do not cause significant loss of PM from your sample.

(vi) Paragraph (b)(1)(vi) of this section applies instead of 40 CFR 1065.145(b).

(vii) Vehicles other than HEVs that apply technology involving engine shutdown during idle may apply the sampling provisions of §1066.501(c).

(c) The following table summarizes the requirements of paragraph (b)(2) of this section:

TABLE 1 OF §1066.110—SUMMARY OF EQUIPMENT SPECIFICATIONS FROM 40 CFR PART 1065, SUBPART B, THAT APPLY FOR CHASSIS TESTING

40 CFR part 1065 references	Applicability for chassis testing under this part
40 CFR 1065.140	Use all except as noted: 40 CFR 1065.140(b) applies as described in this section. Use 40 CFR 1065.140(c)(6), with the additional allowance described in this section. Do not use 40 CFR 1065.140(d)(2)(iv). Use 40 CFR 1065.140(e)(1) as described in this section. Do not use 40 CFR 1065.140(e)(2).
40 CFR 1065.145	Use all except 40 CFR 1065.145(b).
40 CFR 1065.150 through 1065.190	Use all.

§1066.120 Measurement instruments.

The measurement instrument requirements in 40 CFR part 1065, subpart C, apply with the following exceptions:

(a) The provisions of §1066.125 apply instead of 40 CFR 1065.202.

(b) The provisions of 40 CFR 1065.210 and 1065.295 do not apply.

§1066.125 Data updating, recording, and control.

This section specifies criteria that your test system must meet for updating and recording data. It also specifies criteria for controlling the systems related to driver demand, the dynamometer, sampling equipment, and measurement instruments.

(a) Read and record values and calculate mean values relative to a specified frequency as follows:

(1) This paragraph (a)(1) applies where we specify a minimum command and control frequency that is greater than the minimum recording frequency, such as for sample flow rates from a CVS that does not have a heat exchanger. For these measurements, the rate at which you read and interpret the signal must be at least as frequent as the minimum command and control frequency. You may record values at the same frequency, or you may record them as mean values, as long as the frequency of the mean values meets the minimum recording frequency. You must use all read values, either by recording them or using them to calculate mean values. For example, if your system reads and controls the sample flow rate at 10 Hz, you may record these values at 10 Hz, record them at 5 Hz by averaging pairs of consecutive points together, or record them at 1 Hz by averaging five consecutive points together.

(2) For all other measured values covered by this section, you may record the values instantaneously or as mean values, consistent with good engineering judgment.

(3) You may not use rolling averages of measured values where a given measured value is included in more than one recorded mean value.

(b) Use data acquisition and control systems that can command, control, and record at the following minimum frequencies:

TABLE 1 OF §1066.125—DATA RECORDING AND CONTROL MINIMUM FREQUENCIES

Applicable section	Measured values	Minimum command and control frequency[a]	Minimum recording frequency[b, c]
§1066.310 §1066.315	Vehicle speed		10 Hz.

TABLE 1 OF § 1066.125—DATA RECORDING AND CONTROL MINIMUM FREQUENCIES—Continued

Applicable section	Measured values	Minimum command and control frequency [a]	Minimum recording frequency [b, c]
§ 1066.425	Continuous concentrations of raw or dilute analyzers.		1 Hz.
§ 1066.425	Power analyzer		1 Hz.
§ 1066.501			
§ 1066.425	Bag concentrations of raw or dilute analyzers		1 mean value per test interval.
40 CFR 1065.545	Diluted exhaust flow rate from a CVS with a heat		1 Hz.
§ 1066.425	exchanger upstream of the flow measurement.		
40 CFR 1065.545	Diluted exhaust flow rate from a CVS without a heat	5 Hz	1 Hz means.
§ 1066.425	exchanger upstream of the flow measurement.		
40 CFR 1065.545	Dilution air flow if actively controlled (for example, a	5 Hz	1 Hz means.
§ 1066.425	partial-flow PM sampling system) [d].		
40 CFR 1065.545	Sample flow from a CVS that has a heat exchanger	1 Hz	1 Hz.
§ 1066.425			
40 CFR 1065.545	Sample flow from a CVS that does not have a heat	5 Hz	1 Hz means.
§ 1066.425	exchanger.		
§ 1066.420	Ambient temperature		1 Hz.[e]
§ 1066.420	Ambient humidity		1 Hz.[e]
§ 1066.420	Heated sample system temperatures, including PM filter face.		1 Hz.

[a] CFVs that are not using active control are exempt from meeting this requirement due to their operating principle.
[b] 1 Hz means are data reported from the instrument at a higher frequency, but recorded as a series of 1 s mean values at a rate of 1 Hz.
[c] For CFVs in a CVS, the minimum recording frequency is 1 Hz. For CFVs used to control sampling from a CFV CVS, the minimum recording frequency is not applicable.
[d] This is not applicable to CVS dilution air.
[e] Unless specified elsewhere in this part or the standard-setting part. Note that this provision does not apply to soak periods where recording frequencies are not specified. For these instances, we recommend a recording frequency of ≥ 0.016 Hz.

§ 1066.130 Measurement instrument calibrations and verifications.

The measurement instrument calibration and verification requirements in 40 CFR part 1065, subpart D, apply with the following exceptions:

(a) The calibration and verification provisions of 40 CFR 1065.303 do not apply for engine speed, torque, fuel rate, or intake air flow.

(b) The linearity verification provisions of 40 CFR 1065.307 do not apply for engine speed, torque, fuel rate, or intake air flow. Section 1066.135 specifies additional linearity verification provisions that apply specifically for chassis testing.

(c) The provisions of § 1066.220 apply instead 40 CFR 1065.310.

(d) The provisions of 40 CFR 1065.320, 1065.325, and 1065.395 do not apply.

(e) If you are measuring flow volumetrically (rather than measuring based on molar values), the provisions of § 1066.140 apply instead of 40 CFR 1065.340.

(f) The provisions of § 1066.150 apply instead 40 CFR 1065.350(c), 1065.355(c), 1065.370(c), and 1065.375(c).

(g) Table 1 of this section summarizes the required and recommended calibrations and verifications that are unique to testing under this part and indicates when these must be performed. Perform other required or recommended calibrations and verifications as described in 40 CFR 1065.303, with the exceptions noted in this section. Table 1 follows:

TABLE 1 OF § 1066.130—SUMMARY OF REQUIRED CALIBRATIONS AND VERIFICATIONS

Type of calibration or verification	Minimum frequency [a]
40 CFR 1065.307: Linearity verification.	The linearity verifications from 40 CFR part 1065 do not apply under this part for engine speed, torque, fuel rate, or intake air flow; the linearity verification described in § 1066.135 applies for the following measurements: Dynamometer speed: See § 1066.220. Dynamometer torque: See § 1066.220.
40 CFR 1065.310: Torque	This calibration does not apply for testing under this part; see § 1066.220.
40 CFR 1065.320: Fuel flow	This calibration does not apply for testing under this part.
40 CFR 1065.325: Intake flow	This calibration does not apply for testing under this part.