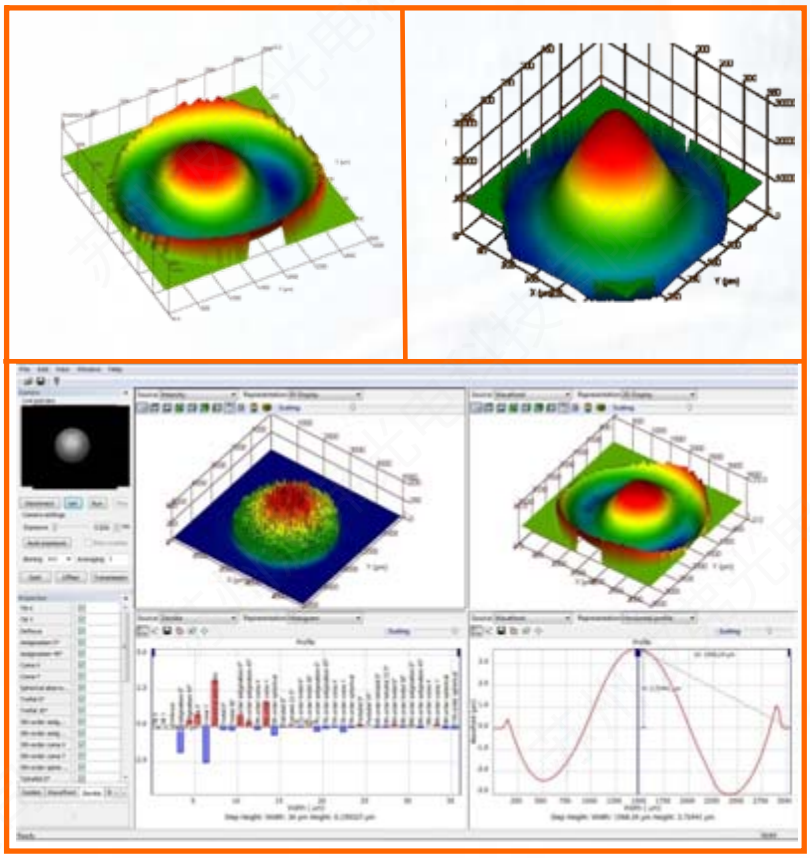
BeamWave®

All-In-One Laser Beam Profiler

High Resolution CCD Beam Profiler

Instant Beam Propagation & Wavefront Analysis

One Shot M^2 Measurement



A Smart and Affordable Beam Profiling Solution

Take advantage of the latest advances in wavefront sensing. The compact and light BeamWave® delivers all critical beam profiling parameters without complex and expensive equipment.

PhaseView®
The Digital Wavefront Company

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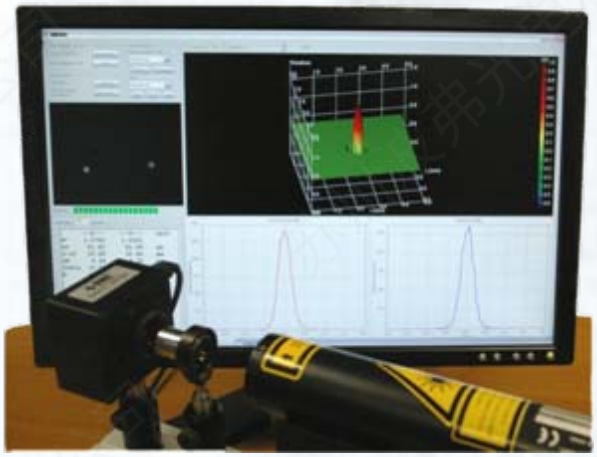
All-In-One CCD BEAM PROFILER

With **no moving parts or additional accessories**, BeamWave® performs all critical laser beam measurements including intensity distribution, wavefront and beam propagation parameters.

High Resolution Beam Profiling

Intensity distribution • XY Profile • Centroid • Divergence angle • Asymmetry

BeamWave is a reliable CCD beam profiler for pulse & CW laser offering high dynamic and resolution for accurate intensity analysis.



Real Time Wavefront Measurement

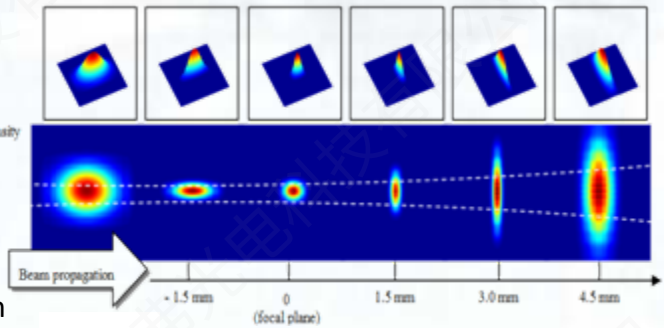
Zernike Analysis • Low and high Order Aberrations • Astigmatism

