Wherever mobility is needed, the mobile code readers from Leuze electronic offer reliable identification of all current and future-oriented coding methods. In transport and shipping as well as for inventory applications and order picking. The scanners convince with resolution and read quality, operating range and ease of operation. For everything from simple identification tasks up to difficult-to-detect directly marked codes. Their added advantage: High availability of suitable interfaces and the unbeatable know-how of Leuze electronic for each individual application.
READING TECHNIQUES AND CONNECTION OPTIONS
Identification technologies and interfaces.

Bar code
The bar code is a machine-readable format whose information is encoded in bars and gaps of varying width. Bar codes are available in various forms for different applications.

2D-code
With elements arranged in a matrix, the 2D Data Matrix code (ECC 200) can store considerably more information in a very small area. This code includes “Reed-Solomon” error correction, which allows even partially destroyed codes to be read.

“Directly marked” 2D-code
Because modern image sensors with intelligent illumination can decode even low-contrast codes, the sensors are able to read directly marked parts. Depending on the labeling method (printed, laser-etched or dot-peened), a Data Matrix code or a Dot Matrix code is created. This process is particularly well suited for the tracking of parts.

RFID technology
This form of identification does not take place optically, but rather inductively; data carriers are used as transponders. Advantages are the use in dirty, rough industrial environments, the functionality of the system even without line-of-sight contact and the reloading of data during the process (e.g., for process control).

RS 232 C interface
The RS 232 C interface is also known as V 24. Data transmission between host (PLC/PC) and reader takes place in asynchronous mode.

PS2 keyboard interface
Looping a hand-held scanner into the keyboard interface is an easy and convenient way to send data to the PC in the same format as that of the keyboard.

USB interface
Modern PCs and hand-held scanners can directly exchange data with one another via the USB interface. This variant is comparable to the keyboard interface. (COM port emulation also possible in some cases)

Bluetooth interface
Bluetooth is a type of RF transmission in the ISM band (2.4 GHz). Class 2 permits a data transmission range of up to 10 m. With Bluetooth versions 1.2 or 2.1, interference from WLAN networks is nearly impossible.
### Technical Data

<table>
<thead>
<tr>
<th></th>
<th>IT 1300g</th>
<th>IT 1450g</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading method</strong></td>
<td>Line imager</td>
<td>Imager</td>
</tr>
<tr>
<td><strong>Code types/Transponder types</strong></td>
<td>Bar codes: Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
<td>Bar codes: Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
</tr>
<tr>
<td><strong>Reading distance</strong></td>
<td>10 – 660 mm</td>
<td>37 – 360 mm</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>RS 232, PS2 and USB</td>
<td>RS 232, PS2 and USB</td>
</tr>
<tr>
<td><strong>Supply voltage</strong></td>
<td>5 V DC</td>
<td>5 V DC</td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>360 mA</td>
<td>360 mA</td>
</tr>
<tr>
<td><strong>Degree of protection</strong></td>
<td>IP 41</td>
<td>IP 41</td>
</tr>
<tr>
<td><strong>Drop height</strong></td>
<td>1.5 m</td>
<td>1.5 m</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>159 g</td>
<td>130 g</td>
</tr>
</tbody>
</table>

### Scope of delivery

- Hand-held scanner

### Accessories

- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Table support
- Wall mount

### Applications

Hand-held scanner for numerous areas of application and bar code types, such as the reading of bar codes on packages, boxes or pallets. Device with large rotational and tilt angles for the quick detection of bar codes.

Hand-held scanner for numerous areas of application and bar code types, such as the reading of bar codes on packages, boxes or pallets. Device with large rotational and tilt angles for the quick and omnidirectional detection of bar codes.
<table>
<thead>
<tr>
<th>Model</th>
<th>Bluetooth</th>
<th>Imager/Line imager/Laser scanner</th>
<th>Bar codes:</th>
<th>Bar codes:</th>
<th>Bar codes:</th>
<th>Bar codes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 1452g</td>
<td></td>
<td>Imager with RF transmission</td>
<td>Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
<td>Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
<td>Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
<td>Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)</td>
</tr>
<tr>
<td>IT 3800i</td>
<td><img src="https://example.com/bluetooth.png" alt="Bluetooth" /></td>
<td>Line imager</td>
<td>37 – 360 mm</td>
<td>16.5 – 2080 mm</td>
<td>25 – 1120 mm</td>
<td>20 – 4600 mm</td>
</tr>
<tr>
<td>IT 3820i</td>
<td><img src="https://example.com/bluetooth.png" alt="Bluetooth" /></td>
<td>Line imager with RF transmission</td>
<td>37 – 360 mm</td>
<td>16.5 – 2080 mm</td>
<td>25 – 1120 mm</td>
<td>20 – 4600 mm</td>
</tr>
<tr>
<td>IT 1280i</td>
<td></td>
<td>Laser scanner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **IT 1452g**
  - **Hand-held scanner incl. battery**
  - **Base station**
  - **RS 232 cable**
  - **PS2 cable**
  - **USB cable**
  - **Power supply unit**

