

# Case i: Gamma Distribution

**ARL Table for scale parameter increase from the in-control value in  $G(1.1, 1.5)$**

$\beta$	$\mu_X$	$n = 5$				$n = 10$				$n = 20$			
		$\bar{X}$ chart		$\tilde{X}$ chart		$\bar{X}$ chart		$\tilde{X}$ chart		$\bar{X}$ chart		$\tilde{X}$ chart	
		ARL	SDRL	ARL	SDRL	ARL	SDRL	ARL	SDRL	ARL	SDRL	ARL	SDRL
<b>1.50</b>	<b>1.6</b>	98.33	98.24	99.46	98.75	97.28	97.90	98.92	99.39	97.08	97.51	97.76	98.46
<b>1.75</b>	<b>1.9</b>	47.39	47.87	56.01	56.73	35.07	35.70	40.91	41.66	22.79	23.35	26.45	26.84
<b>2.00</b>	<b>2.2</b>	20.83	21.44	28.20	28.68	11.98	12.54	15.25	15.62	5.73	6.24	7.29	7.78
<b>2.25</b>	<b>2.5</b>	10.52	10.98	15.56	16.14	5.21	5.67	7.03	7.51	2.14	2.59	2.82	3.30
<b>2.50</b>	<b>2.8</b>	6.16	6.64	9.43	9.93	2.75	3.22	3.80	4.29	0.95	1.37	1.32	1.73
<b>3.00</b>	<b>3.3</b>	2.70	3.17	4.43	4.87	1.01	1.44	1.46	1.91	0.25	0.56	0.38	0.72
<b>3.50</b>	<b>3.9</b>	1.47	1.88	2.49	2.94	0.45	0.81	0.71	1.11	0.07	0.27	0.12	0.37