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# **UIDAI Specifications**

# UIDAI Specifications

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## 1. Specification: Authentication Device

### 1.1. Fingerprint Scanner (FPS)

| Sr. No. | Parameters          | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01      | Minimum Platen Area | <p><b>Optical/ Multispectral / Capacitance technology</b></p> <p><b>1. If platen area is 15.24 mm x 20.32 mm or more:</b></p> <p>1.1. Provisional certificate would be issued without any field testing;</p> <p>1.2. Final certification would be subject to sensor-extractor meeting &lt;2% FRR in Aadhaar authentication system (at FAR of 0.01%) for which detailed guidelines will be published by STQC.</p> <p><b>2. If platen area is 12.8 mm x 16.5 mm but less than 15.24 mm x 20.32 mm,</b></p> <p>Certification would be subject to sensor-extractor meeting &lt;2% FRR in Aadhaar authentication system (at FAR of 0.01%) for which detailed guidelines will be published by STQC.</p> <p><b>3. Any other Technologies</b></p> <p>&lt;2% FRR in Aadhaar authentication set up (at FAR of 0.01%) would need to be demonstrated. Detailed guidelines and other requirements specific to the technology will be published separately by STQC.</p> |
| 02      | Image quality       | <p>Must be listed on “IAFIS Certified Product List” posted on <a href="https://www.fbi biospecs.org/IAFIS/Default.aspx">https://www.fbi biospecs.org/IAFIS/Default.aspx</a> under “PIV Single Finger Capture Devices”</p> <p><b>OR</b></p> <p>Lab Test conformance report showing compliance to ISO 19794-4 Annexure A</p> <p><b>OR</b></p> <p>any other equivalent conformance report (to be approved for equivalence by expert committee appointed by Competent Authority)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 03      | Extractor Quality   | <ul style="list-style-type: none"> <li>• MINEX compliance</li> <li>• Number of Minutiae generated by extractor to be in conformance to ISO Specification. Tested for at least 12 Minutiae points generated under test conditions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|           |                                                        |                                                                                                                                                                                           |
|-----------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>04</b> | <b>NFIQ Quality Software</b>                           | Inbuilt NFIQ quality software either at device level or extractor level.                                                                                                                  |
| <b>05</b> | <b>Resolution</b>                                      | Minimum 500 DPI with 5% margin on the lower side                                                                                                                                          |
| <b>06</b> | <b>Grey scale/ Image type</b>                          | 8 bit, 256 levels                                                                                                                                                                         |
| <b>07</b> | <b>Extractor &amp; Image Template Standard</b>         | ISO 19794-2 for fingerprint minutiae template and<br>ISO 19794-4 for Fingerprint Image Template                                                                                           |
| <b>08</b> | <b>Maximum Acquisition time(Placement to Template)</b> | < 2 secs                                                                                                                                                                                  |
| <b>09</b> | <b>Audio/Visual indication</b>                         | A/V indication either at device level or at application level for indicating various events like:<br><br>a) Indication for placing finger<br>b) Start of capturing<br>c) End of capturing |
| <b>10</b> | <b>Liveness Detection</b>                              | Preferable                                                                                                                                                                                |
| <b>11</b> | <b>Latent detection</b>                                | Preferable                                                                                                                                                                                |
| <b>12</b> | <b>Platen</b>                                          | Rugged, minimum IP 54 rating preferable<br>Prefer scratch resistant features                                                                                                              |
| <b>13</b> | <b>Preferred Operating Temperature</b>                 | 0 to 45 degrees Centigrade                                                                                                                                                                |
| <b>14</b> | <b>Preferred Storage Temperature</b>                   | 0 to 50 degrees Centigrade                                                                                                                                                                |
| <b>15</b> | <b>Preferred Humidity</b>                              | 10 to 90%                                                                                                                                                                                 |
| <b>16</b> | <b>ESD</b>                                             | >= 8Kv                                                                                                                                                                                    |
| <b>17</b> | <b>Environment, health and safety</b>                  | ROHS certification                                                                                                                                                                        |
| <b>18</b> | <b>Safety</b>                                          | UL or IEC60950 compliance                                                                                                                                                                 |

