

Panasonic®

Digital Processing Color Microcamera
GP-KS1000

digital
processing



GP-KS1000

ISO

ISO9001 Registered Firm

No.: JQA-0441

ISO9001-1994/BS EN ISO9001/JIS Z9901-1994

900,000-pixel microminiaturized camera, with a resolution far surpassing that of standard 1-CCD cameras

A 900,000-pixel CCD microcamera combined with RGB filters can provide a resolution that approaches that of 3-CCD cameras. Stable color reproduction has been achieved under all lighting conditions from low illumination up to high illumination, and a built-in digital signal processing circuit delivers clear images. The GP-KS1000 comes with a wide range of lenses and peripheral devices, and is suitable for medical and other applications.

A 1/2" CCD with 900,000 pixels

GP-KS1000 employs a CCD with a total of 900,000 pixels (800,000 effective pixels), which delivers a high resolution of 560 horizontal lines. Unlike 3CCD cameras, the GP-KS1000 does not use a prism. This ensures that images will be unaffected by shock. Moreover, its RGB output terminals enable high-definition images to be displayed when the GP-KS1000 is connected to a monitor with RGB input terminals.

Innovative use of RGB filters

Chroma dynamic ranges have been expanded through use of an increased number of RGB filter pixels, both horizontally and vertically. The microcamera ensures excellent coloring at both low illuminance and high luminance, resulting in highly stable color reproduction.

G	G	G	G	G	G	G	G
B	R	B	R	B	R	B	R
G	G	G	G	G	G	G	G
R	B	R	B	R	B	R	B
G	G	G	G	G	G	G	G
B	R	B	R	B	R	B	R

<Layout of Primary Color Filters>

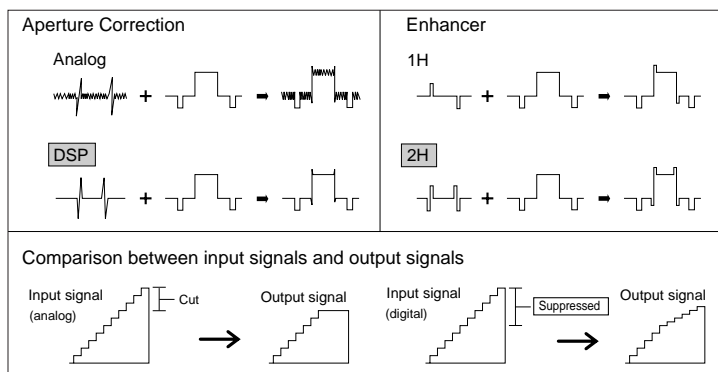
Horizontal
G : 830 pixels
R : 415 pixels
B : 415 pixels

Vertical
G : 485 pixels
R : 485 pixels
B : 485 pixels

Color reproduction and S/N ratio improved through use of a new digital signal processing circuit

The GP-KS1000 adopts the same RGB signal processing system employed in the Panasonic 3-CCD camera. As a result, an S/N ratio of 54 dB has been obtained. In addition, digital processing with aperture correction and a 2H enhancer serve to produce high-definition images with well defined apertures. Furthermore, color errors in the vertical direction have been significantly reduced thanks to the GP-KS1000's, vertical correlative error-correction function.

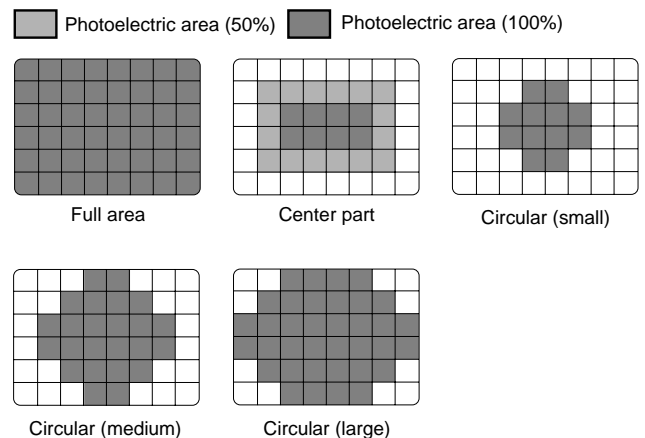
COMPARISON BETWEEN ANALOG CIRCUIT AND DIGITAL PROCESSING CIRCUIT



User switches for changing various settings

The aperture level, chromatic gain, color matrix, AGC/ELC photometric areas, pedestal level, white balance, and other parameters can be adjusted for specific applications.

