



**Subject:** ADR100 Getting Started Guide

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# ADR100

## Photo ID Reader

### Getting Started Guide

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## Warnings

This manual contains important information regarding the installation and operation of the ADR100 Photo ID Reader. For safe and reliable operation of the imager, installers must ensure that they are familiar with, and fully understand, all instructions contained herein.

## Warranty

Access Ltd warrants that this product shall be free from defects in workmanship and materials for a period of one year from the date of original purchase. If the product should fail to operate correctly in normal use during the warranty period, Access will replace or repair it free of charge. No liability can be accepted for damage due to misuse or circumstances outside Access' control. Access will not be responsible for any loss, damage or injury arising directly or indirectly from the use of this product. Access' total liability under the terms of this warranty shall in all circumstances be limited to the replacement value of this product.

## Radio Frequency Energy

### European EMC Directive 2014/30/EU

This product complies with the requirements of this directive by meeting the following standards:

EN 55022:2010: Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement.

BS EN 55024:2010+A1:2015: Information technology equipment. Immunity characteristics. Limits and methods of measurement.



### FCC Compliance Statement (United States)

This equipment generates, uses and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

### Canadian Department of Communications RFI statement

This equipment does not exceed the class A limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le règlement sur le brouillage radioélectriques publié par le ministère des Communications du Canada.

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# 1. Overview

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The ADR100 Photo ID Reader captures a full-colour image of an ID card together with ultraviolet (UV) and, where the option is installed, infrared (IR) images. This device has been designed for indoor and outdoor use, under all lighting conditions and weather – overcast, bright sun, rain.

When a photo ID card is presented to the reader the photograph on the card is automatically detected, cropped and rotated, allowing both the holder's portrait and card images to be displayed right-way-up. When reading an ICAO-compliant driving licence or identity card, the Photo ID Reader will also decode its Machine Readable Zone (MRZ).

Access-IS Document Reader Software (ADRS) is the perfect partner for the ADR100. Capable of standalone use, ADRS provides a graphical display that delivers an instant visual snapshot of document data, resulting in a more efficient and effective workflow. More advanced users can take advantage of its powerful programming interface, which allows the software to be integrated into larger systems.

- Full-page capture of credit card sized documents in colour and UV, with an option to also capture IR greyscale images.
- Reads ID cards, driving licences and, when fitted with the IR option, resident permits conforming to ICAO 9303.
- Option to also read 1D and 2D barcodes.
- Designed to be used indoors or outdoors in any weather.
- Audible beep to confirm successful data capture.
- Replaceable 4 mm toughened and scratch-resistant glass face.
- Robust, compact and maintenance-free design.
- Supports ID-1 (credit card) sized documents including:
  - ▶ All US state and federally-issued ID cards, such as driver's licenses, photo IDs, voter IDs, social security cards, medical ID cards, immigration IDs and resident permits.
  - ▶ All North American, European and other national driving licences.
  - ▶ All European and other national ID and e-ID cards.
  - ▶ EHIC (European Health Insurance Card).
  - ▶ Travel tickets.
  - ▶ Any CR-80/ID1 documents.



*Figure 1: ADR100 Photo ID Reader*

## 2. Installation

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The ADR100 is simple to install. You can connect the product before or after you install the Access-IS Document Reader Software (ADRS) on the host computer.

Refer to ***Installing the software*** (on page 9) for software installation instructions.

### 2.1 Opening the box

Unpack the ADR100 and ensure that you have the following items:

- Advisory notice card.
- ADR100 Photo ID Reader.
- USB 2.0 cable.
- 24 V DC power supply unit.

Report any missing items or damage immediately to your Sales Representative.

### 2.2 Connecting the ADR100 to the host

Connect the ADR100 directly to a USB port on the host computer. Ensure that the host is running Windows XP or above.

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**Note:** *The ADR100 is approved for use with a USB cable no longer than 3 m total length. If a longer cable is used, you should fit a DC EMC filter to the power supply. Please contact the Access-IS support team for details.*

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1. Plug the white Molex power connector into the 24 V DC power supply supplied by Access-IS or your own power supply unit.
2. Plug the micro USB connector into the ADR100.
3. Ensure the power supply is connected to an available power outlet using a suitable IEC power cord.
4. Connect the other end of the USB cable to a USB 2.0 socket on the host PC.

