

# Product information

VWR® Binocular brightfield microscope BL224PL T1

EU cat. no 630-3290



|  |                                   |   |
|--|-----------------------------------|---|
| Observation Method - Transmitted Light | Brightfield                       | Yes   |
|  | Simple polarized light            | As optional   |
| Main Body                              | Type                              | Upright   |
|  | Construction material             | Aluminum die-cast   |
|  | Transportation handle             | Yes   |
| Head                                   | Type                              | Binocular (Siedentopf)  |
|  | Inclination                       | 30°   |
|  | 360° rotating                     | Yes   |
|  | Interpupillary distance (mm)      | 48-75   |
|  | Dioptric adjustment               | On left tube  |
|  | Fixing screw for eyepieces        | Yes   |
|  | Tube inner diameter (mm)          | 23  |
| Eyepieces                              | Field number (mm)                 | 18  |
|  | Magnification                     | 10x   |
|  | Pointer                           | As optional   |
|  | Micrometric scale                 | As optional   |
|  | Diameter of micrometer glass (mm) | 20  |
|  | High eyepoint (for glass wearers) | Yes   |
| Nosepiece                              | Positions                         | Quadruple   |
|  | Reversed                          | Yes   |
|  | Bi-directional                    | Yes   |
|  | Rotation on ball bearings         | Yes   |
|  | Objective thread                  | RMS   |
| Objectives                             | Optical system                    | 160   |
|  | Anti-fungus treatment             | Yes   |
|  | Parfocal distance (mm)            | 45  |
|  | Standard magnifications           | 40x-1000x   |
|  | Type                              | N-PLAN  |
|  |                                   | 4x/0.10, W.D. 15.2 mm<br>10x/0.25, W.D. 5.5 mm<br>40x/0.65, W.D. 0.45 mm<br>100x/1.25 (Oil/Water), W.D. 0.13 mm |
| Stage                                  | Type                              | Double layer  |
|  | Dimensions (mm)                   | 125x115   |
|  | Moving mechanism                  | Rack and pinion   |
|  | Moving range (mm)                 | 70x30   |
|  | Material                          | Anti-scratch painting   |
|  | Specimen holder                   | Yes   |
|  | Slide number                      | 1   |
|  | X-Y movement                      | Yes   |
|  | X-Y Vernier scale                 | Yes   |
| Vernier scale accuracy (mm)            | 0.1                               |   |
| Condenser - Single Position            | Type                              | Abbe  |
|  | Numerical aperture (N.A.)         | 1.25  |
|  | Centrable                         | Pre-centered  |
|  | Focusable                         | By rotation   |

|                 |  |                       |
|-----------------|--|-----------------------|
| Focusing System | Type   | Coaxial coarse & fine |
|                 | Coarse total travel (mm)                     | 18                    |
|                 | Fine total travel (per single rotation) (mm) | 0,4                   |
|                 | Fine graduations                             | 100                   |
|                 | Fine resolution (µm)                         | 4                     |
|                 | Upper stop to prevent contact                | Yes                   |
|                 | Adjustable tension                           | Yes                   |

|                          |                         |          |
|--------------------------|-------------------------|----------|
| Transmitted Illumination | Type                    | X-LED    |
|                          | X-LED type              | X-LED2   |
|                          | Light source power (W)  | 3        |
|                          | Brightness control      | Manual   |
|                          | Lifetime (hours)        | > 65,000 |
|                          | Temperature (K)         | 6,300    |
|                          | Max. required power (W) | 6        |

|   |                      |                         |
|---|----------------------|-------------------------|
| Power Supply for Transmitted Illumination | Type                 | External                |
|   | Microscope connector | Jack, 2.1 mm            |
|   | Power plug type      | Multi-plug (EU, UK, US) |
|   | Input voltage        | 100/240 Vac, 50/60 Hz   |
|   | Output voltage       | 6 Vdc 2.5 A             |

|                      |                         |                                |
|----------------------|-------------------------|--------------------------------|
| Accessories Included | Dust cover              | Yes                            |
|                      | Immersion oil (10ml)    | Yes                            |
|                      | Tension adjustment tool | Yes                            |
|                      | User Manual             | Digital version (downloadable) |
|                      | Calibration slide       | Yes                            |
|                      | Touch pen               | Yes                            |
|                      | USB cable (m)           | 0,5                            |

