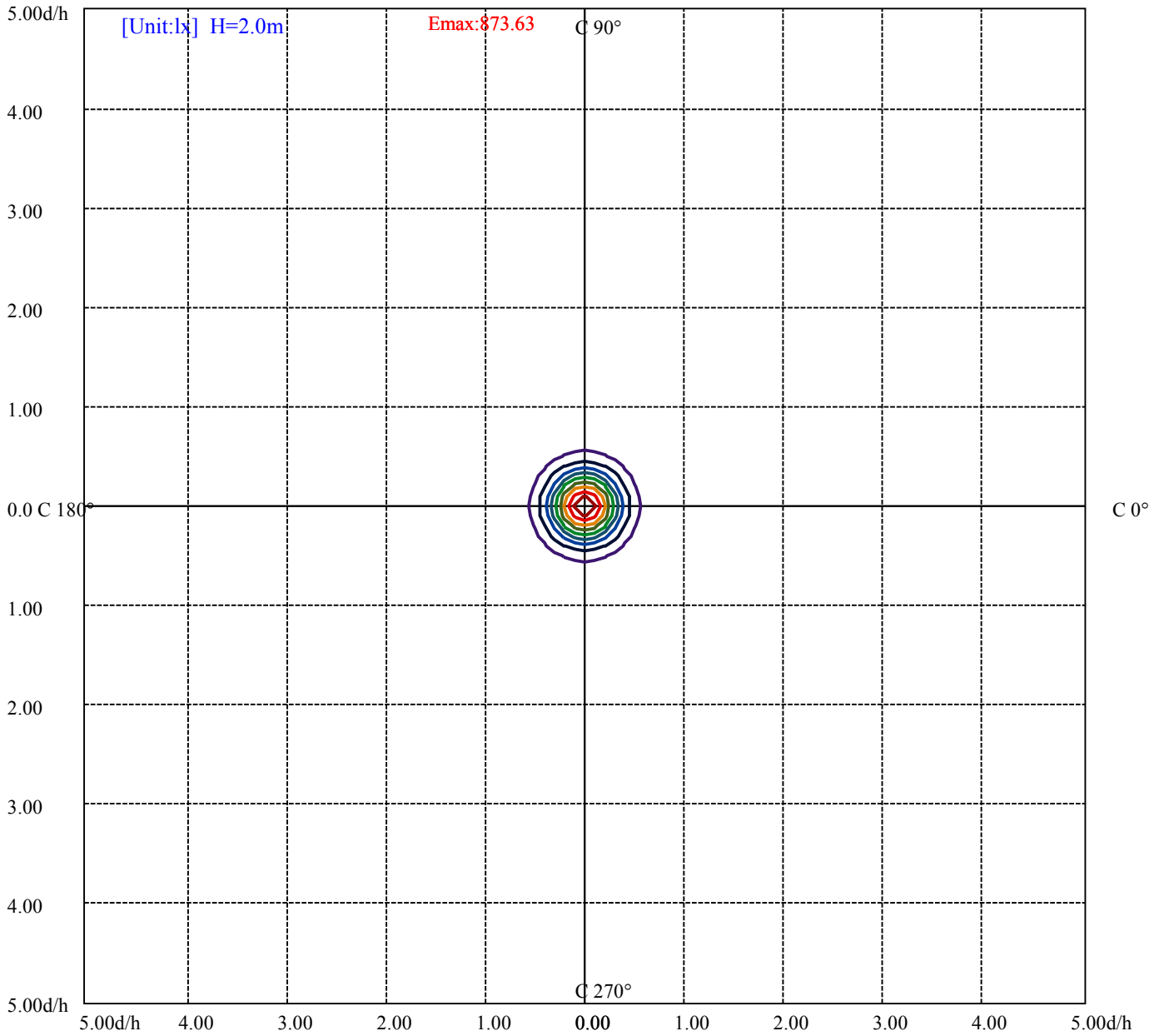
House

[Unit:cd]