- **IT 3800i**
  - **Hand-held scanner incl. battery**
  - **Base station**
  - **RS 232 cable**
  - **PS2 cable**
  - **USB cable**
  - **Power supply unit**
  - **Table support**
  - **Wall mount**
  - **Rope**

- **IT 3820i**
  - **Hand-held scanner incl. battery**
  - **Base station**
  - **RS 232 cable**
  - **PS2 cable**
  - **USB cable**
  - **Power supply unit**
  - **Table support**
  - **Wall mount**
  - **Rope**

- **IT 1280i**
  - **Hand-held scanner**
  - **Base station**
  - **RS 232 cable**
  - **PS2 cable**
  - **USB cable**
  - **Power supply unit**
  - **Table support**
  - **Wall mount**
  - **Rope**

**Specifications**

- **IT 1452g**
  - **Hand-held scanner for numerous areas of application.**
  - **Device with Bluetooth, for mobile applications.**
  - **Device with large rotational and tilt angles for the quick and omnidirectional detection of bar codes.**

- **IT 3800i**
  - **Industrial hand-held scanner for numerous bar code types, such as bar codes on packages, boxes or pallets under rough operating conditions.**
  - **Device with large rotational and tilt angles for the quick detection of bar codes.**

- **IT 3820i**
  - **Industrial hand-held scanner for numerous areas of application.**
  - **Device with Bluetooth, for mobile applications.**
  - **Device with large rotational and tilt angles for the quick detection of bar codes.**

- **IT 1280i**
  - **Very robust industrial hand-held scanner for very large reading ranges and numerous areas of application.**
  - **Device with large rotational and tilt angles for the quick detection of bar codes at very long distances.**
## Technical Data

### Reading method
- Imager hand-held scanner
- Imager hand-held scanner with RF transmission

### Code types/Transponder types
- **Bar codes:** Code 2/5 Int.; Code 39; Code 128; EAN 8/13; (all common)
- **2D-codes:** Data Matrix code ECC200; Aztec; QR-Code; PDF 417; Maxicode; (all common)

### Reading distance
- IT 1900: 0 – 561 mm
- IT 1902: 0 – 561 mm

### Interfaces
- RS 232, PS2 and USB
- RS 232, PS2 and USB

### Supply voltage
- 4 – 5.5 V DC
- 230V AC (3.7 V DC batt.)

### Current consumption
- 450 mA
- 1000 mA

### Degree of protection
- IP 41
- IP 41 (base: IP 41)

### Drop height
- 1.8 m
- 1.8 m (base: 1 m)

### Weight
- 147 g
- 214 g (base: 179 g)

### Scope of delivery
- Hand-held scanner
- Hand-held scanner incl. battery

### Accessories
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Table support
- Wall mount
- Base station
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit

### Applications
- Hand-held scanner for numerous areas of application and code types, such as the reading of codes on packages, boxes or pallets. Omnidirectional code reading.
- Hand-held scanner for numerous code types and areas of application. Device with Bluetooth, for mobile applications. Omnidirectional code reading.
**IT 1910i**

**Imager hand-held scanner**

**Bar codes:**
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
  (all common)

**2D-codes:**
- Data Matrix code
- ECC200; Aztec;
- QR-Code; PDF 417;
- Maxicode;
  (all common)

**Dimensions:**
- 25 – 596 mm

**Power Supply:**
- RS 232, PS2 and USB
- 4 – 5.5 V DC
- 470 mA

**Protection:**
- IP 65
- 2 m
- 300 g

Hand-held scanner

**Extras:**
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Table support
- Wall mount
- Rope

**Industrial hand-held scanner for various code types, such as codes on packages, boxes or pallets under rough operating conditions. Omnidirectional code reading.**

**IT 1911i**

**Imager hand-held scanner with RF transmission**

**Bar codes:**
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
  (all common)

**2D-codes:**
- Data Matrix code
- ECC200; Aztec;
- QR-Code; PDF 417;
- Maxicode;
  (all common)

**Dimensions:**
- 25 – 596 mm

**Power Supply:**
- RS 232, PS2 and USB
- 230V AC (3.7 V DC batt.)
- 1000 mA

**Protection:**
- IP 65 (base: IP 51)
- 2 m (base: 1 m)
- 380 g (base: 290 g)

Hand-held scanner incl. battery

**Extras:**
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Base station
- Table support
- Wall mount
- Rope

**Industrial hand-held scanner for numerous code types and areas of application. Device with Bluetooth, for mobile applications under rough operating conditions. Omnidirectional code reading.**

