

## WASP Touch / WASP 2 counting ranges (logarithmic spiral depositions)

When a Whitley Spiral Plater is used in logarithmic deposition mode with 90 mm agar plates, the dispensed liquid is diluted by a factor of 1000 from the start point (centre of plate) to the point where the stylus leaves the plate. Therefore, each logarithmic spiral plate can replace three conventional pour plates or surface spread plates inoculated with serial decimal dilutions of a sample. The actual range of colony counts (cfu per ml) that can be enumerated on a single spiral plate depends on the sample dilution selected for plating, as shown in the table below.

	<b>1 ml Pour Plate cfu per ml</b>	<b>WASP 10 µl cfu per ml</b>	<b>WASP 50 µl cfu per ml</b>	<b>WASP 100 µl cfu per ml</b>	<b>WASP 200 µl cfu per ml</b>
<b>No dilution</b>	10 to 300*	$2 \times 10^3$ to $2 \times 10^6$	400 to $4 \times 10^5$	200 to $2 \times 10^5$	30 to $1 \times 10^5$
<b><math>10^{-1}</math> (1/10)</b>	100 to $3 \times 10^3$	$2 \times 10^4$ to $2 \times 10^7$	$4 \times 10^3$ to $4 \times 10^6$	$2 \times 10^3$ to $2 \times 10^6$	300 to $1 \times 10^6$
<b><math>10^{-2}</math> (1/100)</b>	$1 \times 10^3$ to $3 \times 10^4$	$2 \times 10^5$ to $2 \times 10^8$	$4 \times 10^4$ to $4 \times 10^7$	$2 \times 10^4$ to $2 \times 10^7$	$3 \times 10^3$ to $1 \times 10^7$
<b><math>10^{-3}</math> (1/1000)</b>	$1 \times 10^4$ to $3 \times 10^5$	$2 \times 10^6$ to $2 \times 10^9$	$4 \times 10^5$ to $4 \times 10^8$	$2 \times 10^5$ to $2 \times 10^8$	$3 \times 10^4$ to $1 \times 10^8$
<b><math>10^{-4}</math> (1/10,000)</b>	$1 \times 10^5$ to $3 \times 10^6$	$2 \times 10^7$ to $2 \times 10^{10}$	$4 \times 10^6$ to $4 \times 10^9$	$2 \times 10^6$ to $2 \times 10^9$	$3 \times 10^5$ to $1 \times 10^9$
<b><math>10^{-5}</math> (1/100,000)</b>	$1 \times 10^6$ to $3 \times 10^7$				
<b><math>10^{-6}</math> (1/1,000,000)</b>	$1 \times 10^7$ to $3 \times 10^8$				

\* According to BS EN ISO 7218:2007 Microbiology of food and animal feeding stuffs – General requirements and guidance for microbiological examinations, precision decreases rapidly for colony counts less than 10 on a pour plate, while counts less than 4 should be treated as mere detection of the presence of microorganisms.