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NATA

LumCAT: 1422-E	
Luminaire: 92.70.046.00	
Report No: NATA0100	Voltage(V): 35.5000
Test No: GC2019010215	Current(A): 0.3000
LampCAT: CREE CXA1512	Power (W): 10.6500
Lamp flux(lm): 1552.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 41	Width(mm): 41
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1303.97
Efficiency(%): 84.02%
Lumens(lm)/Power(W): 124.04
Central intensity(cd): 3052.969
Maximum intensity(cd): 3052.969
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=38.4
 [C90/270]Total=38.4
Field angle(10%Imax): [C0/180]Total=60.4
 [C90/270]Total=60.4
Maximum s/h(1/2): C0_180=0.63 C90_270=0.63
Maximum s/h(1/4): C0_180=0.63 C90_270=0.63
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.12%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.230%

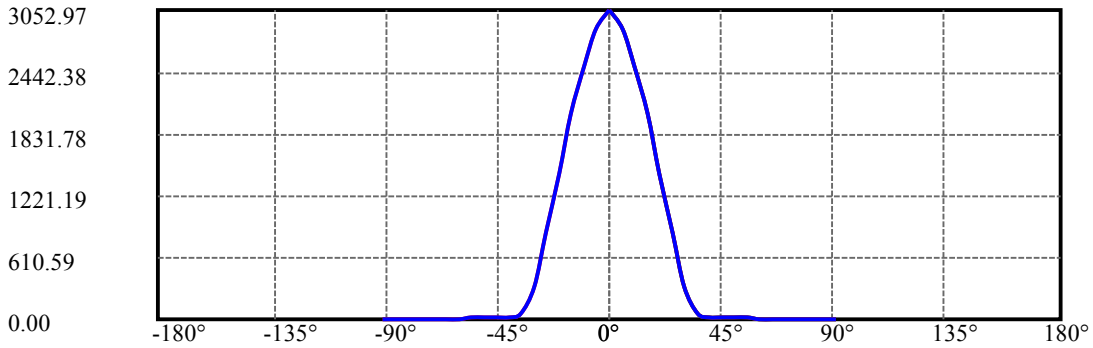
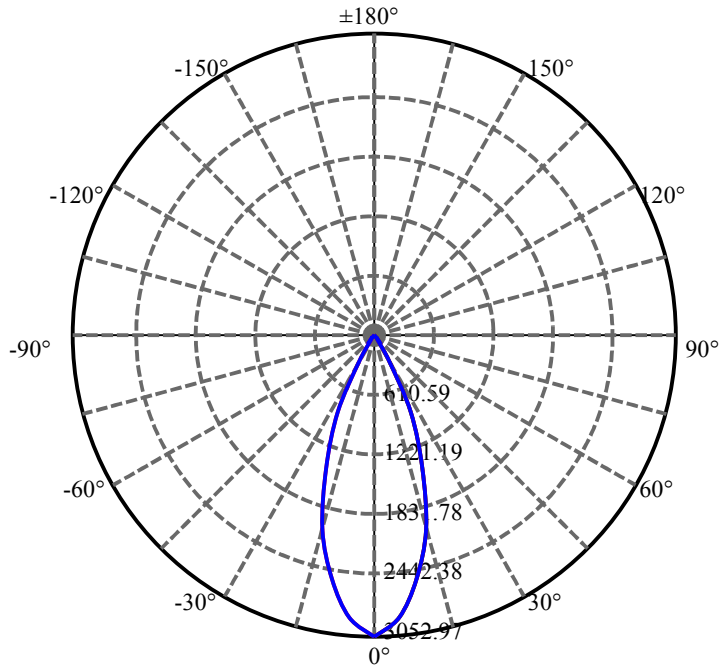
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3052.969	18.257	18.257	1.176%	1.400%
5.0	2860.102	136.637	154.894	8.804%	11.879%
10.0	2504.039	238.342	393.236	15.357%	30.157%
15.0	2031.117	288.151	681.387	18.566%	52.255%
20.0	1432.821	268.617	950.004	17.308%	72.855%
25.0	860.302	199.291	1149.295	12.841%	88.138%
30.0	314.198	86.112	1235.407	5.548%	94.742%
35.0	63.000	19.807	1255.214	1.276%	96.261%
40.0	25.362	8.936	1264.15	.576%	96.946%
45.0	15.806	6.126	1270.277	.395%	97.416%
50.0	12.516	5.255	1275.532	.339%	97.819%
55.0	10.301	4.625	1280.157	.298%	98.174%
60.0	8.923	4.236	1284.393	.273%	98.499%
65.0	7.896	3.923	1288.315	.253%	98.799%
70.0	7.221	3.719	1292.035	.240%	99.085%
75.0	6.722	3.559	1295.594	.229%	99.358%
80.0	6.391	3.450	1299.044	.222%	99.622%
85.0	6.096	3.329	1302.373	.214%	99.877%
90.0	5.829	1.598	1303.97	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1235.41	79.60%	94.74%
0-40	1264.15	81.45%	96.95%
0-60	1284.39	82.76%	98.50%
0-90	1302.37	83.92%	99.88%
0-120	1302.37	83.92%	99.88%
0-180	1303.97	84.02%	100.00%
60-90	22.22	1.43%	1.70%
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%
0-22.34	1043.18	67.21%	80.00%

