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for Ophthalmics –

Data Processing and Information Interchange for Ophthalmic Instruments

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American National Standard
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Data Processing and Information Interchange for Ophthalmic Instruments

Secretariat

Optical Laboratories Association

Approved September 27, 1996

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The Accredited Committee Z80 for Ophthalmic Standards -

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Foreword (This foreword is not part of American National Standard Z80.26-1996 (R2003).)

An Instrument that conforms to this standard will, at minimum, be able to identify itself to a Host computer system, providing the Instrument type, model, manufacturer, and software revision level. It provides the capability to look up, by standard name, the data elements that are available to the Host computer system during Instrument operation and allows read and/or write access to the Data Elements. It defines a consistent set of data collection and specification methods that are applicable across a broad range of Ophthalmic Instruments. The current standard assumes that no Instrument or Host addressing is required.

More flexible and sophisticated Instruments might contain a number of predefined reports which could be used to read the Instrument Data Elements in logical groups, and could have the reports generated automatically whenever the Instrument detected the occurrence of some event. This type of Instrument could allow the Host computer system to define reports in order to customize the data collection. It could allow those reports to be connected to any of the events that the Instrument is able to recognize.

Instruments may also provide a manufacturer-defined suite of Instrument specific capabilities that are available to the Host computer system. By careful design of this capability suite, the manufacturer can provide the desired level of remote control capability for the Instrument.

This allows a minimally conforming Instrument to be produced with a minimum software burden, while allowing much more complex, flexible and interesting interfaces to be designed within the same communications framework.

This document contains one annex which is normative and is considered part of the standard.

Suggestions for improvement of this standard will be welcome. They should be sent to the Optical Laboratories Association, P.O. Box 2000, Merrifield, VA 22116-2000, USA.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Ophthalmics, Z80. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the Z80 Committee had the following members:

Thomas C. White, M.D., Chair
F. Dow Smith, Ph.D., Vice Chair
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The Z80 subcommittee on Ophthalmic Instruments, which developed this standard, had the following members:

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1 Scope and purpose

1.1 Scope

This Communication standard is intended for use by all manufacturers of Ophthalmic Instruments. There is a broad range of different Instrumentation within this category, and there are large systems that incorporate Instruments within broader product manufacturing systems. The Communication framework that is discussed in this specification is designed to allow Ophthalmic Instruments and Systems to use a consistent means of Communication, with a consistent set of Communication Messages.

1.2 Purpose

This standard defines the following:

A set of standard names used to identify data that are measured by Ophthalmic Instruments.

A set of standard names used to identify other standard Parameters that are used and measured by Ophthalmic Instruments.

A set of Communications Capabilities that shall be supported by all conforming Instrumentation. These Capabilities provide for establishment of communication, Instrument identification, and reporting of Data collection and remote control Capabilities that the Instrument supports.

A set of communication Capabilities that ***may*** be supported by conforming Instrumentation. These Capabilities allow for more extensive and flexible data collection and remote control of the Instrument.

A mechanism by which conforming Instrumentation may report an Instrument-specific set of control and reporting capabilities for use by an external computer system.

The application level Communication transaction model.

Communications error handling requirements, formatting standards, and exact format definitions for the defined Capability Messages.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI X3.4-1986 (R1997), *Information Systems – Coded Character Sets – 7-Bit American National Standard Code for Information Interchange (7-Bit ASCII)*[1)]

ANSI/TIA/EIA 232-F-1997, *Interface between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange* [1)]

[1)] Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.