



VF-220 Series Two-Channel FM Fiber-Optic Video Transmission System

- **Compatible with NTSC/PAL, RS170A/RS-343A**
- **Standalone or rack-mount versions**
- **Transmits two channels of video over one multimode fiber**
- **Video, power and optical diagnostics**
- **Full color transmission**
- **Real time video transmission**
- **FM video transmission**

The VF-220 series fiber-optic video transmission system provides superior performance and reliability in closed-circuit video systems. The system consists of transmitter and receiver. It is designed to transmit two channels of high-quality video on one multimode optical fiber at 1300 nm.

The VF-220 series can withstand an optical signal loss of up to 12 dB over 62.5- μ cable. The VF-220 is set up for 62.5-μ cable, but will work on 50-μ cable. It requires no field adjustments. The transmitter and receiver are available in standalone or rack-mount configurations. Refer to Table 1.

A 24 VAC power supply is included with the standalone unit. Rack-mount models are powered by the power supply built into the VF-SR-20/2 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-220 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-SR-20/2 Power Supply. Product Specification V164-60.

Table 1: Models. Product Codes and Descriptions

Model	Product Code	Description
VF-220T	8416-00	Video transmitter, standalone module
VF-220TR	8416-02	Video transmitter, rack-mount module
VF-220R	8417-00	Video receiver, standalone module
VF-220RR	8417-02	Video receiver, rack-mount module

ELECTRICAL

Power Requirements: Standalone: 24 VAC.
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: 2.

Modulation Type: Frequency Modulation (FM).

Formats Supported: NTSC and PAL

Video Bandwidth: 10 MHz.

Horizontal

Video Resolution: 800 TV 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: 3°.

Differential Gain: 5%.

Signal-to-Noise Ratio: 55 dB.

Interconnection Distance

(recommended): 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: 1300 nm.

Maximum Optical Attenuation (Loss Budget): 12 dB (62.5/125 μ).

Fiber Type: 50 or 62.5 μ .

Model Number	Current (mA)	Power Consumption (W)	Heat Equivalent** [btu/min (cal/min)]
VF-220T	275	4.1	0.235 (0.06)
VF-220TR	250	3.8	0.214 (0.05)
VF-220R	210	3.2	0.180 (0.046)
VF-220RR	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.

*Pending optical cable loss.

Maximum Transmission

Distance*: 3.1 mi (5 km).

CONNECTORS AND INDICATORS

Power: Standalone: 3-pin Phoenix.
Rack Mount: connector in rack.

Video: BNC.

Optical: ST type.

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

MECHANICAL

Dimensions: Standalone
Height: 1.1 in. (28 mm).
Width: 8.9 in. (226 mm).
Depth: 5.5 in. (140 mm).
Rack Mount: 2 rack slots.

Weight: Standalone: 1.4 lb (0.6 kg).
Rack Mount: 0.7 lb (0.3 kg).

Construction: Aluminum.

Finish: Standalone: Silver.
Rack Mount: Black paint.

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

Shipping Dimensions: Standalone
Height: 3.5 in. (89 mm).
Width: 8.3 in. (211 mm).
Depth: 14.5 in. (368 mm).
Rack Mount
Height: 3.1 in. (79 mm).
Width: 7.0 in. (178 mm).
Depth: 10.2 in. (259 mm).

Shipping Weight: Standalone: 2.9 lb (1.3 kg).
Rack Mount: 1.1 lb (0.5 kg).

Shipping Volume: Standalone: 0.24 ft³ (0.007 m³).
Rack Mount: 0.13 ft³ (0.004 m³).

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).