ZONAL LUMEN SUMMARY

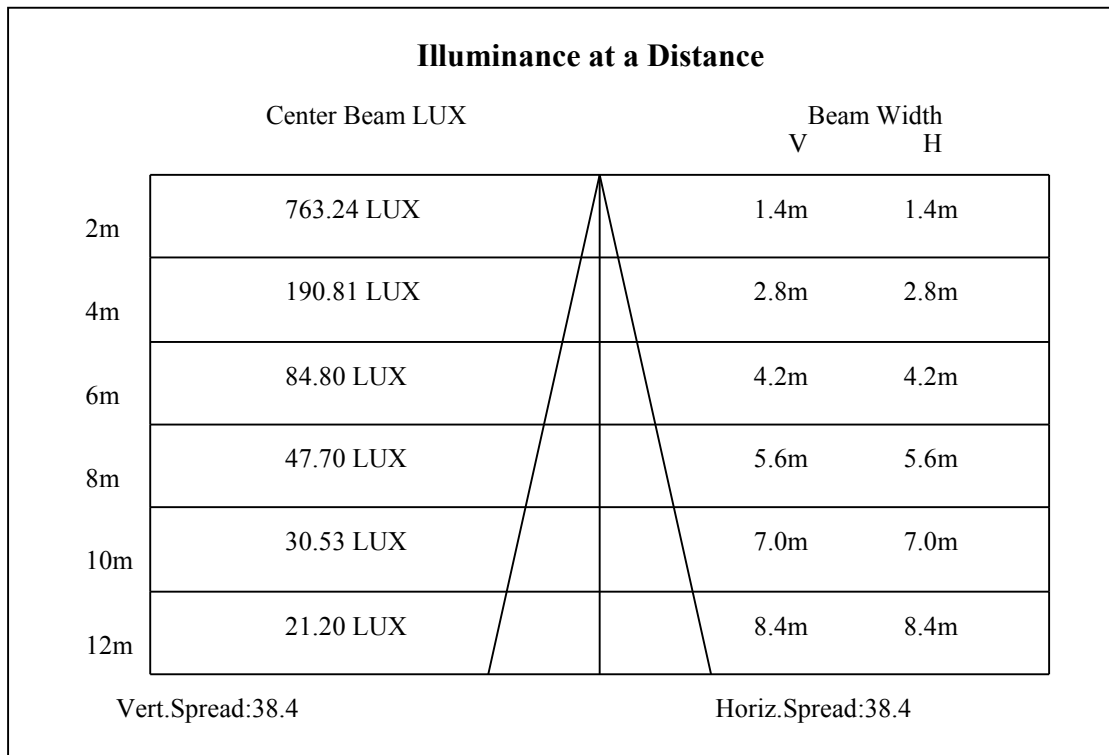
0-10	393.24
10-20	556.77
20-30	285.40
30-40	28.74
40-50	11.38
50-60	8.86
60-70	7.64
70-80	7.01
80-90	3.33
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