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|    |                              |                                                                                                                                              |
|----|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | EMC compliance               | FCC class A or equivalent                                                                                                                    |
| 20 | Operating system environment | Vendor needs to declare the compatible operating system                                                                                      |
| 21 | Connectivity                 | <ol style="list-style-type: none"> <li>Standard USB connectivity for PC based application.</li> <li>Connectivity for POS devices.</li> </ol> |

***Note:** These specifications are subject to change based on field findings.*

## 1.2. IRIS Scanner

### 1.2.1. Revised Iris sensor Specifications-

The Iris sensor for discrete and integrated Authentication Devices should have following specifications: -

| Category            | Parameter                    | Revised Specification / Description                                                                    |
|---------------------|------------------------------|--------------------------------------------------------------------------------------------------------|
| Optical and Imaging | Spatial Resolution           | > 40% modulation transfer function (MTF) at 2line pair/mm                                              |
|                     | Pixel Resolution             | > 15 pixels/mm                                                                                         |
|                     | Image Margins                | Left & right $\geq 0.6x$ iris radius;<br>Top & bottom $\geq 0.2x$ iris radius                          |
|                     | Imaging Wavelength           | Approximately 700-900 nm (near-infrared)                                                               |
|                     | Pixel Depth                  | Minimum 8 bits per pixel (256 grey levels)                                                             |
|                     | Sensor Signal to Noise Ratio | Noise imperceptible in captured images                                                                 |
|                     | Scan Type                    | Progressive scanning                                                                                   |
|                     | Output Image Format          | IMAGE_TYPE_CROPPED_AND_MASKED with JPEG2000 compression, ISO/IEC 19794-6:2011 compliant                |
|                     |                              | IMAGE_TYPE_VGA with JPEG compression >30 kb                                                            |
|                     |                              | IIR (K1)                                                                                               |
|                     | Contrast                     | Good grey level separation between iris, sclera, and pupil; sufficient contrast to reveal iris texture |
|                     | Optical Distortion           | Minimal spherical aberration, chromatic aberration, astigmatism, coma                                  |
|                     | Noise                        | No image resizing or manipulation except recommended JPEG2000                                          |
|                     | Capture Mode                 | Fully automatic capture with real-time built-in quality checks                                         |
|                     | Capture Time                 | < 3 seconds (improved from current < 5 seconds)                                                        |
|                     | Capture Distance             | $\geq 150$ mm                                                                                          |
|                     | Optical Safety               | Exempt Group per IEC 62471                                                                             |
|                     | Operational Performance      | FRR<1% at FAR of 1 in 1,00,000 with images conforming to                                               |
|                     |                              | IMAGE_TYPE_CROPPED_AND_MASKED of size                                                                  |

