



FROM

EN'URGA INC.

SETscan is a high frequency statistical Extinction Tomography patternator developed by En'Urga Inc. to characterize sprays on-line.

Innovations in quality control

SETscan is a versatile spray diagnostic tool that can be used for on-line quality control of spray nozzles. The SETscan patternator provides planar surface area density of liquid sprays. The surface area density is the number of drops per unit volume multiplied by the surface area of the drops. The surface area density is directly proportional to the local evaporation rate in sprays. The graphical user interface (GUI) allows detailed visual and numerical characterization of spray quality in terms of cone angle, asymmetry, streaks and voids, and patternation number. The OP1000-6 is a six-axis patternator that measures extinction along of six laser sheets across six view angles. The measurements are used to obtain the local surface area density within the spray or liquid plume.



SETScan Six-axis patternator (US patent no. 6184989)

Features >>>>>

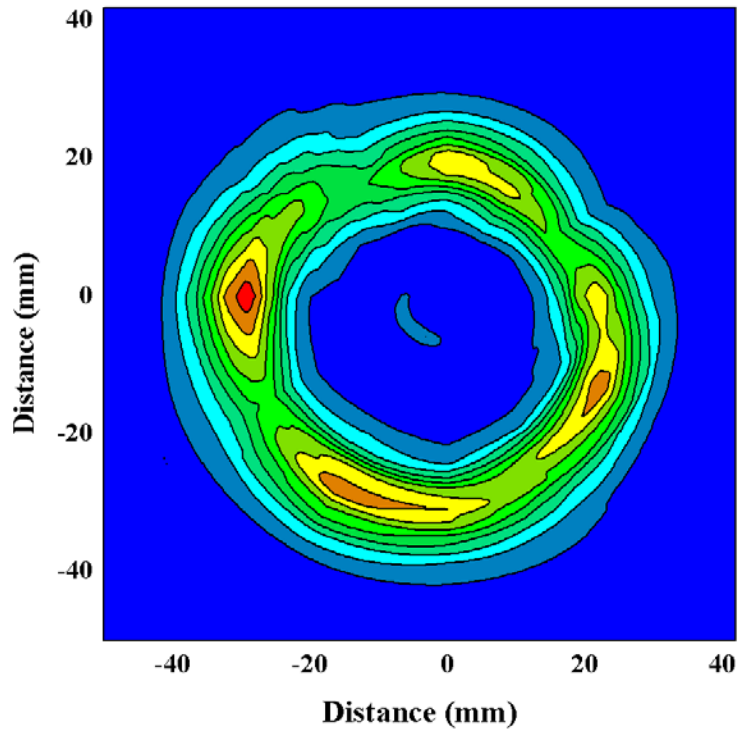
- ◆ Characterization of sprays for cone angle, asymmetry, presence of streaks and voids, and patternation number
- ◆ Graphical user interface with point and click operation including one click calibration
- ◆ Real time display of cone angle and asymmetry ratio
- ◆ Planar surface area densities that are fully correlated with the local evaporation and combustion rate.
- ◆ Patternation number for standard eight pie configuration (with rotation facility to change reference angle)
- ◆ Linear patternation number
- ◆ Insensitivity to alignment of nozzle center

Specifications >>>>>

- ◆ Radial Resolution: Up to 1.5 mm
- ◆ Angular resolution: Up to 7 degrees
- ◆ Power input: 115/230V, 50 Hz, 12W
- ◆ Number of pixels: 512 per axes
- ◆ Max. diameter of spray: 10 inches
- ◆ Array scan rate: 1KHz/9 KHz
- ◆ Weight: 160 lbs
- ◆ GUI update rate: 30 Hz
- ◆ Dimension: 50" diameter, 10" tall

Characteristics >>>>>

- ◆ Stainless steel top cover impervious to most liquids
- ◆ Covered optical and electronic components
- ◆ Rugged cast aluminum enclosure for shop floor applications
- ◆ Automatic nozzle centering chuck
- ◆ Mounting provision for customer platforms or self standing
- ◆ Minimal technical expertise required for operation
- ◆ Out-of-box deployment capability with quick set up and calibration
- ◆ 100 μ s patterning of transient trigger and injector sprays

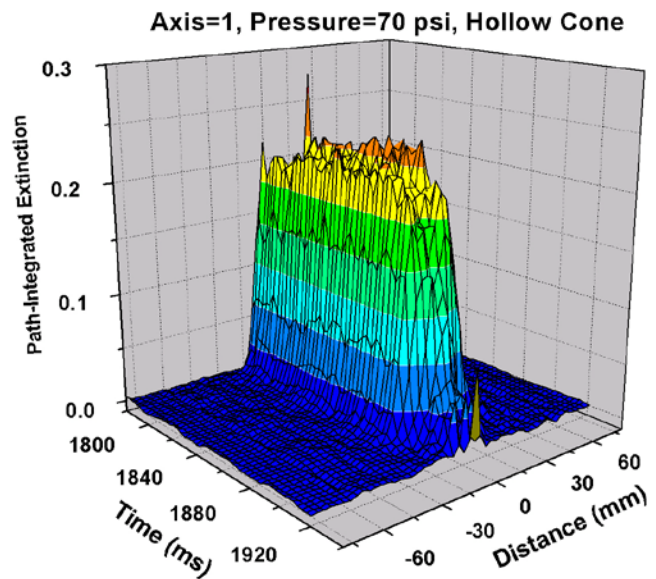


Accessories and options >>>>>

- ◆ Control panel interface (optional)
- ◆ SETscan patterning software
- ◆ Quality audit module
- ◆ DAQ system
- ◆ Fully integrated spray stand
- ◆ Installation and set-up
- ◆ Five year service contract
- ◆ Spare lasers and lenses

**LARGE AND SMALL VOLUME
CONTRACT TESTING OF NOZZLES
INCLUDING DROP SIZE AND
VELOCITY MEASUREMENTS**

Contour plot of drop surface area



Transient spray patterning



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