

| Specification Number | Customer Need Number | Design Specification | Importance | Unit of Measure |
|----------------------|----------------------|-------------------------------|------------|-----------------|
| 1 | | Size | 1 | mm |
| 2 | 1 | Weight | 1 | kg |
| 3 | | Number of digital inputs | 3 | |
| 4 | | Number of digital outputs | 3 | |
| 5 | | Serial interface | 3 | USB |
| 6 | | Number of Analog inputs | 3 | |
| 7 | | Number of Analog outputs | 3 | |
| 8 | | Pulse width modulated outputs | 3 | |
| 9 | 2 | Timing granularity | 9 | degrees |
| 10 | 3 | Injector pulse width and time | 9 | ms |
| 11 | | Processor speed | 9 | MHz |
| 12 | | RAM memory | 9 | kB |
| 13 | | Flash memory | 9 | kB |
| 14 | | Burn in | 3 | oC/hr. |
| 15 | | Battery transient protection | 3 | mV |
| 16 | 4 | Max RPM | 3 | RPM |
| 17 | | Internal temperature range | 3 | oC |
| 18 | | Operating voltage | 1 | V |
| 19 | | Operating current | 1 | Amp |
| 20 | 5 | fuel calibration accuracy | 9 | us |
| 21 | 6 | Ignition calibration accuracy | 3 | us |
| 22 | 7 | tach output | 3 | RPM |
| | | | | |
| | | | | |

Attributes Section

| | | | | |
|----|----|--|---|--|
| 1 | 2 | FSAE sensors compatible with calibration | 3 | |
| 2 | 3 | Controller software updatable by USB | 9 | |
| 3 | | High RFI immunity | 3 | |
| 4 | | Battery reverse protection | 9 | |
| 5 | 4 | Environmentally sealed electronics | 9 | |
| 6 | 5 | Display communications | 3 | |
| 7 | 6 | Tuning setup diagnostic and utility software | 9 | |
| 8 | | cross platform usability | 1 | |
| 9 | 7 | Data logging | 9 | |
| 10 | 8 | User definable real-time display | 9 | |
| 11 | | individual cylinder trim | 9 | |
| 12 | 9 | Adjustable fuel calibration | 9 | |
| 13 | 10 | RPM and load sites are user programmable | 9 | |
| 14 | 11 | adjustable ignition calibration | 3 | |
| 15 | 12 | Onboard wideband lambda sensor controller | 3 | |
| 16 | 13 | Driver warning alarm and shift light control | 1 | |
| 17 | 14 | gear detection | 1 | |
| 18 | 15 | Launch control | 1 | |
| 19 | | Gear change ignition cut (for paddle shifters) | 1 | |
| 20 | 16 | Traction control capable | 1 | |

| Sensor | Unit of Measure | ECU Input Signal Range |
|----------------------------------|-----------------|------------------------|
| Throttle Position Sensor (TPS) | V | 0 - 5 |
| Manifold Absolute Pressure (MAP) | V | 0 - 8 |

| | | |
|----------------------------------|---|-------|
| Intake Air Temperature (IAT) | V | 0 - 5 |
| Engine Coolant Temperature (ECT) | V | 0 - 5 |

| Marginal Value | Ideal Value |
|----------------|--------------|
| 174x105x40 | 80x50x20 |
| 1 | 0.5 |
| 8 | 10 |
| 16 | 20 |
| 2 | 2 |
| 16 | 20 |
| 2 | 4 |
| 4 | 6 |
| 1 | 0.5 |
| 0.1 | 0.01 |
| 24 | 32 |
| 512 | 512 |
| 512 | 512 |
| 10-70/10 hrs | 10-70/32 hrs |
| 0.1 | 0.001 |
| 12500 | 15000 |
| -20-85 | -50-125 |
| 9-24 | 6-24 |
| 10 | 8 |
| 2 | 0.042 |
| 2 | 0.042 |
| 15000 | 18000 |
| | |
| | |

**Possible "Attributes" with
Spec potential components**