<Selection of AGC/ELC Photoelectric Areas>



Cable Length

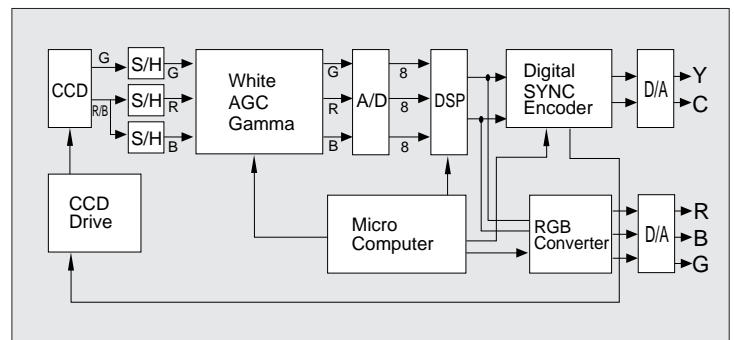
Cable length between camera head and CCU with optional cable:

- GP-CA1K/2 6.6 ft. (2 m)
- GP-CA1K/3 9.84 ft. (3.0 m)
- GP-CA1K/38 12.46 ft. (3.8 m)
- GP-CA1K/10 32.8 ft. (10 m)

Electronic shutter with nine settings

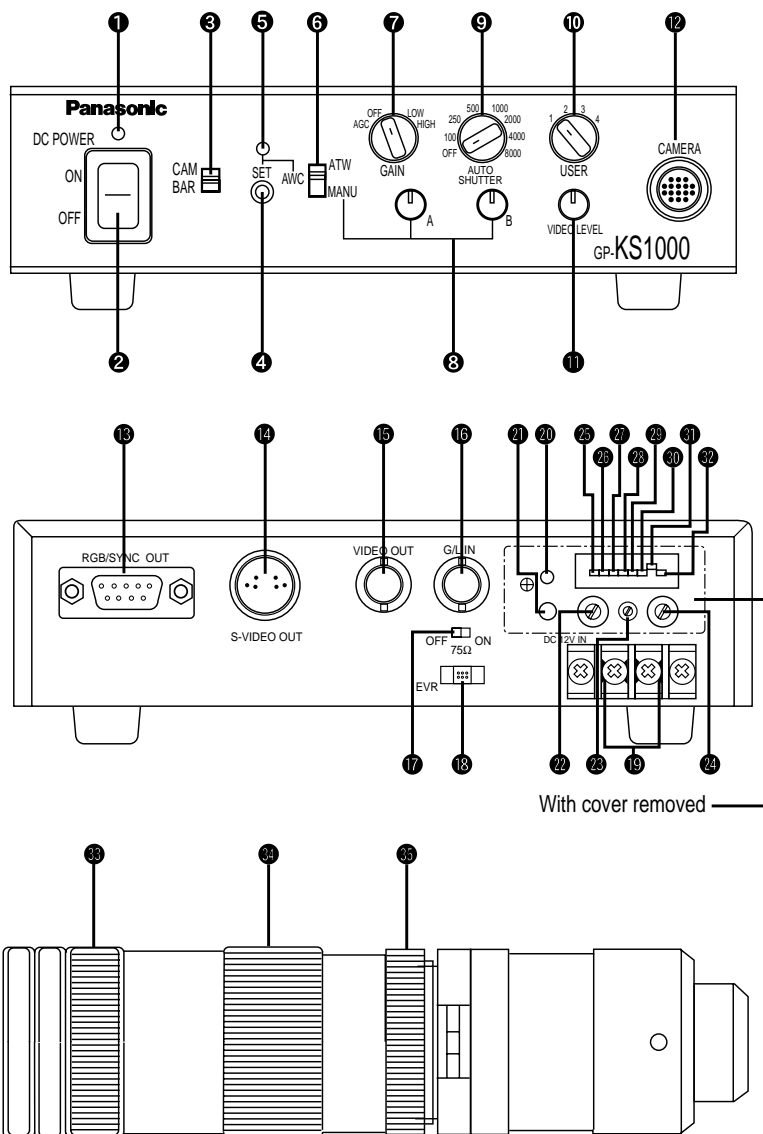
The electronic shutter can be set at the following speeds: OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, and AUTO.

