



## VF-1400 Series Bi-Directional Fiber-Optic Video Transmission System for NOVA Control Systems

- **Compatible with NTSC/PAL, RS170A/RS-343A**
- **Standalone or rack-mount versions**
- **For use with NOVA control systems**
- **Video, power and optical diagnostics**
- **Optical AGC**
- **Full color transmission**

The VF-1400 series fiber-optic video transmission system provides superior performance and reliability in closed-circuit video systems. The system consists of transmitter and receiver. The system transmits high-quality video and bi-directional RS-422 data on one multimode optical fiber. It is intended for use with Vicon NOVA control systems.

The VF-1400 series can withstand an optical signal loss of up to 12 dB over 62.5- $\mu$  cable. The VF-1400 is set up for 62.5- $\mu$  cable, but will work on 50- $\mu$  cable. It requires no field adjustments. The transmitter and receiver are available in standalone or rack-mount configurations. Refer to Table 1.

A 12 VDC power supply is included with the standalone unit. Rack-mount models are powered by the power supply built into the VF-SR20/2 card cage.

### OPTICAL CABLE RECOMMENDATIONS

Vicon recommends that a professional fiber company install and terminate the optical cable. The cable should meet the application requirements for physical properties, such as strength and weatherproofing. The fiber contractor will provide recommendations for exact cable type based on the details of the installation.

### COAXIAL CABLE RECOMMENDATIONS

Using the correct coaxial cable is critical for proper system operation. The cable must meet these requirements: (1) pure copper center conductor; (2) pure copper braid shield with a minimum of 95% coverage; (3) polyethylene dielectric. If the cable is connected to a camera on a pan-and-tilt, use a multistrand center conductor. Other cable properties, such as outer jacket material, will be determined by the physical requirements of the installation. With RG-59/U type cable made of the materials above, the fiber-optic transmitter or receiver may be located up to 100 feet (about 30 meters) from the video source or video destination.

The VF-1400 series meets requirements for an FCC Class A device and Canadian industry (ICES0-3) Class A.

### ASSOCIATED EQUIPMENT AND ACCESSORIES

**Model VF-SR-20/2 Card Cage with Power Supply, Product Code 8423-00:** Rack with built-in power supply can accommodate up to 14 modules with a total current requirement of 1 A. Modules must be rack-mounted versions. Product Specification V164-60.

**Model VF-BPS, Product Code 8424-00:** Blank panel for VF-SR20/2 Power Supply. Product Specification V164-60.

**Table 1: Models. Product Codes and Descriptions**

Model	Product Code	Description
VF-1400T	8420-00	Video transmitter, standalone module
VF-1400R	8421-00	Video receiver, standalone module
VF-1400RR	8421-02	Video receiver, rack-mount module

## ELECTRICAL

**Power Requirements:** Standalone: 12 VDC.  
Rack Mount: power supplied from card cage.

**Current:** Refer to Table 2.

**Power Consumption:** Refer to Table 2.

**Heat Equivalent:** Refer to Table 2.

**Radio Emission Standard:** FCC Class A.

## VIDEO

**Number of Channels:** 1.

**Modulation Type:** Frequency Modulation (FM).

**Formats Supported:** NTSC and PAL

**Video Bandwidth:** 8 MHz.

### Horizontal

**Video Resolution:** 600 TV lines (based on 4 MHz providing 330 lines).

### Video Input/

**Output Impedance:** 75 ohms.

**Video Input Signal:** 1 V p-p nominal, composite video.

**Video Output Signal:** 1 V p-p.

**Differential Phase:** 5°.

**Differential Gain:** 5%.

**Signal-to-Noise Ratio:** 60 dB.

### Interconnection

**Distance:** 100 ft (30 m) (video equipment to transmitter or receiver).

### Recommended

**Cable Type:** RG59/U coaxial cable (Belden no. 9259 or equivalent).

## OPTICAL

**Optical Wavelength:** 850/1300 nm.

### Maximum Optical

**Attenuation (Loss Budget):** 12 dB (62.5  $\mu$ ).

**Fiber Type:** 50 or 62.5  $\mu$ .

### Maximum

**Transmission Distance:** 1.6 m (2.5 km).

## DATA

**Number of Channels:** 1.

**Formats:** All major formats.

**Baud Rate:** Up to 19.2 Kbps.

## CONNECTORS AND INDICATORS

**Power:** Standalone: 2-pin connector.  
Rack Mount: connector in rack.

**Video:** BNC.

**Optical:** ST type.

**Data:** 5-pin screw terminal.

**Diagnostics Indicators:** Video, power and optical presence bi-color/green LEDs.

## MECHANICAL

**Dimensions:** Standalone  
Height: 1.9 in. (48 mm).  
Width: 5.875 in. (149 mm).  
Depth: 3.75 in. (95 mm).  
Rack Mount: 1 rack slot.

**Weight:** Standalone: 0.67 lb (0.3 kg)  
Rack Mount: 0.46 lb (0.2 kg).

**Construction:** Aluminum.

**Finish:** Standalone: Blue.  
Rack Mount: Black paint.

**Mounting:** No. 8 (3 mm) hardware,  
4 places.

**Shipping Dimensions:** Standalone  
Height: 3.1 in. (79 mm).  
Width: 6.0 in. (152 mm).  
Depth: 10.5 in. (267 mm).  
Rack Mount  
Height: 1.2 in. (31 mm).  
Width: 6 in. (152 mm).  
Depth: 8.8 in. (223 mm).

**Shipping Weight:** Standalone: 1.7 lb (0.8 kg)  
Rack Mount: 0.6 lb (0.3 kg).

**Shipping Volume:** Standalone: 0.11 ft<sup>3</sup> (0.003 m<sup>3</sup>)  
Rack Mount: 0.04 ft<sup>3</sup> (0.001 m<sup>3</sup>)

## ENVIRONMENTAL

**Operating Temperature Range:** -40 to 165° F (-40 to 74° C),  
noncondensing.

**Humidity Range:** Up to 95%, relative.

**Storage Temperature Range:** -40 to 185° F (-40 to 85° C)

Model Number	Current (mA)	Power Consumption (W)	Heat Equivalent* [btu/min (cal/min)]
VF-1400T	150	1.8	0.103 (0.03)
VF-1400R	150	1.8	0.103 (0.03)
VF-1400RR	210	3.2	0.180 (0.046)

**Table 2: Electrical Specifications**

\*Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.