

# OLYMPUS

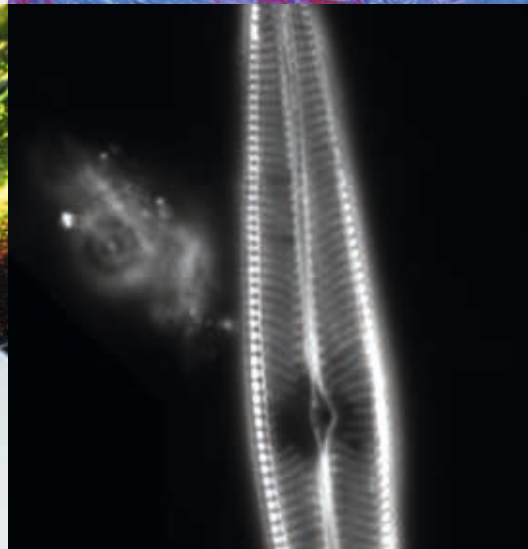
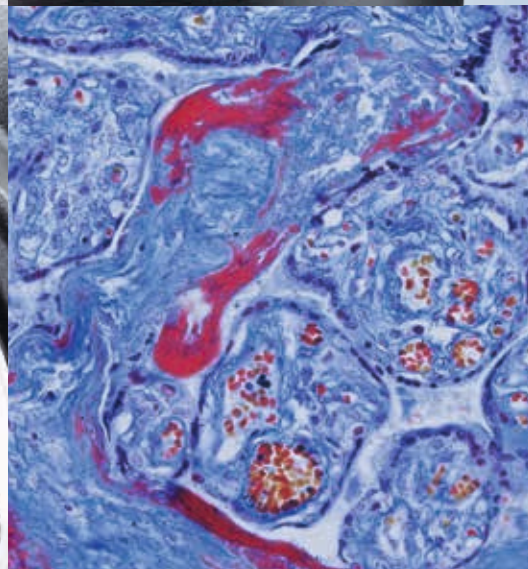
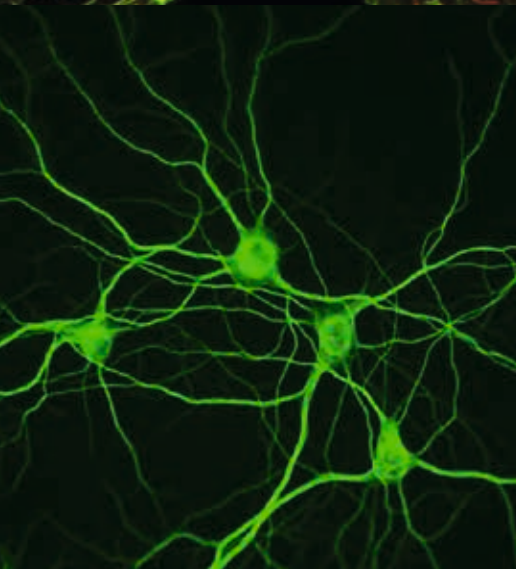
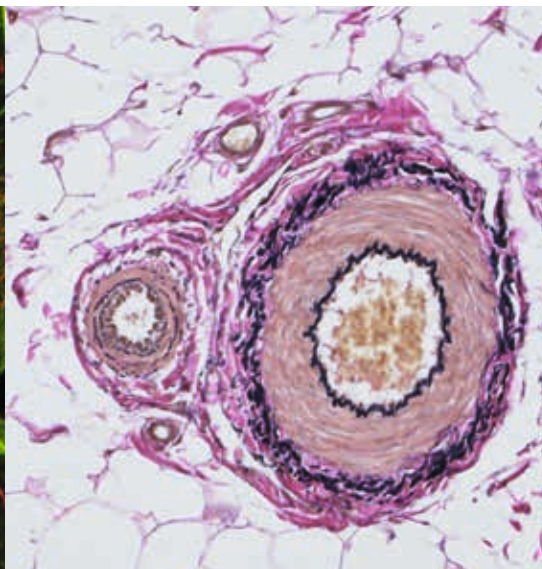
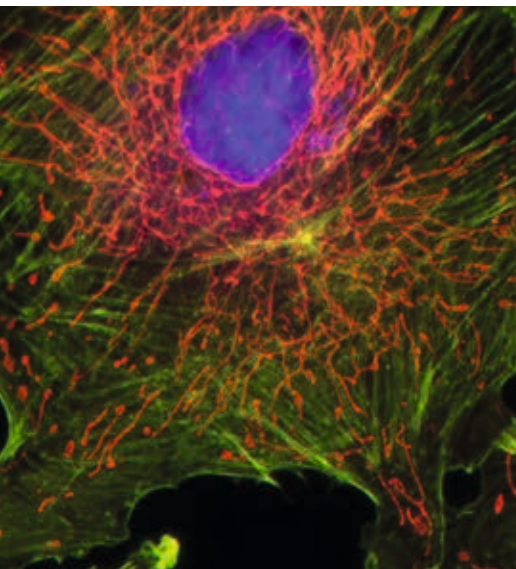
Your Vision, Our Future

