

Digital Interface Cameras

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|------------------------|---|--------------------|------------|-------------------------------------|-------------------------|--------------------------------|
| KP-FD510WCL | Mini CL (Auto Selection of PoCL or non-PoCL) | 1CCD Color (RGB) | 2/3" CCD | 5.05 M Pixels (2456 x 2058) | Max. 12 frames per sec. | 44(W) x 44(H) x 41(D) mm |
| KP-FR500WCL | | 1CCD Color (RAW) | | | Max. 16 frames per sec. | |
| KP-F500WCL | | 1CCD Black & White | | | | |
| KP-FD500PCL/SCL | PCL: Mini CL(PoCL) | 1CCD Color (RGB) | 1/1.8" CCD | UXGA(2.01M Pixels) (1628 x 1236) | Max. 30 frames per sec. | |
| KP-FD202PCL/SCL | SCL: Mini CL(Non-PoCL) | | 1/2" CCD | SXGA(1.45M Pixels) (1392 x 1040) | | |
| KP-FD140PCL/SCL | Mini CL (Auto Selection of PoCL or non-PoCL) | | 2/3" CCD | | | |

KP-FD510WCL



KP-F500WCL, KP-FR500WCL,
KP-FD500PCL/SCL, KP-F145WCL



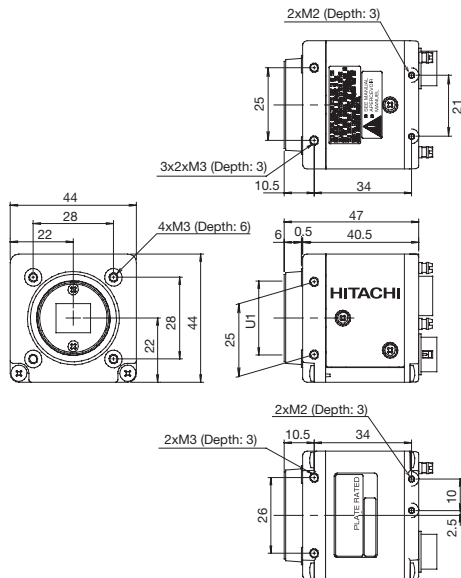
KP-FD202PCL/SCL,
KP-FD140PCL/SCL



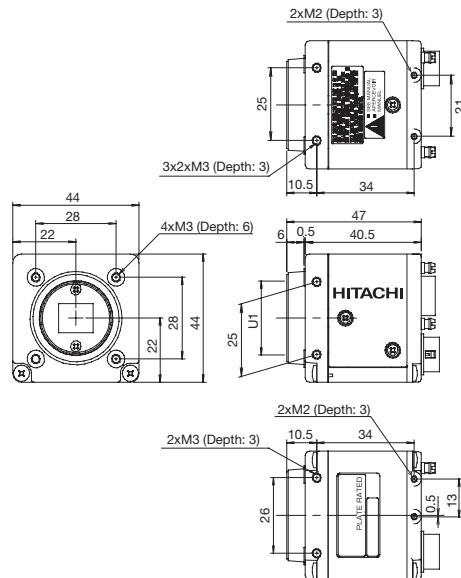
Actual Size (Approx.)



