

- **improve efficiency and your productivity**
- **save on your production cost**
- **shorten time in quality control and production**
- **Measures all Excimer laser**  
Complete beam profiler system
- **Clear profile of the Excimer laser**  
Camera with 12 Bit dynamic
- **Online Quality control**  
beamlux II advanced software ML1201
- **Save time**  
real time evaluation of the laser  
with 1/10th of a second
- **Easy to compare**  
Print outs of all 1D, 2D, 3D evaluation  
results and pictures
- **Synchronizes up to three cameras**  
simultaneously measurement of raw beam,  
and processing plane
- **TCP/IP remote control**  
control your laser system from your desk



Everything can be improved • We give you a tool to be faster

The excimer beam profiler consists of beamlux II advanced software, high resolution camera with industry standard and a UV converter tube. An optional laser synchronisation device or trigger diode can be used for synchronization of laser and camera or single pulse evaluation.

Proper accessories enable to measure all excimer laser beams. Evaluation of the raw beam and profiles generated by homogenizers as top hat areas or laser lines are optimized.

The great field of application for our beam profiler is quality control in industry and laser improvement in R&D. It is an approved tool in semi conductor industry to control raw beam and beam quality in the processing plane.

## Camera System

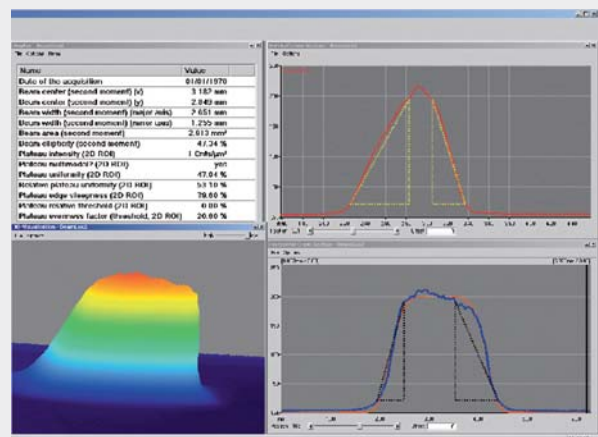
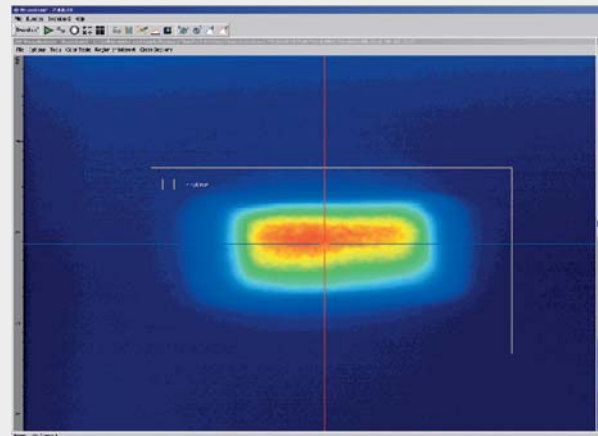
- High dynamic range camera
- High resolution UV converter
- Homogeneity up to > 98 % over active area
- Short decay time
- Damage threshold up to 10 W/cm<sup>2</sup>
- Optional Single pulse detection up to 1 kHz (limited by the converter decay time)



Excimer Beam Profiler camera with K2 converter and extension tube ML5205 for 193-351 nm

## beamlux II advanced ML1200

- beam analysis compliant to ISO
- beam width
- centroid
- cross sections
- beam position and directional stability
- eff. irradiation area
- edge steepness
- plateau uniformity
- comprehensive evaluation results and statistics
- various import and export data formats
- multi camera support
- pass / fail function



## Camera System for 157 nm

Excimer Beam Profiler for 157 nm with ML2200 attenuator and ML1630 LSD synchronization device.

The camera can be synchronized with a pulsed laser for single pulse detection. The components are provided with a vacuum flange for vacuum or purged use.