When you connect the ADR100 to a USB port, Windows automatically detects the device and installs the required standard Windows drivers, which may take a few minutes.

5. Install the software (see ***Access-IS Document Reader Software*** (on page 9)).

No additional drivers are needed.

## 2.3 Mounting

The ADR100 is an OEM device designed for integration into self-service kiosks. The device has been designed for indoor and outdoor use, under all lighting conditions and weather – overcast, bright sun, rain.

**Warning:** The quality of the UV image can be adversely affected in high brightness conditions due to UV light emitted from the sun being transmitted through the scanned document.

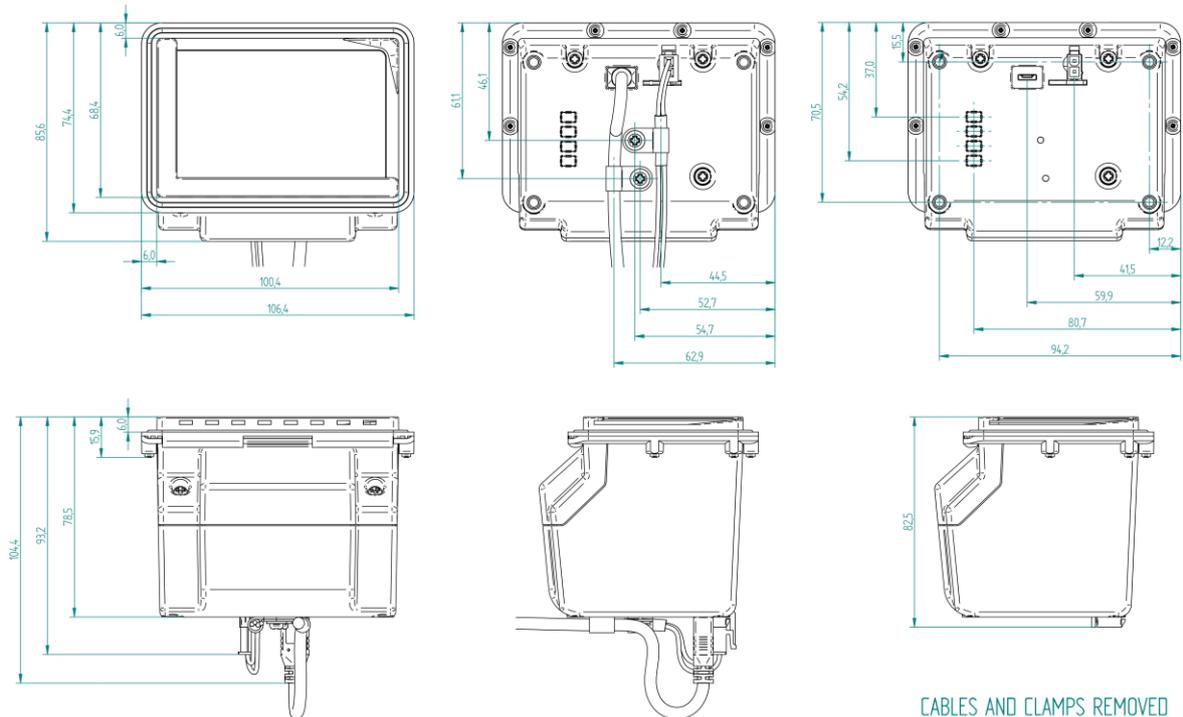


Figure 2: ADR100 dimensions (in millimetres)

### 2.3.1 Mounting points

When mounting the ADR100, use four M4 screws (not provided) to mount the unit. From the base of the ADR100 (bottom of the plastic housing), the minimum insertion depth is 3 mm. The maximum insertion depth is 6 mm.

## 2.4 Testing the device

Once you have connected the device and installed the software (see **Access-IS Document Reader Software** (on page 9)), you can test the device. To do this, place an ID document on the glass platen and check that it is detected and captured by the ADR100.