BLOCK DIAGRAM





Operating Controls and Connections



- 1 Power indicator
- 2 DC power switch
- 3 Camera/color bar selector switch
- 4 AWC set button
- 5 White balance indicator
- 6 White balance selector switch (ATW/AWC/Manual)
- 7 Gain selector switch (AGC/OFF/LOW/HIGH)
- 8 R/B gain control volume
- 9 Electronic shutter speed selector switch
- 10 User file selector switch
- 11 Video-level control volume
- 12 Camera cable terminal
- 13 RGB/SYNC output terminal
- 14 S-VHS output terminal
- 15 Video output terminal
- 16 Gain lock signal input terminal
- 17 Gain lock signal 75Ω termination on/off switch
- 18 EVR terminal
- 19 12V DC input terminal
- 20 User file setting indicator
- 21 User file set switch
- 22 User file item selector switch
- 23 User file adjustment control
- 24 User file selector switch
- 25 User file set on/off switch
- 26 Not in use (always off)
- 27 Peak/average selector switch
- 28 White balance offset on/off switch
- 29 Not in use (always on)
- 30 Not in use (always off)
- 31 Cable-length selector switch
- 32 Cable-length selector switch
- 33 Iris adjustment ring (optional lens)
- 34 Focus adjustment ring (optional lens)
- 35 Focus fixing ring

APPLICATIONS

Medical

Endoscopic observations and examinations relating to surgical operations and clinical evaluations

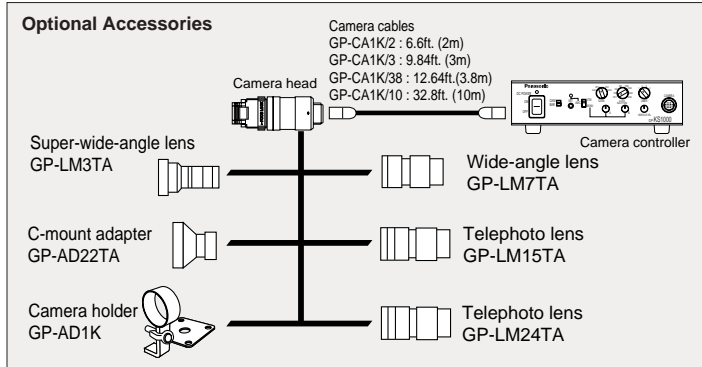
Industrial

Inspection of precision machinery and engine interiors

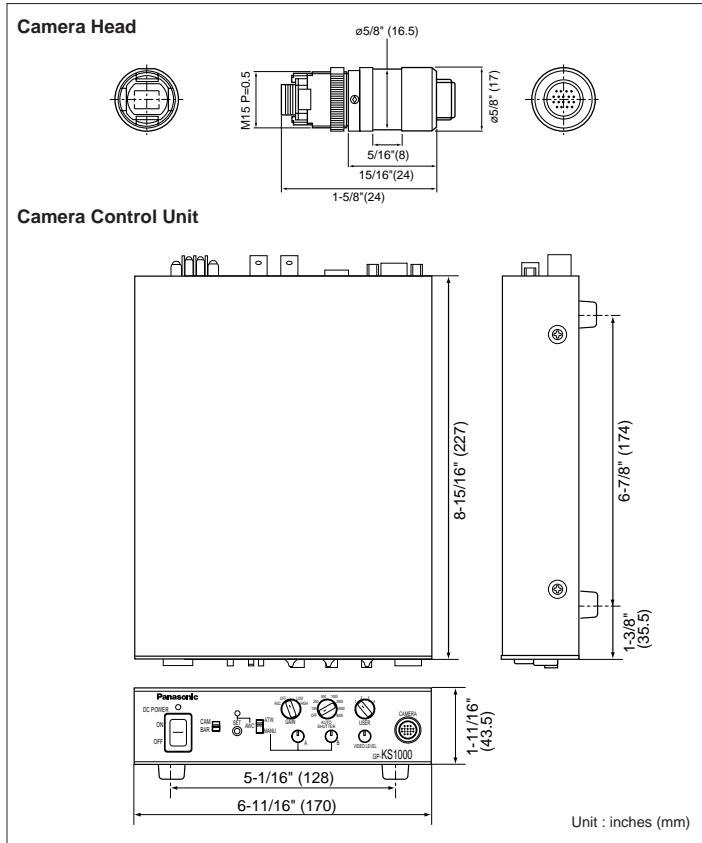
Othors

General-use visual sensor (e.g., as an image-processing visual sensor for microscopes)






