



With the above example, 2,000 particles 5 microns or greater are counted upstream and 1,000 particles 5 microns or greater are counted downstream in the oil, the Beta Ratio equals 2. $\beta_5 = 2$ means that a 5 micron filter can remove 50% of all particles that are 5 microns or larger.

Although the multipass test was originally intended as a research and development tool for filter development, most will-fit marketing groups commonly use Beta ratios of 2 and 75 as the definition of a filter's "nominal" and "absolute" rating. Thus, the filter illustrated is said to have a "nominal rating of 5 microns" and an "absolute rating of 15 microns."

Lab efficiency can be calculated from the Beta ratio in the following manner:

$$\text{Efficiency \%} = 1 - \frac{1}{\text{Beta Ratio } (\beta_x)}$$

Beta Ratio (β_x)	Efficiency %
2	50.0 %
75	98.7 %
200	99.5 %

As can be seen, ratios above 75 do not represent a significant improvement. The added cost for a Beta=200 filter only improves lab test efficiency by 0.8%. Variability in sampling and testing can often account for such minor differences.