When using a document with an ICAO-compliant MRZ and the ADR100's IR option is fitted, the document reader software should display a visual snapshot of the document's data, including images. If the device fails to respond when connected to the host, refer to the *Troubleshooting* section of this document.

## 2.4.1 ADR100 status indicators

Four indicators on the back of the device allow you to check the status of the ADR100.



Figure 3: The ADR100 rear view, showing lighting indicators and cable connections

Table 1: ADR100 status indicators

Colour	Description
Blue	The ADR100 is switched on and has power. Communication with the document reader software's Application Programming Interface (API) is established and the ADR100 can read a document.
Orange	The ADR100 is busy reading a document, or the detected document is not stable.
Red	Bad read indicator.
Green	Good read indicator.

If all of these indicators are illuminated, the ADR100 is switched on, but there is no communication between the ADR100 and the document reader software's API.

When ADRS is started, only the blue power indicator illuminates; the ADR100 is in standby mode waiting to read a document. The ADR100 is not ready to scan a document if the blue power indicator is not illuminated.

## 2.5 Troubleshooting

If the ADR100 does not appear to be working, refer to the following table to help identify and resolve the problem. For further assistance, contact **Customer Support** ([support@access-is.com](mailto:support@access-is.com)).

Alternatively, use the *Contact Customer Support* page on the Access-IS website.

**Note:** Do not attempt to disassemble the ADR100 if it does not operate correctly. Any attempt to do so may be dangerous and will invalidate the warranty.

Table 2: Troubleshoot ADR100

Problem	Solution
Persistent 'bad reads' (A bad read is defined as more than 7 misread characters)	Ensure that you place the document correctly in the document guide. If the document is correctly placed, check the document window, and clean as necessary.
The ADR100 is not detecting a document	Check that ADRS is ready. Refer to <b>Document reader software status messages</b> (on page 14) for more information.
The ADR100 cannot scan a barcode	Ensure that the unit has been purchased with barcode option enabled. Ensure that the unit is configured to read the barcode that you are scanning. If scanning a document, ensure that the print quality is good. If scanning a barcode on a mobile phone, ensure that you set the screen backlight on the phone to its brightest setting.

## **2.6 Maintenance**

### **2.6.1 Cleaning**

Clean the glass with a lint-free cloth. If the glass is dirty, wipe the glass with a lint-free cloth moistened with isopropyl alcohol or use an alcohol wipe. Do not use abrasive cleaners.

### **2.6.2 Storage**

Store the unit in its original box, at a temperature of 0°C to 60°C.

## 3. Access-IS Document Reader Software

The Access-IS Document Reader Software (ADRS) delivers an instant visual snapshot of document data, resulting in a more efficient and effective workflow.

You can install the software before or after you connect the ADR100 to the host computer.

For more information on how to configure ADRS, refer to the *ADRS User Guide*.

### 3.1 Installing the software

Before you install ADRS, make sure that your computer meets the minimum hardware requirements and is running Windows XP or above.

To install ADRS, do the following:

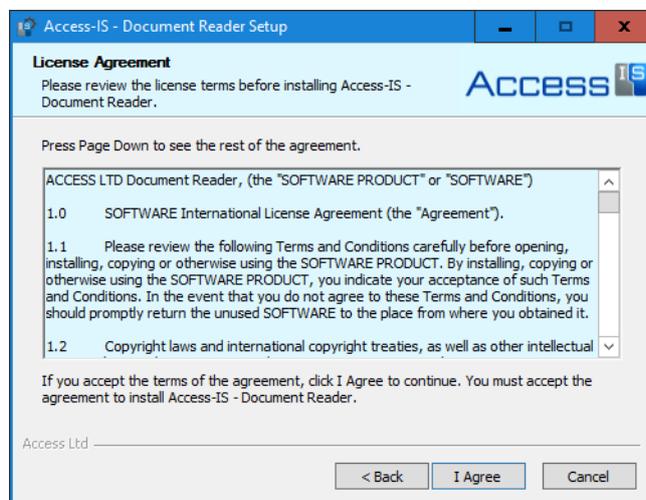
1. Download the latest version of ADRS.