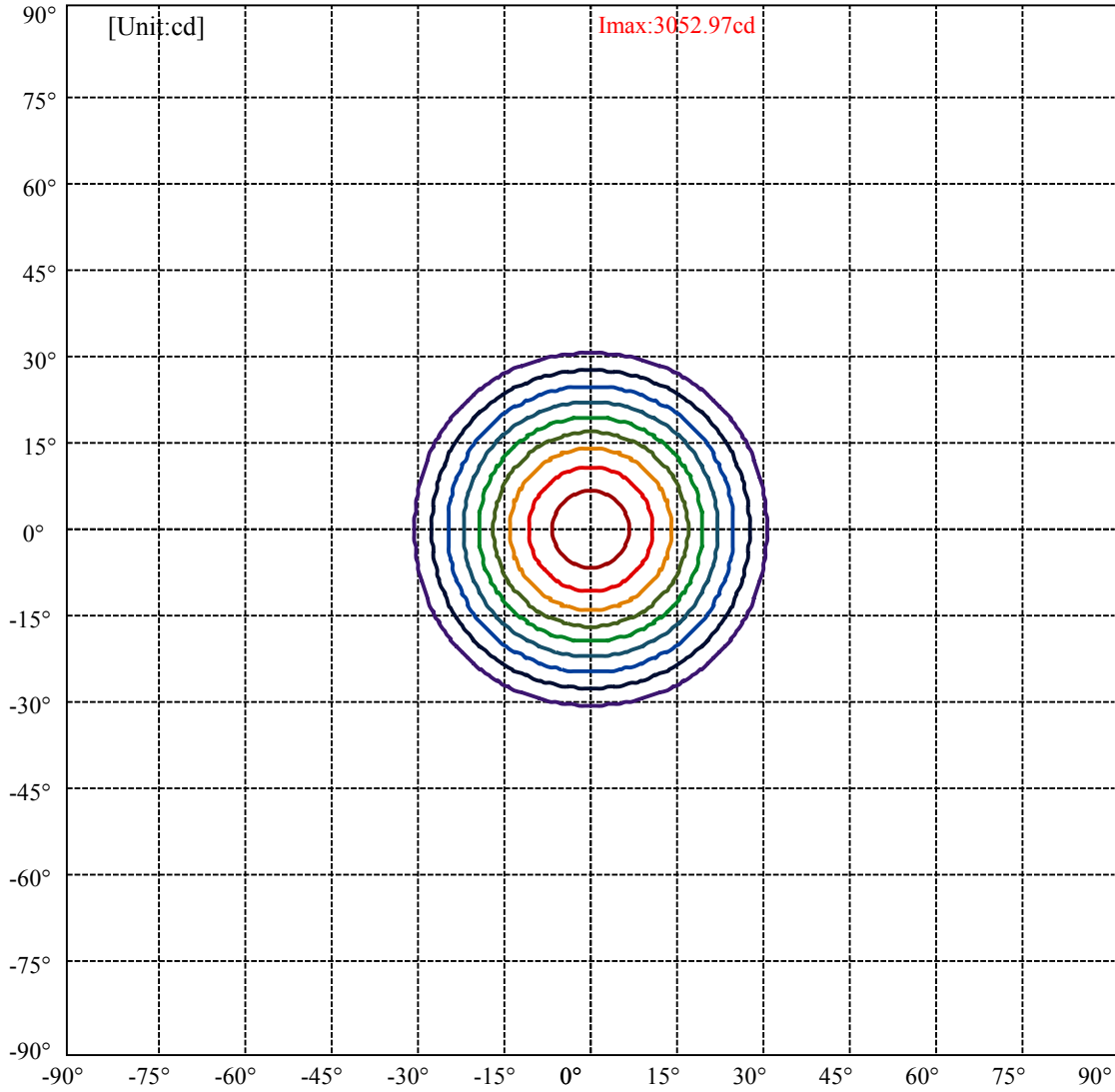


C0(Max): ———
C0/C180: ———
C90/C270: ———

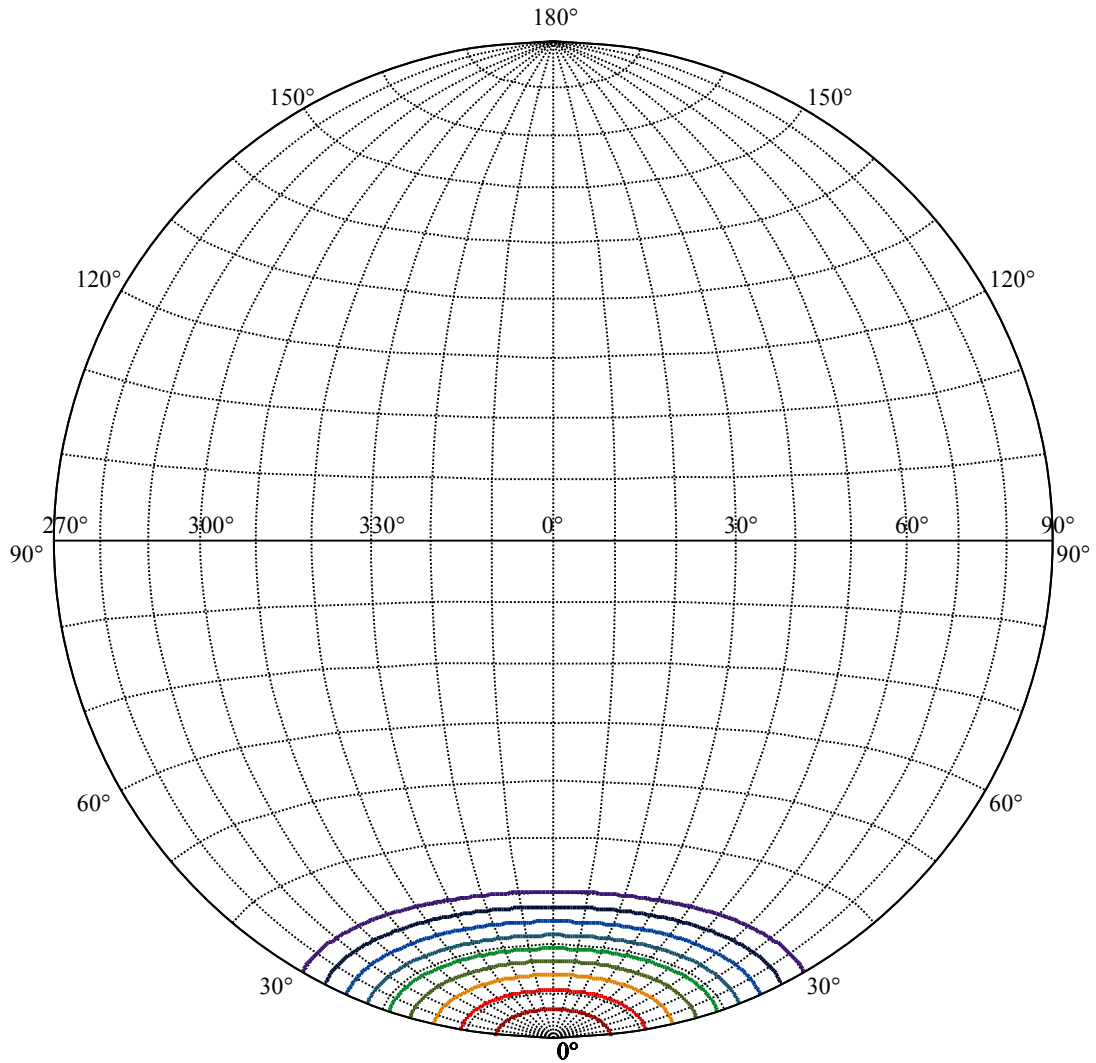
Field angle(10%Imax):C0/180Left:30.2 Right:30.2
:C90/270Left:30.2 Right:30.2

