Automatic Identification Technology

Bar Code and 2D Code Reading Systems
RF Identification Systems
Laser Measurement Systems
All-Inclusive Support for Sensors

Pre-Sales

Individual, intelligent, dependable

Application Consulting
SICK has a solution for your identification task. Any system has to be commercially viable so we also evaluate the cost parameters and use this as a basis for suggesting the best possible individual solution for you.

Engineering
SICK engineering teams develop intelligent solutions and combine these to create individual systems. The SICK quality management system ensures that every aspect of each customer’s system functions reliably.

Project Management
SICK project management teams guarantee that each project runs optimally. They reliably supervise your project from planning to final inspection.

After-Sales

Global, competent, cooperative

Installation
SICK service technicians install bar code and 2D code scanners, RFID systems, assembly frames and scanner networks world-wide. In doing so, they prepare the systems for commissioning.

Commissioning
SICK commissioning engineers professionally configure the specific application reader properties for the bar code and 2D code scanners and RFID systems.

Site Management
SICK site managers are on the spot to make sure each project runs smoothly. They flexibly coordinate the work of SICK technicians and are your on-site contact.

Final Inspection
During a test phase, which closely simulates real conditions, SICK service specialists demonstrate that the agreed features of the installed scanners and RFID systems function correctly. When everything is running smoothly, the identification system is handed over to the operator.
SICK provides services all over the world to support your successful identification solution. SICK is your reliable partner during every phase of the project – ensuring your project is technically and commercially perfect.

**Services for the Operation Phase**

**Made-to-measure, quick to react, in partnership**

**Servicing**
SICK scanners and RFID systems are maintenance-free. However, it is recommended that they are cleaned and adjusted at regular intervals depending on external conditions. This also allows the operator to identify any alterations or damage and perform repairs to the application. Regular servicing guarantees that the system will provide the best possible performance throughout its long operating life.

**Troubleshooting and Spare Parts**
SICK offers a spare parts and repair plan tailored to the customer’s requirements and means. This develops commercially interesting concepts, which can be agreed in a service contract together with other services.

**Hotline**
SICK sales organisations can be contacted via a free technical hotline. Most questions about SICK products can be answered quickly on the telephone. However, it can also be used to report more complex queries. The case is then immediately passed on to the responsible specialist department.

**Training**
SICK trainers offer a complete training programme both at SICK and in-house. These include made-to-measure training units for project developers, commissioning personnel and maintenance staff. They help participants to fulfil their roles in the company.
## Bar Code Scanners

### Reading ranges

<table>
<thead>
<tr>
<th>Product</th>
<th>CLV405</th>
<th>CLV410</th>
<th>CLV420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module width (mm)</td>
<td>0.25</td>
<td>0.35</td>
<td>0.2</td>
</tr>
<tr>
<td>Reading distance (mm)</td>
<td>50</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>• High Density – max. 90 mm</td>
<td>• High Density – max. 95 mm</td>
<td>• High Density – max. 200 mm, Long Range – max. 730 mm</td>
<td></td>
</tr>
</tbody>
</table>

### Application areas

- **CLV405**
  - Document processing
  - PCB manufacturing
  - Clinical analysers
- **CLV410**
  - Labelling
  - Robotic systems
  - Packaging industry
- **CLV420**
  - Material handling
  - Packaging industry
  - Document processing

### Technical data

#### Scanning frequency

- **CLV405**: 300 to 1,000 Hz
- **CLV410**: 200 to 800 Hz
- **CLV420**: 400 to 1,200 Hz

#### Operating voltage

- **CLV405**: 5 V DC ± 5 %
- **CLV410**: 5 to 30 V DC
- **CLV420**: 10 to 30 V DC

#### Data interfaces

- **CLV405**: RS 232 (True, TTL)
- **CLV410**: RS 232, RS 422/485
- **CLV420**: RS 232, RS 422/485, CAN

#### Dimensions (L, W, H)

- **CLV405**: 44.5/44.5/21.6 mm
- **CLV410**: 59/62/35 mm
- **CLV420**: 59/62/35 mm

