

Area estimation	$a = \pi \bar{l}^2$	l: length of rays
Volume estimation	$\bar{v}_N = \frac{4\pi}{3} \bar{l}_n^3$	l: length of rays
Estimated coefficient of error	$estCV(R) = \frac{\sqrt{\frac{1}{n-1} \sum_{i=1}^n (R_i - \bar{R})^2}}{\bar{R}}$	n : Number of nucleator estimates R _i : Area/volume estimate for each sampling site
Average area/volume estimate	$\bar{R} = \frac{1}{n} \sum_{i=1}^n R_i$	n: Number of nucleator estimates R _i : Area/volume estimate for each sampling site
Relative efficiency	$CE_n(R) = \frac{CV(R)}{\sqrt{n}}$	CV(R): Estimated coefficient of variation n: Number of nucleator estimates
Geometric mean of the area/volume estimate	$e^{\left(\frac{1}{n} \sum_{i=1}^n \ln R_i\right)}$	n: Number of nucleator estimates R _i : Area/volume estimate for each sampling site

References

Gundersen, H. J. G. (1988). [The nucleator](#). *Journal of Microscopy*, 151 (1), 3–21.