SYSTEM CONFIGURATION



DIMENTIONAL DRAWINGS

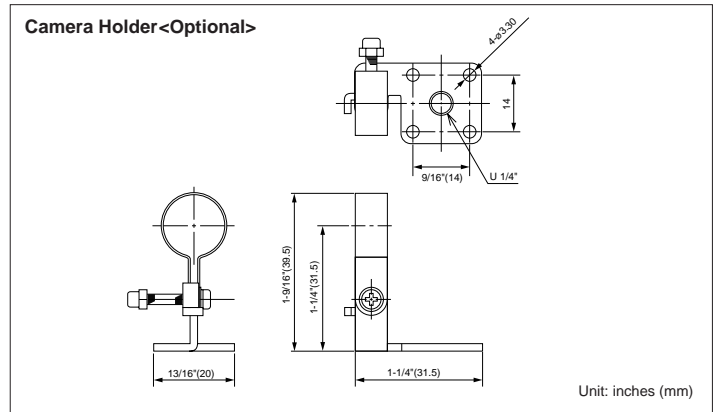


ACCESSORY DEVICES

Camera Cable	Super-Wide-Angle Lens	Wide-Angle Lens
GP-CA1K/2: 6.6ft (2m) GP-CA1K/3: 9.84ft (3m) GP-CA1K/38: 12.64ft (3.8m) GP-CA1K/10: 32.8ft (10m)	GP-LM3TA 	GP-LM7TA 
Telephoto Lens	C-Mount Adapter	Camera Holder
GP-LM15TA GP-LM24TA 	GP-AD22TA 	GP-AD1K 

SPECIFICATIONS

Pick-up device	1/2" IT (Interline Transfer) CCD
Effective number of pixels	Approx. 800,000 pixels, 830 (H) x 970 (V)
Horizontal resolution	Over 560 lines at center
Recommended illumination	2000lx (F5.6)
Minimum illumination	5lx (Illuminance at 30IRE)
S/N ratio	S/N: 54 dB (Equivalence in DLT off)
Video output	VBS (1.0 V _{p-p} /75Ω) Y/C (Y:1.0 V _{p-p}), burst signal: 0.286 V _{p-p} /75Ω RGB: (0.7 V _{p-p} /75Ω) SYNC (0.3 V _{p-p} /75Ω)
Scanning system	2:1 interlace
Horizontal scanning frequency	15.734 kHz
Vertical scanning frequency	59.94 Hz
Number of scanning lines	525 lines, 60 fields
Number of frames per second	30
Synchronization	Internal/External (VBS)
White balance	Manual/AWC/ATW
Electronic shutter	OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000 s, and AUTO
Gain control	AGC/OFF/LOW/HIGH
Lens mount	Special mount
Power supply	12 VDC, approx. 650 mA (Use a power supply with capacity larger than 1A.)
Camera cable	6.6 ft. (2m), 9.84 ft. (3m), 12.64 ft. (3.8m), 32.8 ft. (10m) (option)
Ambient operating temperature	14°F ~ 104°F (-10°C to +40°C)
Dimensions and weight	Camera head: ø11/16" x 1-5/8" (17 x 42 mm) (excl. lens). Camera control unit: 6-13/16" (W) x 1-11/16" (H) x 8-15/16" (D) 170 (W) x 43.5 (H) x 227 (D) mm (excl. connectors and rubber feet) Camera head: Approx. 0.04 lbs (18 g) (excl. lens) Camera control unit: approx. 2.9 lbs (1.3 kg)



●All TV pictures are simulated. ●Weights and dimensions are approximate. ●Specifications are subject to change without notice. ●These products may be subject to export control regulations.

Panasonic

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