#### Weight

- **CLV405**: 57 g
- **CLV410**: 250 g
- **CLV420**: 250 g

#### Enclosure rating

- **CLV405**: IP 52
- **CLV410**: IP 65
- **CLV420**: IP 65

### Special features

- **CLV405**
  - Auto Setup
  - Profile programming
  - Setup button
  - Bargraph for visualisation
  - Raster scanner
- **CLV410**
  - Auto Setup
  - Profile programming
  - Reflector polling
  - Raster scanner
  - Angle attachment
- **CLV420**
  - Auto Setup
  - Profile programming
  - Reflector polling
  - Host and Aux interfaces
  - Raster scanner
  - Angle attachment

### Accessories

- **CLV405**
  - CLV Setup Software,
  - CLV Connect Software
  - CDB405 connection module
  - Reading trigger sensors
- **CLV410**
  - CLV Setup Software,
  - CLV Connect Software
  - CDB410, CDM410 connection modules
  - Reading trigger sensors
  - Mounting bracket
  - Round rod bracket
- **CLV420**
  - CLV Setup Software,
  - CLV Connect Software
  - CDB420, CDM420 connection modules
  - Gateways for PROFIBUS, DeviceNet, Ethernet
  - Reading trigger sensors
  - Mounting bracket
  - Round rod bracket

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**NOTE:**

More detailed information about the products presented in this product overview can be found in the corresponding product informations. These can be ordered as printed materials or downloaded as PDF files from the internet at [www.sick.com](http://www.sick.com).
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>CLV430</th>
<th>CLV440</th>
<th>CLV450</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading ranges</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module width (mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Range – max. 260 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid Range – max. 440 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Density – max. 340 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimised for resolution 0.5 mm – max. 950 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stacker crane</td>
<td>Material handling</td>
<td>Pallet handling</td>
<td></td>
</tr>
<tr>
<td>Material handling</td>
<td>PCB manufacturing</td>
<td>Clinical analyses</td>
<td></td>
</tr>
<tr>
<td>Pallet handling</td>
<td>Forklift truck</td>
<td>Automotive industry</td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanning frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 to 800 Hz</td>
<td>300 to 800 Hz</td>
<td>300 to 1,000 Hz</td>
<td></td>
</tr>
<tr>
<td>10 to 30 V DC</td>
<td>10 to 30 V DC</td>
<td>10 to 30 V DC</td>
<td></td>
</tr>
<tr>
<td>RS 232, RS 422/485, CAN</td>
<td>RS 232, RS 422/485, CAN</td>
<td>RS 232, RS 422/485, CAN</td>
<td></td>
</tr>
<tr>
<td>2 x IN/2 x OUT</td>
<td>90/60/35.7 mm</td>
<td>90/60/35.7 mm</td>
<td></td>
</tr>
<tr>
<td>420 g</td>
<td>420 g</td>
<td>420 g</td>
<td></td>
</tr>
<tr>
<td>IP 65</td>
<td>IP 65</td>
<td>IP 65</td>
<td></td>
</tr>
<tr>
<td><strong>Special features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMART decoder</td>
<td>Adjustable focus</td>
<td>Adjustable focus</td>
<td></td>
</tr>
<tr>
<td>Auto Setup</td>
<td>SMART decoder</td>
<td>SMART decoder</td>
<td></td>
</tr>
<tr>
<td>Profile programming</td>
<td>Auto Setup</td>
<td>Auto Setup</td>
<td></td>
</tr>
<tr>
<td>Reflector polling</td>
<td>Profile programming</td>
<td>Profile programming</td>
<td></td>
</tr>
<tr>
<td>Host and Aux interfaces</td>
<td>Reflector polling</td>
<td>Host and Aux interfaces</td>
<td></td>
</tr>
<tr>
<td>Oscillating mirror</td>
<td>Host and Aux interfaces</td>
<td>Oscillating mirror</td>
<td></td>
</tr>
<tr>
<td>Raster scanner</td>
<td>Raster scanner</td>
<td>Raster scanner</td>
<td></td>
</tr>
<tr>
<td>Angle attachment</td>
<td>Angle attachment</td>
<td>Angle attachment</td>
<td></td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLV Setup Software, CLV Connect Software</td>
<td>CLV Setup Software, CLV Connect Software</td>
<td>CLV Setup Software, CLV Connect Software</td>
<td></td>
</tr>
<tr>
<td>CDB420, CDM420 connection modules</td>
<td>CDB420, CDM420 connection modules</td>
<td>CDB420, CDM420 connection modules</td>
<td></td>
</tr>
<tr>
<td>Gateways for PROFIBUS, DeviceNet, Ethernet</td>
<td>Gateways for PROFIBUS, DeviceNet, Ethernet</td>
<td>Gateways for PROFIBUS, DeviceNet, Ethernet</td>
<td></td>
</tr>
<tr>
<td>Reading trigger sensors</td>
<td>Reading trigger sensors</td>
<td>Reading trigger sensors</td>
<td></td>
</tr>
<tr>
<td>Mounting bracket</td>
<td>Mounting bracket</td>
<td>Mounting bracket</td>
<td></td>
</tr>
<tr>
<td>Round rod bracket</td>
<td>Round rod bracket</td>
<td>Round rod bracket</td>
<td></td>
</tr>
<tr>
<td>Mounting bracket with shock-absorber</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Standard**
- **Optional**
## Bar Code Scanners