Digital Cameras for Microscopy

## Camera Overview

For Life Science Microscopes

### Versatility by Design



## Color Cameras

|                                       | DP22                                                  | DP27                                                  | SC50                                                                            | SC100                                                       |
|---------------------------------------|-------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>Image Sensor</b>                   | Color CCD                                             | Color CCD                                             | Color CMOS                                                                      | Color CMOS                                                  |
| <b>Sensor Type</b>                    | Sony ICX 687 AQA                                      | Sony ICX 625 AQA                                      | Aptina MT9P006STC                                                               | Aptina MT9J003                                              |
| <b>Sensor Size</b>                    | 1/1.8 inch                                            | 2/3 inch                                              | 1/2.5 inch                                                                      | 1/2.3 inch                                                  |
| <b>Resolution (max.)</b>              | 1920 x 1440 pixels                                    | 2448 x 1920 pixels                                    | 2560 x 1920 pixels                                                              | 3840 x 2748 pixels                                          |
| <b>Pixel Size</b>                     | 3.7 x 3.7 µm                                          | 3.45 x 3.45 µm                                        | 2.2 x 2.2 µm                                                                    | 1.67 x 1.67 µm                                              |
| <b>Binning</b>                        | 2x                                                    | 2x                                                    | 2x, 4x                                                                          | 2x                                                          |
| <b>A/D Converter</b>                  | 8 bit                                                 | 8 bit                                                 | 12 bit                                                                          | 12 bit                                                      |
| <b>Exposure Time</b>                  | from 50 µs to 8 s                                     | from 50 µs to 8 s                                     | from 31 µs to 2.74 s                                                            | from 0.12 ms to 14.6 s                                      |
| <b>Live Frame Rates</b>               | 25 fps at 1920 x 1440 pixels                          | 15 fps at 2448 x 1920 pixels                          | 15 fps at 2560 x 1920 pixels                                                    | 3 fps at 3840 x 2748 pixels                                 |
|                                       | 30 fps at 1920 x 1080 pixels                          | 22 fps at 1920 x 1080 pixels                          | 32 fps at 1920 x 1080 pixels                                                    | 12 fps at 1920 x 1374 pixels                                |
|                                       | 25 fps at 960 x 720 pixels                            | 30 fps at 1224 x 960 pixels                           | 55 fps at 640 x 480 pixels<br>77 fps at 480 x 270 pixels                        | 42 fps at 960 x 686 pixels                                  |
| <b>Cooling System</b>                 | No                                                    | No                                                    | No                                                                              | No                                                          |
| <b>External Trigger</b>               | No                                                    | No                                                    | No                                                                              | No                                                          |
| <b>Data Transfer</b>                  | USB 3.0                                               | USB 3.0                                               | USB 3.0                                                                         | USB 2.0                                                     |
| <b>Color Profiles</b>                 | Olympus real time color profiles                      | Olympus real time color profiles                      | Olympus real time color profiles                                                | Olympus real time color profiles                            |
| <b>Partial Readout</b>                | Yes                                                   | Yes                                                   | No                                                                              | No                                                          |
| <b>Remarks</b>                        | · Stand-alone option<br>· Fast and Fluid Full HD Live | · Stand-alone option<br>· Fast and Fluid Full HD Live | · Automatic White Balance<br>· Active Noise Cancellation<br>· Fast Full HD Live | · Single-shot 10.5 megapixels<br>· Convenient USB interface |
| <b>Operating System Compatibility</b> | Windows 7 / 8 / 8.1 32 bit and 64 bit                 | Windows 7 / 8 / 8.1 32 bit and 64 bit                 | Windows 7 / 8 / 8.1 32 bit and 64 bit                                           | Windows 7 / 8 / 8.1 32 bit and 64 bit                       |