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|                                         |                                                         |                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                                         |                                                         | 3.5 kb                                                                                                                    |
|                                         |                                                         | 20 persons for Provisional certification and 5000 for final certification                                                 |
| <b>Environmental &amp; Durability</b>   | Operating Temperature                                   | 0 to 50°C (IEC 68-2-2)                                                                                                    |
|                                         | Storage Temperature                                     | 0 to 50°C                                                                                                                 |
|                                         | Dry Heat Test as per 60068-2-2                          | Temp: 50deg ± 2 °C<br>Recovery Period: 1 to 2 Hours                                                                       |
|                                         | Damp Heat Cyclic Test (First Cycle) as per 60068-2-30   | Temp: 40 °C ± 2 °C<br>Humidity (RH): 90% ± 2% Duration of Test: 1 cycle of 24Hrs (12h + 12h)                              |
|                                         | Cold test as per 60068-2-1                              | Temp: 0 °C ± 2 °C<br>Duration: 16 Hrs                                                                                     |
|                                         | Damp heat Cyclic Test (Five Cycles) as per 60068-2-30   | Temp: 40 °C ± 2 °C<br>Humidity (RH): 90% ± 2% Duration of test: 5 cycles of 24 Hrs each (12h + 12h)                       |
|                                         | Durability Test(IP 54) as per IEC 60529                 | Dust Test Duration: 8 Hrs<br>Recovery Period: 1 to 2 Hrs                                                                  |
|                                         | Drop test as per 60068-2-31                             | No. of drops: Six drops (one drop on each face)<br>Height of fall: 1000 mm unpacked. Withstand 1-meter drops on all faces |
|                                         | Vibration Test as per IEC60068-2-6                      | Frequency: 10 ... 150 Hz<br>0.15mm or 2.0g No. of Sweeps: 10 in each axis                                                 |
|                                         | Humidity                                                | 10% to 90% non-condensing                                                                                                 |
|                                         | IP Rating                                               | Minimum IP65 dust and water splash resistance                                                                             |
| <b>Occupational Health &amp; Safety</b> | Optical Safety Compliance                               | IEC 62471 Exempt Group, IEC 60950 & BIS 13252-1                                                                           |
|                                         | Material Compliance                                     | RoHS and REACH compliant                                                                                                  |
|                                         | User Comfort                                            | Ergonomic design minimizing strain, accommodating disabilities                                                            |
|                                         | E- Waste management                                     | Compliance                                                                                                                |
| <b>Electro-Magnetic Compatibility</b>   | Electro-Magnetic Compatibility                          | FCC Class B or equivalent                                                                                                 |
|                                         | ESD (Electro Static Discharge) Test as per IEC61000-4-2 | ±8 kV air discharge, ±4 kV contact discharge (IEC61000-4-2)                                                               |
|                                         | Radiated Emission                                       | FC part 15B/IEC-CISPR 22 CLASS B standard                                                                                 |
|                                         | Radiated Immunity                                       | As per IEC/EN 61000-4-3:2006+A2:2011                                                                                      |
| <b>Usability and Ergonomics</b>         | Capture Aid (Resident)                                  | Visual aids (LED indicators, LCD display), optional eye cup/guard (post-pandemic safety compliant), audio feedback        |
|                                         | Actionable Feedback (Operator)                          | Visual (viewfinder, LEDs, LCD), audio cues for alignment and capture guidance                                             |
|                                         | Informative Feedback (Resident)                         | Visual (LED on/off), audio/tactile (beep, vibration) indicating capture progress and completion                           |
|                                         | Special Conditions Support                              | Supports users with squint eyes, droopy eyelids, blindness, lazy eyes                                                     |

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|                                         |                            |                                                                                              |
|-----------------------------------------|----------------------------|----------------------------------------------------------------------------------------------|
| <b>Security Features</b>                | Liveness Detection         | Multi-modal liveness detection (infrared reflectance, pupil dynamics, anti-replay) ISO 30107 |
|                                         | Latent Iris Detection      | Detect latent iris patterns to avoid false captures                                          |
|                                         | Template Security          | ISO 19794-6 compliant templates with embedded cryptographic signatures                       |
|                                         | Data Transmission Security | End-to-end encryption (AES-256 or higher)                                                    |
|                                         | Tamper Detection           | Hardware-level tamper detection and alert system                                             |
|                                         | Firmware Security          | Secure boot and signed firmware updates                                                      |
| <b>Connectivity &amp; Compatibility</b> | Connectivity               | USB 2.0 or higher;                                                                           |
|                                         |                            | optional Bluetooth LE, Wi-Fi with secure pairing                                             |
|                                         | OS Support                 | Windows 10+, Linux kernel 5.x+, Android 10+, iOS15+, MacOS                                   |
|                                         | Software API               | Full UIDAI API compliance with secure authentication protocols                               |
| <b>Performance Metrics</b>              | False Rejection Rate (FRR) | < 1% at FAR of 1 in 1,00,000                                                                 |
|                                         | Certification Testing      | Provisional: 100 subjects; Final: 5,000 subjects                                             |
|                                         | Capture Time               | < 3 seconds                                                                                  |
|                                         |                            |                                                                                              |