*PRODUCT* | CLV480 | CLV490
---|---|---
**Reading ranges** |  |  
Reading distance (mm) | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | Reading distance (mm) | 600 | 1000 | 1400 | 1800 | 2200 
Module width (mm) | 0.3 | 0.35 | 0.5 |  |  |  |  |  | Module width (mm) | 0.3 | 0.35 | 0.5 |  |  |  |  |  |  
Reading distance max. 1,200 mm |  |  |  |  |  |  |  |  | HD – max. 1,600 mm |  |  |  |  |  |  |  |  |  
LD – max. 2,200 mm |  |  |  |  |  |  |  |  | Reading width max. 1,200 mm |  |  |  |  |  |  |  |  |  
Application areas |  |  
• Automotive industry |  |  
• Pallet handling |  |  
• Forklift truck |  |  
• Pallet handling |  |  
• Forklift truck |  |  
• Automotive industry

**Technical data**
- Scanning frequency: 600 to 1,200 Hz
- Operating voltage: 18 to 30 V DC
- Data interfaces: RS 232, RS 422/485, CAN
- Switching inputs/outputs: 6 x IN/4 x OUT
- Dimensions (L, W, H): 117/117/94 mm
- Weight: 1.5 kg
- Enclosure rating: IP 65

**Special features**
- Adjustable focus
- SMART decoder
- Tracking software
- Host and Aux interfaces
  - Oscillating mirror
  - Optional heating for operating temperature down to –35 °C
  - Remote diagnostics
- Auto focus
- SMART decoder
- Tracking software
- Host and Aux interfaces
  - Oscillating mirror
  - Optional heating for operating temperature down to –35 °C
  - Remote diagnostics

**Accessories**
- CLV Setup Software
- CLV Connect Software
- RDT400 Remote Diagnostic Software
- CDB420, CDM490 connection modules
- Gateways for PROFIBUS, DeviceNet, Ethernet
- External parameter memory
- Reading trigger sensors
- Incremental encoder
- Mounting bracket
- Mounting bracket with shock-absorber
- CLV Setup Software
- CLV Connect Software
- RDT400 Remote Diagnostic Software
- CDB420, CDM490 connection modules
- Gateways for PROFIBUS, DeviceNet, Ethernet
- External parameter memory
- Reading trigger sensors
- Incremental encoder
- Mounting bracket
- Mounting bracket with shock-absorber

