

Compact Color Camera-Family

 **CF 112, CF 113, CF 114**

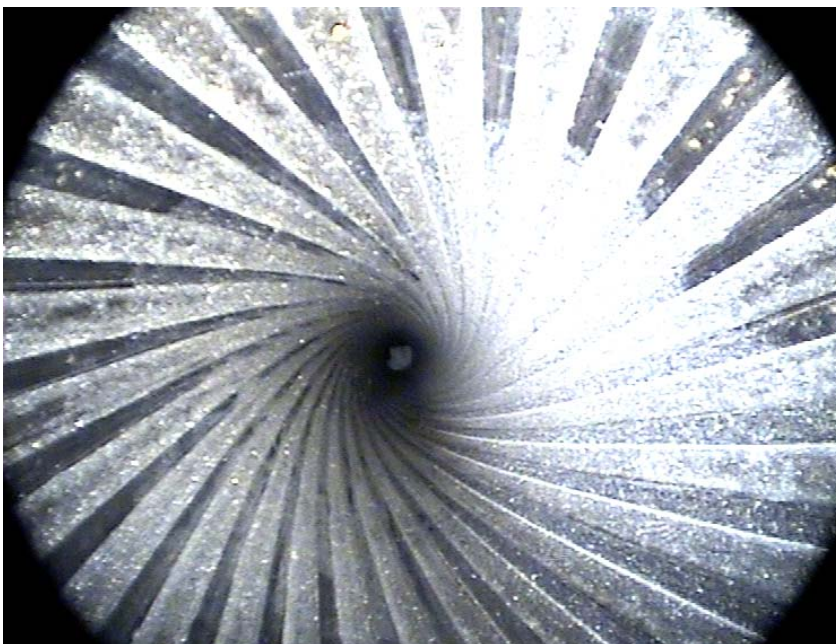


The CCD color cameras with digital signal processing are a family of economically priced compact cameras without complicated extra equipment. They come with a round housing design for industrial applications.

All signal processing functions are automated. The white set can be performed with a switch on the camera.

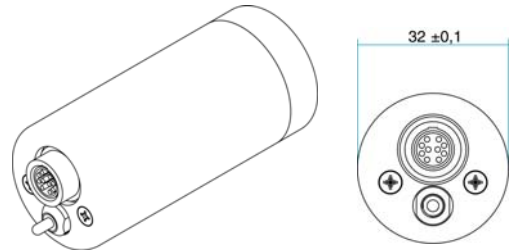
The cameras are equipped with 1/2", 1/3" or 1/4" CCD sensors and offer full video resolution at 752 x 582 pixel (PAL) or 768 x 494 pixel (NTSC). Equipped with a C-Mount and a one cable connection this all-round camera can be used in endoscopy, macroscopy and microscopy. A 10pin Hirose plug supplies variable voltage of 9-36 V DC (3 W). The construction is small, light and extremely rugged.

1/2", 1/3" or 1/4" CCD Sensor
Digital signal processing
Signal-to-noise ratio 48 dB
Easy operation
Compact, rugged design
White Set by switch (Set/Lock)
752 x 582 pixel (PAL)
Fast AGC and AIT reaction time
9 – 36 V DC (3 W)



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Technical Data

Sensor

Camera:	CF 112 (PAL) / CF 112 N (NTSC)	CF 113 (PAL) / CF 113 N (NTSC)	CF 114 (PAL) / CF 114 N (NTSC)
Type	Interline-transfer-CCD with complementary color filter		
	1/2" CCD	1/3" Super HAD CCD*	1/4" CCD
Size of sensing area	6,4 (H) x 4,8 (V) [mm]	4,9 (H) x 3,6 (V) [mm]	3,6 (H) x 2,7 (V) [mm]
Pixel size	8,6 (H) x 8,3 (V) [µm] (PAL) 8,4 (H) x 9,8 (V) [µm] (NTSC)	6,5 (H) x 6,25 (V) [µm] (PAL) 6,35 (H) x 7,4 (V) [µm] (NTSC)	4,85 (H) x 4,65 (V) [µm] (PAL) 4,75 (H) x 5,55 (V) [µm] (NTSC)
Number of picture elements	752 (H) x 582 (V) (PAL), 768 (H) x 494 (V) (NTSC)		
Sensitivity	(measured at 20 ms integration time, 50 % video level, gamma 0.45)		
	< 0,12 lux at 14 dB < 0,03 lux at max. gain	< 0,17 lux at 14 dB < 0,04 lux at max. gain	< 0,36 lux at 14 dB < 0,09 lux at max. gain
Spectral sensitivity	380 to 780 nm		
Filter	optical lowpass and infrared blocking filter, not removable		

Signal Processing

System	8 bit digital signal processing
Signal/noise ratio	> 48 dB (measured in a dark image at 20 ms integration, 0 dB gain)
Resolution	480 lines (horizontal)
Signal output	S-Video (Y/C), Video (composite)
Integration	1/50 s to 1/100 000 s automatic (AIT) (PAL) 1/60 s to 1/100 000 s automatic (AIT) (NTSC)
Gain	0 to 14 dB automatic (AGC), 0 dB fixed, 0 – 26 dB (optionally configurable)
Measuring window AIT and AGC	centred integral
Gamma	0.45
White-set	set / lock
Synchronization	internal

General

Power supply	9 – 36 V DC, 3W
Connections	Hirose (10pin)
Lens mount	C-mount
Operating temperature	-20° C to +45° C
Storage temperature	-50° C to + 90° C
Vibration	random: 7,5g rms (20Hz to 2KHz)
Shock	100g (0,5ms halfsine)
Relative humidity	10 % to 90 %, no condensing
Housing dimensions (Ø x L)	32 x 70 [mm]
Weight	approx. 87 g
Standard equipment	camera, operating manual (CD)
Order no.	CF 112 (PAL) & CF 112 N (NTSC): 961-1110 & 961-1110 N CF 113 (PAL) & CF 113 N (NTSC): 961-1111 & 961-1111 N CF 114 (PAL) & CF 114 N (NTSC): 961-1112 & 961-1112 N

Optional

integration into the modular software package Kappa ImageBase (KIB) via PCI bus frame grabber

*Super & EXview HAD CCD = Sony trademark for improved sensitivity CCDs by incorporation of new SONY semiconductor technology (HAD = Hole Accumulation Diode).

We are constantly checking the accuracy of the technical data. We are prepared to provide more detailed information on request. Technical data are subject to change without notice!

TECHNICAL SUPPORT
Fon +49.1805.371371
support@kappa.de

Kappa opto-electronics Inc.
825 Primrose Ave., Unit I
Monrovia, CA 91016 | USA
Fon +1.626.256.4343
Fax +1.626.256.6484
info@kappa-vision.com
www.kappa-vision.com

Kappa opto-electronics GmbH
Kleines Feld 6
37130 Gleichen | Germany
Fon +49.5508.974.0
Fax +49.5508.974.100
info@kappa.de
www.kappa.de



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