|                                       | UC30                                  | UC50                                  | XC30                                   | XC50                                   |
|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|
| <b>Image Sensor</b>                   | Color CCD                             | Color CCD                             | Color CCD                              | Color CCD                              |
| <b>Sensor Type</b>                    | Sony ICX 252 AQ                       | Sony ICX 282 AQ                       | Sony ICX 252 AQ                        | Sony ICX 282 AQ                        |
| <b>Sensor Size</b>                    | 1/1.8 inch                            | 2/3 inch                              | 1/1.8 inch                             | 2/3 inch                               |
| <b>Resolution (max.)</b>              | 2080 x 1544 pixels                    | 2588 x 1960 pixels                    | 2080 x 1544 pixels                     | 2576 x 1932 pixels                     |
| <b>Pixel Size</b>                     | 3.45 x 3.45 µm                        | 3.4 x 3.4 µm                          | 3.45 x 3.45 µm                         | 3.4 x 3.4 µm                           |
| <b>Binning</b>                        | 2x, 3x                                | 2x, 4x, 6x                            | 2x, 3x                                 | 2x, 4x, 6x                             |
| <b>A/D Converter</b>                  | 14 bit                                | 14 bit                                | 14 bit                                 | 14 bit                                 |
| <b>Exposure Time</b>                  | from 0.1 ms to 160 s                  | from 0.1 ms to 160 s                  | from 0.1 ms to 160 s                   | from 0.1 ms to 10 s                    |
| <b>Live Frame Rates</b>               | 7 fps at 2080 x 1544 pixels           | 9 fps at 2588 x 1960 pixels           | 7 fps at 2080 x 1544 pixels            | 9 fps at 2588 x 1960 pixels            |
|                                       | 13.6 fps at 1040 x 772 pixels         | 9 fps at 1292 x 980 pixels            | 13.6 fps at 1040 x 772 pixels          | 9 fps at 1292 x 980 pixels             |
|                                       | 25 fps at 688 x 514 pixels            | 33 fps at 640 x 480 pixels            | 25 fps at 688 x 514 pixels             | 33 fps at 640 x 480 pixels             |
|                                       |                                       | 24.5 fps at 424 x 318 pixels          |                                        | 24.5 fps at 424 x 318 pixels           |
| <b>Cooling System</b>                 | No                                    | No                                    | Peltier 10°C at 25°C ambient           | Peltier 10°C at 25°C ambient           |
| <b>External Trigger</b>               | No                                    | No                                    | No                                     | No                                     |
| <b>Data Transfer</b>                  | FireWire™ IEEE 1394a                  | FireWire™ IEEE 1394a                  | FireWire™ IEEE 1394a                   | FireWire™ IEEE 1394a                   |
| <b>Color Profiles</b>                 | Olympus real time color profiles      | Olympus real time color profiles      | Olympus real time color profiles       | Olympus real time color profiles       |
| <b>Partial Readout</b>                | Yes                                   | Yes                                   | Yes                                    | No                                     |
| <b>Remarks</b>                        | —                                     | —                                     | · Low image noise with Peltier cooling | · Low image noise with Peltier cooling |
| <b>Operating System Compatibility</b> | Windows 7 / 8 / 8.1 32 bit and 64 bit | Windows 7 / 8 / 8.1 32 bit and 64 bit | Windows 7 / 8 / 8.1 32 bit and 64 bit  | Windows 7 / 8 / 8.1 32 bit and 64 bit  |

