

# COMPACT FLUORINE LASER FOR METROLOGY AND



## INSPECTION SYSTEMS



Michael Bauer, Andreas Görtler, Dan Pniak, Claus Strowitzki

TuiLaser AG, Germering, Germany

### 193 nm COMPACT EXCIMER LASER FOR IMMERSION INTERFEROMETRIC LITHOGRAPHY

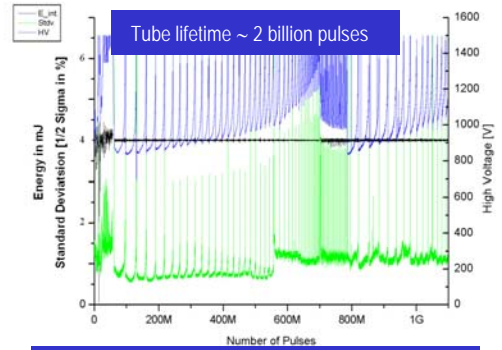


Line narrowed operation of the laser system with installed optical line narrowing module

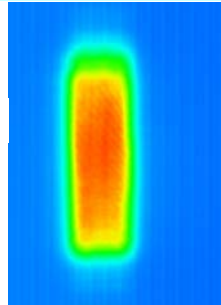
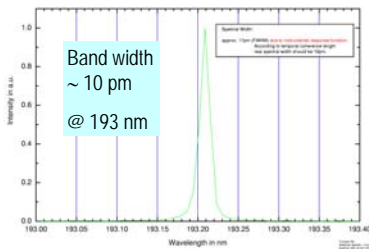
Band width ~ 10 pm

⇒ temporal coherence 3 mm

Laser system conforms to SEMI standards



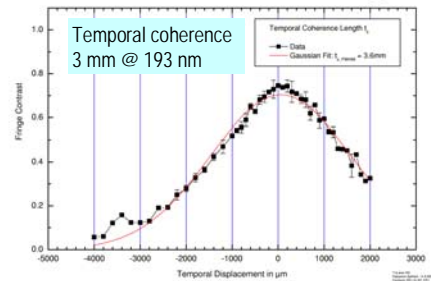
stabilized energy at 4 mJ and 1 kHz @ 193 nm



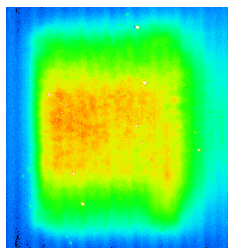
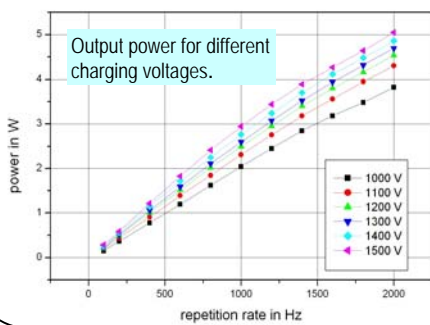
Beam dimensions (FWHM):

6 mm vertical

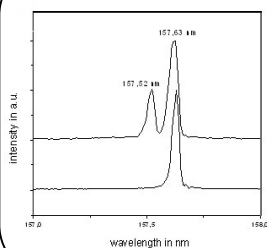
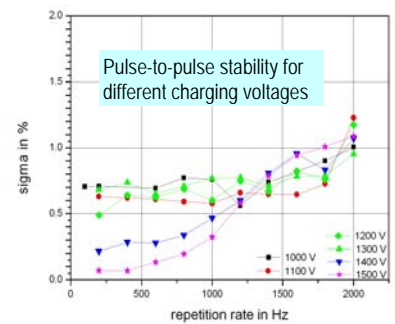
1.5 mm horizontal



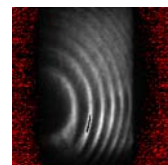
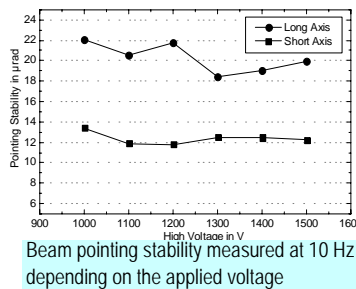
### 157 nm COMPACT EXCIMER LASER FOR METROLOGY AND INSPECTION



Beam profile measured near field



Prism alignment for max. intensity of 157.52 nm: The single peak at 157.52nm can not be isolated in that mode (upper curve). Lower curve: alignment for max. intensity at 157.63nm



Detected ring system of the Fabry-Perot interferometer (Line width=1.75 pm ± 0.25 pm) ⇒ temporal coherence ~ 15 mm

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