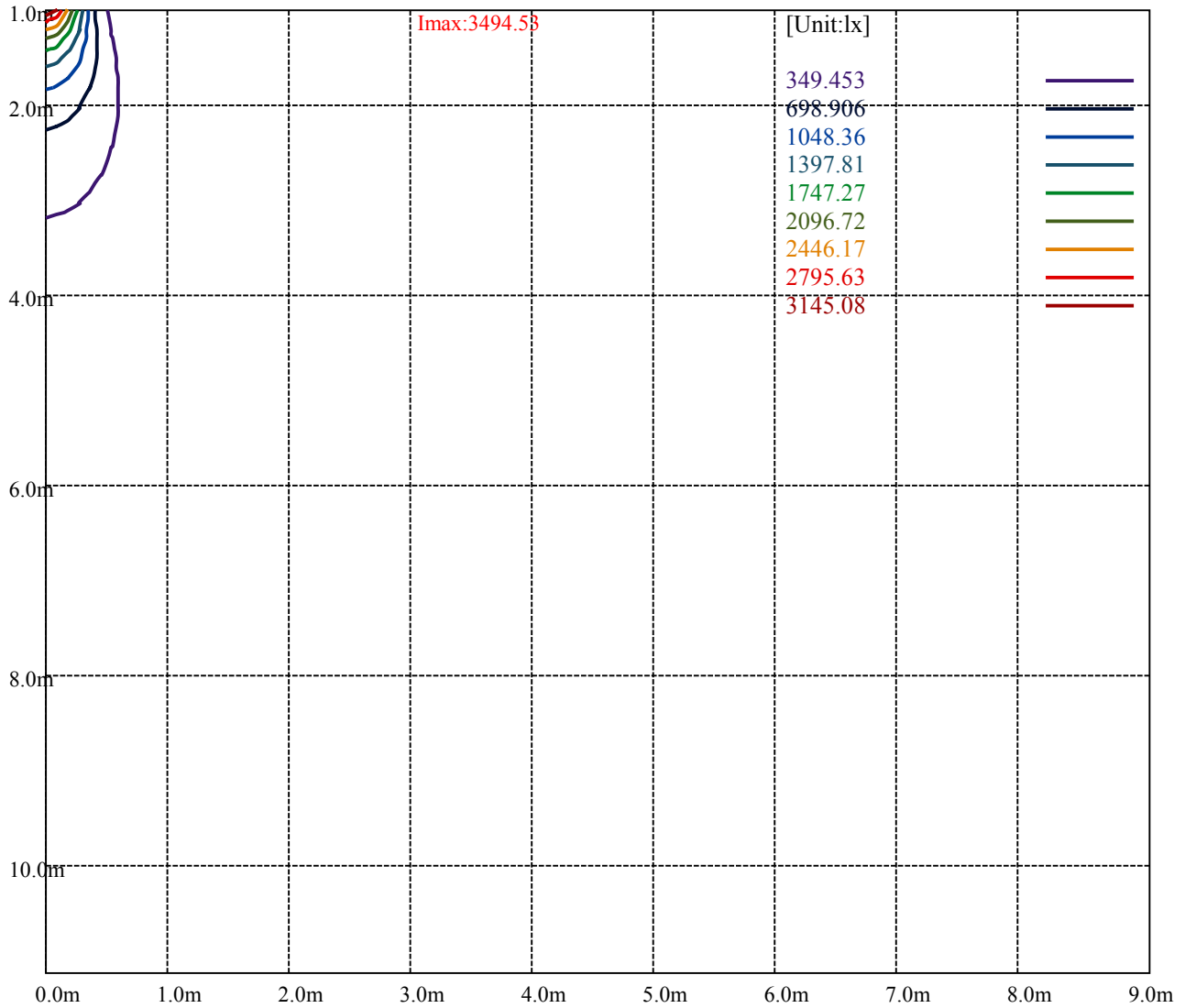
Road

Imax:3494.53

(10%Imax)	349.453	—
(20%Imax)	698.906	—
(30%Imax)	1048.36	—
(40%Imax)	1397.81	—
(50%Imax)	1747.27	—
(60%Imax)	2096.72	—
(70%Imax)	2446.17	—
(80%Imax)	2795.63	—
(90%Imax)	3145.08	—