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### Hand-held Scanners

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>TR3080</th>
<th>IT3800</th>
<th>IT3800G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading ranges</strong></td>
<td><img src="image" alt="Module width" /></td>
<td><img src="image" alt="Module width" /></td>
<td><img src="image" alt="Module width" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application areas</strong></td>
<td>• Document processing</td>
<td>• Part picking</td>
<td>• Manufacturing</td>
</tr>
<tr>
<td></td>
<td>• Clinical analysers</td>
<td>• Logistics &amp; distribution</td>
<td>• Part picking</td>
</tr>
<tr>
<td></td>
<td>• Library applications</td>
<td>• Manufacturing</td>
<td>• Logistics &amp; distribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Point of sales (POS)</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td>Max. 200 Hz</td>
<td>270 Hz</td>
<td>270 Hz</td>
</tr>
<tr>
<td>Scanning frequency</td>
<td>5 V DC ± 5 %</td>
<td>5 V DC ± 10 %</td>
<td>5 to 12 V DC</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>RS 232 TTL, USB, keyboard wedge, wand emulation</td>
<td>RS 232 TTL, USB, keyboard wedge, wand emulation</td>
<td>RS 232 TTL, USB, keyboard wedge, wand emulation</td>
</tr>
<tr>
<td>Data interfaces</td>
<td>64/175/89 mm</td>
<td>135/152/78 mm</td>
<td>110/150/80 mm</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>225 g</td>
<td>180 g</td>
<td>160 g</td>
</tr>
<tr>
<td>Weight</td>
<td>6 drops from 1.2 m</td>
<td>50 drops from 1.5 m</td>
<td>50 drops from 1.5 m</td>
</tr>
<tr>
<td>Shock test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special features</strong></td>
<td>• CCD touchreader</td>
<td>• Linear imager</td>
<td>• Linear imager</td>
</tr>
<tr>
<td></td>
<td>• Bar code programming</td>
<td>• Optical and acoustical Good Read signal</td>
<td>• Optical and acoustical Good Read signal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RS 232 True</td>
<td>• RS 232 True</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>• TR Setup Software</td>
<td>• Visual Xpress Software</td>
<td>• Visual Xpress Software</td>
</tr>
<tr>
<td></td>
<td>• Mounting bracket</td>
<td>• Mounting brackets</td>
<td>• Mounting brackets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stands</td>
<td>• Stands</td>
</tr>
</tbody>
</table>

- **Standard**
- **Optional**
Hand-held Scanners

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>IT3820</th>
<th>IT38001</th>
<th>IT4600G/4820</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading ranges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module width (mm)</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Reading distance (mm)</td>
<td>0-500</td>
<td>0-1000</td>
<td>0-250</td>
</tr>
<tr>
<td>Application areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Part picking</td>
<td>• Automotive industry</td>
<td>• Electronic manufacturing</td>
<td></td>
</tr>
<tr>
<td>• Logistics &amp; distribution</td>
<td>• Parcel identification</td>
<td>• Clinical analysers</td>
<td></td>
</tr>
<tr>
<td>• Manufacturing</td>
<td>• Logistics &amp; distribution</td>
<td>• Document processing</td>
<td></td>
</tr>
<tr>
<td>Technical data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanning frequency</td>
<td>270 Hz</td>
<td>270 Hz</td>
<td>Max. 270 Hz (bar code)</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>9 V DC ± 5 %</td>
<td>4.5 to 14 V DC</td>
<td>4.5 to 14 V DC</td>
</tr>
<tr>
<td>Data interfaces</td>
<td>RS 232 TTL, USB, keyboard wedge, wand emulation</td>
<td>RS 232 TTL/True, USB, keyboard wedge, wand emulation</td>
<td>RS 232 TTL/True, USB, keyboard wedge, wand emulation</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>157/135/81 mm</td>
<td>160/135/81 mm</td>
<td>157/135/81 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>260 g (incl. battery)</td>
<td>213 g</td>
<td>185 g (IT4600G)</td>
</tr>
<tr>
<td>Enclosure rating</td>
<td>IP 41</td>
<td>IP 54</td>
<td>IP 41</td>
</tr>
<tr>
<td>Shock test</td>
<td>50 drops from 1.8 m</td>
<td>50 drops from 2 m</td>
<td>50 drops from 1.8 m</td>
</tr>
<tr>
<td>Special features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Linear imager</td>
<td>• Linear imager</td>
<td>• 2D imager</td>
<td></td>
</tr>
<tr>
<td>• Li Ion battery</td>
<td>• Operating temperature down to –30 °C</td>
<td>(IT4600G cable version/IT4820 radio version)</td>
<td></td>
</tr>
<tr>
<td>• Cordless Bluetooth data communication V 1.2</td>
<td>• Green aiming line</td>
<td>• Li Ion battery at IT4820</td>
<td></td>
</tr>
<tr>
<td>• Bluetooth range 10 m</td>
<td>• RS 232 True</td>
<td>• Cordless Bluetooth data communication V 1.2 at IT4820</td>
<td></td>
</tr>
<tr>
<td>• RS 232 True</td>
<td>• Bluetooth range 10 m at IT4820</td>
<td>• Bluetooth range 10 m at IT4820</td>
<td></td>
</tr>
<tr>
<td>• RS 232 True</td>
<td>• RS 232 True (IT4820)</td>
<td>• RS 232 True (IT4820)</td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Visual Xpress Software</td>
<td>• Visual Xpress Software</td>
<td>• Visual Xpress Software</td>
<td></td>
</tr>
<tr>
<td>• IT2020-5 base and charging station</td>
<td>• Mounting brackets</td>
<td>• IT2020 base and charging station at IT4820</td>
<td></td>
</tr>
<tr>
<td>• IT2020 CB charging station</td>
<td>• Stands</td>
<td>• Mounting brackets</td>
<td></td>
</tr>
<tr>
<td>• Mounting brackets</td>
<td>• Stands</td>
<td>• Stands</td>
<td></td>
</tr>
</tbody>
</table>

