**Olympus BX61 vs Keyence BZ-X810**

BZ-X810 is best for thin flat whole tissue imaging of 3 slides per run by saving setting time, though longer auto acquisition time. BX61 is best for fast and complicated imaging and real time processing for up to only 2 slides per run by saving total acquisition time, though longer setting time. Both microscopes can do multi-channels Fluorescence (FL) and Bright Field (BF) Imaging with Z-stack, multi-points and tiling options. However, from light source to camera via objectives and filters, the two microscopes are different and their images should not be compared side by side. Chose only one microscope for one whole research project to compare images.

Hardware

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Microscope** | **Setup** | **Controls** | **FL Light** | **BF Light** | **Objectives** | **FL Filters** | **Camera** |
| **BX61** | **Upright, open, with Eyepiece** | **Either HW or SW** | **Total 156W**  **6 LEDs** | **Incandescent 20W** | **4X/.16, 10X/0.4, 20X/0.8, 40X/0.9, 60X/1.42, 100X/1.3** | **DAPI, CFP, GFP, YFP, Cy3, TXR, Cy5** | **FL & Color** |
| **BZ-X810** | **Inverted, closed**  **Screen View only** | **Only Software** | **80W Metal Halide** | **LED 3.7W** | **2X/0.1, 4X/0.2, 10X/0.45, 20X/0.75, 40X/0.95, 60X/1.42** | **DAPI, FITC, Cy3, Cy5, Cy7** | **Two modes** |

Software

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Microscope** | **Imaging Settings** | **Tile setting time** | **Z-offset** | **Real time Processing** | **Tiling Area** | **Tile Focus** | **Image Meta file openness** |
| **BX61** | **Comprehensive, Smart, Precise** | **Long** | **Yes** | **EFI and Stitching No Email Sending** | **Rectangular or Polygon** | **Focus Map (FM) or AF** | **Freeware: Olyvia, ImageJ Imaris Viewer** |
| **BZ-X810** | **Simple, Easy, Quick** | **Short** | **No** | **No EFI No Stitching**  **Email Sending** | **Rectangular** | **AF or Post Processing** | **Licensed Keyence, then convert to Tiff** |

Camera Specifications

|  |  |  |
| --- | --- | --- |
| **Microscope** | **FL Camera** | **Color Camera** |
| **BX61** | **2048X2048, 16b/12b/8b, 6.5µm/px, 13.3X13.3 mm2, 40-80 fps** | **3384X2708, 14b/8b, 3.69µm/px, 14.6X12.8 mm2, 19.5 fps** |
| **BZ-X810** | **1920X1440, 14b/8b, 7.5µm/px, 14.5X10.8 mm2, 15 fps** | **1920X1440, 8b, 7.5µm/px, 14.5X10.8 mm2, 8.5 fps** |

Applications

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Microscope** | **Sample Thickness** | **Sample Flatness** | **Slides per run** | **Dish/Plate** | **Total acquisition time** | **Post Processing** |
| **BX61** | **< 50 µm** | **High adoptable with FM** | **1 or 2** | **No** | **Relative shorter** | **none** |
| **BZ-X810** | **< 20 µm** | **Rely on AF or Z-Stack** | **1 or 2 or 3** | **Yes** | **Relative longer** | **Extracting Focus, Stitching.** |