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## **1.2.2. Usability and ergonomics**

Device usability and form factor have a significant impact on image quality and matching accuracy. Following Usability requirements shall be adhered:

### **Ease of Use**

- It is easy and quick to position/align the resident's eye, within the capture volume of the device
- It encourages the resident to sufficiently open their eyes and look (gaze) in a specific direction
- It should quickly and automatically capture the irises
- It gracefully handles effects from the motion of the camera in respect to the eye (linear and angular)
- It should be easy to use by residents with special conditions such as squint eyes, blindness, droopy eyes, lazy eyes and other handicaps

### **Usability Design**

The features of iris devices required in improving device usability in the Indian context are classified into three categories:

- **Capture aid:** this refers to all the assistance provided to the resident in encouraging correct and quick usage of the device
- **Actionable feedback:** this refers to all the feedback provided to the operator to enable the operator to take a physical or verbal action during the iris capture
- **Informative feedback:** This refers to all the feedback provided to resident about the capture process.

The device design shall incorporate these features.

### **Capture Aid (for resident)**

At least one of the below capture aids to be provided to the resident for ease-of use:

- **Physical (removed due to covid-19):**  
Physical aids can be provided to make it intuitive for the resident to align the iris camera to their eye(s). The resident can get tactile feedback and intuitively position the device correctly. The examples are eye cup, eye guard, goggles, etc. The physical structure can assist alignment in z and/or restrict the x and y alignment by utilizing position of the eyes and/or nose
- **Visual:**  
Visual aid can be implemented in a number of ways, for example, by providing a viewfinder for the resident to look through, or look at the reflection of their own eyes in a mirror, or by changing colors of LEDs to convey some predetermined messages such as too far or too close, or a display such as LCD showing the resident and operator what to do for enabling quickcapture.

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- **Audio:**

Audio instructions can be provided to the resident by the device or host to aid the alignment and capture. Due to large diversity of languages in India, this is not expected to be very effective, except in case of blind/handicap residents.

## **Actionable Feedback (for operator)**

At least one of the below methods of actionable feedback be provided to the operator for ease-of-use:

**Visual:** visual feedback may be provided to the operator to take an action to assist the resident in iris capture.

- A viewfinder can be used by the operator to bring the iris camera to the eye level of the resident,
- LEDs of predetermined color and meaning can provide feedback to the operator if the resident is too far or too close to the iris capture device, or a display such as LCD can show in large icons or video.
- Note that it is better to have this feature on the device itself so that the feedback and the resident are both in the line of sight of the operator and the operator does not have to look at visual feedback that is in a different direction than the resident. If a cell phone or tablet is used as the host device to the iris camera, the host display can be used for showing actionable feedback since the operator can hold the host in the hand and have it in the same line of sight as the resident.

**Audio:** audio can be used to provide actionable feedback to the operator. The operator then takes a physical action or provides a verbal instruction to the resident. The actionable feedback to include the following:

- How to correct alignment in x, y, and z
- Open eyes wider (in case of occlusion from eyelids)
- Look straight or look at “object” (in case of incorrect gaze); the object can be reflection of one’s own eye, light source, or some other object
- Hold steady (in case of motion blur)
- Improve focus by moving closer or farther

## **Informative Feedback (for resident)**

- **Visual:** LED/light is on when capturing and turn off when capture is finished; and/or
- **Audio or tactile:** a beep/click and/or vibration of the device can be used to indicate that capture is done.

The following informative feedback to the resident is required:

- Iris capture is in progress
- Capture complete

Actionable feedback streamlines the process, improves speed and avoids confusion.

