

## ATD Thorax Displacement Technology for the SID-IIs



### Advantages of RibEye™ for Measuring ATD Thorax Displacement

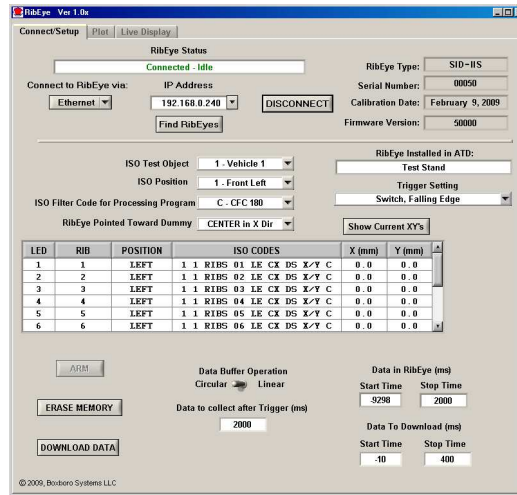
- Multiple Point Measurement (up to 6 points @10kHz) – captures linear & oblique load conditions
- Multiple Axis – capable of measuring X, Y, and Z axis position from each point
- Non-Contact – no mechanical linkages between spine box & ribs
- Simple installation for LEDs and light sensors
- Calibration of optical photo sensors with precision fixture
- Can be interfaced with existing data acquisition systems
- Meets SAE J211-1 (July 2007) and ISO 6487-2000 specifications

### Measurement

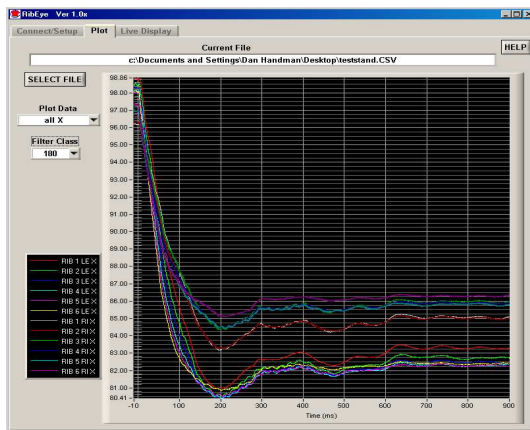
- Accuracy =  $\pm 0.2$  mm typical;  $\pm 1$  mm maximum error
- X Axis  $\pm 50$  mm from rib center line
- Y Axis up to 65 mm chest compression
- Z Axis  $\pm 40$  mm for each rib
- Sample rate 10 kHz per LED measurement point
- Acquisition time: 30,000 ms (30 seconds) in DRAM, 2 seconds in flash memory (500 ms pre-trigger, 1500 ms post-trigger)

### Temperature Range

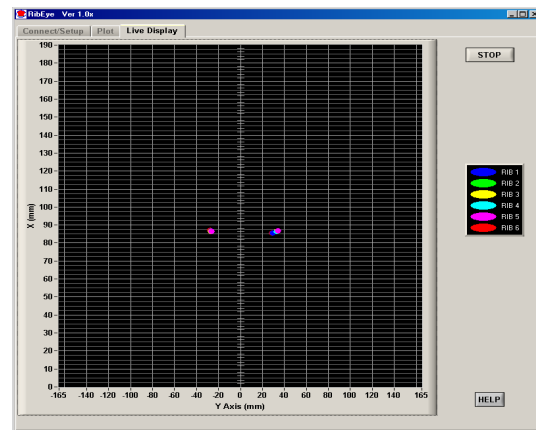
- Maximum accuracy: 65° - 85°F (18° - 29°C)
- Operating range: 0° - 100°F (-18° - 38°C)



RibEye™ Control Software Main Screen



Plot Screen



Live Display Screen

### Components

- 6 Light Emitting Diodes (LEDs); X, Y, and Z position data reported for all points
- 3 Optical Sensors (mounted to the spine box) derive the position of the LEDs
- Controller Assembly mounted in the spine box
- Interface box (power, trigger, communications and arming) located externally
- PC based Control Software
- Modified dummy spine box included (Use Model 7700-MOD for customer supplied spine box)
- Communication requirement: 10/100 Mbs Ethernet (RJ45 jack)
- Power requirement: 12-36 VDC, 8.3 W (collecting data, typical), 5.3 W (idle), 12.3 W (max)
- PC and Power supply not included

US Patent Number 7508530 — Boxboro Systems