

FEATURES:

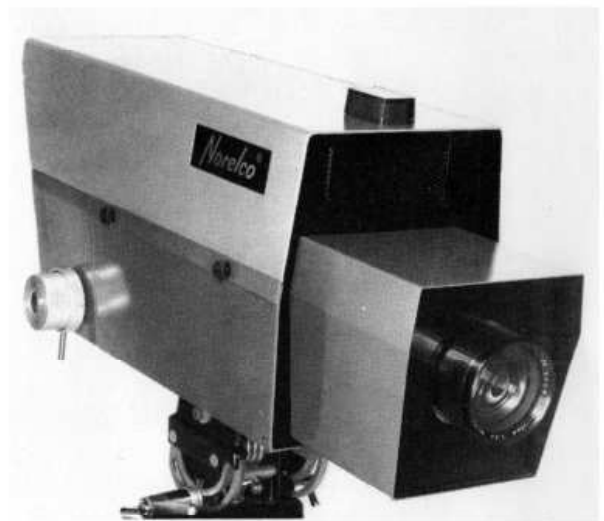
- **Self-contained Design**
 - Simultaneous video and modulated RF output signals.
 - Built-in 2:1 interlaced scanning or external synchronization.
 - Side operated zoom and focus controls.
 - Rear operated iris control.
 - Lightweight and portable.
- **Automatic Operation**
 - Video level stabilization through
 - a) Stable black level control.
 - b) Peak white limiting.
 - c) White signal compression.
 - d) Beam current stabilization.
- **Versatile**
 - Self-contained 2:1 interlace or externally synchronized operation.
 - Standard or separate-mesh vidicons.
 - Reserve video gain for low illumination operation.
 - Minimum Operational Controls

Suitable for a variety of closed-circuit applications, the Norelco VF-150 Viewfinder Camera is a self-contained unit which combines extreme simplicity of operation with good picture quality, versatility, long-term reliability, low cost and light-weight maneuverability.

The automatic features and built-in interlaced scanning make the VF-150 ideal for producing video tape recordings. Applications include science, medicine, education, industrial training, sales and management training—situations where limited personnel must handle multiple functions.

VIEWFINDER MONITOR

The 5-inch viewfinder monitor is a complete integral module which is easily removable from the camera housing. It provides bright, sharp images with negligible geometric distortion. Controls provided are Brightness, Power On-Off, Contrast, Horizontal Hold and Vertical Hold.



CAMERA

The TV camera of the VF-150 has been specifically designed for closed-circuit television applications. In addition to extreme simplicity of operation, it provides good picture quality, versatility, and reliability.

Perfect interlaced scanning, automatic sensitivity control, clamping, white compression, peak white limiting, and a well-defined and stable black level have been included in the design. Circuitry is solid state throughout and arranged on printed circuit boards.

The target voltage of the vidicon tube is automatically controlled by the video signal amplitude so that the output level remains constant under widely varying illumination levels. In addition, the vidicon is optimally controlled with regard to dark current and minimum lag phenomena.

White compression and white peak limiting of the circuitry further enhance the overall automatic video level stabilization.

VIEWFINDER HOUSING

The viewfinder housing is fabricated of heavy gauge formed aluminum alloy. Captive fasteners and hinged side panels permit easy access to the inside. Tally light indicators are on top and rear panels, and a power indicator is included for operator convenience.

OPTICS

Four high quality zoom lens assemblies are available including:

- 4:1 (25-100mm) f/1.4
- 5:1 (20-100mm) f/1.8
- 5:1 (20-100mm) f/2.5
- 10:1 (15-150mm) f/2.8

Each has side operated manual focus and zoom control and rear operated manual iris control.

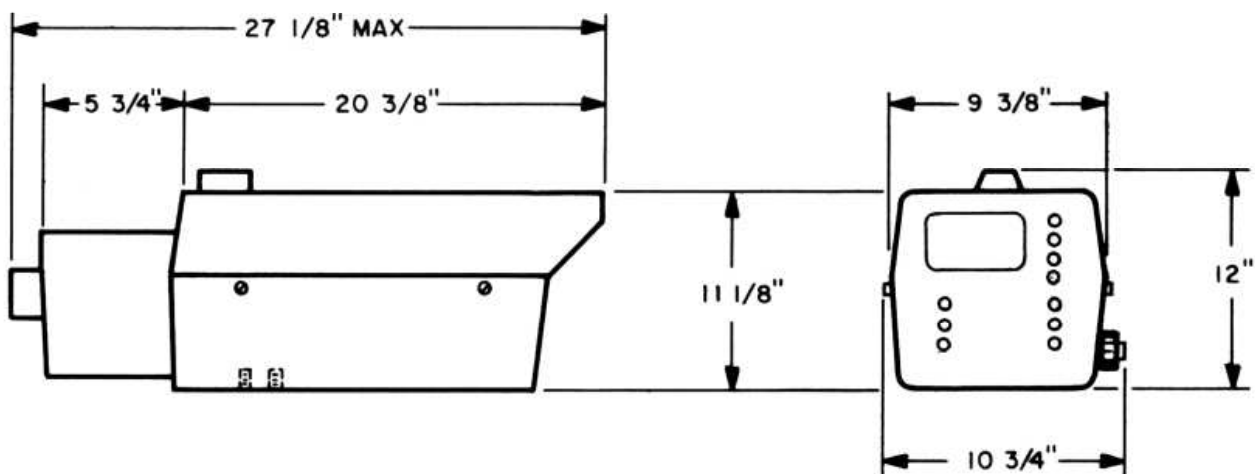
Particular attention has been given to the lens design to assure smooth and acoustically quiet operation. Heavy duty plates which support the