You can download the software from the **Access-IS website** (<http://www.access-is.com/gettingstarted/>).

2. Extract the contents of the download file to a folder on your computer.
3. Run the **Access-IS Document Reader.exe** file.

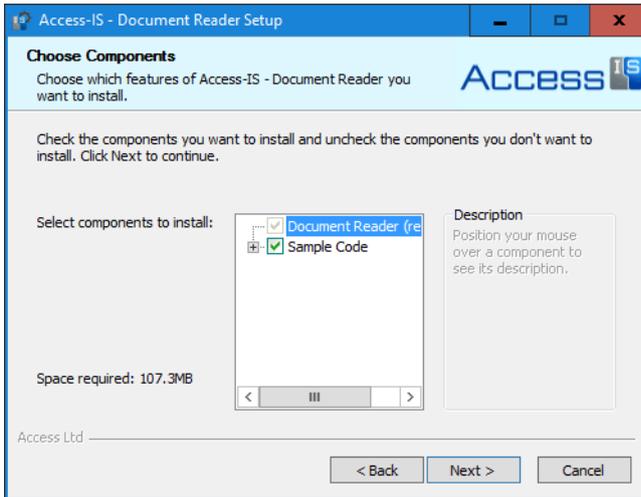
The **Access-IS - Document Reader Setup** dialog box appears.

4. Click **Next** to continue and display the **License Agreement** page.



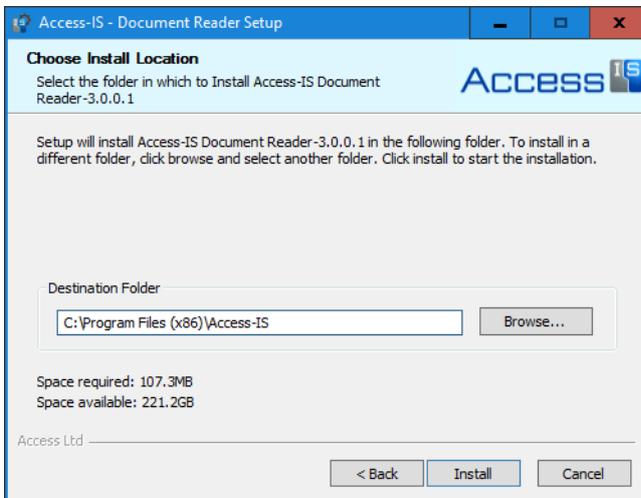
5. Review the license agreement and click **I Agree** to accept the terms of the agreement and continue.

6. On the **Choose Components** page, select the components to install.



If you do not want to integrate the software into another system and will therefore not require the sample code, then you may clear the **Sample Code** check box.

7. Click **Next**.
8. On the **Choose Install Location** page, select the installation folder.

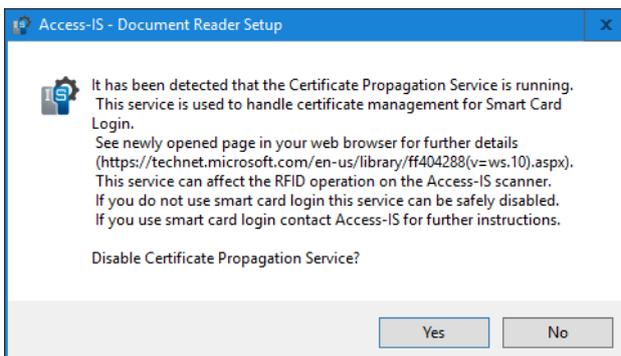


A default location is provided; to install to a different location, click **Browse** and select the folder that you want to use.

9. Click **Install** to start installation.

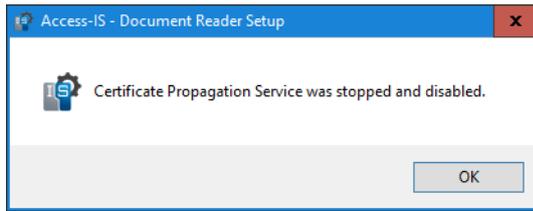
Depending on your system's settings, a message may appear asking if you want to disable the Certificate Propagation service. This service may affect the RFID operation of Access-IS products with RFID functionality.

