

Epsilon ONE® Model Selection

Selecting the best non-contact extensometer for your application

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The flexibility of the Epsilon ONE systems makes them powerful instruments, but selecting the most appropriate model can be a challenge. This *Guide* will help you work through common selection criteria.

Examples and General Recommendations

- **ONE-78PT-200 is the most versatile and most popular option for metals and composites** where either model ONE-52PT or ONE-78PT might be selected. Select ONE-52PT if only a small field of view is needed.
- **ONE-200CE-220 is optimal for many applications where 80-200mm FoV is needed**, such as plastics.
- Select ONE-250CE-280 typically if the working distance of ONE-200CE or ONE-78PT is too small.
- Select ONE-500CE-270 when >250mm Field of View is needed. Custom systems with larger *Field of View* and/or *Working Distance* (e.g. 1000CE) are possible – contact Epsilon. These systems have less resolution / speed than other models, but their resolution / speed is still sufficient for applicable tests.
- ONE-130PT is available for special applications where a large FoV and telecentricity are needed.

Multiple optics can be used interchangeably with the ONE system when applications vary widely.


Field of View, Working Distance, and Telecentricity

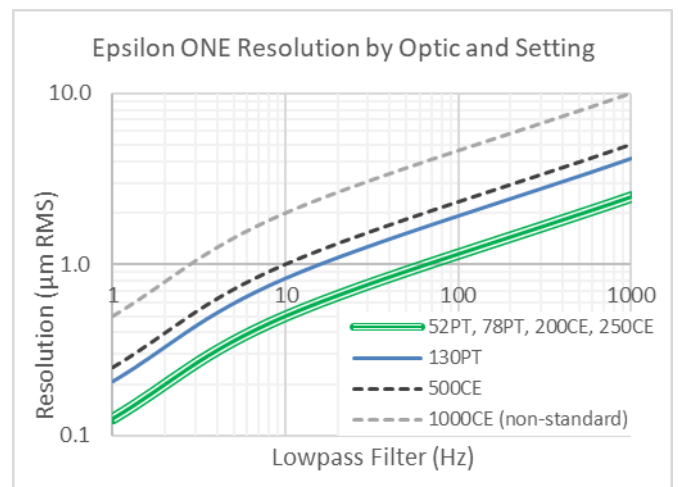
When selecting an Epsilon ONE, the *Field of View* must be sufficient to capture the elongation of the specimen. See [Epsilon TechNote-Determining Field of View](#) or [Experimental Method \(video\)](#) for details. Grips, chambers, and other obstacles can place physical constraints on the *Working Distance*.

For applications where high accuracy at low strain (<1%ε) is important, *Precision Telecentric Optics* are ideal. However, these precision systems are generally limited to smaller fields of view, so they may not be available for all applications. For more detail, see [Epsilon TechNote-Precision Telecentric Optics](#).

Performance: Resolution

Most Epsilon ONE performance specifications are consistent between the optics packages, but the *Field of View* and *Working Distance*, *Out of Plane Sensitivity* (telecentricity) and the *Resolution* vary by the model. Resolution is not the only parameter to consider but can become limiting if the field of view is >> the gauge length.

 Resolution varies according to the model and Filter Setting (Hz). A typical tensile test might use a 10-100 Hz setting. A creep test might use 1 Hz, and a fatigue test might use 100-1000 Hz.



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