## Color and Monochrome Cameras

|                                       | DP73                                                                                                          | DP80                                                                                                                                | XC10                                                                                       | XM10 (monochrome only)                  |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------|
| <b>Image Sensor</b>                   | Color CCD                                                                                                     | Color CCD + Monochrome CCD                                                                                                          | Color CCD                                                                                  | Monochrome CCD                          |
| <b>Sensor Type</b>                    | Sony ICX 274 AQ                                                                                               | Sony ICX 275 AQ + ICX 285 AL                                                                                                        | Sony ICX 285 AQ                                                                            | Sony ICX 285 AL                         |
| <b>Sensor Size</b>                    | 1/1.8 inch                                                                                                    | 2/3 inch (both sensors)                                                                                                             | 2/3 inch                                                                                   | 2/3 inch                                |
| <b>Resolution (max.)</b>              | 4800 x 3600 pixels                                                                                            | 4080 x 3072 pixels (color)<br>1360 x 1024 pixels (monochrome)                                                                       | 1376 x 1032 pixels                                                                         | 1376 x 1032 pixels                      |
| <b>Pixel Size</b>                     | 4.4 x 4.4 µm                                                                                                  | 6.45 x 6.45 µm (both sensors)                                                                                                       | 6.45 x 6.45 µm                                                                             | 6.45 x 6.45 µm                          |
| <b>Binning</b>                        | 2x                                                                                                            | 2x, 4x                                                                                                                              | 2x, 4x                                                                                     | 2x, 4x, 8x                              |
| <b>A/D Converter</b>                  | 14 bit                                                                                                        | 14 bit (both sensors)                                                                                                               | 14 bit                                                                                     | 14 bit                                  |
| <b>Exposure Time</b>                  | from 23 µs to 60 s                                                                                            | from 23 µs to 60 s                                                                                                                  | from 0.1 ms to 160 s                                                                       | from 0.1 ms to 160 s                    |
| <b>Live Frame Rates</b>               | 15 fps at 1600 x 1200 pixels                                                                                  | 15 fps at 1360 x 1024 pixels                                                                                                        | 15 fps at 1360 x 1024 pixels                                                               | 15 fps at 1376 x 1032                   |
|                                       | 15 fps at 800 x 600 pixels                                                                                    | 57 fps at 340 x 250 pixels                                                                                                          | 28 fps at 688 x 516 pixels                                                                 | 28 fps at 688 x 516                     |
|                                       | 27 fps at 800 x 600 (binning 2x)                                                                              |                                                                                                                                     | 50 fps at 344 x 258 pixels                                                                 | 50 fps at 344 x 258                     |
|                                       |                                                                                                               |                                                                                                                                     |                                                                                            | 106 fps at 172 x 129                    |
| <b>Cooling System</b>                 | Peltier 10°C at 25°C ambient                                                                                  | Peltier 10°C at 25°C ambient                                                                                                        | Peltier 10°C at 25°C ambient                                                               | Peltier 10°C at 25°C ambient            |
| <b>External Trigger</b>               | Yes                                                                                                           | Yes                                                                                                                                 | Optional                                                                                   | Optional                                |
| <b>Data Transfer</b>                  | PCIe dedicated controller                                                                                     | PCIe dedicated controller                                                                                                           | FireWire™ IEEE 1394a                                                                       | FireWire™ IEEE 1394a                    |
| <b>Color Profiles</b>                 | Olympus real time color profiles                                                                              | Olympus real time color profiles                                                                                                    | Olympus real time color profiles                                                           | N/A                                     |
| <b>Partial Readout</b>                | Yes                                                                                                           | No                                                                                                                                  | Yes                                                                                        | No                                      |
| <b>Operating System Compatibility</b> | Windows 7 / 8 / 8.1 64 bit                                                                                    | Windows 7 / 8 / 8.1 64 bit                                                                                                          | Windows 7 / 8 / 8.1 32 bit and 64 bit                                                      | Windows 7 / 8 / 8.1 32 bit and 64 bit   |
| <b>Remarks</b>                        | · Extended dynamic range in DP73WDR model<br>· Fine Detail Processing<br>· 3CCD mode<br>· Progressive readout | · Dual CCD camera<br>· Fast motorized sensor switching<br>· Precise image overlay<br>· Progressive readout<br>· Near-IR sensitivity | · Highly sensitive both in color and monochrome<br>· Optional Trigger and near-IR versions | · Optional Trigger and near-IR versions |

Cover page image: YFP-H brain of a 20-week-old mouse treated by New Scale. Courtesy of: Hiroshi Hama, Atsushi Miyawaki, Laboratory for Cell Function Dynamics RIKEN Brain Science Institute.

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