

## Type

Compact Digital Waterproof Camera

## Sensor

Type: Backlit CMOS w primary color filter  
Size: 1/2.3"  
Effective pixels: 16  
Total pixels: 16.79  
Recorded resolutions  
Still: 16M (4608x3456), 12M (1:1, 3456x3456), 12M (16:9, 4608x2592), 7M (3072x2304), 5M (16:9, 3072x1728), 5M (2592x1944), 4M (16:9, 2592x1464), 3M (2048x1536), 2M (16:9, 1920x1080), 1024 (1024x768), VGA (640x480)  
Movie: HD (1920x1080p30, 1280x720p60/30)  
Quality levels: Still: \*\*\* best, \*\* better, \* good, Movie: fixed

## Lens

Type/construction: RICOH zoom lens, 9 elements, 7 groups (4 aspheric elements), protective cover w SP coating  
Optical zoom: 4X  
Focal length (equiv.): 4.5-18mm (25-100mm)  
Digital zoom: 7.2X  
Combined zoom: 28.8X  
Intelligent zoom: Approx. 6X at 7M to 28.8X at VGA  
Aperture: F2-4.9

## Focus System

Type: TTL contrast detection autofocus, AF assist lamp, Macro Illuminating LEDs  
Focus modes: 9 point AF, Spot AF, Auto Tracking AF, Macro, 1CM Macro, Infinity Landscape, Pan Focus, Manual Focus  
Manual focus: Yes  
Macro focus: Yes, Macro and 1CM Macro available  
Focus lock: Yes, by pressing the shutter release button half way  
Focus range  
Normal: 1.31' to infinity  
Macro: 0.33' to 1.64'  
Super Macro: 0.03 (1cm) to 0.98' (at mid-zoom, set automatically)

## LCD Monitor

LCD screen: 3" widescreen TFT color LCD w anti-reflective coating on cover  
LCD resolution: HVGA 460,000 dots  
Wide angle viewable: Yes (approx. 170° horizontal/vertical)

## Flash

Type: Built-in series control auto flash  
Flash modes: Auto, Flash Off, Flash On, Auto + Redeye, On + Redeye  
Effective range: 34' (wide, auto ISO), 14' (tele, auto ISO)

## Storage Media

Internal memory: 70 MB  
Removable memory: SD, SDHC, SDXC

## Interfaces

Ports: USB 2.0 hi-speed, USB / AV out, HDMI (Micro, Type-D)  
Video out: NTSC, PAL, HD (HDMI supports HD Auto, 1080i, 720p, 480p)

## Power Supply

Power source: Rechargeable Li-Ion battery D-LI92  
Recordable images: Approx. 240  
Playback time: Approx. 200 min  
Movie recording time: Approx. 65 min  
Audio recording time: Approx. 270 min  
AC adapter available: Yes (optional)

## Physical Specs

Dimensions (W x H x D): 4.9" x 2.5" x 1.3"  
Weight:  
Without battery or removable memory: 7.4 oz (non-GPS), 7.6 oz (GPS)  
Loaded and ready: 8.1 oz (non-GPS), 8.3 oz (GPS)  
Construction material(s): Reinforced polycarbonate plastic w aluminum accents  
Operating temperature: 14-104°F (coldproof)  
Ruggedized features: Waterproof (45.9'), Shockproof (6.5'), Crushproof (220 LBF), Coldproof (-10°C), Dustproof (JIS 6)

## Timing

Startup: Approx 1.8 sec  
Release lag: Approx 0.016 sec

## Language Support

English, French, German, Spanish, Portuguese, Italian, Dutch, Danish, Swedish, Finnish, Polish, Czech, Hungarian, Turkish, Greek, Russian

## Image Stabilization

Still: Sensor-Shift-Type (SR : Shake Reduction), Dual (SR & Pixel Track SR), High-sensitivity anti-shake mode (Digital SR)  
Movie: Movie SR

## Metering System

Type: TTL  
Multi-segment: Yes  
Center weighted: Yes  
Spot: Yes  
Exposure compensation: +/- 2 EV (1/3 steps)

