Lognormal Distribution

ARL Table for scale parameter decrease from the in-control value in LN(0,1)

| | | $n = 5$ | | | | $n = 10$ | | | | $n = 20$ | | | |
| | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | |
σ	μ_X	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL
1.0	1.65	202.20	98.89	198.78	101.11	200.65	99.70	198.87	100.36	193.88	98.83	199.33	99.61
0.9	1.50	345.51	228.51	678.99	218.24	261.56	210.55	981.46	200.33	184.48	164.80	1564.11	159.70
0.8	1.38	711.97	610.49	2837.89	489.00	399.70	380.76	7898.24	343.30	186.28	183.97	27042.76	171.74

ARL Table for shifts of both parameters increase from the in-control value in LN(0,1)

| | | | $n = 5$ | | | | $n = 10$ | | | | $n = 20$ | | | |
| | | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | |
μ	σ	μ_X	ARL	ARL^+	ARL	ARL^+	ARL	ARL^+	ARL	ARL^+	ARL	ARL^+	ARL	ARL^+
0.0	1.0	1.65	99.28	197.68	100.04	198.97	100.20	200.97	99.00	200.08	98.66	202.37	97.92	198.25
0.2	1.2	2.51	17.91	19.39	30.76	39.88	12.06	12.30	25.08	29.12	6.55	6.56	18.35	19.66
0.4	1.4	3.97	4.91	5.04	13.22	15.53	2.50	2.49	9.42	10.35	1.00	0.98	6.07	6.15
0.6	1.6	6.55	2.03	2.03	7.28	8.32	0.85	0.84	5.13	5.43	0.23	0.23	3.18	3.31
0.8	1.8	11.25	1.02	1.04	4.63	5.51	0.36	0.36	3.44	3.77	0.06	0.06	2.23	2.31

ARL Table for shifts of both parameters decrease from the in-control value in LN(0,1)

| | | | $n=5$ | | | | $n=10$ | | | | $n=20$ | | | |
| | | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | | $\bar{X}$ chart | | $\tilde{X}$ chart | |
μ	σ	μ_X	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL	ARL^-	ARL
0.0	1.0	1.65	202.09	99.45	201.88	99.99	200.19	100.61	197.33	98.99	196.17	98.15	195.37	98.50
-0.2	0.8	1.13	140.01	139.47	279.47	463.17	51.12	50.44	161.66	3.44	0.06	0.06	2.23	2.23
-0.4	0.6	0.80	87.01	85.93	377.82	463.17	8.81	8.81	75.88	3.44	0.81	0.80	10.66	2.23
-0.6	0.4	0.59	41.47	41.07	463.17	463.17	0.69	0.70	12.81	3.44	0.00	0.00	0.36	2.23