

A-A-54386  
22 April 1991

## COMMERCIAL ITEM DESCRIPTION

### MICROSCOPE, OPTICAL (Binocular, Brightfield)

The General Services Administration has authorized the use of this Commercial Item Description.

This Commercial Item Description covers a brightfield binocular microscope for histopathological and pathological studies for use inside medical laboratories and for outside field use.

#### Salient Characteristics:

Shall be an inclined binocular brightfield microscope for histopathological and pathological studies. Shall be a professional model that is suitable for diagnostic and research applications. A student grade microscope is not acceptable for use under this specification document.

Shall be suitable for use in laboratories with adequate AC supply lines. Shall also be adaptable for outside field use where AC facilities are not available by the adaption of a mirror and fork assembly that shall be supplied as an accessory.

Shall be supplied with the following accessories:

A carrying case with a handle, a protective dust cover, and a mirror and fork assembly.

Shall be suitable for operation from 50/60 Hz AC supply lines. The applicable AC line voltage shall be as indicated in the contract and/or purchase order (see 'Ordering data' paragraph).

As a minimum, the microscope shall consist of a base with variable light source, stand with supporting arm and focusing controls, inclined binocular body (head), revolving nosepiece assembly with three planachromatic objectives and dust plug(s), specimen stage, mechanical stage, and substage condenser. The focusing of the microscope shall be controlled by the vertical movement of the specimen stage or the objective.

AMSC N/A

FSC 6650

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

A-A-54386

The base shall have built-in a variable light source (illuminator) for operation from AC supply lines through a power cord. The light source shall be a 8 volt, 20 or 30 watt tungsten halogen lamp. The circuitry for the light source shall include a continuous voltage (intensity) control, on-off switch and transformer. The lamp shall be supported in a lamp socket which has the facility for easy replacement of the bulb. The power cord shall be a flexible 3-conductor cord that terminates with a non-detachable 3-blade male plug. The illuminator shall have a filter holder with a removable blue filter and a built-in field diaphragm for Koehler illumination.

The mirror and fork assembly shall be attachable to the base, for outside field use where AC facilities are not being used.

The stand shall house the focusing mechanism, and shall be attached to the base. The supporting arm of the stand shall support the binocular body. The focusing mechanism shall raise and lower the nosepiece assembly or stage. The focusing mechanism shall include coarse and fine controls that are manually controlled by coarse and fine knob (dials) located in the lower position of both sides of the stand. For purposes of measuring specimen thickness, the fine adjustment shall be graduated in one (1) or two (2) micrometer divisions with one complete revolution representing 100 micrometers as a minimum. For protecting an objective and specimen (slide), an adjustable mechanical stop shall be included in the stand to limit the travel of the coarse control. In addition, a safety clutch shall be included to stop the travel of the fine control mechanism in the event the operator continues to turn the fine control when the objective makes contact with a slide or its top mounted cover slip.

The binocular body (head) shall have eyepiece tubes with 10X wide field eyepieces and eyeguard relief. The eyepiece tubes shall be inclined 30-40 degrees from the horizontal. The interpupillary distance (between eyepiece tubes) shall be adjustable within a range that includes 56 to 72 millimeters (mm). The interpupillary adjustment shall include a millimeter scale for easy reference. Automatic tube length compensation shall be included if the tube length is affected by changes in the interpupillary settings. The eyepiece tubes shall include provisions for installing micrometer discs. One eyepiece tube shall be focusable for acuity equalization of a user's eye. The eyepieces shall have a minimum 18 mm diameter field view and a minimum eye relief distance 18.7 mm. The binocular body shall be 360 degrees rotatable on the supporting arm (stand). The binocular body shall also be detachable for interchangeability with heads (e.g. a trinocular body for photomicrographic procedures).