- (10%Emax) 87.36325
- (20%Emax) 174.7263
- (30%Emax) 262.09
- (40%Emax) 349.4525
- (50%Emax) 436.815
- (60%Emax) 524.18
- (70%Emax) 611.5425
- (80%Emax) 698.905
- (90%Emax) 786.2675



Luminance Table

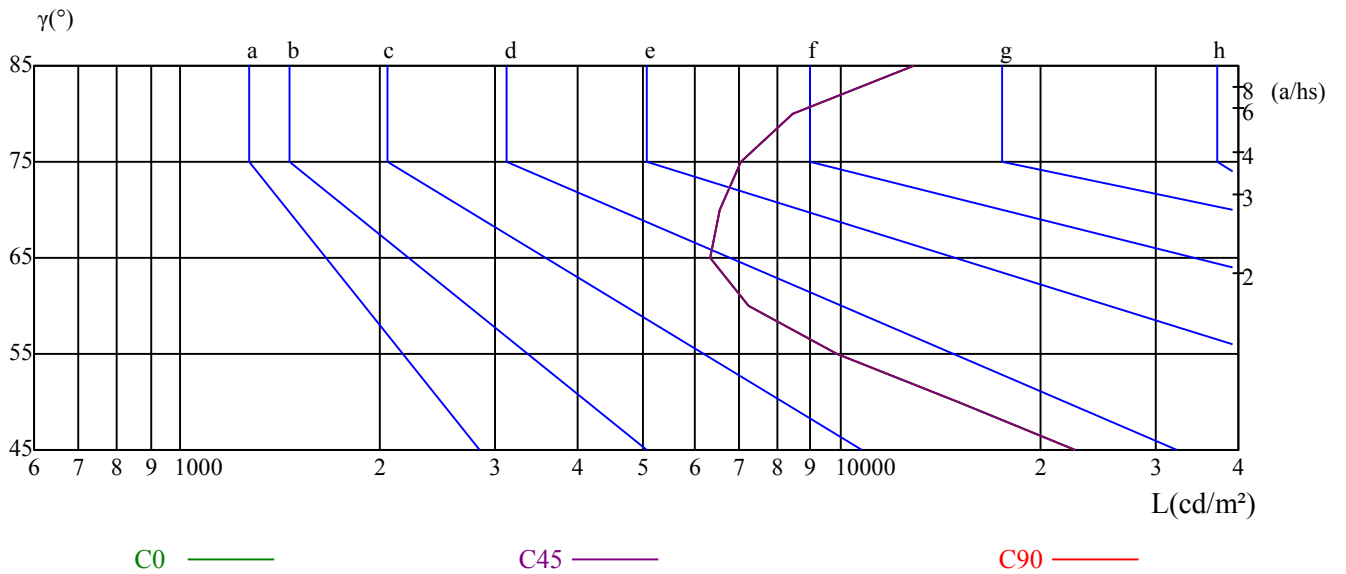
γ	45	50	55	60	65	70	75	80	85
C0	22607	15003	9888	7254	6353	6563	7074	8459	12882
C45	22607	15003	9888	7254	6353	6563	7074	8459	12882
C90	22607	15003	9888	7254	6353	6563	7074	8459	12882

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6353	6353	6353	7074	7074	7074	12882	12882	12882