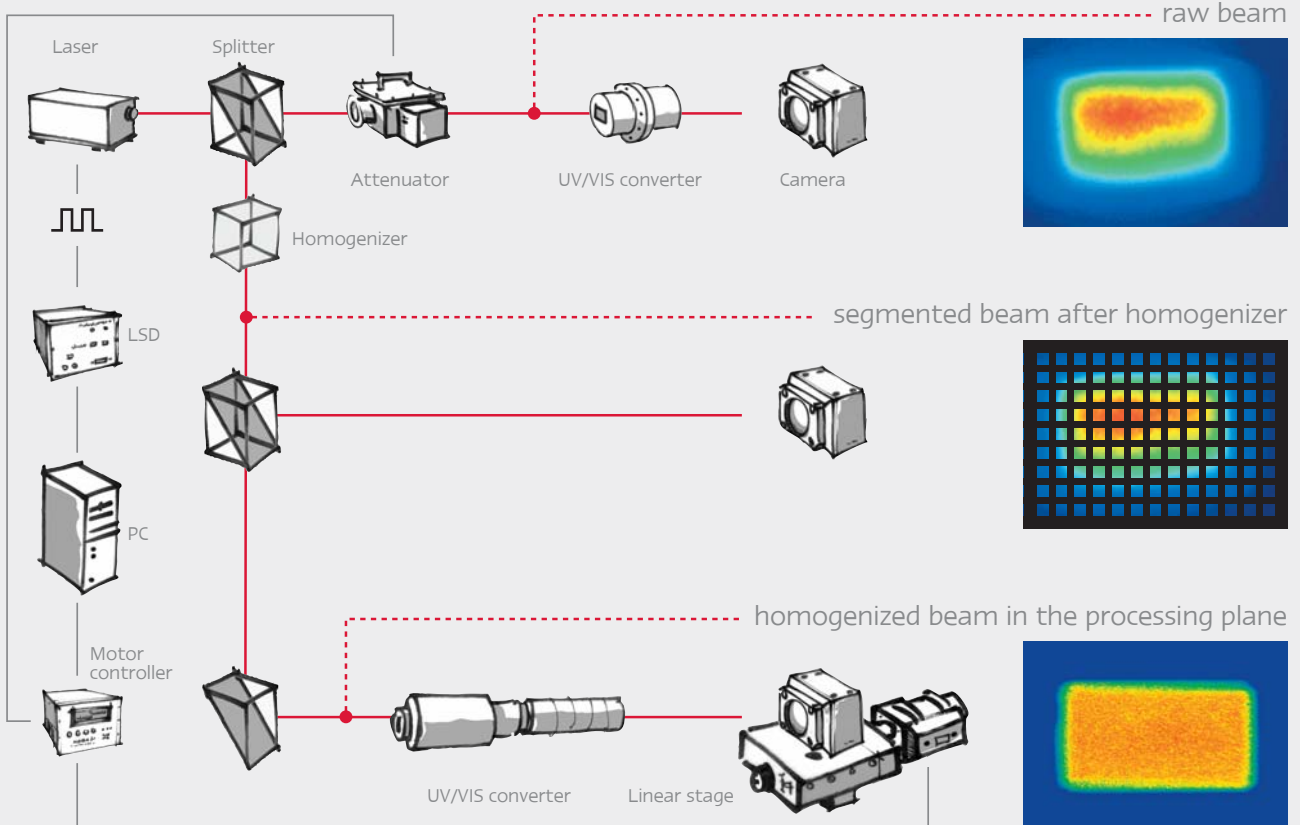
# Excimer laser beam profiler

Laser	Wavelength	beam size								
<b>F<sub>2</sub></b>	157 nm	Laser spot	< 5x4	< 9x6	< 13x9	< 18x13	< 27x20	<35x27	< 43x32	< 50x38*
<b>ArF</b>	193 nm									
<b>NdYag 5<sup>th</sup></b>	213 nm									
<b>KrF</b>	248 nm									
<b>NdYag 4<sup>th</sup></b>	266 nm									
<b>XeCl</b>	308 nm	ML5222 10x	direct	ML5201	ML5202	ML5203	ML5204	ML5205	ML5206	ML5207
<b>XeF</b>	351 nm	ML5223 20x	coated							
<b>NdYag 3<sup>rd</sup></b>	355 nm	ML5224 40x	sensor							

\* (larger sizes available on request, up to 200 mm)

Software	ML1201	beamlux II advanced	
Camera	ML3720	1/2" CCD	782 x 582
	ML3743	2/3" CCD	1392 x 1040

## Multi camera support



## Laser Beam Analyzer

Complete customized system for near field and far field measurement of a 308 nm Excimer laser.



