

**MODEL NO. DOS-180DFL-40/80**

**Standard**

**GENERAL DESCRIPTION**

The DOS180DFL-40/80 Lens Assembly is designed for use as a remotely operated system, and used in conjunction with a video camera. To facilitate conditions under which the system will be used, the design incorporates remotely controlled focal length selection, remote focus, all controlled by means of the furnished Lens Controller. The system has two discreet focal lengths of 40in.(1016m.m.) and 80in.(2032m.m.), operator selectable, and operates over the wide spectral response of 450n.m. thru 160n.m.

## SPECIFICATIONS

### Standard

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#### System Characteristics:

- A. Optical - 180 m.m. aperture, (7 inch)
- B. Dual Focal Length - 40 in./80 in.
- C. Ruggedized and Temperature Stable
- D. Remotely Focusable
- E. Illuminated Projected Reticle
- F. Dry-Air Purge System
- G. Forward Protection Window (Field Replaceable)

#### SPECIFICATIONS

##### A - Optical:

- 1.0 - Lens Design - Maksutov Cassegrain
- 1.1 - Clear Aperture - 180 m.m (7 inches)
- 1.2 - Focal Length - Basic System - 105 inches (2665 m.m.)
- 1.3 - Geometrical f ratio - f/15
- 1.4 - Resolution - 0.7 Arc Second
- 1.5 - Material - Primary Mirror - Zero-Dur  
Corrector Lens - BK-7 Glass
- 1.6 - Coatings - Primary and Secondary Mirror surfaces coated with protected aluminum. All internal air glass surfaces - AR coated with MgF<sub>2</sub>.

##### B - Dual Focal Lengths:

- 2.0 - Focal Lengths - 40 inches (1015 m.m. ) / 80 inches (2030 m.m.)
- 2.1 - Geometrical f ratios - f/5.6 - f/11.3 (T8 to T16)
- 2.2 - Switching Time - One second or less
- 2.3 - Drive Motor - 24V., D.C.
- 2.4 - Repeatable Positive Stops (within 2 arc seconds)
- 2.5 - Par-focal at infinity focus

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### C - Mechanical:

- 3.0 - Mechanical Construction - Invar
- 3.1 - Ruggedized to withstand shockloads of 10 G's
  
- 3.2 - Temperature compensated to maintain the boresight accuracy within plus or minus 25 arc seconds over a temperature variant of 50 deg. F.
- 3.3 - Common mounting plate provided to support both the optical system and the T.V. camera in a sealed enclosure.
- 3.4 - Camera Platform provided to establish proper alignment between camera and the optical axis.
- 3.5 - Mounting Holes - Position and size to be determined.
- 3.6 - Finish - All exterior surfaces to be painted with Chromate, Epoxy Primer Mil Spec PRF23377J Type 1, Class 2, Finish coat – Epoxy Polyimide white Mil Spec 22750F.

### D - Remotely Controlled Focus:

- 4.0 - Focusing range of 1000 ft. to infinity
- 4.1 - Drive Motor - Customer's Choice of 12V., or 24V., D.C. 1.2 amp maximum current (starting load).
- 4.2 - Limit Stops - Electrical limit switches are provided to prevent over-travel in either direction. Near or far focus is controlled by motor polarity.

### E - Illuminated Projected Reticle:

- 5.0 - The Reticle Projection System defines the optical axis and remains fixed and stable relative to the optical ray-path.
- 5.1 - Reticle Lamp - Customer's choice of 12V., or 24V., D.C. Reticle pattern appears only when selectively activated by operator.
- 5.2 - Illumination level variable via control on operator control panel.
- 5.3 - Reticle pattern to be cross line unless otherwise specified.

### F - Dry-Air Purge System:

- 6.0 - System will be sealed against dust and moisture
- 6.1 - Air intake valve included for purging.
- 6.2 - Includes Safety Relief Valve.
- 6.3 - Removeable and rechargeable Desiccant Cartridges are provided to keep interior dry.

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G - Front Protection Window:

- 7.0 - Material - BK-7 Glass
- 7.1 - AR coated on inside surface only
- 7.2 - "O" Ring sealed
- 7.3 - Field Replaceable

Options:

- AA - Enhanced Silver Coatings instead of Protected Aluminum
- BB - Continuous N.D. Filtering (Acts as Auto-Iris)