**IT 1980i**

**Imager hand-held scanner**

**Bar codes:**
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
  (all common)

**2D-codes:**
- Data Matrix code
- ECC200; Aztec;
- QR-Code; PDF 417;
- Maxicode;
  (all common)

**Dimensions:**
- 10 – 16000 mm

**Power Supply:**
- RS 232, PS2 and USB
- 4 – 5.5 V DC
- 490 mA

**Protection:**
- IP 65
- 2 m
- 325 g

Hand-held scanner incl. battery

**Extras:**
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Base station
- Table support
- Wall mount
- Rope

**Industrial hand-held scanner for various code types and areas of application.**

**IT 1981i**

**Imager hand-held scanner with RF transmission**

**Bar codes:**
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
  (all common)

**2D-codes:**
- Data Matrix code
- ECC200; Aztec;
- QR-Code; PDF 417;
- Maxicode;
  (all common)

**Dimensions:**
- 10 – 16000 mm

**Power Supply:**
- RS 232, PS2 and USB
- 230V AC (3.7 V DC batt.)
- 1000 mA

**Protection:**
- IP 65 (base: IP 51)
- 2 m (base: 1 m)
- 420 g (base: 290 g)

Hand-held scanner incl. battery

**Extras:**
- RS 232 cable
- PS2 cable
- USB cable
- Power supply unit
- Base station
- Table support
- Wall mount
- Rope

**Industrial hand-held scanner for numerous code types and areas of application. Device with Bluetooth, for mobile applications under rough operating conditions. Omnidirectional code reading over very long distances.**
# Hand-held readers for bar codes and 2D-codes

## Technical Data

<table>
<thead>
<tr>
<th>Reading method</th>
<th>Code types/Transponder types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading distance</td>
<td></td>
</tr>
<tr>
<td>Interfaces</td>
<td>Supply voltage</td>
</tr>
<tr>
<td>Current consumption</td>
<td>Degree of protection</td>
</tr>
<tr>
<td>Drop height</td>
<td>Weight</td>
</tr>
</tbody>
</table>

## Scope of delivery

## Accessories

## Applications
HCR 6200
Imager hand-held scanner

Bar codes:
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
- (all common)

2D-codes:
- Data Matrix code
- ECC200; Aztec;
- QR-Code; PDF 417;
- Maxicode;
- (all common)

25 – 200 mm

RS 232 and USB

500 mA

IP 54

1.8 m

130 g

Hand-held scanner inkl. battery

RS 232 cable
USB cable
Power supply unit
Table support
Wall mount

Robust industrial hand-held scanner for reading directly marked codes (laser-etched or dot-peened) with low contrast, e.g., on metals, plastic, etc.; omnidirectional code reading.

FIS 6170
Imager hand-held scanner

Bar codes:
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
- (all common)

2D-codes:
- Data Matrix code
- ECC200; QR-Code;
- PDF 417
- (all common)

25 – 200 mm

RS 232 and USB

470 mA

IP 65

204 g

Hand-held scanner

RS 232 cable
USB cable
Power supply unit
Wall mount

Industrial hand-held scanner for reading directly marked codes (laser-etched or dot-peened) with low contrast, e.g., on metals, plastic, etc. Omnidirectional code reading.

HS 6508
Imager hand-held scanner

Bar codes:
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
- (all common)

2D-codes:
- Data Matrix code
- ECC200; QR-Code;
- PDF 417
- (all common)

0 - 233 mm

RS 232, PS2 and USB

330 mA

IP 65

336 g

Hand-held scanner

RS 232 cable
PS2 cable
USB cable
Power supply unit
Wall mount

Robust industrial hand-held scanner for reading directly marked codes (dot-peened) with low contrast as well as large bar codes. Omnidirectional code reading.

