

Power up your performance

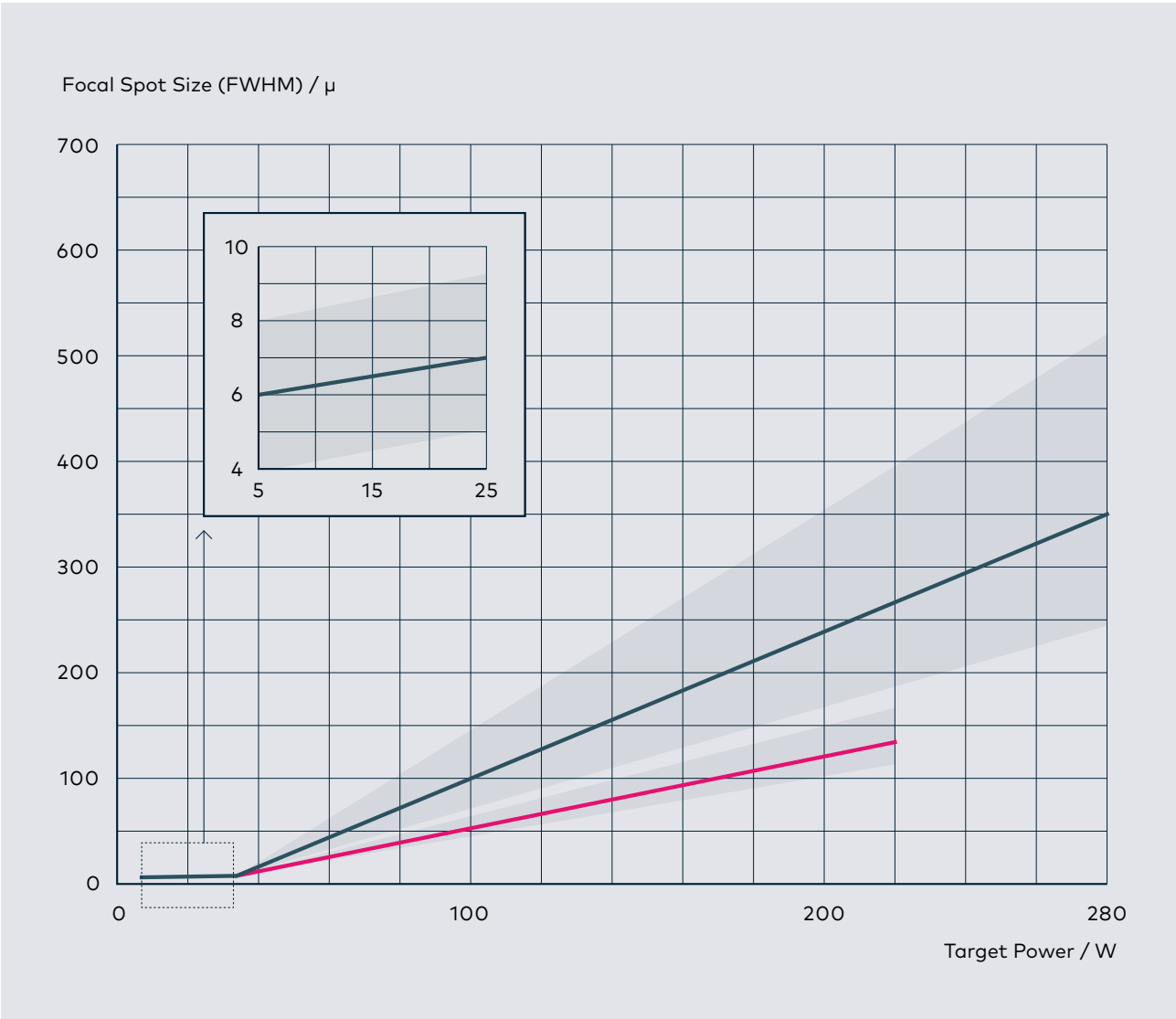
Increase speed with the High-Density Power Target upgrade for the FXE 225 Range.



The need for speed

The demand for higher performance, higher efficiency electronic components and electrical batteries is increasing rapidly. Given the complexity of the production processes involved, it is crucial to ensure that the end products will be reliable and safe. This is where X-ray inspection comes in. Add to this the requirement for speed: inspection should take as little time as possible to enable high throughput. From an X-ray generation point of view, more power on the generating target means more usable dose, which means faster inspection. But higher power on the target can put a strain on the target material and reduce its lifetime, demanding a maintenance intervention. The alternative is typically to sacrifice resolution by increasing the size of the X-ray focal spot size.

The ideal scenario would be to increase the power on the target, while maintaining the resolution capabilities, thereby increasing the power density. That is exactly what we did at Comet. We have developed a new target for the high-power reflection tube FXE-225 Range that improves the power density available to the target by a factor of 2. The High Density Power (HDP) target is therefore the perfect upgrade for applications requiring a balance of high speed and resolution.



Maximizing performance

To highlight the benefits of the HDP target, we have plotted the performance curve in Fig. 1. This graph displays the X-ray focal spot size on the target against the target power. Together these two quantities define the power density on the target. The performance of the HDP target is shown in purple (the grey shaded error bars represent the kV spread).

Let's illustrate the improvement enabled with this new target with an example. Say an application requires a focal spot size of 100 μm . The standard target can only support 100 W of power at this focal

spot size, whereas with the HDP target the tube can operate at 170 W of power! This means a considerable increase in X-ray dose and therefore inspection speed with no loss of imaging performance.

An alternative view is that at constant power. For an application requiring a power level of 200 W, previously it was only possible to operate the tube with a focal spot size of 240 μm . With the HDP target a focal spot size of 120 μm is achieved, meaning that smaller defects can be inspected accurately with no loss in imaging speed.

Reliable and easy to use

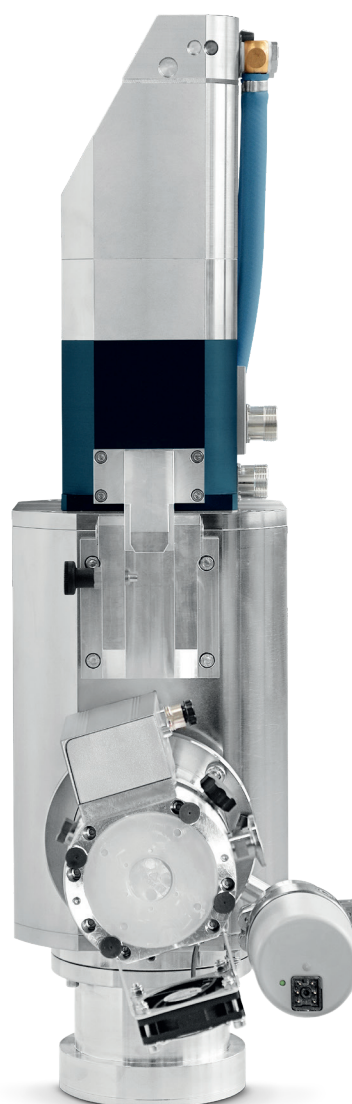
As with all our reflection tubes, the HDP target is directly water cooled, meaning excellent beam stability and long term, operation.

Finally, the form factor of the HDP target is the same as for the standard target. That means it can fit right into your existing system as a direct upgrade to enhance performance.

Upgrade now!

The benefits of an HDP target upgrade for the FXE 225 Range are:

- Higher power at fixed resolution
- Higher resolution at fixed power
- Unchanged form factor



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