driving shafts and gears for focus and zoom are job-bored for accuracy; teflon and metal gears are used for quiet operation. Manual control of the focus and zoom functions is effected thru an internal gear and shaft arrangement which exists on the right-hand side of the camera housing near the rear. One-hand controls on concentric shafts make for easy operation of these functions.

A special coupling piece is used between camera and lens to permit adjustment of back focus and retention of the optical centerline through the line/camera combination.

SYNCHRONIZATION

The VF-150 synchronization technique permits external synchronization from separate H and V drive pulses, and each unit is provided with a horizontal phasing adjustment to correct timing in multiple camera systems. Upon removal of the H and V drive pulses, the VF-150 automatically reverts to the built-in 2:1 interlaced scanning mode.



CAMERA HEAD

SPECIFICATIONS

Electrical

Input Voltage

117 VAC $\pm 10\%$, 50/60 Hz ± 2 Hz

Input Power

34 W

Vertical Sweep Rate

Line Locked Mode: 60 Hz, with lock-in range of ± 2 Hz and hold-in range of ± 4 Hz

Free Running Mode: 60 Hz ± 2 Hz

(Operation at 50 Hz Vertical Sweep Rate can be achieved by simple internal changes. Same tolerances apply.)

Horizontal Sweep Rate

15.75 kHz (525 lines/frame)

(Operation at 15.625 kHz (625 lines/frame) can be achieved by simple internal modifications.)

Scanning

Internal: Positive 2:1 interlace from internal sync generator (525 lines/field @ 60 fields/30 frames/sec or 625 lines/field @ 50 fields/25 frames/sec)

External: Synchronization from separate negative horizontal and vertical drive pulses, 4 ± 0.5 V

Sync and Blanking Waveform

In accordance with EIA Standard RS-330

Camera Tube Type

1-inch XQ-1030 or equivalent standard mesh vidicon, with 6.3V/0.095A filament. (Separate mesh vidicon such as 8541A may be utilized with slight camera modification.)

Resolution

Horizontal: 600TV lines minimum (using XQ-1030 vidicon)

Vertical: 350 lines

Resolution Stability

With Temperature: Meets resolution specifications over rated temperature range.

With Input Voltage Variation: Meets resolution specifications over rated voltage range.

Sensitivity

1.0 V peak-to-peak video output, at a signal current of 0.35μ amps. For low illumination operation the sensitivity can be doubled with a decrease in video bandwidth and signal-to-noise ratio.

Signal-to-Noise Ratio

RMS noise 38 dB below 1V p-p video signal voltage at normal sensitivity

Automatic Light Control

500:1 for 2:1 signal level change

Black Level

Adjustable and fixed by line-by-line clamp circuit

Gray Scale Rendition

Reproduces 10 shades using EIA test chart

Output Signals

Video: 1.4V p-p composite signal (black negative) or 1.0V non-composite, into 75 ohms unbalanced

RF: 8-15 mV (rms) modulated RF with approximately 80% modulation. Channel 4 (tunable to Channels 2 and 3). Into 75 ohms unbalanced

White Peak Clipper

White compression between 1.0 and 1.2V p-p of the blanked video signal amplitude; signal level limitation at 1.2V p-p

Geometric Distortion

Less than 2% of picture height

Aspect Ratio

4:3

Monitor

Cathode Ray Tube: 5" rectangular

Geometric Distortion: Less than 2% of picture height

Mechanical

Overall Size

10-3/4"W x 12"H x 20-3/8"D (less lens)

Weight

25 lbs (less lens)

Mounting

Two each 3/8" x 16 threaded holes in baseplate

Lens Controls

Zoom and Focus: Concentric, side mounted
Iris: Rear mounted

Input Connectors

AC Power: 3-prong grounding plug
H & V Drive Pulses: BNC
Sync: 2 x BNC

Output Connectors

Video: BNC
RF: BNC

Lenses Available

20-100mm f/2.5, 20-100mm f/1.8, 25-100mm f/1.8,
15-150mm f/2.8

Environmental**Temperature**

0°C to 40°C

Vibration and Shock

Normal Commercial Shipping

Electrical Controls**Camera**

Power On-Off, Iris Open-Closed

Monitor

Brightness, Contrast, Horizontal Hold, Vertical Hold

Ordering Information	
PBEC Order No.	
9801-0041	VF-150 VIEWFINDER CAMERA, less lens, with vidicon
4300-1221	20-100 mm f/2.5 Zoom Lens
4300-1211	15-150 mm f/2.8 Zoom Lens
4300-1215	20-100 mm f/1.8 Zoom Lens
4300-1212	25-100 mm f/1.8 Zoom Lens

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