Beam Angle(50%Imax):C0/180Left:19.2 Right:19.2
:C90/270Left:19.2 Right:19.2





(10%Imax) 305.297	—
(20%Imax) 610.594	—
(30%Imax) 915.891	—
(40%Imax) 1221.19	—
(50%Imax) 1526.48	—
(60%Imax) 1831.78	—
(70%Imax) 2137.08	—
(80%Imax) 2442.38	—
(90%Imax) 2747.67	—



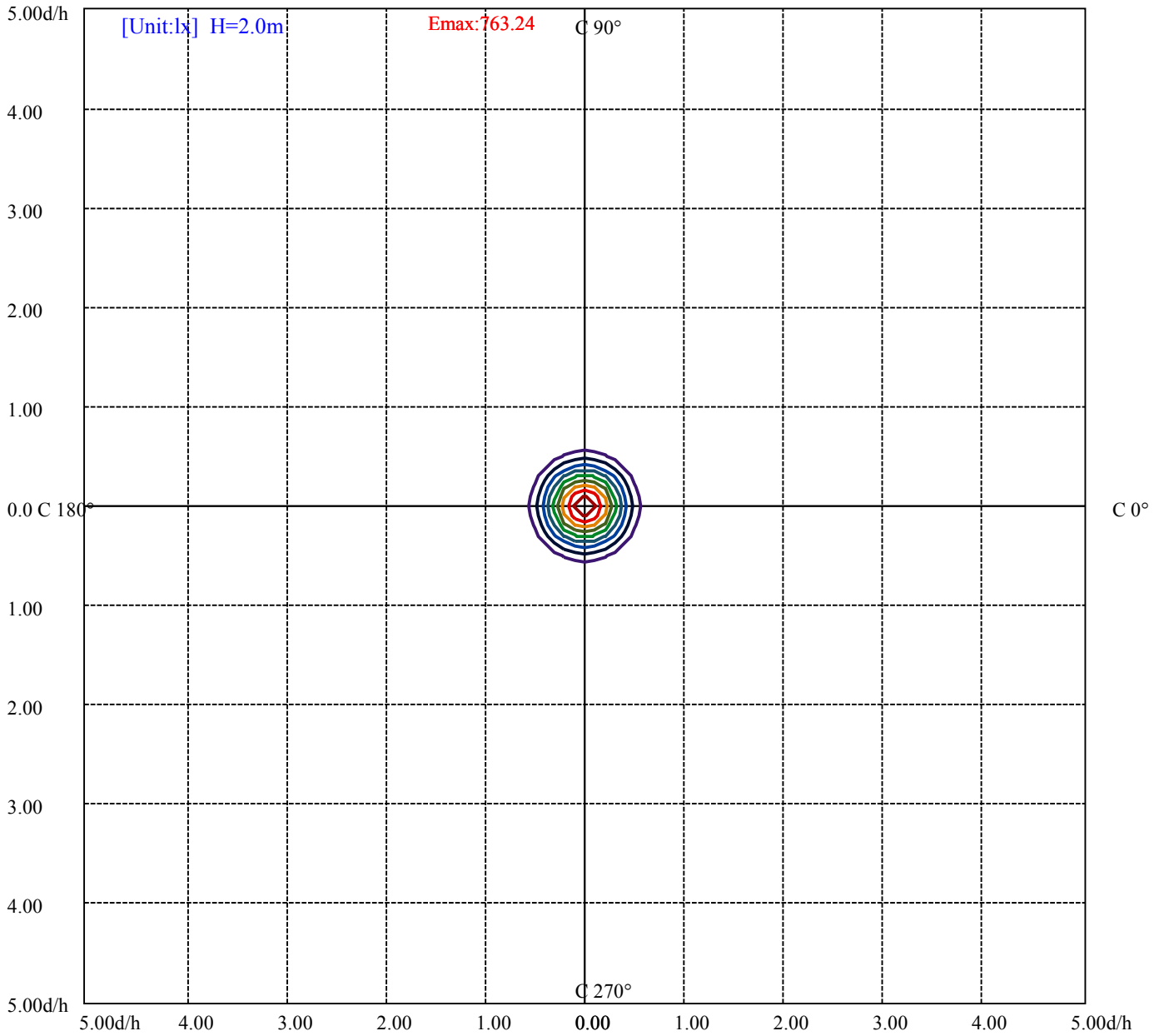
House

[Unit:cd]