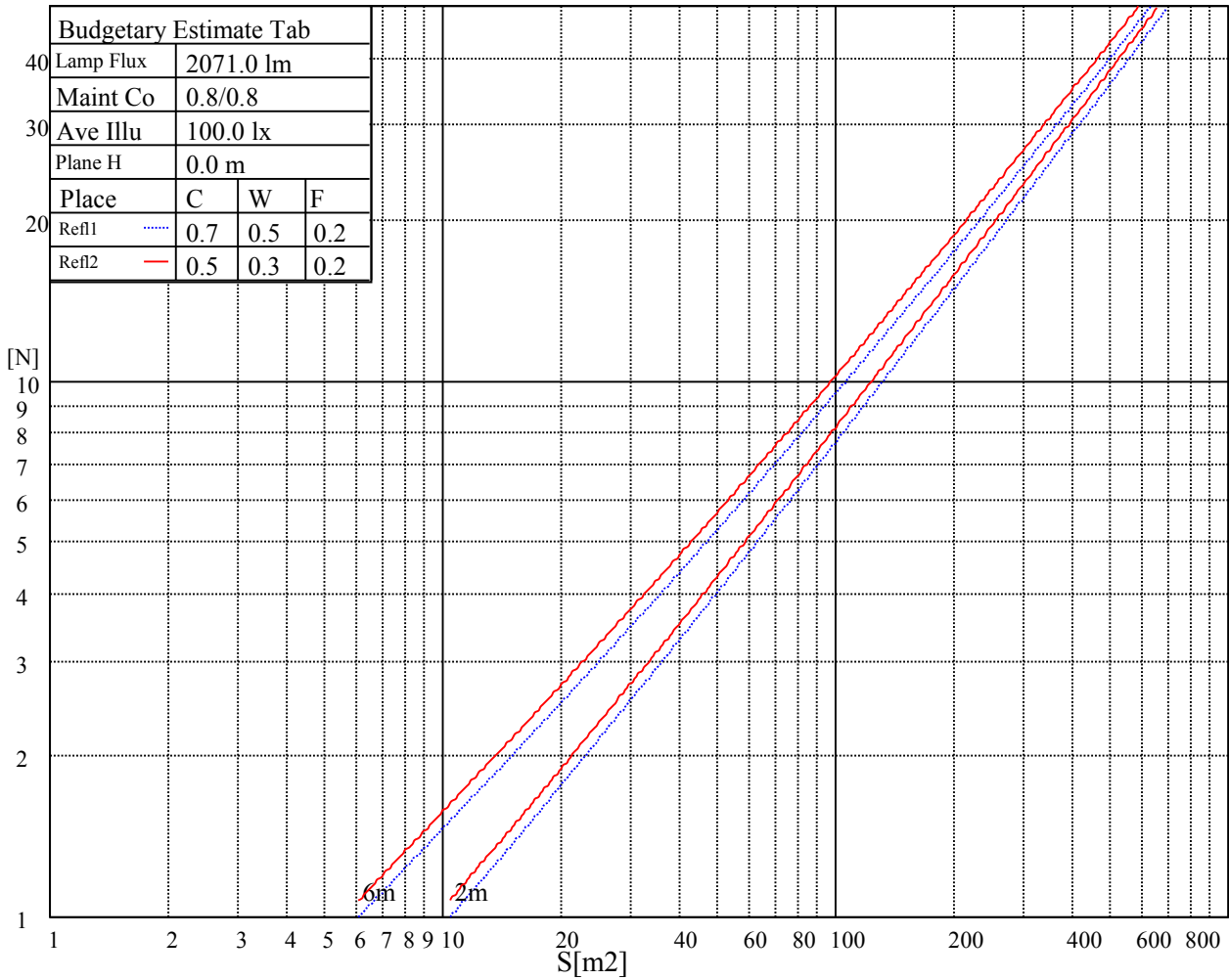
Glare Table

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

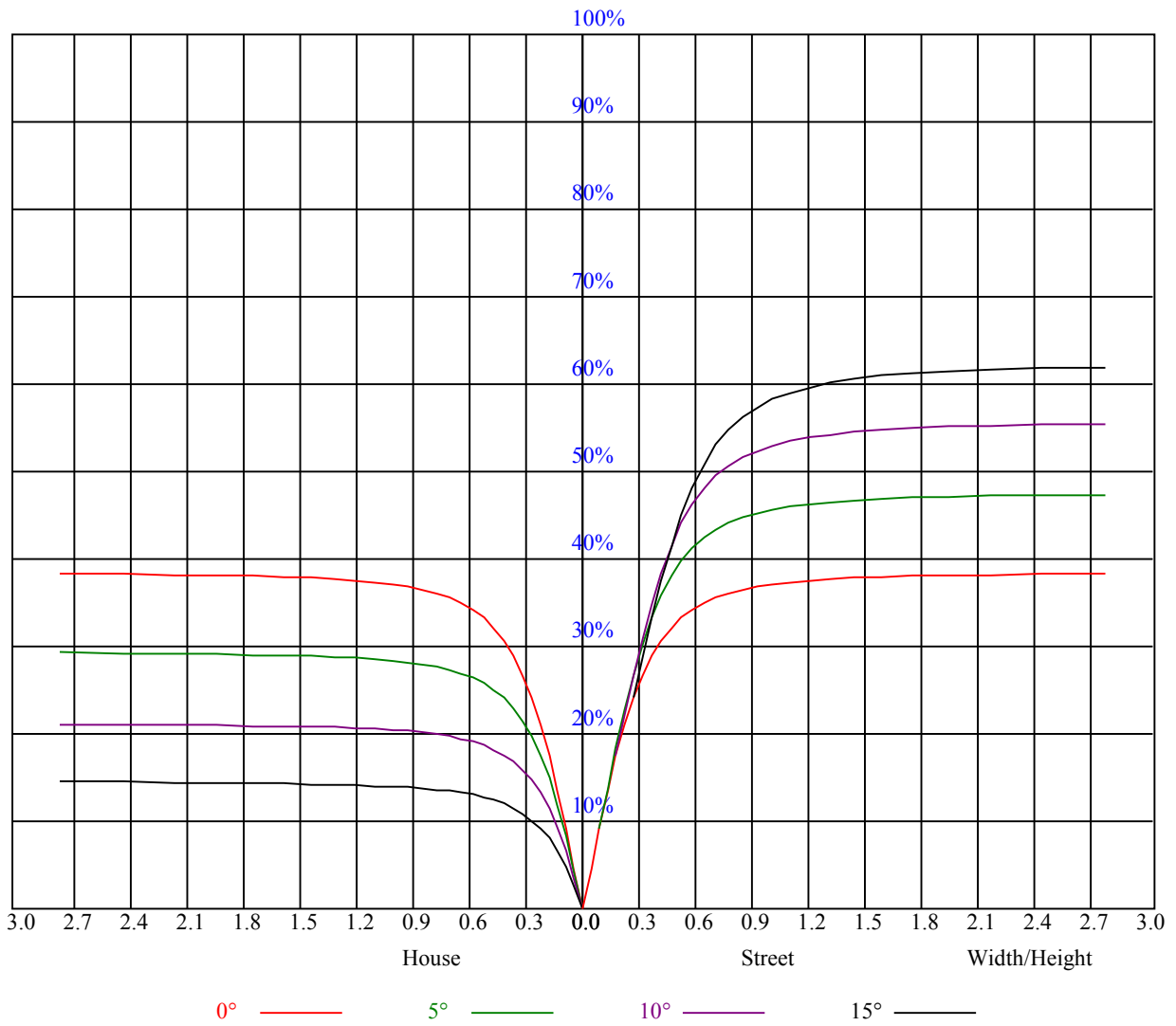
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	11.63	12.66	11.99	12.98	13.29	11.69	12.72	12.05	13.03	13.35
	3H	12.89	13.80	13.27	14.13	14.50	12.93	13.84	13.31	14.18	14.55
	4H	13.58	14.43	13.99	14.78	15.17	13.62	14.47	14.03	14.82	15.21
	6H	14.33	15.11	14.75	15.48	15.88	14.39	15.16	14.81	15.54	15.93
	8H	14.74	15.47	15.17	15.86	16.27	14.79	15.52	15.23	15.92	16.33
	12H	15.44	16.14	15.88	16.52	16.96	15.50	16.20	15.93	16.58	17.01
4H	2H	11.87	12.72	12.28	13.07	13.46	11.92	12.77	12.33	13.12	13.51
	3H	13.45	14.14	13.87	14.55	14.96	13.48	14.18	13.90	14.59	14.99
	4H	14.33	14.95	14.77	15.38	15.82	14.37	14.99	14.81	15.41	15.86
	6H	15.19	15.72	15.66	16.17	16.65	15.24	15.77	15.71	16.22	16.69