## **Notes:**

1. Per ISO/IEC 19794-6:2011, Annex B.1 measured by MTF using a sinewave target. In addition, upper limit of 1.05 on MTF is required at all frequencies to discourage

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image processing that produces excessive edge sharpening, which can add false details to an image. The output image of sine wave target shall not exhibit any significant amount of aliasing. Aliasing will be investigated by quantitative analysis and from visual observation of the softcopy-displayed image.

2. Per ISO/IEC 19794-6:2011, annex B.6, the image should have a dynamic range spanning 256 grey levels, allocating one byte (8 bits) per intensity value, and providing at least 7 bits of useful intensity information.

## **1.2.3. Non-Optical parameters, Environmental Test Specifications for Integrated Iris Authentication Devices**

| <b>Sr. No.</b> | <b>Characteristics</b>                                    | <b>Environment Test Specification (for mobile devices incorporating IRIS Devices)</b>                                           |
|----------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 01             | Operating temperature                                     | 0...50 C (IEC 68-2-2)                                                                                                           |
| 02             | Storage temperature                                       | 0...50 C (IEC 68-2-2)                                                                                                           |
| 03             | Dry Heat Test as per IEC 60068-2-2                        | Temp: 50deg±2 C<br>Recovery period: 1to 2 Hours                                                                                 |
| 04             | Damp Heat Cyclic Test (First Cycle) as per IEC 60068-2-30 | Temp: 40 C ± 2 C<br>Humidity (RH): 90% ± 2%<br>Duration of Test: 1 cycle of 24Hrs. (12h + 12h)<br>Recovery Period: 1 to 2 hours |
| 05             | Cold test as per IEC 60068-2-1                            | Temp: -10 C ± 2C<br>Duration: 16 Hrs<br>Recovery Period: 1 to 2 Hrs                                                             |
| 06             | Damp heat Cyclic Test (five Cycles) as per IEC 60068-2-30 | Temp: -10 C ± 2 C Humidity (RH): 90% ± 2%<br>Duration of Test: 5 cycles of 24Hrs each(12h+12h)<br>Recovery Period: 1 to 2 hours |
| 07             | Drop/Topple Test as per IEC 60068-2-31                    | One topples each on four bottom edges<br>In unpacked condition                                                                  |
| 08             | Vibration Test as per IEC 60068-2-6                       | Frequency: 10...150 Hz, 0.15mm or 2.0g No. of Sweeps: 10 in each axis<br>In packed condition                                    |

For API compliance, refer “Other Parameters” under Section 1.2.3. Other tests specified under “Other Parameters” are not applicable for Integrated Iris Devices as these are governed by the host device (Mobile / Tablet) and as such the measurement on IRIS authentication device is not possible in isolation. The “Usability and ergonomics” for the Integrated Iris Devices would be the same as specified in “Other Parameters” under Section 1.2.3.

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## 1.3. Registered Device Service

### 1.3.1. L0 Devices

Aadhaar Registered Devices - Technical Specifications published by UIDAI  
[https://uidai.gov.in/images/resource/Aadhaar\\_Registered\\_Devices\\_2\\_0\\_4.pdf](https://uidai.gov.in/images/resource/Aadhaar_Registered_Devices_2_0_4.pdf)

### 1.3.2. L1 Devices

Aadhaar Registered Devices - Technical Specifications published by UIDAI,  
[https://uidai.gov.in/images/resource/Aadhaar\\_Registered\\_Devices\\_2\\_0\\_4.pdf](https://uidai.gov.in/images/resource/Aadhaar_Registered_Devices_2_0_4.pdf)

L1 traceability matrix document  
[http://www.stqc.gov.in/sites/upload\\_files/stqc/files/L1%20traceability%20matrix%20document.pdf](http://www.stqc.gov.in/sites/upload_files/stqc/files/L1%20traceability%20matrix%20document.pdf)