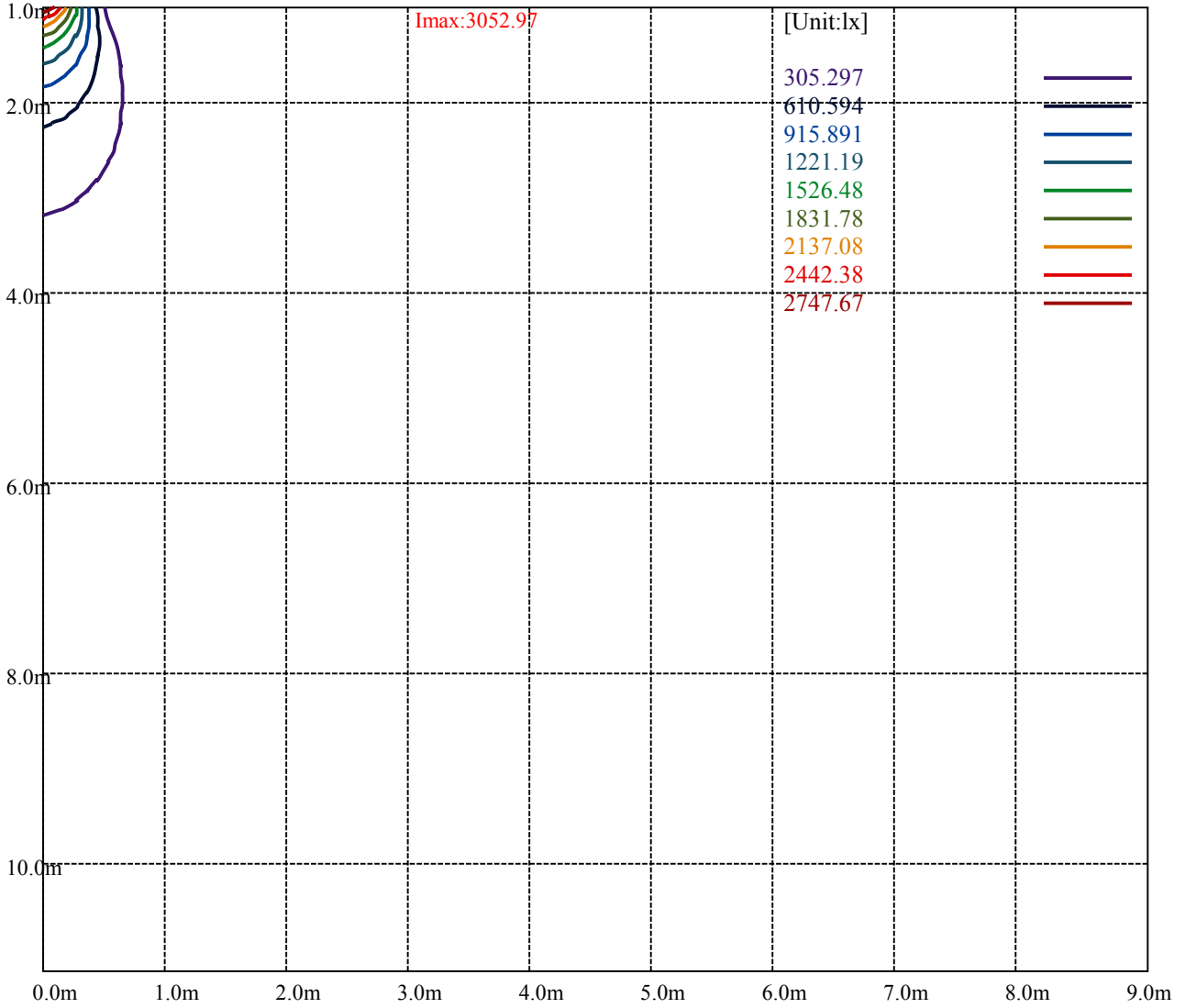
Road

Imax:3052.97

(10%Imax) 305.297	—
(20%Imax) 610.594	—
(30%Imax) 915.891	—
(40%Imax) 1221.19	—
(50%Imax) 1526.48	—
(60%Imax) 1831.78	—
(70%Imax) 2137.08	—
(80%Imax) 2442.38	—
(90%Imax) 2747.67	—



(10%Emax) 76.324	—
(20%Emax) 152.6483	—
(30%Emax) 228.9722	—
(40%Emax) 305.2975	—
(50%Emax) 381.62	—
(60%Emax) 457.945	—
(70%Emax) 534.2675	—
(80%Emax) 610.5925	—
(90%Emax) 686.9175	—



