

# MODEL NO. DOS 180NDRZ-EC SPECIFICATIONS

## Standard Lens

### OPTICAL SPECIFICATIONS

System Type:	Maksutov-Cassegrain catadioptric with primary mirror focusing, counter rotating N.D. filter wheels, and internal system focal length change via moving lens.
Aperture:	7 inches (180 mm)
E.F.L. Adjustment Range:	400 mm (15.75 in.) to 2000 mm (78.7 inches) Focus is maintained during focal length change with a minimum of focus adjustment available via microprocessor controlled mirror positioning.
Relative Aperture Range:	F/2.2 @ 400 mm. to F/11.1 @ 2000 mm.
Focusing Range:	100 feet (30.5 meters) to infinity
N.D. Filter Type:	Counter-rotating wedge coated circular plane-parallel elements – filter factor range ND 0.0 to ND 5.0
Field of View Across a 2/3 Inch Chip	2.65 degrees @ 400 mm. E.F.L. 0.53 degrees @ 2000 mm. E.F.L.

### MECHANICAL SPECIFICATIONS

Weight of System Less Camera	Under 59 lbs.
Length of System Less Camera	28 inches (712.6 mm.)
With Camera Platform	31.75 inches (808.04mm.)
Height from Bottom of Davro Baseplate to Top of Unit:	12 inches (305.4mm.)
Height of Optical Axis From Bottom of Davro Baseplate:	5.875 inches (149.52 mm.)
Camera Mount	Platform Support with slip-in “C” mount adapter
Materials of Construction:	Aluminum alloy with stainless steel fasteners. Pyrex and optical glass optical system

# **STANDARD SPECIFICATIONS**

## **MODEL NO. DOS-M180NDRZ-EC**

### **Optical:**

- 1.1 - Lens Design – Maksutov Cassegrain
  - 1.2 - Clear Aperture – 180 m.m. (7inches)
  - 1.3 - Focal length – Variable – 400 m.m. (15.75 inches) thru 2000 m.m. (78.7 inches)
  - 1.4 - Geometrical f/ratio – f/2.2 at 400 m.m. F.L. thru f/11.1 at 2000 m.m. F.L.
  - 1.5 - Resolution - .8 arc second (diffraction limited)
  - 1.6 - Material - Primary Mirror – Pyrex  
Corrector Lens – BK-7 Glass
  - 1.7 - Coatings - Reflective Surfaces – Enhances Aluminum  
Air-Glass Surfaces – AR- with MgF2
- Optional:* Enhanced silver coatings on reflective surfaces –  
*EXTRA CHARGE*

### **Focusing:**

- 2.1 - Electronic, microprocessor controlled with software or with provided hand paddle.
- 2.2 - Moving mirror design.
- 2.3 - Focusing range – 100 feet to infinity.

### **Neutral Density Filter System:**

Automatically controlled neutral density filter system (Acts as an Auto-Iris)

- 3.1 - Matched set of counter-rotating variable density filter wheels – provides even illumination across T.V. format.
- 3.2 - Boresight is maintained throughout full range of density adjustment.
- 3.3 - Range of density 0.0 (Clear) to N.D. 5.0
- 3.4 - Drive requirements of mechanism are compatible with most auto-iris modules that read peak to peak video levels.
- 3.5 - *Optional:* Pelco controller with serial communication port level control and auto/manual mode select. *EXTRA CHARGE*

### **Mechanical Specifications:**

- 5.1 - Weight of system less camera: Under 59 lbs.
- 5.2 - Length of system: 28 inches (712.6 mm.)(less camera)
- 5.3 - Height from bottom of Davro baseplate to top of unit: 12inches (305.4 mm.)
- 5.4 - Height of optical axis from bottom of Davro baseplate: 5.875 inches (149.52 mm.)
- 5.5 - Camera mount: Platform support with slip in “C” mount adapter.
- 5.6 - Materials of Construction: Aluminum alloy with stainless steel fasteners.

**Electrical Specifications:**

- 6.1 - The supply to the lens powers the microprocessor, and should be free of voltage spikes or dropouts to the extent practical. This should be a regulated linear power supply and output 12 vdc @ 3 amp continuous.
- 6.2 - All communications to the Davro NDRX lens are accomplished by an [RS232](#) serial port. Neither hardware nor software handshaking is required or supported. The port is configured for single host, single slave operation. Serial data format is 19,200 Baud, 1 start bit, 8 data bits, 1 stop bit, and no parity. Messages to the lens are in the form of writes to, or read from, a series of internal registers. All characters are ASCII, with hex notation used for data fields. All alpha characters are upper case. Any properly formatted message received by the lens will elicit a response message. The response message will be either the requested data or the system status message.