

IR203 Thermal Camera

For Apple iOS Devices

Instruction Manual



**Perfect
Prime**

www.perfectprime.com



Contents

1. Overview	2
2. App Download	3
3. Product Specifications	4
4. Symbol Definition	5
5. Getting Temperature of a Point	6
6. Choose Color Palette	7
7. Enable Filters for Better Picture Quality	8
8. Contour Detection (Beta, Experimental)	9
9. Menu Settings	10
10. Recording Functions	11



1. Overview

PerfectPrime provides you a way to sense the invisible, measure the unfathomable, and analyze the improbable by providing thermal image and temperature measurements in a new way. This Guide provides you all the information you will need to operate the IR203.



The IR203 is powered by the host device, no charging or battery is needed



2. App Download

Scan the QR code below or enter the URL (<https://apps.apple.com/t-n/app/senxorproviewer/id1541291250>) to download the "SenXorProViewer" application and install it (only supports iOS Phone system).



QR Code



App



3. Product Specifications

3.1. General

Resolution	80 × 62
FOV (angles in degrees)	44.2° (H), 34.5° (V)
Maximum frame rate	15 FPS
Max scene temperature range	-40°C to 400°C
NETD	150mK
Accuracy	up to +/-1°C

3.2. Environmental

Operating temperature	-20 - 85°C
Storage temperature	-40 - 85°C

3.3. Interface

Power Consumption	300mW
iOS Dongle connector	Lightning
iOS Dongle size	56mm x 28mm x 14mm

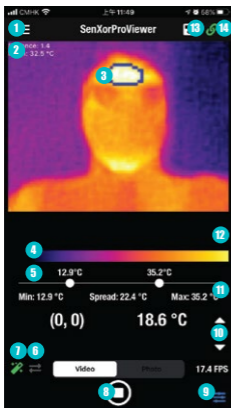
3.4. Mechanical

iOS Dongle weight	9.3 g
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4. Symbol Definition

You can download and install the Meridian SenXorProViewer App on Apple App Store. You need to install the App before you use the IR203.

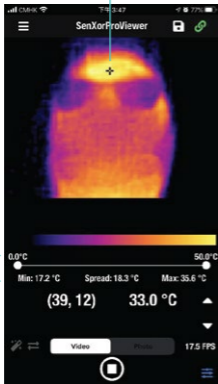


- 1 Settings
- 2 Contour Detector
Mean temperature
- 3 Contour Detector
Selected contour
- 4 Color Palette
temperature
adjustments
- 5 Min/Max
temperature And
spread
- 6 Flip Image
- 7 Auto Range
(temperature)
- 8 Start/Stop Capture
- 9 Image adjustments
- 10 FPS Up/Down
Display
- 11 Selected point
(x,y) temperature
- 12 Current color
palette
- 13 Save Video Button
- 14 Connection Status
(red not connected
Green connected)



5. Getting Temperature of a Point

CrossHair

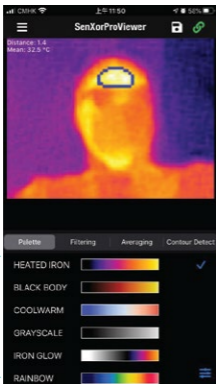


The SenXorProViewer App allows the user to get the temperature of a particular point by touching the location on the thermal picture. The crosshair on the thermal picture indicates the selected XY coordinates and the corresponding temperature is shown on the screen

Point XY and temperature



6. Choose Color Palette



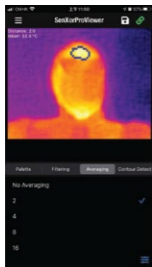
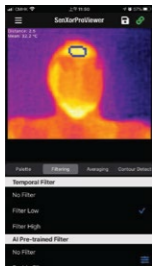
Choose palette

The SenXorProViewer App allows the user to choose preset color palettes to map temperature values to different colors, include grayscale, colors and combinations.

16 preset color palettes are provided for image visualization, temperature data is not affected. Tap the palette list, select one of the palettes on the drop-down list and result will be applied to the new thermal image.



7. Enable Filters for Better Picture Quality



The SenXorProViewer App supports the following types of image filtering that serve to improve the intrinsic noise of the detector:

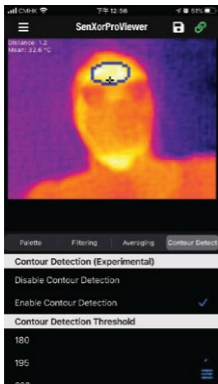
Temporal filters -- these work in reducing the temporal fluctuation of individual detector pixels from one thermal frame to the next:

- Simple rolling average -- accessed via the Averaging button, with recommended values of 2 or 4 (number of frames over which the averaging is performed).
- Predictive temporal filter -- access via the Temporal Filter. The strength of which can be selected between low and high, depending on the dynamics of the scene. For static scenes, high strength is recommended, while for scenes with motion, low strength is recommended to avoid ghosting artefacts in the video.

Spatial filter -- access via the AI Pre-trained Filter. This filter works by reducing the noise within an individual frame by considering the relation between the values of individual pixels within the frame. It is enabled by default and works best in conjunction with the temporal filters.



8. Contour Detection (Beta, Experimental)



The Contour Detection feature is for DEMO purpose only, not for medical advice or usage.

The SenXorProViewer App supports an indicative contour detection as an experimental feature. The function is based on the detection of the hottest region within the captured image-- then display the mean of the hottest region.

The SenXorProViewer App shows the contour of the hottest spot that is automatically detected. Since the model involves some parameters, the user has control over them to fine tune the threshold and obtain a more stable readout.

The model is intended for distance between the camera and the subject in the range of 0.7 to 2 m.



9. Menu Settings

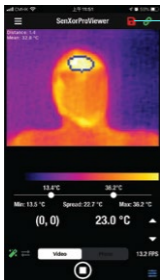
The setting of Filters, Contour Detection, Temperature Unit and Emissivity and Language Selection can be found in the menu. Each setting is saved after change and will be kept even the SenXorProViewer App is restarted.

Emissivity is a property of the material of each individual object in the field of view. It quantifies the ability of an objects surface to emit long-wave infrared radiation and strongly affects the temperature readout from the IR203. By default, the emissivity is set to 0.95 which is a representative value for many common objects with matt surface, as well as the human skin (in the range of 0.95 - 0.97). Note that metals tend to have a dramatically lower emissivity as low as 0.1, and it strongly depends on their surface processing. The user can adjust the emissivity according to the exact object of observation.





10. Recording Functions

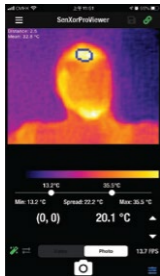


Save Video Button

Thermal video can be stored to the camera roll by pressing the save button on the video streaming screen.

To capture thermal photos, switch to photo mode

and press the camera button. The photos captured are stored in the camera roll.



Note: The SenXorProViewer App does not collect or save any thermal image or video unless the user selects to save a picture or video to the device.

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