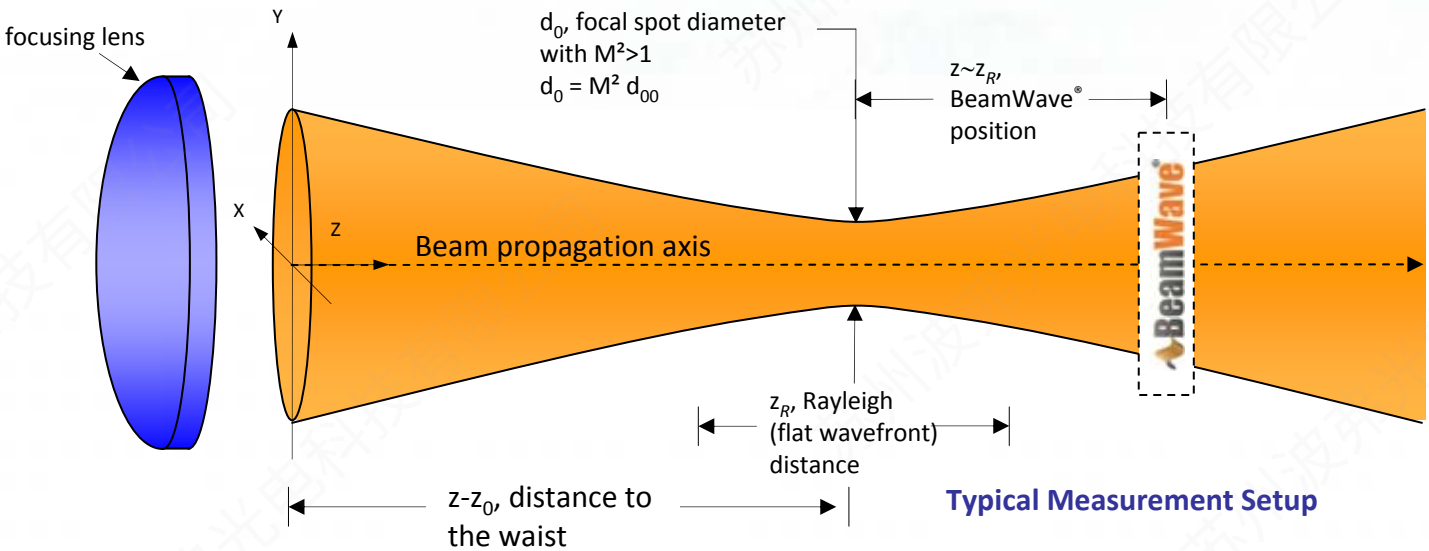
BeamWave provides high resolution wavefront data, these useful parameters allows laser beam analysis in its all dimensions.

On Click Beam Propagation Analysis

One Shot M² • Intensity distribution at any selected plane • Divergence angle • Rayleigh Range

Thanks to it capability to measure simultaneously phase and intensity, BeamWave delivers beam propagation analysis, thus providing an instant picture of laser beam behavior along the propagation axis.





Typical Measurement Setup

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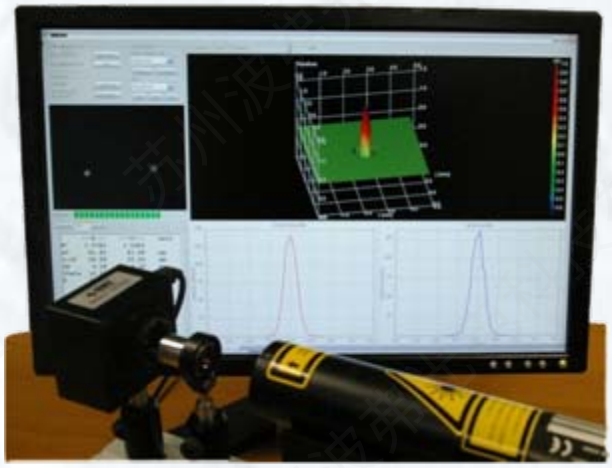
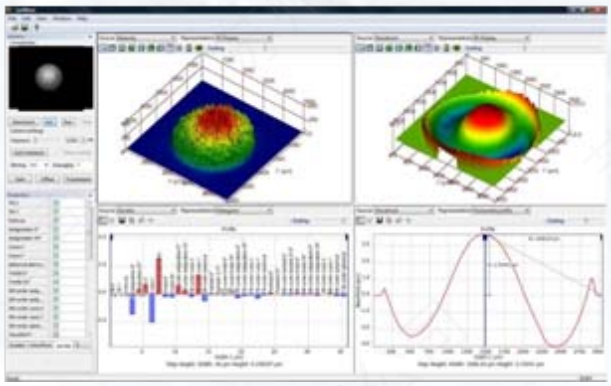
Beam propagation parameters, relative power density, wavefront, and intensity in any plane are measured with the same device.