- Standard
- Optional
<table>
<thead>
<tr>
<th><strong>PRODUCT</strong></th>
<th><strong>IT4800I</strong></th>
<th><strong>IT6300/6320 DPM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading ranges</strong></td>
<td><img src="image" alt="Reading ranges" /></td>
<td><img src="image" alt="Reading ranges" /></td>
</tr>
</tbody>
</table>
| **Application areas** | • Logistics & distribution  
• Automotive industry  
• Parcel identification | • Automotive industry  
• Electronic manufacturing  
• Aircraft industry |
| **Technical data** | Scanning frequency: 270 Hz  
Operating voltage: 4.5 to 14 V DC  
Data interfaces: RS 232 TTL/True, USB, keyboard wedge, wand emulation  
Dimensions (L, W, H): 163/135/81 mm  
Weight: 213 g  
Enclosure rating: IP 54  
Shock test: 50 drops from 2 m | Depending on application  
Scanning frequency: 270 Hz  
Operating voltage: 5 V/9 V DC  
Data interfaces: RS 232 TTL, USB, keyboard wedge  
Dimensions (L, W, H): 134/84/175 mm  
Weight: 270 g (IT6300)  
330 g (IT6320 incl. battery)  
Enclosure rating: IP 54  
Shock test: 50 drops from 2 m (IT6300)  
25 drops from 2 m (IT6320) |
| **Special features** | • 2D imager  
• Operating temperature down to –10 °C  
• Green aiming line  
• DPM imager (IT6300 cable version/IT6320 radio version)  
• Flexible illumination  
• Decoding of codes on direct marked parts (laser, dot peening, printing)  
• Radio range 10 m at IT6320  
○ RS 232 True (IT6320) | |
| **Accessories** | • Visual Xpress Software  
○ Mounting brackets  
○ Stands | • DPM Setup Tool  
• IT2020 base station at IT6320 DPM |

- **Standard**
- **Optional**
# 2D Code Scanners

## PRODUCT OVERVIEW

### Automatic Identification Technology

**ICR840**

- **Reading ranges**
  - 0.35, 0.7 mm

- **Application areas**
  - Automotive industry
  - Electronic manufacturing
  - Direct part marking

**ICR850/852**

- **Reading ranges**
  - 0.35, 0.7 mm

- **Application areas**
  - Electronic manufacturing
  - Document processing

**ICR855**

- **Reading ranges**
  - 0.35, 0.7 mm

- **Application areas**
  - Document processing
  - Packaging industry
  - Pharmaceutical applications

### Technical data

- **Scanning frequency**
  - 25 Hz
  - 15 kHz
  - 45 kHz

- **Operating voltage**
  - 10 to 30 V DC

- **Data interfaces**
  - RS 232, RS 422/485, CAN, Ethernet

- **Switching inputs/outputs**
  - 2 x IN/2 x OUT

- **Dimensions (L, W, H)**
  - ICR840: 112/80/39 mm
  - ICR850/852: 115/80/39 mm
  - ICR855: 115/80/39 mm

- **Weight**
  - 900 g

- **Enclosure rating**
  - IP 65

### Special features

- **OMNI bar code and Data Matrix code identification**
- **Auto Setup**
- **Ethernet assistant**
- **Code quality evaluation**
- **Host and Aux interfaces**
- **Megapixel CMOS technology**

### Accessories

- **CLV Setup Software, CLV Connect Software**
- **CDB420, CDM420 connection modules**
- **Gateways for PROFINET, DeviceNet**
- **Reading trigger sensors**
- **Mounting bracket**

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*Standard  ○ Optional*
### PRODUCT