Luminance Table

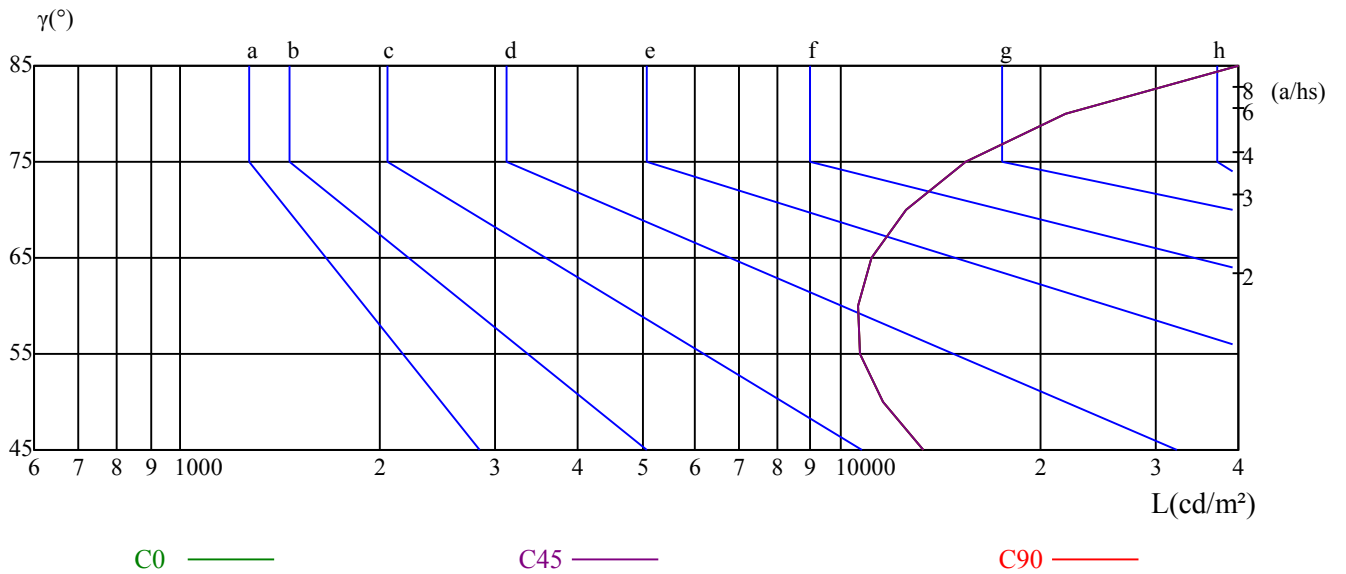
γ	45	50	55	60	65	70	75	80	85
C0	13298	11583	10683	10616	11115	12560	15450	21896	41609
C45	13298	11583	10683	10616	11115	12560	15450	21896	41609
C90	13298	11583	10683	10616	11115	12560	15450	21896	41609

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
11115	11115	11115	15450	15450	15450	41609	41609	41609