- No mechanical mounts, stepper motors or moving stages
- No maintenance cost of moving devices
- No mechanical adjustments during lifetime of the instrument
- No bulky systems for measuring several parameters are needed

Simultaneous high-resolution intensity & wavefront

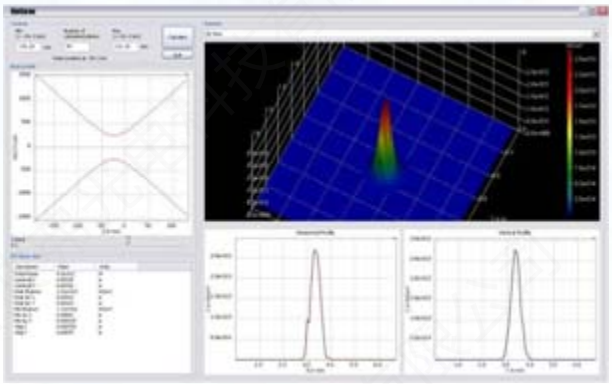
Acquisition of intensity is made directly on CCD chip, reconstruction of wavefront is performed by software.



- No need to acquire a two distinct instruments (beam profiler & wavefront sensor) to obtain same measurement
- Detailed profile of the beam in an arbitrary plane

One shot M^2 measurement of both CW and pulsed lasers

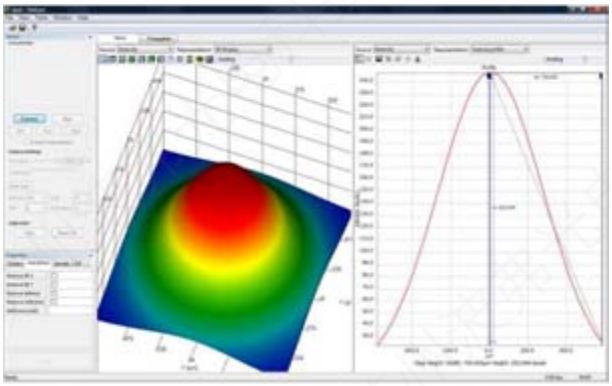
Calculation of M^2, divergence, collimation and other beam propagation parameters of both CW and pulsed lasers is made by software.



- No need of additional instrumentation, saving time and costs
- Measurement are highly repeatable
- Measurement of even misaligned lasers are performed

Instant measurement of the entire beam over the broad range around focal region

Beam propagation computed by software from simultaneous intensity and wavefront acquisition.



- Save time for laser beam adjustment
- Predictive laser beam analysis

All-In-One CCD BEAM PROFILER

GUI software XP, Vista and Windows 7 compatible, performs intensity and wavefront acquisition in a remarkably fast and easy way and provides comprehensive tools for beam profiling including intensity distribution and beam propagation parameters.

- **Acquisition & Display**
  - Automatic calibration & acquisition
  - Live display 2D and 3D intensity, wavefront, PSF
  - Single and continuous acquisition

- **Analysis**

Beam intensity parameters:
- Maximum intensity levels
- Ellipticity of the beam spot
- Beam spot major and minor axis dimensions

Beam propagation parameters:
- M^2 parameter for the X and Y directions
- 4σ Waist size in X and Y directions
- Distance between camera position and waist planes
- Rayleigh range
- Divergence angle of the beam
- PSF, Strehl ratio
- Real-time Zernike display and analysis
- Profiles of wavefront and intensity

- **Export & Report**
  - Wavefront and Zernike data
  - Report Editor
  - HTML Compatible Presentation

Specifications

	BeamWave® 500	BeamWave® 1000
Maximum input beam diameter (1/e²), mm	3.2	4.8
Beam Intensity Measurements?	CW & Pulsed Lasers in XY for any Z	CW & Pulsed Lasers in XY for any Z
Wavelength range, nm	350 - 1100	350 - 1100
Measures M^2 ?	CW and Pulsed lasers	CW and Pulsed lasers
M^2 range	1 to >50	1 to >50
M^2 accuracy	+/- 5%	+/- 5%
M^2 repeatability	< 2%	< 2%
Phase/Wavefront measurements possible?	yes	yes
Wavefront and Intensity XY resolution, um	6.45	6.45
Wavefront Measurement Points	500 x 500	1392 x 1040
Wavefront Sensitivity (λ), rms	0.005	0.005
Wavefront Accuracy (λ), rms	0.01	0.01
Wavefront Dynamic Range (λ)	1 500	1 500
Measurement Time	Real-Time	Real-Time
Computer interface	USB 2.0	2 x USB 2.0
Weight, kg	0.350	2.5
Dimensions, mm	41 x 55 x 80	87 x 161 x 84

PhaseView® The Digital Wavefront Company

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