COSMOS
Navigate the Compliance Universe

40 C.F.R. § 1065.915

PEMS instruments.

(a) *Instrument specifications*. We recommend that you use PEMS that meet the specifications of subpart C of this part. For unrestricted use of PEMS in a laboratory or similar environment, use a PEMS that meets the same specifications as each lab instrument it replaces. For field testing or for testing with PEMS in a laboratory or similar environment, under the provisions of § 1065.905(b), the specifications in the following table apply instead of the specifications in Table 1 of § 1065.205:

Table 1 of § 1065.915—Recommended Minimum PEMS Measurement Instrument Performance

Measurement	Measured quantity symbol	Rise time, *t*10–90, and Fall time, *t*90–10	Recording update frequency	Accuracy a	Repeatability a	Noise a
Engine speed transducer	f_n	1 s	1 Hz means	5% of pt. or 1% of max	2% of pt. or 1% of max	0.5% of max.
Engine torque estimator, BSFC (This is a signal from an engine's ECM)	*T* or BSFC	1 s	1 Hz means	8% of pt. or 5% of max	2% of pt. or 1% of max	1% of max.
General pressure transducer (not a part of another instrument)	*p*	5 s	1 Hz	5% of pt. or 5% of max	2% of pt. or 0.5% of max	1% of max.
Atmospheric pressure meter	*p*atmos	50 s	0.1 Hz	250 Pa	200 Pa	100 Pa.
General temperature sensor (not a part of another instrument)	*T*	5 s	1 Hz	1% of pt. K or 5 K	0.5% of pt. K or 2 K	0.5% of max 0.5 K.
General dewpoint sensor	*T*dew	50 s	0.1 Hz	3 K	1 K	1 K.
Exhaust flow meter	*n*	1 s	1 Hz means	5% of pt. or 3% of max	2% of pt	2% of max.
Dilution air, inlet air, exhaust, and sample flow meters	*n*	1 s	1 Hz means	2.5% of pt. or 1.5% of max	1.25% of pt. or 0.75% of max	1% of max.
Continuous gas analyzer	*x*	5 s	1 Hz	4% of pt. or 4% of meas	2% of pt. or 2% of meas	1% of max.

Gravimetric PM balance	*m*PM			See § 1065.790	0.5 µg	
Inertial PM balance	*m*PM			4% of pt. or 4% of meas	2% of pt. or 2% of meas	1% of max.

a Accuracy, repeatability, and noise are all determined with the same collected data, as described in § 1065.305, and based on absolute values. "pt." refers to the overall flow-weighted mean value expected at the standard; "max." refers to the peak value expected at the standard over any test interval, not the maximum of the instrument's range; "meas" refers to the actual flow-weighted mean measured over any test interval.