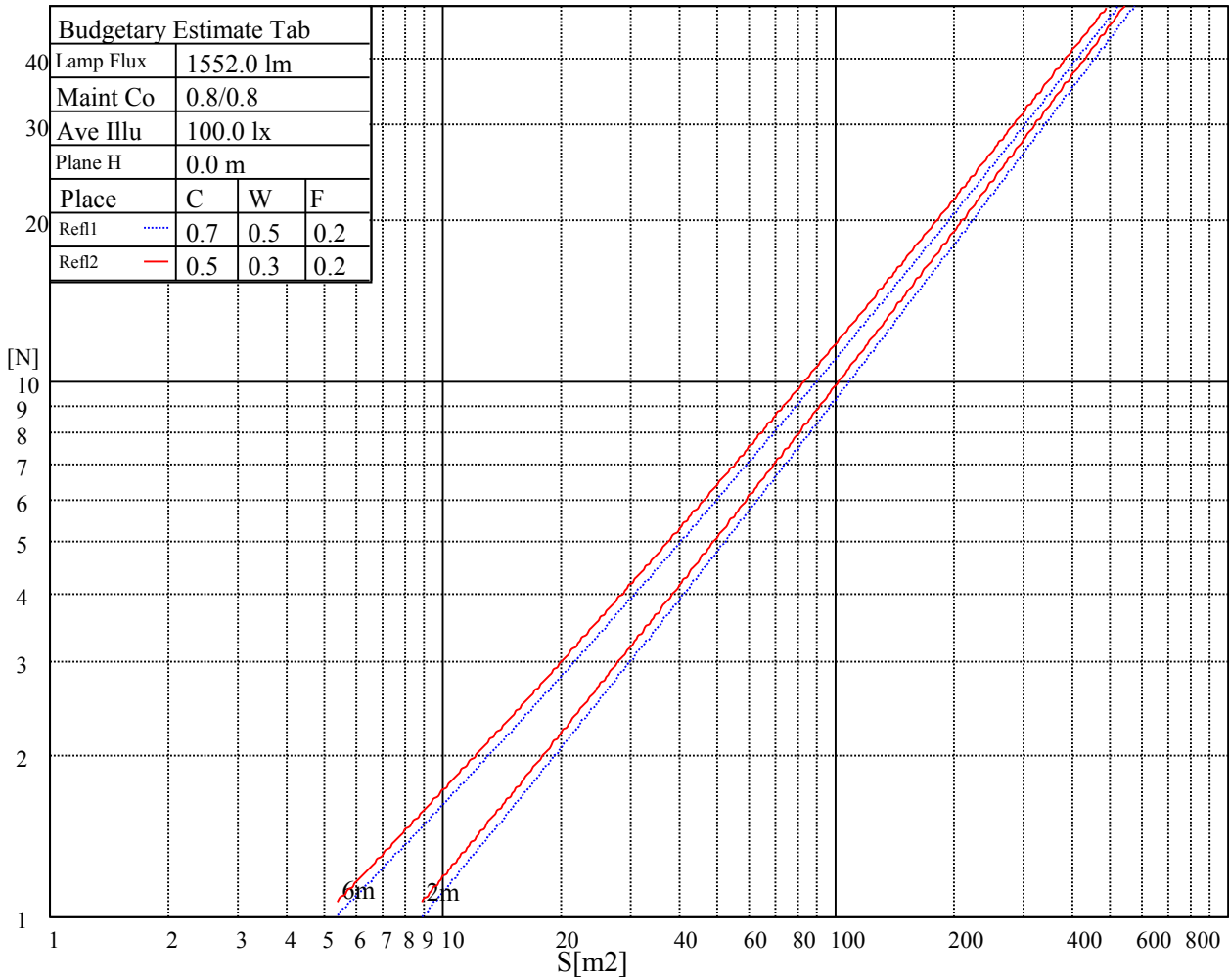
Glare Table

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

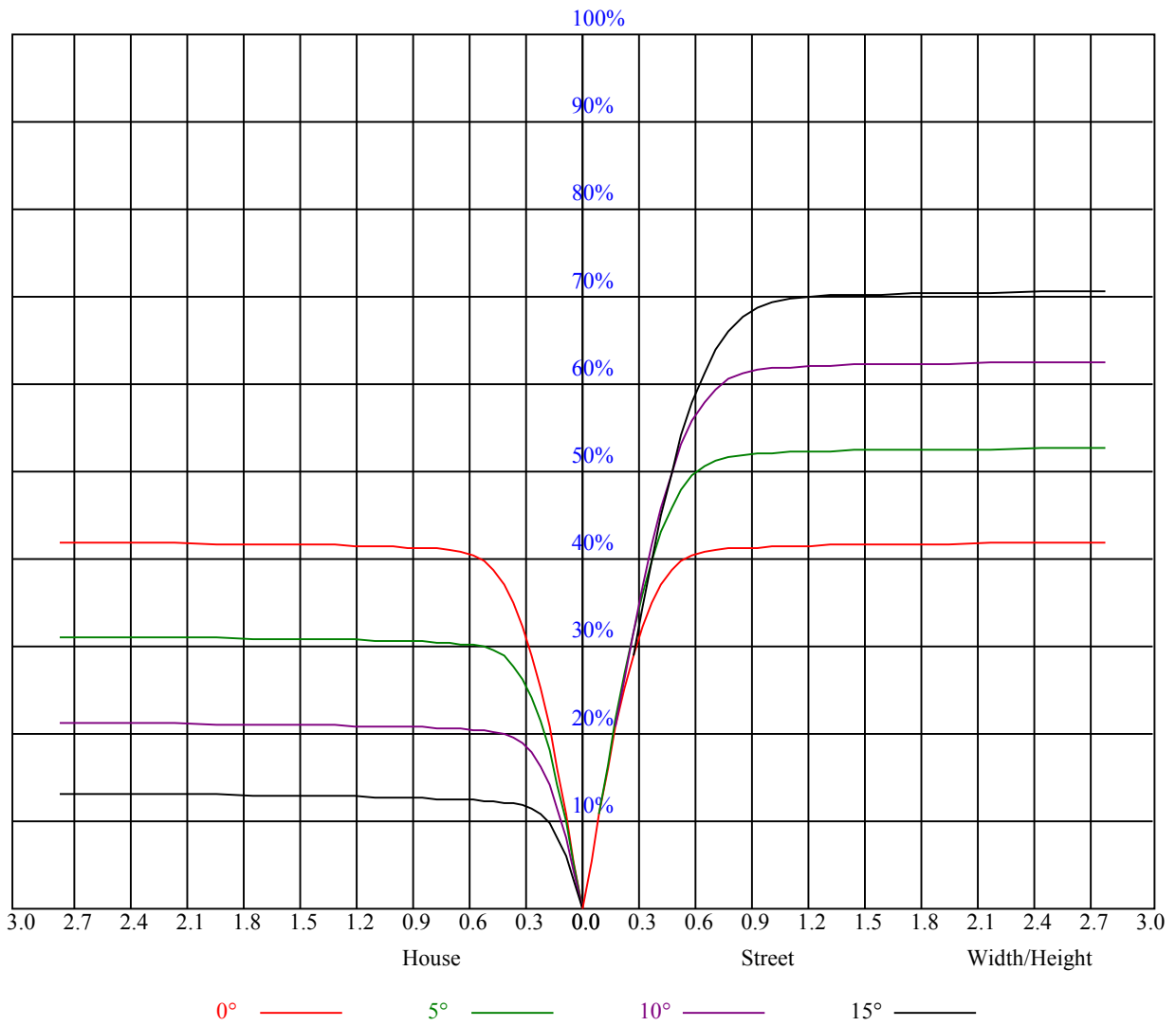
Luminance Limiting Curve



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	9.67	10.60	10.04	10.91	11.23	9.48	10.41	9.85	10.72	11.04
	3H	12.11	12.93	12.49	13.26	13.63	11.97	12.79	12.35	13.12	13.49
	4H	13.48	14.23	13.88	14.59	14.98	13.34	14.09	13.74	14.45	14.84
	6H	15.06	15.76	15.48	16.13	16.53	14.94	15.63	15.36	16.01	16.41
	8H	15.97	16.62	16.40	17.01	17.42	15.85	16.50	16.29	16.90	17.31
	12H	17.49	18.11	17.92	18.49	18.92	17.38	18.00	17.82	18.39	18.82
4H	2H	10.29	11.04	10.69	11.40	11.79	10.14	10.90	10.55	11.25	11.64
	3H	13.04	13.66	13.45	14.07	14.48	12.93	13.55	13.35	13.96	14.37
	4H	14.60	15.16	15.04	15.58	16.03	14.50	15.05	14.93	15.48	15.93
	6H	16.35	16.83	16.82	17.28	17.75	16.26	16.73	16.73	17.18	17.66
	8H	17.38	17.83	17.86	18.28	18.75	17.29	17.74	17.77	18.19	18.66
8H	12H	18.86	19.24	19.35	19.73	20.21	18.78	19.16	19.27	19.65	20.13
	4H	15.19	15.63	15.66	16.08	16.56	15.10	15.54	15.58	16.00	16.47
	6H	17.23	17.58	17.75	18.09	18.58	17.16	17.51	17.67	18.01	18.50
	8H	18.46	18.77	19.00	19.30	19.79	18.39	18.70	18.93	19.23	19.72
12H	12H	20.13	20.40	20.66	20.90	21.48	20.07	20.33	20.59	20.83	21.41
	4H	15.34	15.72	15.83	16.21	16.69	15.26	15.65	15.76	16.14	16.61
	6H	17.72	17.82	18.04	18.29	18.84	17.65	17.75	17.98	18.22	18.77
8H	18.87	19.13	19.39	19.63	20.21	18.80	19.07	19.33	19.57	20.15	
Variation with the observer position at spacings:											
S = 1.0H	4.0/-2.3				4.0/-2.3						
S = 1.5H	4.9/-1.8				4.9/-1.8						
S = 2.0H	5.4/-1.5				5.4/-1.5						
Standard tables:	BKBF				BKBF						
Uncorrected UGR	3.8				3.8						



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	1.01	1.01	1.01	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	0.94	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.81	0.79
