



AF302A

SCHLIEREN APPARATUS

The Schlieren apparatus enables students to see air flow (including supersonic shock waves) around two-dimensional models as variations in the intensity of illumination. For use with the AF302 Continuous Supersonic Wind Tunnel.

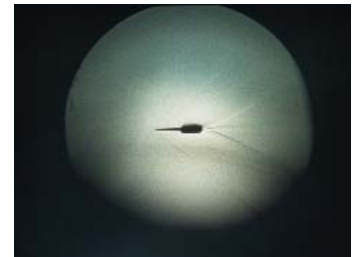


IMAGE OF AIR FLOW PATTERN ROUND
A 5° SINGLE WEDGE MODEL

KEY FEATURES

- Monochrome Schlieren apparatus with a high-power light source and imaging screen
- High-quality, laboratory-standard mirrors and lenses for clear images without distortion
- Shows supersonic air flow patterns around models
- Shows shockwaves and expansions
- Includes digital imaging equipment and video monitor

SCHLIEREN APPARATUS

DESCRIPTION

A monochrome Schlieren apparatus for use with the Continuous Supersonic Wind Tunnel (AF302).

The Schlieren apparatus allows students to see density gradients as variations in intensity of illumination. This allows them to see supersonic air flow patterns around models. It also clearly shows shockwaves and expansions, and students can compare their positions and angles with values predicted by theory.

The focused light from the light source (and condenser lens) passes through the optical slit and is reflected at 90 degrees to the first achromatic lens. The light passes through the working section of the wind tunnel, then through the second achromatic lens. A second mirror reflects the light at 90 degrees towards the Schlieren edge. The Schlieren edge enhances the light refracted image. The small lens focuses this image onto the imaging screen. Achromatic lenses are chosen because of their ability to pass light without colour distortion, that would normally ruin the Schlieren image.

The apparatus includes digital imaging equipment to record the images.

The video monitor is useful to display the images to groups of students. The imaging equipment can capture still images and any real-time changes in the image.

ANCILLARY FOR:

- Intermittent Supersonic Wind Tunnel (AF302)

STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- An ISO 9001 certified company

ESSENTIAL SERVICES

FLOOR SPACE NEEDED:

1375 mm x 824 mm

ELECTRICAL SUPPLY:

Single-phase , 90 VAC to 250 VAC 50/60 Hz

(Usually supplied from the instrument frame of the wind tunnel.)

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory

STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +40°C

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C

SPECIFICATION

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

NETT DIMENSIONS AND WEIGHT:

Length 1400 mm x depth 800 mm x height 1375 mm; 70 kg

Monitor: Less than 20 kg

PACKED DIMENSIONS AND WEIGHT:

0.99 m³ and 134 kg

MIRROR QUALITY:

1/4 Lambda