## 2. Specification: Pre-Certified Hardware (PCH)

Aadhaar Registered Devices - Technical Specifications published by UIDAI  
[https://uidai.gov.in/images/resource/Aadhaar\\_Registered\\_Devices\\_2\\_0\\_4.pdf](https://uidai.gov.in/images/resource/Aadhaar_Registered_Devices_2_0_4.pdf)

L1 traceability matrix document  
[http://www.stqc.gov.in/sites/upload\\_files/stqc/files/L1%20traceability%20matrix%20document.pdf](http://www.stqc.gov.in/sites/upload_files/stqc/files/L1%20traceability%20matrix%20document.pdf)

## 3. Specification: Enrolment Device

### 3.1. Fingerprint Scanner (FPS)

| Sr. No | Device Characteristics         | Values                                                                                          |
|--------|--------------------------------|-------------------------------------------------------------------------------------------------|
| 01     | Capture mode                   | Plain live scan capture                                                                         |
| 02     | Image Acquisition Requirements | Setting level 31 or higher (Section 9.1 of Biometric Design Standards for UIDApplications V1.0) |
| 03     | Image evaluation frame rate    | > 3 frames/sec, continuous image capture                                                        |
| 04     | Capture mode                   | Auto capture with built-in quality check (incorporates NIST quality considerations)             |
| 05     | Capture area                   | > 76mm x 80mm                                                                                   |
| 06     | Connectivity <sup>1</sup>      | USB 2, USB-IF certified                                                                         |
| 07     | Power                          | Through USB                                                                                     |
| 08     | Dimension (W X H X D)          | < 160mm x 160mm x 160mm                                                                         |
| 09     | Weight                         | Maximum 2.5 Kg.                                                                                 |
| 10     | Operating temperature          | 0 – 50 C                                                                                        |
| 11     | Humidity                       | 10 – 90% non-condensing                                                                         |

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|    |                  |                                                                                                                                     |
|----|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 12 | Durability/Shock | IP 54                                                                                                                               |
| 13 | Standards        | UL certified (if applicable). Meets ISO 19794-4:2005 Section 7 and Annex A certification requirements (IAFIS Appendix F certified). |
| 14 | Software API     | Compliant with UIDAI Device Capture API specification V1.0 RC 3                                                                     |

<sup>1</sup>Total of only 1 USB port available for connectivity and power.

## 3.2. IRIS Scanner

| Sr. No. | Device Characteristics                       | Stationary (mounted: wall, tripod or stand) <sup>2</sup>                            | Hand-held <sup>3</sup>  | Hand-held with alignment aid <sup>4</sup> |
|---------|----------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------|
| 01      | Iris Diameter (In pixel)                     | > 210                                                                               |                         |                                           |
| 02      | Spatial Resolution<br>Pixel Resolution       | > 60% @ 4.0 Lp/mm<br>> 16 Pixels/mm                                                 |                         |                                           |
| 03      | # of simultaneous captured eyes <sup>5</sup> | 2                                                                                   |                         |                                           |
| 04      | Viewfinder                                   | External                                                                            | Internal                | External or Internal                      |
| 05      | Capture distance                             | > 750 mm                                                                            | > 50 mm                 | > 20 mm                                   |
| 06      | Capture volume (width/height/depth)          | > 250x500x500mm                                                                     | > 20x15x12mm            | > 20x15x12mm                              |
| 07      | Exposure time                                | < 15ms                                                                              | < 33 ms                 | < 33 ms                                   |
| 08      | Imaging wavelength                           | 700-900 nm                                                                          |                         |                                           |
| 09      | Spectral Spread                              | Power in any 100nm band > 35% of total power                                        |                         |                                           |
| 10      | Scan type                                    | Progressive                                                                         |                         |                                           |
| 11      | Image margins                                | Left & right: 0.50x iris diameter, Top & bottom: 0.25x iris diameter                |                         |                                           |
| 12      | Pixel depth                                  | > 8 bits/pixel                                                                      |                         |                                           |
| 13      | Image evaluation frame rate                  | > 5 frames/sec, continuous image capture                                            |                         |                                           |
| 14      | Capture mode                                 | Auto capture with built-in quality check (incorporates NIST quality considerations) |                         |                                           |
| 15      | Sensor signal to noise ratio                 | > 36 DB                                                                             |                         |                                           |
| 16      | Connectivity <sup>6</sup>                    | USB 2, USB-IF certified Or Networked (TCP/IP)                                       | USB 2, USB-IF certified |                                           |
| 17      | Power                                        | USB or independent PS                                                               |                         |                                           |
| 18      | Weight                                       | NA                                                                                  | < 1 kg                  | < 1 kg                                    |
| 19      | Dimension                                    | <300x100x300mm                                                                      | < 220x200x100mm         | < 220x200x100mm                           |
| 20      | Operating temperature                        | 0-49C                                                                               |                         |                                           |