	8H	15.73	16.22	16.20	16.67	17.15	15.77	16.27	16.25	16.72	17.19
	12H	16.49	16.92	16.98	17.41	17.89	16.54	16.97	17.03	17.46	17.94
8H	4H	14.65	15.15	15.13	15.60	16.07	14.69	15.18	15.16	15.63	16.11
	6H	15.77	16.17	16.28	16.67	17.15	15.81	16.21	16.32	16.71	17.19
	8H	16.47	16.82	17.00	17.34	17.84	16.51	16.86	17.04	17.39	17.88
	12H	17.58	17.88	18.10	18.38	18.96	17.62	17.93	18.14	18.43	19.00
12H	4H	14.71	15.14	15.20	15.63	16.10	14.74	15.17	15.23	15.66	16.13
	6H	16.23	16.27	16.45	16.74	17.29	16.27	16.30	16.48	16.78	17.32
	8H	16.72	17.02	17.24	17.52	18.10	16.76	17.06	17.28	17.56	18.14
Variation with the observer position at spacings:											
S = 1.0H	1.9/-2.3					1.9/-2.3					
S = 1.5H	3.2/-2.5					3.2/-2.5					
S = 2.0H	4.6/-2.2					4.6/-2.2					
Standard tables:	BK3					BK3					
Uncorrected UGR	1.4					1.4					