<table>
<thead>
<tr>
<th>ICR860/862</th>
</tr>
</thead>
</table>

#### Reading ranges

<table>
<thead>
<tr>
<th>Module width (mm)</th>
<th>Reading distance (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>f = 75 mm</td>
<td>100 - 3000</td>
</tr>
<tr>
<td>f = 50 mm</td>
<td>2000 - 2500</td>
</tr>
<tr>
<td>f = 25 mm</td>
<td>1000 - 500</td>
</tr>
<tr>
<td>f = 12 mm</td>
<td>500 - 250</td>
</tr>
<tr>
<td>f = 8 mm</td>
<td>250 - 12</td>
</tr>
</tbody>
</table>

#### Application areas

- Automotive industry

#### Technical data

- **Image recording rate**: Max. 30 images/second
- **Resolution**
  - ICR860: 640 x 480 pixel (VGA)
  - ICR862: 1024 x 768 pixel (XGA)
- **Operating voltage**: 24 V DC ± 20 %
- **Data interfaces**: Ethernet (UDP), RS 485
- **Switching inputs/outputs**: 1 x IN/3 x OUT
- **Dimensions (L, W, H)**: 160/55/60 mm
- **Weight**: 505 g
- **Enclosure rating**: IP 65 (with lens protective cover)

#### Special features

- Data Matrix code identification
- Suited for CS- and C-Mount lenses
- Ethernet assistant

#### Accessories

- ICR Setup Software, ImageFTP Software
- Lenses
- Protective covers
- CDB420 connection module
- Illuminations
- Reading trigger sensors
- Mounting bracket

---

- **Standard**
- **Optional**
### Technical data

<table>
<thead>
<tr>
<th>Product</th>
<th>Reading ranges</th>
<th>Application areas</th>
</tr>
</thead>
</table>
| RFI341  | Theoretically achievable reading/writing distance. Dependent on the antenna, output power, transponder type and environment. | • High-bay warehouse management  
• Tote and pallet handling  
• Automotive parts |
| RFA331  | Reading/writing distance for 2 W transmitter power measured with ISO-transponder (card) in an optimal environment. | |
| RFA341  | Reading/writing distance for 2 W transmitter power measured with ISO-transponder (card) in an optimal environment. | |

<table>
<thead>
<tr>
<th>Technical data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Radio frequency</strong></td>
<td>13.56 MHz</td>
</tr>
</tbody>
</table>
| **Transmitter power (TX)** | 2 x 2 W (splitter)  
Max. 2 W |
| **Number of antennas** | Max. 2 |
| **Operating voltage** | 115 to 230 V AC  
RS 232 |
| **Data interfaces** | 2 x IN/2 x OUT  
400/200/120 mm |
| **Dimensions (L, W, H)** | |
| **Weight** | 7.6 kg  
IP 65 |
| **Enclosure rating** |  |
| **Special features** | |
| **Accessories** | |

### Accessories

- RFI341 Demo Software for PC  
- RDT400 Remote Diagnostic Software  
- CDB420, CDM420 connection modules  
- Gateways for PROFIBUS, DeviceNet and Ethernet  
- High-quality, writable ISO transponders RFT331 (card, IP 67) or RFT321 (coin, IP 68)

