

## RibEye™ Measurement System for the SID-IIs

### Features of RibEye System

- Multiple point measurement (up to 6 points at 10 kHz) - captures linear and 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 and ribs
- Simple installation for light emitting diodes (LEDs) and light sensors
- Calibration of optical photosensors with precision fixture
- Can be interacted 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)

### Components

- 6 light-emitting diodes (LEDs), X and Y position data reported for all points
- 3 optical sensor heads (mounted to the spine box) derive the position of the LEDs
- Controller assembly mounted in the spine box
- 2 LED connector blocks mounted in the spine box
- Interface box (power, trigger, communications and arming) located externally
- PC-based control software
- Communication requirement: 10/100 Mbs Ethernet (RJ45 jack)
- Power requirement: 12-36 VDC, 8.3W (collecting data, typical), 5.3W (idle), 12.3W (max)
- Existing spines can be easily modified to mount the RibEye system

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