If you only use devices without RFID, such as the ADR100 and OCR31x, please select **No**. If, in the future, you are planning to use an Access-ID RFID-enabled device, then please select **Yes**.



If you do not use a smart card to unlock the host computer, you can safely disable the service. The web page that automatically opens provides more information on the **Certificate Propagation service** (<https://www.technet.microsoft.com/en-us/library/ff404288>).

Click **Yes** to stop and disable the service, and then click **OK**.



10. When installation is complete, click **Next** and then click **Finish**.

### 3.1.1 What gets installed and where?

By default, the installer installs all the necessary software, API components and documentation in the following location: *Program Files (x86)\Access-IS\Access-IS Document Reader*

You can access ADRS, the Software Development Kit (SDK) and other tools from the **Access-IS Document Reader** group on the Windows Start menu.

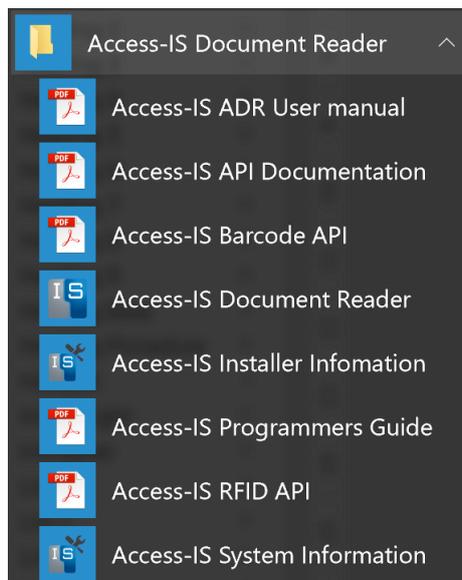


Figure 4: Access-IS Document Reader group on the Start menu

### 3.1.2 Sample code

If installed, you can access the sample code, from the following location:



### 3.1.3 ADRS application, SDK and tools

Table 3: ADRS application, SDK and tools

Application		
SDK	Access-IS Document Reader	Opens the ADRS application.
	Access-IS ADR User Manual	Describes how to configure and use ADRS.
	Access-IS API Documentation	Describes the VideoOCR API.
	Access-IS Barcode API	Describes the barcode DLL, used by a document reader to decode barcodes.
	Access-IS Programmers Guide	Describes how to use the VideoOCR API to control the operation and data provided by a document reader.
Tools	Access-IS RFID API	Describes the RFID DLL, which adds RFID functionality to a document reader. Not applicable to the ADR100.
	Access-IS Installer Information	Provides installation information and an option to uninstall the document reader and associated files.
	Access-IS System Information	Provides operating system information.

## 3.2 Starting the software

1. Connect the ADR100 to the host. See **Connecting the ADR100 to the host** (on page 5) for details.
2. Double-click the **Access-IS Document Reader** shortcut on the host's desktop.

The **Access-IS Document Reader** opens.

## 3.3 Reading your first document

Use ADRS to read and display the information in a read document. The software displays the information in an easy-to-read format so that you can quickly check the authenticity and validity of the document.

1. Ensure that the ADR100 is connected to the host and that you have started ADRS.

The message in the status bar at the bottom of the ADRS window indicates that the ADR100 is ready.

A message displayed in the status bar with a pink background indicates a problem. Refer to **Document reader software status messages** (on page 14) for details.

2. Place the ID document that you want to read onto the glass platen with side of the document to be read facing into the ADR100. Slide the ID document until it meets the lower and side guide.

The ADR100 captures a full-colour and ultraviolet image of the ID document, together with an infrared image, if installed. When reading an ICAO-compliant driving licence or identity card with an IR-ready ADR100, it decodes the MRZ and validates the data for accuracy.

The **Summary** tab in the Access-IS Document Reader window displays the images and other details collected from the read ID document.

- ▶ **Images** - Displays captured images.
- ▶ **Barcode Information** - Displays barcode and validation information (if barcode reading is enabled on the ADR100).
- ▶ **Document Information** - Displays MRZ data and a face-detect image (if applicable).