HS 6578
Imager hand-held scanner with RF transmission

Bar codes:
- Code 2/5 Int.; Code 39;
- Code 128; EAN 8/13;
- (all common)

2D-codes:
- Data Matrix code
- ECC200; QR-Code;
- PDF 417
- (all common)

0 - 233 mm

RS 232, PS2 and USB

3.6 V DC batt.,

915 mA

IP 65 (base: IP 41)

2 m (base: 1 m)

414 g (base: 298 g)

Hand-held scanner incl. battery

Base station

RS 232 cable
PS2 cable
USB cable
Power supply unit

Robust industrial hand-held scanner with Bluetooth for reading directly marked codes (dot-peened) with low contrast as well as large bar codes. Omnidirectional code reading.
# Technical Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>HFM 3500D</th>
<th>HFM 3520D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading method</strong></td>
<td>Mobile combi device</td>
<td>Mobile combi device with RF transmission</td>
</tr>
<tr>
<td>Bar code/RFID</td>
<td>Bar code/RFID</td>
<td>Bar code/RFID</td>
</tr>
<tr>
<td>HF (13.56 MHz)</td>
<td>HF (13.56 MHz)</td>
<td></td>
</tr>
<tr>
<td><strong>Code types/Transponder types</strong></td>
<td>Transponder: ISO 15693</td>
<td>Transponder: ISO 15693</td>
</tr>
<tr>
<td>Bar codes:</td>
<td>Bar codes:</td>
<td>Bar codes:</td>
</tr>
<tr>
<td>Code 39; Code 128; Code 93; EAN 8/13; 2/5 Int. (all common)</td>
<td>Code 39; Code 128; Code 93; EAN 8/13; 2/5 Int. (all common)</td>
<td></td>
</tr>
<tr>
<td><strong>Reading/writing distance</strong></td>
<td>RFID</td>
<td>RFID</td>
</tr>
<tr>
<td><strong>RFID</strong></td>
<td>0 – 30 mm</td>
<td>0 – 30 mm</td>
</tr>
<tr>
<td><strong>Bar code</strong></td>
<td>0 – 450 mm</td>
<td>0 – 450 mm</td>
</tr>
<tr>
<td><strong>2D-code</strong></td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>RS 232 via 9-pin Sub-D USB converter cable</td>
<td>RS 232 via 9-pin Sub-D USB converter cable</td>
</tr>
<tr>
<td><strong>Supply voltage</strong></td>
<td>5 V DC</td>
<td>230V AC (3.7 V DC batt.)</td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>200 mA</td>
<td>200 mA</td>
</tr>
<tr>
<td><strong>Degree of protection</strong></td>
<td>IP 54</td>
<td>IP 54 (base: IP 54)</td>
</tr>
<tr>
<td><strong>Drop height</strong></td>
<td>1 m</td>
<td>1 m (base: 1 m)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>172 g</td>
<td>220 g (base: 200 g)</td>
</tr>
<tr>
<td><strong>Scope of delivery</strong></td>
<td>Combi device incl. RS 232 Cable, 4 m</td>
<td>Combi device incl. battery</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>Power supply unit USB-RS 232 converter cable</td>
<td>Base station Power supply unit USB-RS 232 Converter cable</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>Mobile combi device for transponders and bar codes; designed especially for reading bar code information and subsequently writing this information to a transponder.</td>
<td>Mobile combi device for transponders and bar codes; designed especially for reading bar code information and subsequently writing this information to a transponder.</td>
</tr>
</tbody>
</table>
**Order picking**
- Fast and reliable identification of merchandise.
- Economical identification solutions for manual identification increases the cost effectiveness of the system.
- High-performance, diversified range of mobile code readers for strong performance and, thus, high system availability.

**Parts tracking**
- Reading permanent, directly marked labels (e.g., on tools, engine components, drivetrain components, surgical-medical instruments, etc.) that must always be identifiable in the process flow.
- Flexible use in production/manufacturing for labeling electronic components, tools, etc.
- Error correction by means of the "Reed-Solomon" algorithm – identification is possible even if part of the code is destroyed.
- High-performance, diversified product portfolio of mobile 2D-code readers for a wide range of application types

**Process control**
- Read bar code information and then write on a transponder with one device
- Process control through changeable information with RFID
- Robust transponders for high industrial stress from chemicals, temperature, etc.
Switching Sensors
Optical Sensors
Ultrasonic Sensors
Fiber Optic Sensors
Inductive Switches
Forked Sensors
Light Curtains
Special Sensors

Measuring Sensors
Distance Sensors
Sensors for Positioning
3D Sensors
Light Curtains
Forked Sensors

Products for Safety at Work
Optoelectronic Safety Sensors
Safe Locking Devices, Switches and Proximity Sensors
Safe Control Components
Machine Safety Services

Identification
Bar Code Identification
2D-Code Identification
RF Identification

Data Transmission/
Control Components
MA Modular Connection Units
Data Transmission
Safe Control Components

Industrial Image Processing
Light Section Sensors
Smart Camera