

PRODUCT · DC-AIR®

# DC-Air®

## True Wireless® Intraoral X-Ray Sensor

DC-Air® is Athlos's premium wireless intraoral X-ray sensor. A single-crystal silicon / CMOS direct-conversion detector with 26 µm pixels, 16-bit grayscale and 1.25 megapixel resolution, paired with BLE 5.0 True Wireless® operation and dynamic per-exposure self-calibration.

Also known as DCiS / Athlos-Air® / Athlos-1



### 1 Key highlights

|                                        |                                       |                                          |
|----------------------------------------|---------------------------------------|------------------------------------------|
| DETECTOR Single-crystal silicon / CMOS | PIXEL PITCH 26 µm                     | ACTIVE AREA 35.1 × 24.7 mm               |
| RESOLUTION 1,249,920 px · 16-bit       | WIRELESS Bluetooth LE 5.0 · up to 3 m | BATTERY Li-ion · up to 10 h / 300 X-rays |

### 2 Kit contents

|                                                                  |                                                                                   |                                                                          |                                                                       |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------|
| SENSOR · WIOS-S2<br><b>DC-Air®</b><br>Intraoral · universal size | CHARGING · WIOS-DS2<br><b>Docking station</b><br>Magnetic · USB-C · charge & pair | POSITIONING<br><b>Zero Profile® holders</b><br>Anterior · BW · posterior | INTEGRATION<br><b>TWAIN driver</b><br>Single-layer · Athlos SDK (C++) |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------|

### 3 Technical specifications

| Detector & image3.1      |                                  |           |                                          | Imaging performance & exposure3.2 |            |    |                                                  |
|--------------------------|----------------------------------|-----------|------------------------------------------|-----------------------------------|------------|----|--------------------------------------------------|
| Detector                 | Single-crystal direct conversion | Si / CMOS | Silicon-based intraoral sensor           | MTF @ 5 lp/mm                     | > 70       | %  | Image Accuracy (IA)                              |
| Pixel physical size      | 26                               | µm        | Square pixel                             | MTF @ 10 lp/mm                    | > 40       | %  | High-frequency contrast retention                |
| Active area              | 35.1 × 24.7                      | mm²       | Universal size — anterior, BW, posterior | Exposure time                     | 0.05 – 0.5 | s  | Compatible with standard intraoral X-ray sources |
| Number of pixels         | 1,249,920                        | px        | ≈ 1.25 megapixel                         | Tube voltage                      | 60 – 70    | kV | Recommended operating range                      |
| Grayscale depth          | 16                               | bit       | 65,536 gray levels                       | Tube current                      | 2 – 8      | mA | Recommended operating range                      |
| Sensor mode of operation | Global shutter                   | –         | Whole frame captured simultaneously      | Trigger to display                | ≈ 6        | s  | From X-ray trigger to image on PC                |
| Triggering               | Automatic on X-ray start         | –         | No external trigger wiring               | Onboard image storage             | 1 image    | –  | Safety buffer until handoff                      |
| Self-calibration         | Dynamic · per capture            | –         | Consistent quality with every exposure   | Patient population                | General    | –  | Adult & pediatric intraoral exams                |

### 4 Clinical applications

|                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Intraoral radiography</b> <ul style="list-style-type: none"><li>- Periapical imaging — anterior &amp; posterior</li><li>- Bitewing imaging — caries detection &amp; interproximal</li><li>- Full-mouth series (FMX)</li><li>- Endodontic working-length &amp; treatment verification</li></ul> | <b>Clinical settings</b> <ul style="list-style-type: none"><li>- General dental practice — replaces wired sensors &amp; phosphor plates</li><li>- Multi-operatory clinics — one sensor moves between rooms</li><li>- Specialist practice — endodontics, prosthodontics, periodontics</li><li>- Premium / boutique clinics prioritising patient experience</li></ul> |
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Technical specifications (continued)