KP-F500WCL, KP-FR500WCL, KP-FD500PCL/SCL,
KP-F145WCL, KP-FD202PCL/SCL, KP-FD140PCL/SCL



KP-FD510WCL



Unit: mm

Digital Interface Cameras

| | | KP-FD510WCL KP-FD500PCL/SCL | KP-FR500WCL KP-F500WCL | KP-FD202PCL/SCL | KP-FD140PCL/SCL | KP-145WCL |
|-------------------------------|--|--|--|---|---|---|
| Imaging device | | 2/3-inch progressive scan interline CCD (ICX625AQ) | | 1/1.8-inch progressive scan interline CCD (ICX274AQ) | 1/2-inch progressive scan interline CCD (ICX267AK) | 2/3-inch progressive scan interline CCD (ICX285AL) |
| | Total pixels | 2536(H) x 2068(V) | | 1688(H) x 1248(V) | 1434 (H) x 1050 (V) | 1432 (H) x 1050 (V) |
| | Effective pixels | 2448(H) x 2050(V) | 2456 (H) x 2058 (V) | 1628(H) x 1236(V) | 1392 (H) x 1040 (V) | 1392 (H) x 1040 (V) |
| | Pixel size | 3.45 μm (H) x 3.45 μm (V) (square lattice) | | 4.4 μm (H) x 4.4 μm (V) (square lattice) | 4.65 μm (H) x 4.65 μm (V) (square lattice) | |
| Color filter (FR/FD model) | RGB primary color mosaic filter | | | | | - |
| Sensing area | 8.45 mm (H) x 7.07 mm (V) | | 8.47 mm (H) x 7.10 mm (V) | 7.13 mm (H) x 5.37 mm (V) | 6.32 mm (H) x 4.76 mm (V) | 8.98 mm (H) x 6.71 mm (V) |
| Scanning system | Progressive | | | | | |
| Aspect ratio | 5 : 4 | | | 4 : 3 | | |
| Frame rate | 12 frames per second (full pixel readout) | 16 frames per second (full pixel readout) 32 frames per second (vertical 2 pixel addition) FR model: No vertical 2 pixel addition) | | 30 frames per second (full pixel readout) | | 30 frames per second (full pixel readout) 60 frames per second (vertical 2 pixel addition) |
| Horizontal drive frequency | 48.0000 MHz | | 64.0000 MHz | 72.0000 MHz | 57.6000 MHz | |
| Horizontal Scanning frequency | 24.922 kHz | | 33.264 | 37.5 kHz | 32.179 kHz | |
| Vertical Scanning frequency | 11.99 Hz | 16.00 Hz (full pixel readout) 31.98 Hz (vertical 2 pixel additionmode) FR model: No vertical 2 pixel addition) | | 29.95 Hz | 30.13 Hz | |
| Sync system | Internal | | | | | |
| Lens mount | C mount (Flange focal distance = 17.526 mm) | | | | | |
| Video output | Interface/ Protocol | Camera Link 64.0000 MHz Base configuration (1ch: SDR connector x 1pc.) Medium configuration (2ch: SDR connector x 2pcs) | Camera Link Base configuration: 64.0000 MHz x 2TAP Medium configuration: 32.0000 MHz x 4TAP | Camera Link 72.0000 MHz | Camera Link 57.6000 MHz | |
| | Output format | 24bits (Base configuration) 30bits (Medium configuration) 36bits (Medium configuration) | 8 bit / 10bit / 12bit | 24bits (Base configuration) 30bits (Medium configuration) 36bits (Medium configuration) | 12 bit | |
| | Output image size | 2448 (H) x 2050 (V) (full pixel readout) | 2456(H) x 2058(V) (fullpixel readout) | 1620(H) x 1220(V) (full pixel readout) | 1360(H) x 1024(V) (full pixel readout) | 1392(H) x 1040(V) (full pixel readout) |
| Sensitivity | 2000 lx, F11, 3200 K | | 500 lx, F11, 3200 K FR Model: 2000 lx, F8, 3200K | 2000 lx, F5.6, 3200 K | | 400 lx, F8, 3200 K |
| Minimum illumination | 5 lx (F1.4, MAX GAIN) | | 1.0 lx (F1.4, MAX GAIN) FR model: 15 lx (F1.4 GAIN MAX) | 10 lx (F1.4, MAX GAIN) | | 2.0 lx (F1.4, MAX GAIN) |
| Signal noise to ratio | 48 dB | | | | | |
| Electric shutter | OFF, 1/12, 1/60, 1/100, 1/250, 1/1000, 1/2000, 1/10000, 1/50000 second OFF is normal exposure (frame rate) or changeable by variable shutter (from 10 to 1/100000 second) | | OFF, 1/16, 1/60, 1/100, 1/250, 1/1000, 1/2000, 1/10000, 1/50000 second OFF is normal exposure (frame rate) or changeable by variable shutter (from 10 to 1/100000 second) | OFF, 1/30, 1/60, 1/100, 1/250, 1/1000, 1/2000, 1/10000, 1/50000 second. OFF is normal exposure (frame rate) or changeable by variable shutter (from 10 to 1/100000 second) | | |
| Frame on demand | Mode | (A) Fixed shutter mode (8 steps or variable) (B) ONE trigger mode (C) VD reset mode | | | | |
| | Trigger input | Camera Link (CC1) or DCIN/SYNC connector | | | | |
| Partial scan | Selectable start position and height of picture grabbing in 1H step. | | | | | |
| ALC (Auto level control) | Mode: AGC (Auto gain control), AES (Auto electric shutter), AGC & AES Video Level: Adjustable | | - | Mode: AGC (Auto gain control), AES (Auto electric shutter), AGC & AES Video Level: Adjustable | | - |
| Gain | Auto/Manual (0 to +12dB) (Approx. 0.0358dB step) | | Auto/Manual (0 to +18dB) (Approx. 0.0358dB step) | Auto/Manual (0 to +18dB) (Approx. 0.0358dB step) | | Auto/Manual (-6 to +18dB) (Approx. 0.0358dB step) |
| White balance | ATW / MANUAL / One-push | | - | ATW / MANUAL / One-push | | - |
| Gamma | OFF (γ=1) / LUT | | γ=1 | OFF (γ=1) / LUT | | γ=1 |
| Color masking | OFF / ON (6 vector independent masking) | | - | OFF / ON (6 vector independent masking) | | - |
| Paint black | Adjustable | | - | Adjustable | | - |
| Sharpness | Adjustable | | - | Adjustable | | - |
| Brightness | Adjustable | | - | Adjustable | | - |
| Knee | Adjustable | | - | Adjustable | | - |
| Power supply voltage | 12 ± 1 VDC | | | | | |
| Current consumption | Approx. 310 mA (Approx. 3.7W) | | Approx. 260 mA (Approx. 3.1W) *MAX partial scan 1H: Approx. 330 mA (Approx. 4.0W) | Approx. 340 mA (Approx. 4.1W) *MAX partial scan 1H: Approx. 415 mA (Approx. 5.0W) | Approx. 300 mA (Approx. 3.6W) Approx. 230 mA (Approx. 2.8W) *MAX partial scan 1H: Approx. 350 mA (Approx. 4.2W) | |
| Ambient temperature | Performance | 0 to +40 °C (+32 to +104 °F), less than 90 % RH | | | | |
| | Operation | -10 to +50 °C (+14 to +122 °F), less than 90 % RH | | | | |
| | Storage | -20 to +60 °C (-4 to +140 °F), less than 70 % RH (without dew condensation) | | | | |
| Vibration endurance | 10 to 55Hz (2.37 to 71.7m/S ²), Sweep 1 minute, 30 minutes for each 3 axis | | | | | |
| Shock endurance | 490.3 m/s ² (Once for each side of top, under, left and right) | | | | | |
| External dimensions | 44 (W) x 44 (H) x 41 (D) mm (not including mount protrusions) | | | | | |
| Mass | Approx. 110 g | | | | | |