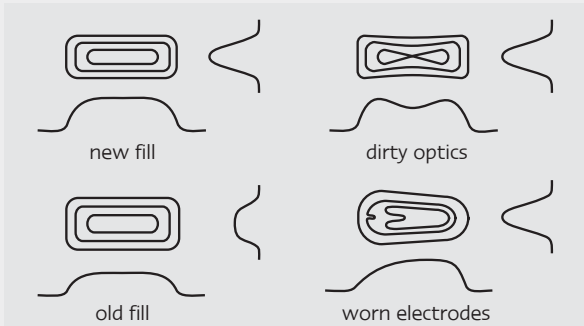
## Service case

Ideal tool for adjustment and calibration of Excimer lasers.



## Laser quality control

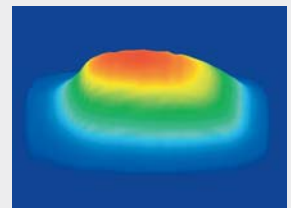
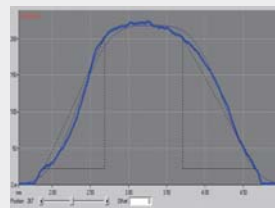
With our Excimer Laser Beam Profiler it is easy to identify the status of your laser



## Excimer 248 nm

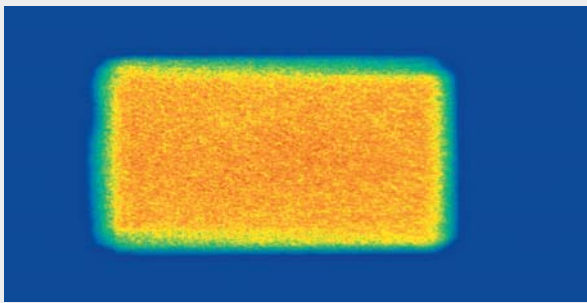
Evaluation protocol of a KrF Excimer raw beam

Name	Value
Date of the acquisition	10/05/2007
Beam center (second moment) (x)	3.315 mm
Beam center (second moment) (y)	2.199 mm
Beam width (second moment) (major axis)	28.531 mm
Beam width (second moment) (minor axis)	13.097 mm
Beam area (second moment)	360.181 mm
Beam ellipticity (second moment)	43.37 %
Plateau intensity (2D ROI)	3 Cnts/ $\mu$ m
Plateau multimodal? (2D ROI)	yes
Plateau uniformity (2D ROI)	100.60 %
Relative plateau uniformity (2D ROI)	105.70 %
Plateau edge steepness (2D ROI)	87.11 %
Plateau relative threshold (2D ROI)	0.00 %
Plateau evenness factor (threshold, 2D ROI)	25.84 %



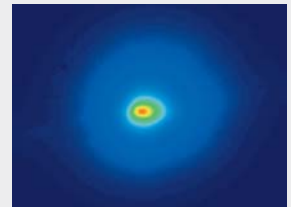
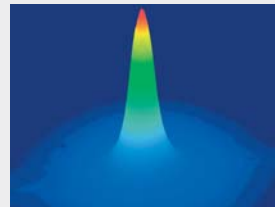
## Excimer 157 nm

Homogenized profile of a LPF Excimer laser



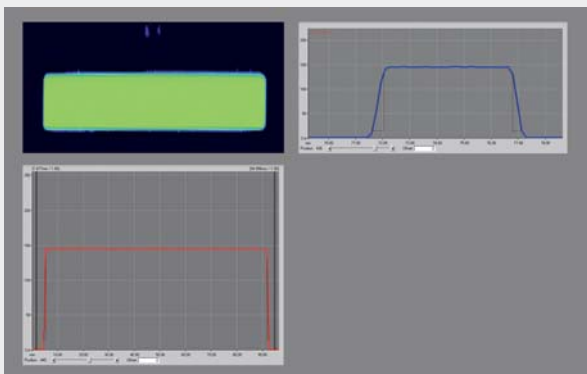
## NdYag 266 nm

Laser focus of a 4<sup>th</sup> harmonic Nd YAG laser, recieved with extension tube ML5222 with 10 x magnification.



## Excimer 248 nm

Laser line generated by a homogenizer used for TFT annealing in semiconductor industrie



## Excimer 308 nm

XeCl Excimer Profile raw beam