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|    |                  |                                                                 |
|----|------------------|-----------------------------------------------------------------|
| 21 | Humidity         | 10 – 90% non-condensing                                         |
| 22 | Durability/Shock | IP54                                                            |
| 23 | Safety Standard  | Exempt Group per IEC 62471:2006-07                              |
| 24 | Standards        | FCC Class A, RoHS                                               |
| 25 | Software API     | Compliant with UIDAI Device Capture API specification V1.0 RC 3 |

<sup>2</sup>Stationary: Any capture process where the device is stationary and the subject is required to position and rest himself/herself.

<sup>3</sup>Hand-held: Operator operates and holds the camera and the subject is stationary.

<sup>4</sup>Alignment aid: Camera has mechanical fixture for alignment. Optical viewfinder is not considered alignment aid.

<sup>5</sup>Considered simultaneous if second eye is captured within 2 seconds of first eye done without moving the device.

<sup>6</sup> Total of only 1 USB port will be available for connectivity and power.

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## 4. Specification: QR Code Scanner

| Sl.No. | Description                      | Specifications                                                                   |
|--------|----------------------------------|----------------------------------------------------------------------------------|
| 01     | Image Sensor (Pixels)            | 640 x 400 pixels                                                                 |
| 02     | Symbologies                      | QR Code                                                                          |
| 03     | Pitch/Skew                       | +/- 60°, +/- 60°                                                                 |
| 04     | Scan Angle                       | Roll 0-360°                                                                      |
| 05     | Min. Symbol Contrast             | <= 25%                                                                           |
| 06     | Interface                        | USB                                                                              |
| 07     | Dimensions                       | Ergonomically designed product                                                   |
| 08     | Weight                           | <250g                                                                            |
| 09     | Indication                       | Buzzer, Indicator light LED                                                      |
| 10     | Operating Power                  | must be as per USB 2.0/3.0 standard requirement                                  |
| 11     | Input Voltage                    | must be as per USB 2.0/3.0 standard requirement                                  |
| 12     | Motion tolerance                 | Up to 5 in.(13 cm) per second for 13 mil UPC                                     |
| 13     | Light Source                     | LED 350-770 nm                                                                   |
| 14     | Operating Temperature            | 0°C to 50°C                                                                      |
| 15     | Storage Temperature              | -20° to 70° C                                                                    |
| 16     | Humidity                         | 5% to 95% non-condensing                                                         |
| 17     | ESD                              | +/- 4 kV contact discharge; +/- 8 kV air discharge                               |
| 18     | DROP                             | 1m, Unpacked Condition, As per 60068-2-31                                        |
| 19     | Environment Sealing              | IP42, as per IEC 60529                                                           |
| 20     | Decode Range                     | 1” to 10” for 20 mil QR Code                                                     |
| 21     | Service Center                   | Should Be Available in India                                                     |
| 22     | Safety Standards like LED safety | IEC 62471:2006<br>IEC 60950-1:2005 + A1 + A2 (optional)<br>IS 13252(PART 1):2010 |