## ISO Sensitivity

Auto: 125-6400 auto range adjustable  
Manual: 125-6400

## White Balance

Auto, Daylight, Shade, Tungsten Light, Fluorescent Light (D: Daylight Color, N: Daylight White, W: White Light), Manual

## Shutter

Type: Programmed AE mechanical and electronic shutter mechanism  
Shutter speed: 1/4000 to 1/4 sec (1/2000 - 4 sec in Shutter Priority, Night Scene mode)

## Capture Modes

Mode selection: Auto Picture, Program, Shutter Priority, USER, HDR, Night Scene, Handheld Night Snap (ISO 125-1600), Movie, Underwater, Underwater Movie, Digital Microscope (2M), Landscape, Flower, Portrait, Interval Shot, Interval Movie, High Speed Movie (VGA, 120 FPS capture, 30 FPS playback), Time-Lapse Movie, 1CM Macro Movie, Digital SR, Surf & Snow, Kids, Pet, Sport, Fireworks, Night Scene Portrait, Food, Digital Wide (5M), Digital Panorama (2M per frame), Report (1280x960, ISO 125-1600), Green (ISO 125-1600)  
Auto Picture modes: Landscape, Portrait, Night Scene, Night Scene Portrait, Standard, Flower, Sport, Candlelight, Blue Sky, Sunset, Text, Group Photo, Pet, Portrait x Blue Sky, Portrait x Sunset, Portrait x Backlight  
Custom Image Tone: Bright, Natural, Monochrome  
Green simplified mode available: Yes (ISO 125-1600)  
Face detection available: Yes (up to 32 faces), Smile Capture, Blink Detection, Self Portrait Assist, Self Portrait Assist + Smile Capture, Pet Recognition (1 face detect)  
PASMB: P  
Date stamp: Yes, date, date-time, time (not available in Green mode)  
Digital filters (capture): n/a  
Dynamic Range Adjustment: Yes (highlight and shadow correction)  
File/Folder customization: Folder name (date, PENTX, custom), file name (IMGF, custom)  
Electronic level: Yes

## Drive Modes

Mode selection: One Shot, Self-Timer (10s, 2s), Continuous, Burst Shooting, Remote Control (3s, 0s), Auto Bracketing  
Continuous FPS: 1.5fps, Burst 12-14 FPS for up to 30 frames (5M or 4M)  
Multi-exposure: n/a  
Interval: Interval Shot, Interval Movie, High Speed Movie (120 FPS capture, 30 FPS playback)  
HDR: Yes. Capture Mode (3 captured images combined to create single image with wide dynamic range) or as a Playback filter (single image processed to have HDR "look")

## Playback Modes

Mode selection: One Shot, Index (6 or 12 thumbnails), Magnification (up to 10X, scrollable), Movie Playback, Histogram, Folder Display, Select & Delete, Calendar  
Mode pallet: Slideshow, Image Rotation, Small Face Filter, Ink Rubbing Filter, Collage, Digital Filter(B&W/Sepia, Toy Camera, Retro, Color, Extract Color, Color Emphasis, High Contrast, Starburst, Soft, Fish-eye, Digital filters (playback): (B&W, Sepia, Toy Camera, Retro, Color, Color Extract, Color Emphasis, High Contrast, Starburst, Soft, Fisheye, Brightness, Miniature), HDR Filter, Original Frame, Movie Edit, Red-Eye Edit, Resize, Cropping, Image Copy, Protect, DPOF, Start-up Screen  
Movie edit: Save as Still Image, Movie Divide, Title Picture

## File Formats

Still: JPG (EXIF 2.3), DCF 2.0, DPOF, PIM III  
Movie (compression): MP4 (AVC h.264)  
Sound: WAV (PCM), 32KHz, 16bit stereo, High Speed Movie ] 8KHz, 16bit, stereo

## Computer Requirements

\*For device connectivity. Bundled software requirements may vary.  
WINDOWS: Windows XP(SP3), Vista, 7, 8, USB port  
Mac: MacOS 10.4, 10.5, 10.6, 10.7, 10.8 USB port