A-A-54386

Three objectives shall be supplied with a quadruple or quintuple 360 degree revolving nosepiece having a ball detent index. Dust plugs shall be included in the unused objective hole(s) of the nosepiece. The objectives furnished shall be 10X, 40X or 45X and 100X oil immersion planachromatics having numerical apertures of 0.25, 0.65 or 0.66 and 1.25 respectively. Each planachromatic objective shall have an image flatness over the entire field of view without any loss of sharpness or any loss of focus around the periphery of the field of view.

The objectives shall be color coded and marked for identification. In the nosepiece, the objectives shall be parfocal and parcentered so they are not affected by switching from one objective to another. The 40X, 45X and 100X objectives shall be retractable (i.e. spring loaded) when contact is made with a microscope slide or its cover slip. As an alternate to retractable objectives, the nosepiece assembly shall be retractable when an objective makes contact with a microscope slide or its cover slip.

The specimen stage shall accommodate microscope slides that include 25 by 75 mm and 50 by 75 mm sizes. The specimen stage shall include a slide holder that is detachable by releasing a thumbscrew hold. The slide holder shall be in the form of a finger assembly that can grasp the sides of a microscope slide instead of its corners. The finger assembly shall also be retractable to allow more space on the specimen stage for manual scanning of a microscope slide. The aperture width of the stage mount shall be not less than 25 mm. A right hand ungraduated mechanical stage, as a minimum, shall control the X-Y horizontal movement of the slide holder. The mechanical stage shall have ball bearing slideways in two perpendicular directions that can give complete coverage under an objective of both size microscope slides.

The substage condenser shall be located below the mechanical stage in a fork-type mount which is moved vertically by rack and pinion control for focusing purposes. The substage condenser shall have a numerical aperture (N.A.) of 1.25 or 1.30, and shall include an integral iris diaphragm and shall provide an even full field illumination and a variable aperture control for all the objectives, i.e. from 10X to 100X (oil immersion). The fork mount shall contain two knurled centering screws. The condenser shall be supported by a snap action in the fork-type mount. The condenser shall also be removable from the fork-type mount without having to remove the centering screws.

A-A-54386

Provisions shall be made in the microscope to control the vertical movement of the condenser so that it does not make contact with the stage mounted microscope slide or the base mounted light source. In addition, a quick set condenser shall be supplied which allows the condenser to be lowered from a focused position and then returned to its original position by being raised to a positive stop.

The microscope shall be capable of accepting the following accessories which shall be commercially available from the manufacturer, but are not required to be supplied with the microscope:

1. A rotatable polarizer to fit the light source and an associated slide attachment to fit below the binocular body (head).
2. A paraboloid or oil immersion dark field substage condenser that is interchangeable with the substage condenser that is supplied with the microscope.
3. A dual viewing adapter with a built-in pointer, for use with the binocular body (head) that is supplied with the microscope.
4. A trinocular head for photomicroscopy, that is interchangeable with the binocular body (head) that is supplied with the microscope.
5. A 4X planachromatic objective for the nosepiece, with an auxiliary swing-in condenser for attachment to the substage condenser.

To eliminate vibrations during photomicroscopy, the fully assembled microscope (i.e., stand, accessory trinocular body with objectives, stage mount and substage condenser) shall not weigh less than 19 pounds.

The microscope shall be legibly and permanently marked with the name or registered trademark of the manufacturer, serial number and model number.

Workmanship. The microscope shall be free from defects which detract from its appearance or impair its serviceability.

Unit. Each (EA). One microscope, as specified, constitutes one unit.

A-A-54386

Quality Assurance Provisions.

Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

Records. Records of examinations and tests performed by or for the contractor shall be maintained by the contractor and made available to the Government upon the Government's request, at any time, or from time to time, during the performance of the contract and for a period of three years after delivery of the supplies to which such records relate.

Inspection. Inspection, as used herein, is defined as both examination (such as visual or auditory investigation without the use of special laboratory appliances or procedures) and testing (determination by technical means of physical and chemical properties) of the item.

