













# Equipment List for NovaStar Pixel Level Calibration System

NI'AN NOVASTAR TECHNOLOGY CO., LTD.




All the equipment listed below, except the dongle, shall be purchased by the client.

# 1 Equipment for Cabinet Calibration in Darkroom



| No. | Name                                 | Model                                | Appearance  | Description  |
|-----|--------------------------------------|--------------------------------------|---|--|
| 1   | Camera<br>(Choose one from the four) | Canon 90D                            |    | Before purchasing this camera, make sure whether the official accessories include a USB cable. If not included, it shall be prepared by the client.                                  |
|     |                                      | Canon 70D                            |    | <ol style="list-style-type: none"> <li>1. A USB cable: about 1 m</li> <li>2. See chapter 3 for details on the camera power adapter (for cabinet calibration in darkroom).</li> </ol> |
|     |                                      | Canon 7D Mark II                     |   | The upgraded edition of Canon 7D   |
|     |                                      | Canon 80D                            |  | A Canon digital camera   |
| 2   | Lens                                 | Canon 18–200mm                       |  | Standard zoom lens, Canon EF-S bayonet   |
|     |                                      | Canon EF-S 18–135mm f/3.5–5.6 IS USM |  | Standard zoom lens, Canon EF-S bayonet   |
|     |                                      | Canon EF 70–200mm f/4L IS II USM     |  | Standard zoom lens, Canon EF bayonet   |

|   |                  |                               |   |  |
|---|------------------|-------------------------------|---|--|
| 3 | Tripod           | WF-717                        |  | Aluminum alloy, 1.8 m, with hydraulic damping head   |
| 4 | Dongle           | NovaStar                      |  | This is the authorization tool of NovaStar calibration software. It is provided by NovaStar. |
| 5 | Desktop computer | Windows XP, Win7, Win8, Win10 |  | You are advised to use a high-performance computer to help improve the calibration speed.    |

## 2 Equipment for On-Site Screen Calibration

| No. | Name                                 | Model     | Appearance  | Description   |
|-----|--------------------------------------|-----------|---|---|
| 1   | Camera<br>(Choose one from the five) | C3200     |  | Contact NovaStar sales to purchase this camera if needed.   |
|     |                                      | Canon 90D |  | Before purchasing this camera, make sure whether the official accessories include a USB cable. If not included, it shall be prepared by the client. |
|     |                                      | Canon 70D |  | Fittings:<br>1. A USB cable: about 1 m<br>2. Two batteries and a battery charger  |

|   |        |                                      |   |  |
|---|--------|--------------------------------------|---|--|
|   |        | Canon 7D Mark II                     |    | The upgraded edition of Canon 7D   |
|   |        | Canon 80D                            |    | A Canon digital camera   |
| 2 | Lens   | Canon 18–200mm                       |    | Standard zoom lens, Canon EF-S bayonet   |
|   |        | Canon EF-S 18–135mm f/3.5–5.6 IS USM |   | Standard zoom lens, Canon EF-S bayonet   |
|   |        | Canon EF 70–200mm f/4L IS II USM     |  | Standard zoom lens, Canon EF bayonet   |
|   |        | SIGMA 50–500mm (Optional)            |  | Super-telephoto zoom lens, Canon bayonet, for long-distance on-site calibration              |
| 3 | Tripod | WF-717                               |  | Aluminum alloy, 1.8 m, with fluid damping head   |
| 4 | Dongle | NovaStar                             |  | This is the authorization tool of NovaStar calibration software. It is provided by NovaStar. |

|   |                 |                               |   |   |
|---|-----------------|-------------------------------|---|---|
| 5 | Wireless router | TP-LINK                       |  | This TP-LINK wireless router is used to establish a WLAN for online calibration. You can select a model based on actual requirements. |
| 6 | Laptop          | Windows XP, Win7, Win8, Win10 |  | You are advised to use a computer with a high-capacity battery to meet the calibration time requirement.                              |

### 3 Optional Equipment

| No. | Name        | Model          | Appearance  | Description  |
|-----|-------------|----------------|---|--|
| 1   | Colorimeter | Minolta CS100A |   | <p>Fittings:</p> <ol style="list-style-type: none"> <li>1. A PoweredUSB cable</li> <li>2. A tripod to fix the CS100A</li> </ol> <p>Function:</p> <p>Absolute measuring of the cabinet brightness and chroma values</p>           |
|     |             | Minolta CS150  |  | <p>Fittings:</p> <ol style="list-style-type: none"> <li>1. A PoweredUSB cable</li> <li>2. A tripod to fix the CS150</li> </ol> <p>Function:</p> <p>Absolute measuring of the cabinet brightness and chroma values</p>            |
|     |             | Minolta CS2000 |  | <p>Fittings:</p> <ol style="list-style-type: none"> <li>1. A USB cable</li> <li>2. A power adapter</li> <li>3. A stable tripod</li> </ol> <p>Function:</p> <p>Absolute measuring of the cabinet brightness and chroma values</p> |

|   |                       |   |   |  |
|---|-----------------------|---|---|--|
| 2 | Barcode scanner       | Honeywell MS3780  |    | <p>Function: Scan the cabinet barcode to automatically start calibration.</p> <p>Note: If you need the support of other models, please contact NovaStar R&amp;D engineers.</p>   |
| 3 | USB extension cable   | Select by client  |    | <p>Connect the camera data cable to the computer during cabinet calibration in order to allow for replacing cabinet and operating software by only one person. Select an appropriate extension cable based on the distance between the cabinet and camera.</p> |
| 4 | Camera power adapter  | SANG Canon EOS70D 5D2 5D3 60D 7DMARKII ACK-E6 DR-E6 power adapter |   | <p>This adapter is used to provide external power for the camera. The model is for reference only.</p>   |
| 5 | Wireless network card | COMFAST CF-WU771N   |  | <p>300 Mbps high-power USB wireless network card, with a built-in 10 dB radar directional antenna</p>  |

**Note**

The CS2000 colorimeter has higher stability and measuring precision than the CS100A and CS150, but it has a higher price.

If you only need to measure white balance of the same batch of cabinets, or measure only one of the two batches of cabinets and then calibrate those cabinets using the same target value, you are advised to use the CS100A or CS150.

If you need to measure cabinets one by one, you are advised to use the CS2000.