



Standard Guide for Describing and Specifying the Spectrometer of an Optical Emission Direct-Reading Instrument¹

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1. Scope

1.1 This guide lists and discusses features of a spectrometer or polychromator used for optical emission, direct-reading, spectrochemical analysis. A polychromator in this sense consists of a spectrometer with an extended and fixed wavelength range and an array of fixed exit slits to isolate the spectral lines of the elements to be measured.

1.1.1 This guide does not apply to direct-reading systems that employ echelle spectrometers and vidicon or other detectors, where the design parameters are quite different.

1.2 This guide covers only the optical portion of the instrument, from excitation stand to photomultipliers.

1.2.1 Only general statements are made about source units.

1.2.2 Photomultipliers are included to the extent that they are mounted within the spectrometer to convert optical intensities to electrical signals, and establish the instrumental precision of each channel as a light measuring device. Readout systems are not included.

1.3 It is not the purpose of this guide to establish binding specifications or tolerances, but rather, to call attention to important parameters that manufacturers should include in their literature, to provide methods for measuring those parameters, and to assign values that are indicative of acceptably good performance. Because of the great variety of demands imposed by spectrochemical techniques, rigid performance criteria are not feasible.

1.4 The values stated in SI units are to be regarded as the standard.

1.5 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.6 A partial listing of the information in this guide includes the following:

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