|                        |  |   |
|------------------------|--|---|
| Additional Information |  | External rechargeable battery pack (as optional).<br>Tablet Keyboard (as optional). |
|------------------------|--|---|

|                    |             |     |
|--------------------|-------------|-----|
| Product Dimensions | Height (mm) | 525 |
|                    | Width (mm)  | 260 |
|                    | Depth (mm)  | 320 |

|                |      |     |
|----------------|------|-----|
| Product Weight | (kg) | 7,4 |
|----------------|------|-----|

|                       |   |                   |
|-----------------------|---|-------------------|
| Camera specifications | PC Camera resolution (MP)               | 3.1               |
|                       | Camera resolution (n° of pixels: W x H) | 2048x1536         |
|                       | USB Signal output                       | USB 2.0           |
|                       | Color / Monochrome                      | Color             |
|                       | Sensor Size                             | 1/2.5"            |
|                       | Sensor Technology                       | CMOS              |
|                       | Sensor Type                             | APTINA CMOS       |
|                       | Rolling Shutter                         | Yes               |
|                       | Image Format                            | 4/3               |
|                       | Pixel Size (µm)                         | 2.2x2.2           |
|                       | Frame rate full resolution (fps)        | 8@1280x1024       |
|                       | Frame rate other resolution (fps)       | 30@640x480        |
|                       | Sensitivity                             | 0.53 V/lux-second |
|                       | Signal/Noise Ratio (DB)                 | 40.5              |
| Dynamic range (DB)    | 66.5                                    |                   |

|  |                      |               |
|--|----------------------|---------------|
|  | ADC conversion       | 12 Bit        |
|  | Color Depth          | 8 Bit         |
|  | Exposure time        | ... - 1.5 sec |
|  | Binning              | 1x1           |
|  | IR filter            | Yes           |
|  | IR filter range (nm) | 680           |
|  | Camera Power         | PC USB        |
|  | C-Mount              | Yes           |

|                    |                   |     |
|--------------------|-------------------|-----|
| Camera accessories | Calibration slide | Yes |
|--------------------|-------------------|-----|

|                            |                     |                   |
|----------------------------|---------------------|-------------------|
| Environment specifications | Working Temperature | -10°C up to +50°C |
|                            | Storage Temperature | -20°C up to +60°C |
|                            | Relative Humidity   | 30% to 80%        |
|                            | Storage Humidity    | 10% to 60%        |

|                  |    |                    |
|------------------|----|--------------------|
| Operating System | OS | Windows 10 (64Bit) |
|------------------|----|--------------------|

|                    |    |         |
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| Available Software | SW | PROVIEW |
|--------------------|----|---------|

|          |       |   |
|----------|-------|---|
| Warranty | Years | 2 |
|----------|-------|---|

|          |                    |  |
|----------|--------------------|--|
| Tablet   | Operating system   | Windows 10 (64Bit)   |
|          | CPU                | Gemini-Lake, N4100   |
|          | CPU speed          | 1.10 GHz   |
|          | Graphic card       | Intel® HD Graphics 600   |
|          | RAM                | Ram 6 GB LPDDR3  |
|          | Display size       | LED 10.1" IPS Multi Touch Screen                                     |
|          | Display resolution | 1920x1200  |
|          | Storage            | Hdd 128 GB   |
|          | Network            | WiFi (2.4G / 5G) - Bluetooth 5.0                                     |
|          | Input ports        | USB-C (1 USB2.0 for battery charge, 1 USB3.0) - Micro SD card reader |
|          | Output ports       | Microphone - Headphone - Micro HDMI                                  |
|          | Battery Type       | Lithium-ion  |
|          | Battery capacity   | 6500 mAh   |
|          | Power consumption  | 24.05W   |
|          | Power supply       | 12V 2A EU  |
|          | Dimensions (mm)    | 261 x 167 X 9  |
|          | Weight (Kg)        | 0.53   |
| Language | Multilanguage      |  |

|                    |                                  |     |
|--------------------|----------------------------------|-----|
| Tablet accessories | OTG cable (micro USB-C to USB-A) | Yes |
|                    | USB cable USB-B to USB-A (0.5m)  | Yes |
|                    | Touch pen                        | Yes |