National Bureau of Standards

Certificate

Standard Reference Material 1901

Centerline Drawings for Optical Character Recognition

Style B, Size I Characters

This Standard Reference Material (SRM) consists of exact copies of the centerline drawings that uniquely define each printed character shape and size used in constant strokewidth Style B Size I Optical Character Recognition (OCR-B) applications in accordance with one or more of the following standards:

- American National Standard X3.49-1975 (R 1982), Character Set for Optical Character Recognition (OCR-B)

- Federal Information Processing Standards Publication 32-1, 1982, Character Sets for Optical Character Recognition (OCR)

- European Computer Manufacturers Association Standard ECMA-11 for the Alphanumeric Character Set OCR-B for Optical Recognition, 3rd Edition, 1976

- International Organization for Standardization (ISO) 1073/11, Alphanumeric Character Sets for Optical Recognition - Part II: Character Set OCR-B - Shapes and Dimensions of the Printed Image, First Edition, 1976

These standards contain information on the nominal size, strokewidth, tolerance, and relative position of characters.

Although these standards may have different repertoires, those characters that are common among them are identical.

The original character centerline drawings were made at a scale of 100 times full size, superimposed upon a 280 mm x 380 mm rectangular grid with 2 mm spacing.[1] The NBS masters and copies are on transparent sheets of 0.1 mm (0.004 in) thick polyester stable base material, approximately 320 mm x 440 mm. Measurements performed at NBS on the grid dimensions of the NBS masters indicate the grid squares are not precisely 2 mm x 2 mm. The NBS masters vary between 99.85:1 and 99.95:1 of full size in each dimension. NBS certifies that the copies supplied in this SRM are between 1.0001:1 and 1.0006:1 of the actual size of each NBS master and are therefore between 99.86:1 and 100.01:1 of full size in each dimension.

The above tolerances in scaling apply only within a controlled environment. Storage and use areas should be maintained at 20-22 °C (68-72 °F) and 48%-52% relative humidity. When changes in relative humidity occur, each sheet should be separated and left flat for a minimum of four hours to ensure that equilibrium between the sheets and their surroundings is achieved. When changes in temperature occur, only several minutes are required to achieve equilibrium.

Gaithersburg, MD 20899
August 28, 1986
(Revision of Certificate
dated 3-1-76)

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

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Supplemental Information

At the request of the American National Standards Institute (ANSI) and in support of the Federal Information Processing Standards (FIPS) Program, the National Bureau of Standards (NBS) makes available transparent direct positive silver gelatin photographic reproductions of the master character drawings that are held in repository at NBS. The NBS master character drawings are derived from the print masters of the primary standard character drawings developed and maintained by the European Computer Manufacturers Association (ECMA) in Geneva, Switzerland.

Each character centerline representation was designed to have a constant strokewidth. The complete character shape is considered to be the area covered by a circle, with a diameter equal to the character strokewidth, placed with its center upon the centerline and traversed the entire extent of the centerline. This general rule does not always apply near stroke intersections or endings. Character stroke edges are therefore shown near stroke intersections and endings.

The box supplied with each SRM is constructed of acid-free fiberboard. The copies issued as this SRM should be stored flat. Clean cloth gloves, as used in photographic applications, are recommended for handling. Cleaning should be attempted only with a mild film cleaner and soft cloth using light pressure.

[1]Reference Drawing Number (RDN) 92, Long Vertical Mark, has no background grid and is included for illustrative purposes only. Reference Drawing Number (RDN) 117, Character Space; RDN 120 character erase; and RDN 121 group erase are not included since their dimensions are specified in the referenced standards.

The standard character drawings contained in SRM 1901 are illustrated below.

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