### 3. Review the information displayed on the **Summary** tab.

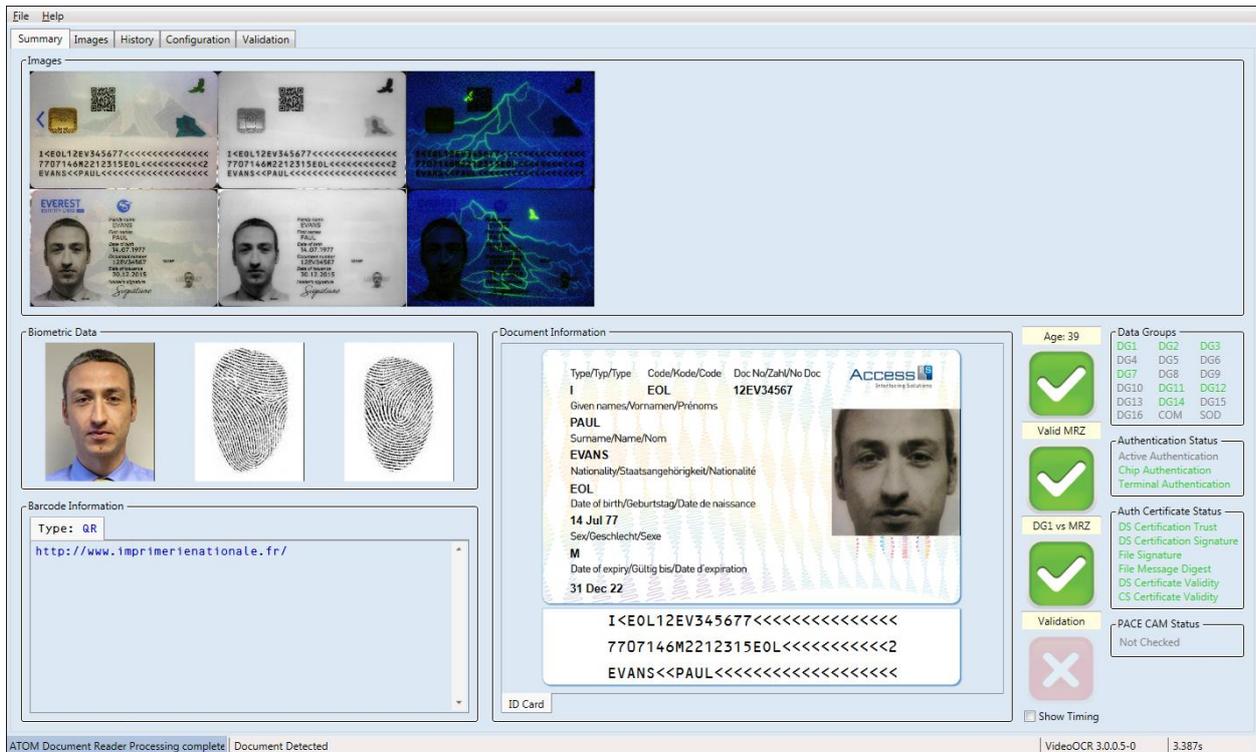


Figure 5: ADRS Summary tab. Note the version number of the software displays on the right side of the status bar, next to the time taken to read and process the document. The version shown is VideoOCR 3.0.0.5-0; the precise layout may differ in newer versions of the software.

To help you assess the validity of the document, ticks and crosses display next to the **Document Information** section.

#### ▶ **Age**

Displays a tick if the date of birth read from the MRZ indicates that the owner of the document is older than the age specified on the **Configuration** tab (default age set to 18).

#### ▶ **Valid MRZ**

Displays a green tick if the MRZ is valid.

If invalid, you can see why the MRZ is invalid by hovering the mouse over the red cross.

### 3.3.1 Images

The ADR100 captures images under visible and ultraviolet light and displays colour and ultraviolet images in the **Images** panel. A third image captured under infrared light may display if the ADR100 is configured with the infrared option.

### 3.3.2 Barcode information

If barcode reading is enabled on your ADR100, the barcode type and barcode data in the read document appears in the **Barcode Information** section.