2	0.89	0.86	0.83	0.88	0.85	0.82	0.85	0.83	0.81	0.82	0.81	0.79	0.80	0.79	0.77	0.76
3	0.85	0.81	0.78	0.84	0.80	0.78	0.81	0.79	0.76	0.79	0.77	0.75	0.78	0.76	0.74	0.73
4	0.81	0.77	0.74	0.80	0.77	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
6	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
7	0.72	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
8	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.67	0.64	0.62	0.61
9	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57



NATA 1422-E

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	3043.69	2935.69	2638.69	2144.81	1558.13	924.19	330.19	60.86	22.56
45.0	3052.69	2968.88	2646.00	2165.06	1572.75	961.31	380.81	68.12	26.16
90.0	3071.81	2864.25	2511.00	2027.25	1440.00	876.04	326.98	66.49	28.58
135.0	3043.69	2885.06	2539.69	2104.31	1573.31	1029.38	435.38	86.01	31.56
180.0	3043.69	2796.19	2382.75	1985.06	1437.19	840.71	282.49	63.39	25.43
225.0	3052.69	2775.38	2370.38	1870.88	1364.63	763.43	241.37	56.70	24.30
270.0	3071.81	2831.63	2467.13	1996.88	1398.94	805.50	298.13	59.85	24.41
315.0	3043.69	2823.75	2476.69	1954.69	1117.63	681.86	218.25	42.58	19.91
360.0	3043.69	2935.69	2638.69	2144.81	1558.13	924.19	330.19	60.86	22.56
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	14.91	11.76	9.90	8.66	7.71	7.20	6.69	6.36	5.96
45.0	15.69	12.26	10.13	8.78	7.93	7.26	6.75	6.36	6.08
90.0	16.59	13.11	10.69	9.28	8.16	7.37	6.92	6.47	6.19
135.0	16.54	12.94	10.52	9.06	7.93	7.20	6.69	6.41	6.13
180.0	15.53	12.60	10.41	9.00	7.99	7.26	6.69	6.41	6.19
225.0	16.20	12.88	10.69	9.06	7.93	7.26	6.75	6.47	6.19
270.0	16.59	13.05	10.58	9.23	8.04	7.31	6.81	6.47	6.13
315.0	14.40	11.53	9.51	8.33	7.48	6.92	6.47	6.19	5.91
360.0	14.91	11.76	9.90	8.66	7.71	7.20	6.69	6.36	5.96
C/ γ (°)	90.0								
0.0	5.91								
45.0	5.91								
90.0	5.79								
135.0	5.85								
180.0	5.74								
225.0	5.85								
270.0	5.79								
315.0	5.79								
360.0	5.91								