| Wireless connectivity3.3 |                       |         |                                       | Battery & docking station3.4 |             |                |                                  |
|--------------------------|-----------------------|---------|---------------------------------------|------------------------------|-------------|----------------|----------------------------------|
| Radio                    | Bluetooth® Low Energy | BLE 5.0 | True Wireless® connectivity           | Sensor battery type          | Lithium-Ion | –              | Rechargeable, integrated         |
| Operating range          | up to 3               | m       | Sensor to docking station             | Battery capacity             | 32          | mAh            |                                  |
| BLE Rx sensitivity       | –89                   | dBm     |                                       | Recharge cycle               | up to 10    | h / 300 X-rays | Typical clinical day             |
| Trigger to display time  | ≈ 6                   | s       | From X-ray trigger to on-screen image | Battery gauge                | Yes         | –              | Charge state visible in software |
| BLE location services    | Yes                   | –       | For device finding (while powered)    | Docking                      | Magnetic    | –              | For robustness and ease of use   |
| Onboard storage          | 1 image               | –       | Safety buffer                         | Dock input voltage           | +5 ± 10%    | V DC           | USB-powered                      |
|                          |                       |         |                                       | Dock input power (max)       | 2.5         | W              |                                  |

| Environmental & enclosure3.5    |                   |     |                                  | Interfaces3.6               |                    |   |                                             |
|---------------------------------|-------------------|-----|----------------------------------|-----------------------------|--------------------|---|---------------------------------------------|
| Operating temperature           | +10 to +40        | °C  | Ambient                          | Wireless interface          | BLE 5.0            | – | Sensor → docking station                    |
| Transportation temperature      | –20 to +50        | °C  |                                  | Wired interface             | USB 2.0 High Speed | – | Docking station → PC                        |
| Storage temperature (long term) | 0 to +40          | °C  |                                  | Connector (docking station) | USB-C              | – |                                             |
| Humidity (non-condensing)       | 30 – 95           | %RH |                                  | Cable (dock to PC)          | USB-C → USB Type A | – | Standard supplied                           |
| IP protection level             | Enhanced IP67     | –   | Dust-tight · water-resistant     | Triggering                  | Automatic          | – | On X-ray start — no external trigger wiring |
| Encapsulation                   | Ultrasonic bonded | –   | Robust seal, no glue lines       | Accelerometer               | N/A                | – | Not equipped                                |
| Encapsulation material          | PPSU              | –   | Hydrolytic stability & toughness |                             |                    |   |                                             |
| Biocompatibility                | ISO 10993         | –   | Agency rating                    |                             |                    |   |                                             |

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Software & compatibility

| End-user software4.1                                                                                                                                                                                                                                                          |                              |   |                                 | OEM integration4.2 |                          |   |                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---|---------------------------------|--------------------|--------------------------|---|--------------------------------------|
| Interface                                                                                                                                                                                                                                                                     | Optimised single-layer TWAIN | – | Driver included                 | Athlos SDK         | Included                 | – | Source-code examples for integration |
| Acquisition workflow                                                                                                                                                                                                                                                          | Direct to PMS                | – | No intermediate viewer required | SDK language       | C++                      | – | Calling-function definitions         |
| Compatible imaging software:<br>Dentrix Ascend · Eaglesoft · Open Dental · Dexis · TigerView · Romexis · Acteon · Apteryx · tab32 · MOGO · Dovetail · Curve Dental · XDR Radiology · TDO · VistaSoft · Theia · DentalEye · ArchiMED suite — plus most TWAIN-enabled software. |                              |   |                                 | Image processing   | Locally adaptive filters | – | Advanced, included                   |
|                                                                                                                                                                                                                                                                               |                              |   |                                 | Image output       | Raw / processed          | – | 16-bit grayscale                     |

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Ordering & configuration

| Order codes5.1       |                    |           |                                                      |
|----------------------|--------------------|-----------|------------------------------------------------------|
| DC-Air® sensor       | WIOS-S2            | universal | Wireless Intraoral Sensor                            |
| Docking station      | WIOS-DS2           | –         | Magnetic dock, USB-C                                 |
| DC-Air® standard kit | WIOS-S2 + WIOS-DS2 | kit       | Sensor · dock · Zero Profile® holders · TWAIN driver |

|                 |              |                    |                     |
|-----------------|--------------|--------------------|---------------------|
| DOCUMENT        | REVISION     | STATUS             | ORIGIN              |
| DCAIR-DS-2026.1 | A · May 2026 | Production release | Athlos Oy · Finland |

COMPANION

For the commercial narrative, clinical workflow imagery and the full DC-Air® award history (Dental Product Shopper, Clinicians Report, Dental Advisor 2024/2025), see the **DC-Air® Brochure**.

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Contact

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