### 3.3.3 Document information

If fitted with the IR option, the ADR100 reads the MRZ, if it is present on the document that you are scanning. Once read, the reader decodes the information and the details appear in the **Document Information** section on the **Summary** tab. If a colour image is captured, the software picks out the face from the image and displays this separately.

### 3.4 Document reader software status messages

Messages display in bottom left corner of ADRS. Use these messages to check the status and help diagnose problems with the reader and software.

Table 4: Document reader software status messages

Message	Description
ADR100 is ready	The ADR100 is connected to the host, powered and ready to read a document.
Reading	The ADR100 is acquiring images.
Writing Multiple Image file	The ADR100 is acquiring images and saving these to disk. Set this mode from the software's <b>Configuration</b> tab.
Processing complete	The ADR100 has processed the document.
Automatic reader not started	An attempt to start the reader was made, but it failed. This generally indicates that the automatic detection of documents placed in the reader is not enabled (on the <b>Configuration</b> tab). The setting is enabled by default.
No Document Reader Connected	The ADR100 is disconnected from the host and software; the camera will not work. Check USB and power connections.
Could not set Windows Handle for windows....	Another instance of ADRS is already running. Ensure that you close ADRS before restarting.
Initialised	The reader is initialised, but the reader has not started correctly. Make sure the reader is powered up and switched on.
MRZ decoding failed	The ADR100 has detected an MRZ string that is not correctly formatted. Move the mouse cursor over the MRZ summary icon to display details of the failure.

## A. Specifications

Specification	Details
Dimensions (W x D x H)	106 mm x 79 mm x 86 mm
Weight	285 g (excluding cable and power supply unit)
Environmental	Operating temperature: 0°C to 50°C Storage temperature: 0°C to 60°C Humidity: 0 to 95% non-condensing
Body	Black ABS
Glass	4 mm toughened platen BS EN60068-2-75 and IEC 62262:2002, rated to 6.375 J impact, with anti-reflective coating
Communications and host	Communication: USB 2.0 high speed Connection: USB Micro-B connector Host (minimum): Pentium-4 3 GHz, 2 GB RAM Supported operating systems: Windows XP and above, 32-bit or 64-bit
Power requirements	24 V DC power supply via Molex connector
Image capture	Full page: JPG, BMP, TIFF, PNG Resolution: 600 DPI
MRZ reading (if IR option fitted)	Illumination sources: Visible/white, UV and optional IR LEDs Standard OCR font: OCR-B Travel and identity documents: 1 line of 30 characters, 2 lines of 36 characters, 3 lines of 30 characters
Barcode reading (optional)	Reads barcodes from mobile phones, tablets and paper Linear: EAN/UPC, Code 2 of 5, Interleaved 2 of 5, IATA 2 of 5, Code 39, Code 128 2D: IATA resolution 792, PDF417, Aztec, DataMatrix and QR codes (Full list of supported barcodes available on request)
MTBF	85,000 hours
Approvals	CE EMC Class B <ul style="list-style-type: none"> <li>• EN 55022</li> <li>• EN 55024</li> </ul> CE Low Voltage Directive <ul style="list-style-type: none"> <li>• EN 60950-1</li> <li>• IEC 62471: 2006 - Exempt Class</li> </ul> FCC 47CFR Part 15 Subpart B Class A Canadian Standard ICES-003: Issue 6

## B. Model numbers

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Model	Bezel	Visible	IR	UV	1D/2D barcode
ADR100-A	A	✓	✗	✓	✗
ADR100-B	B	✓	✗	✓	✗
ADR100-AB	A	✓	✗	✓	✓
ADR100-BB	B	✓	✗	✓	✓
ADR100-AI	A	✓	✓	✓	✗
ADR100-BI	B	✓	✓	✓	✗
ADR100-ABI	A	✓	✓	✓	✓
ADR100-BBI	B	✓	✓	✓	✓

## C. Document history

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Revision	Date	Description
1.0	02/2015	First issue.
1.1	03/2015	Content revisions.
1.2	12/2015	Download link update.
2.0	09/2016	Content revisions, addition of ADRS.
2.1	09/2018	Minor formatting changes.
2.2	10/2018	Approvals section updated.