**OUTLINE**

The C2741-03 is a high-performance video camera with various functions that have been developed for image processing and measurement purposes. The camera has sensitivity to 1800 nm from a visible wavelength region. Compared with conventional surveillance cameras, this camera excels in resolution, image distortion, stability, etc.

In addition, the camera can be connected to a real-time image processor and measurement system, and also to a personal computer for use with a video frame grabber board.

**FEATURES**

- Sensitivity to 1800 nm from visible wavelength region
- Image processing and measurement
- Contrast enhancement function
APPLICATIONS

- **Light intensity measurement in the infrared region**
  Light intensity measurement of infrared light sources, including infrared LEDs, transmission characteristic measurement of optical fibers, etc., and other applications, is possible. In addition, the light intensity distribution of an infrared light source can be measured with a real-time image processing system.

- **Internal inspection**
  Internal inspection is possible with an infrared light source. The camera can be connected to a microscope to look for IC internal defects.

- **Observation and surveillance**
  This camera can be connected to an infrared floodlight for surveillance under low illuminated conditions, in a darkroom, etc.

- **Various image processing and measurement**
  The C2741-03 has been developed for image processing and measurement. By connecting it to the ARGUS-20 or a real-time image processing system, various measurements, such as light intensity measurement, width and area measurement, and position measurement can be performed.

[Real-time image processor ARGUS-20]

The ARGUS-20 is a real-time image processor that achieves a high resolution of 1,024 horizontal pixels. A broad range of image processing functions and measurement functions are provided, including image subtraction, accumulation, and recursive filters. A mouse is used, making operation easy. In addition, a superimpose function enables superimposed displays of illuminated images, emissions, and fluorescence emissions, making it possible to identify fluorescence positions and other elements.
Functions

**Contrast Enhancement**
The contrast enhancement function amplifies video signals that are above offset (threshold) level. Using this function, the low contrast image is enhanced and changed into a clear image.

**Shading Corrector**
This corrects shading introduced by both the optics and the imaging tube to help utilize the contrast enhancement feature most effectively.

**Diagonal Shading Corrector**
This corrects the direction of a diagonal.

**Video Booster**
The video booster modifies the contrast in dark portions of the image revealing details which were lost due to their low intensity.

**Automatic Gain Control: AGC**
Excellent overall image contrast can be achieved automatically using this feature. This eliminates the need for manual adjustments in situations where light intensity fluctuates over time.

**Operational Video Output (Optional)**
External processing of video signals is simplified by the operational video output. Operational video does not include synchronization signals so it can be used to display DC signals with black level as 0 volts.

**All Timing is Crystal Clock Controlled.**
By using a crystal oscillator, synchronization is more stable and higher quality images can be produced. All control signals, including the deflection frequencies, are derived from a crystal oscillator.

**High Geometric Stability**
It features high geometric (position and dimensional) stability. Also, highly uniform and accurate images are obtained.

**Level Indicator**
Two LEDs, which monitor input light intensity, provide a unique and rapid method for the accurate determination of the illumination level required to produce optimal image quality. In addition, this feature provides a visual indication of potentially damaging extreme light levels.

**Video Tube Protection Circuit**
A protection circuit has been incorporated to prevent damage to the imaging tube, should the horizontal or vertical synchronization signals be lost.

**Video Inverter**
The video inverter produces a negative image by inverting the video intensity values. When used in conjunction with contrast enhancement, this feature is particularly valuable for improving detectability and image quality in low intensity regions. In addition, it is very effective in facilitating the visual interpretation of high contrast images.

**White Clipper**
The white clipper operates to suppress the level of the video signal when it exceeds a preset level, in order to maintain consistently high image quality on the TV monitor.
PERFORMANCE / SPECIFICATIONS

Performance

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Optional Features

- External synchronization control
- Operational Video output

Specifications

- Camera Head (approx. 2 kg)
- Camera Controller (approx. 5 kg)

Dimensions

- Camera Head: Width 140 ± 1 mm, Height 195 ± 1 mm
- Camera Controller: Width 232 ± 1 mm, Height 74 ± 1 mm

Configuration

- Video Monitor Cable (BNC-BNC, 3 m)
- Camera Cable (5 m)
- Camera Controller
- Camera Head

Configuration Information

- Camera Head: Weight 2 kg
- Camera Controller: Weight 5 kg

Performance

- Imaging tube: 1-inch Infrared vidicon
- Spectral response: 400 to 1800 nm
- Horizontal center resolution: 650 TV line (typical value)
- Geometric distortion: 1.20 (maximum value)
- Shading: 20% (40%) (maximum value)
- Lag: 60% (typical value)
- Gamma: 0.6 (typical value)
- S/N: 46 dB (p-p/r.m.s.) (minimum value)

Specifications

- Video system: EIA, CCIR
- Horizontal scanning frequency: 15.734 kHz, 15.625 kHz
- Vertical scanning frequency: 59.94 Hz, 50.00 Hz
- Total number of scanning lines: 525, 625
- Effective number of scanning lines: 485, 509
- Interface ratio: 2 : 1
- Aspect ratio: 4 : 3 (horizontal/vertical)
- Synchronization signal: Internal synchronization

- Output signals: Video signal (composite)
- Horizontal vertical signals: TTL level output, Negative polarity

- Effective scanned area of tube: Approx. 12.7 (H) x 9.5 (V) mm

- Lens mount: 1-inch C-mount
- Operating temperature: 0 to +40 °C
- Storage temperature: -10 to +50 °C
- Operating/storage humidity: 90% or less (non-condensation)
- Line voltage: AC 100/117/220/240 V, 90% or less (non-condensation)
- Power consumption: 80 VA or less

Glossary of terms

- Horizontal center resolution
  - This shows how far fine structure can be recognized, and it shows how many stripes TV book display can distinguish at the interval equivalent to the height (length) of the screen of video, and white or black is counted as one, respectively.
- Geometric distortion
  - This is the difference (distortion) between the subject and the image of the subject on the screen. It is expressed as a percentage to the vertical height of the screen.
- Shading
  - Non-uniformity of the video output signal when a video camera views a uniform source. It is expressed as the difference between the brightest and darkest signals divided by the brightest signal and multiplied by 100%. Shading is mainly caused by non-uniform sensitivity of an image tube surface.
- Lag
  - A phenomenon caused when some of the output signal lingers even after the incident light was interrupted. For video cameras, this means output signal delay in response to the change of incident light.
- Gamma characteristic
  - This is the relationship between the signal output and the incident light. On a logarithmic graph, the former is shown on the horizontal axis and the latter on the horizontal axis; the gamma characteristic is the slope (tangent) of the resulting straight line.
- S/N ratio
  - A comparison of the video signal component and the noise component that is mixed in. S/N ratio is usually shown in dB.

愕然

- Dimensions and external appearance are subject to change without notice.

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