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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.86	0.83	0.82	0.84	0.82	0.80	0.81	0.79	0.78	0.78	0.77	0.75	0.75	0.74	0.73	0.72
2	0.80	0.77	0.75	0.79	0.76	0.74	0.77	0.74	0.72	0.74	0.72	0.71	0.72	0.70	0.69	0.68
3	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.71	0.68	0.66	0.69	0.67	0.65	0.64
4	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.66	0.64	0.62	0.61
5	0.68	0.64	0.61	0.68	0.64	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.58
6	0.65	0.61	0.58	0.65	0.61	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56
7	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.53
8	0.60	0.56	0.53	0.59	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.57	0.54	0.52	0.51
9	0.58	0.54	0.51	0.57	0.53	0.51	0.56	0.53	0.51	0.56	0.53	0.50	0.55	0.52	0.50	0.49
10	0.55	0.52	0.49	0.55	0.51	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.53	0.51	0.49	0.48



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	3483.00	3395.81	2972.25	2286.56	1572.75	878.06	483.19	295.31	193.33
45.0	3495.38	3333.38	2860.31	2206.69	1557.56	909.00	478.69	297.00	200.93
90.0	3493.69	3253.50	2703.94	2095.31	1469.81	781.54	432.79	277.37	186.19
135.0	3506.06	3290.63	2783.81	2200.50	1546.88	846.00	463.50	295.88	198.56
180.0	3483.00	3184.31	2626.88	1972.13	1107.00	693.56	402.13	259.09	183.09
225.0	3495.38	3232.13	2612.25	1940.06	1092.49	656.83	390.38	253.29	178.03
270.0	3493.69	3349.69	2840.06	2115.00	1478.25	782.44	422.44	292.50	180.90
315.0	3506.06	3351.94	2796.19	2049.75	1106.66	722.98	396.84	252.45	171.11
360.0	3483.00	3395.81	2972.25	2286.56	1572.75	878.06	483.19	295.31	193.33

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	128.31	78.08	45.96	29.42	20.59	17.21	14.23	11.53	8.66
45.0	127.91	77.40	44.83	28.63	20.31	16.93	13.95	11.19	8.49
90.0	115.20	70.93	41.06	25.82	19.63	16.37	13.22	10.58	8.10
135.0	124.48	76.44	43.88	27.11	20.03	16.71	13.56	10.91	8.21
180.0	112.61	66.71	38.08	25.03	19.35	16.09	13.05	10.41	7.99
225.0	112.33	66.54	38.81	25.54	19.41	16.14	13.16	10.58	8.21
270.0	116.83	70.43	42.75	27.23	20.03	16.93	13.78	11.03	8.44
315.0	108.17	64.07	40.22	25.82	19.52	16.43	13.39	10.69	8.33
360.0	128.31	78.08	45.96	29.42	20.59	17.21	14.23	11.53	8.66

C/γ(°)	90.0
0.0	6.69
45.0	6.69
90.0	6.69
135.0	6.69
180.0	6.64
225.0	6.75
270.0	6.64
315.0	6.69
360.0	6.69