Testing and examination. Testing and examination shall be conducted in accordance with commercial practice to determine compliance of the microscope with specification requirements. In addition, each microscope shall be tested to demonstrate its capability to operate properly.

Sampling for testing and examination. Sampling for testing and examination shall be conducted in accordance with commercial practice.

Contractor certification. The contractor shall certify that the product offered meets the salient characteristics of this description and conforms to the producers' own drawings, specifications, standards, and quality assurance practices. The Government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

A-A-54386

Regulatory requirements.

Federal Food, Drug and Cosmetic Act. If the product covered by this document has been determined by the U.S. Food and Drug Administration to be under its jurisdiction, the offeror/contractor shall comply, and be responsible for compliance by its subcontractors/suppliers, with the requirements of the Federal Food, Drug and Cosmetic Act, as amended, and regulations promulgated thereunder. In addition, the offeror/contractor shall comply, and be responsible for compliance by its subcontractors/suppliers, with the requirements of all other applicable Federal, State, and local statutes, ordinances and regulations.

Recovered materials. The offeror/contractor is encouraged to use recovered material in accordance with Federal Acquisition Regulation Subpart 23.4 to the maximum extent practical.

Preservation, packaging, packing, labeling, and marking. Unless otherwise specified, preservation, packaging, and packing shall be to a degree of protection to preclude damage to containers and/or contents thereof under normal shipping conditions, handling, etc., involving shipment from the supply source to the receiving activity, plus reshipment from receiving activity, and shall conform to applicable carrier's rules and regulations. Intermediate and exterior package quantities and labeling and marking shall be as specified in the contract and/or order.

NOTE: The following National Stock Numbers are covered by this document.

NATIONAL STOCK NUMBERITEM IDENTIFICATION

6650-01-207-0829

MICROSCOPE, OPTICAL, Binocular,  
120/230 Volt, 50/60 Hz, AC

6650-01-315-3745

MICROSCOPE, OPTICAL, Binocular,  
120/230 Volt, 50/60 Hz, AC

Ordering data. (Applicable line voltage requirement(s), intermediate/exterior package quantities, labeling, and marking must be specified in the contract and/or order.)

MILITARY INTERESTS:

PREPARING ACTIVITY:

Custodians:

DoD-MB

A-A-54386

Army - MD  
Navy - MS  
Air Force - 03

Agent:  
DLA-DM

CIVIL AGENCY COORDINATING ACTIVITIES:

VA-OSS  
PHS  
FDA-MPQAS

Project Number: 6650-0186

Location: ENABLE/MICOPTCD/S31

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

- 1 The preparing activity must complete blocks 1, 2, 3, and 8. In block 1 both the document number and revision letter should be given.
- 2 The submitter of this form must complete blocks 4, 5, 6, and 7.
- 3 The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

## 1. RECOMMEND A CHANGE:

1 DOCUMENT NUMBER  
A-A-54386

2 DOCUMENT DATE (YYMMDD)  
22 APRIL 1991

## 3 DOCUMENT TITLE

MICROSCOPE, OPTICAL (Binocular, Brightfield)

## 4 NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

## 5. REASON FOR RECOMMENDATION

## 6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

7. DATE SUBMITTED (YYMMDD)

(1) Commercial  
(2) AUTOVON  
(If applicable)

## 8. PREPARING ACTIVITY

a. NAME

b. TELEPHONE (Include Area Code)

(1) Commercial

(2) AUTOVON

Defense Personnel Support Center

(215) 737-2870

444-2870

c. ADDRESS (Include Zip Code)

ATTN: DPSC-MSTE  
2800 S. 20th Street  
Philadelphia, PA 19101

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS CONTACT  
Defense Quality and Standardization Office  
5203 Leesburg Pike Suite 1403 Falls Church VA 22041 3446  
Telephone (703) 756-2340 AUTOVON 289-2340