- Plastic profile  
- Mounting bracket

---

**NOTE:** Other reading ranges, frequencies and transponders available on request
<table>
<thead>
<tr>
<th><strong>Product</strong></th>
<th>CLX490</th>
<th>OPS400</th>
<th>OPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading ranges</strong></td>
<td><img src="image" alt="Reading ranges" /></td>
<td><img src="image" alt="Reading ranges" /></td>
<td><img src="image" alt="Reading ranges" /></td>
</tr>
<tr>
<td>Width max. 400 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application areas</strong></td>
<td>• Parcel identification</td>
<td>• Parcel identification</td>
<td>• Parcel identification</td>
</tr>
<tr>
<td></td>
<td>• Logistics &amp; distribution</td>
<td>• Logistics &amp; distribution</td>
<td>• Logistics &amp; distribution</td>
</tr>
<tr>
<td></td>
<td>• Mail-order business</td>
<td>• Mail-order business</td>
<td>• Mail-order business</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td>Scanning frequency 600 to 1,200 Hz</td>
<td>Scanning frequency 600 to 1,200 Hz</td>
<td>Scanning frequency 600 to 1,200 Hz</td>
</tr>
<tr>
<td>Operating voltage 18 to 30 V DC</td>
<td>Operating voltage 115/230 V AC +10 %/–15 %</td>
<td>Operating voltage 115/230 V AC +10 %/–15 %</td>
<td></td>
</tr>
<tr>
<td>Data interfaces RS 232, RS 422/485, CAN</td>
<td>Data interfaces RS 232, RS 422/485</td>
<td>Data interfaces RS 232, RS 422/485</td>
<td></td>
</tr>
<tr>
<td>Switching inputs/outputs 6 x IN/4 x OUT</td>
<td>Switching inputs/outputs 16 x IN/4 x OUT/1 x relay OUT</td>
<td>Switching inputs/outputs Depending on application</td>
<td></td>
</tr>
<tr>
<td>Dimensions (L, W, H) 176/208/153 mm</td>
<td>Dimensions (L, W, H) 530/270/158 mm</td>
<td>Dimensions (L, W, H) Depending on application</td>
<td></td>
</tr>
<tr>
<td>Weight 2.0 kg</td>
<td>Weight 10.7 kg</td>
<td>Weight Depending on application</td>
<td></td>
</tr>
<tr>
<td>Enclosure rating IP 65</td>
<td>Enclosure rating IP 65</td>
<td>Enclosure rating IP 54/IP 65</td>
<td></td>
</tr>
<tr>
<td><strong>Special features</strong></td>
<td>• Compact OMNI bar code scanner</td>
<td>• OMNI bar code scanner</td>
<td>• OMNI bar code scanner</td>
</tr>
<tr>
<td></td>
<td>• Auto focus</td>
<td>• Auto focus</td>
<td>• Auto focus</td>
</tr>
<tr>
<td></td>
<td>• SMART decoder</td>
<td>• SMART decoder</td>
<td>• SMART decoder</td>
</tr>
<tr>
<td></td>
<td>• Tracking software</td>
<td>• Tracking software</td>
<td>• Tracking software</td>
</tr>
<tr>
<td></td>
<td>• Host and Aux interfaces</td>
<td>• Host and Aux interfaces</td>
<td>• Host and Aux interfaces</td>
</tr>
<tr>
<td></td>
<td>• Optional heating for operating temperature down to ~30 °C</td>
<td>• Optional heating for operating temperature down to ~30 °C</td>
<td>• Optional heating for operating temperature down to ~30 °C</td>
</tr>
<tr>
<td></td>
<td>• Remote diagnostics</td>
<td>• Remote diagnostics</td>
<td>• Remote diagnostics</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>• CLV Setup Software, CLV Connect Software</td>
<td>• CLV Setup Software, CLV Connect Software</td>
<td>• CLV Setup Software, CLV Connect Software</td>
</tr>
<tr>
<td></td>
<td>• RDT400 Remote Diagnostic Software</td>
<td>• RDT400 Remote Diagnostic Software</td>
<td>• RDT400 Remote Diagnostic Software</td>
</tr>
<tr>
<td></td>
<td>• CDB420, CDM490 connection modules</td>
<td>• Mechanical mounting frame</td>
<td>• Mechanical mounting frame</td>
</tr>
<tr>
<td></td>
<td>• Gateways for PROFIBUS, DeviceNet and Ethernet</td>
<td>• Incremental encoder</td>
<td>• Incremental encoder</td>
</tr>
<tr>
<td></td>
<td>• External parameter memory</td>
<td>• Reading trigger sensors</td>
<td>• Reading trigger sensors</td>
</tr>
<tr>
<td></td>
<td>• Reading trigger sensors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Incremental encoder</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Mounting bracket</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Mounting bracket with shock-absorber</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Standard**
- **Optional**
### Product Overview: Automatic Identification Technology

**ALIS**

- **Reading Ranges**
  - Module width (mm): 600 to 1,200 Hz
  - Module width (mm): 1,400 to 2,000 Hz
- **Application Areas**
  - Airport luggage sortation
  - Airport luggage tracing
- **Technical Data**
  - Scanning frequency: 600 to 1,200 Hz
  - Operating voltage: 115/230 V AC +10 %/–15 %
  - Data interfaces: RS 232, RS 422/485
  - Switching inputs/outputs: 16 x IN/4 x OUT/1 x relay OUT
  - Dimensions (L, W, H): Depending on application
  - Weight: Depending on application
  - Enclosure rating: IP 65
- **Special Features**
  - High-End CCD Camera System
  - OMNI bar code and 2D code identification in all positions
  - Real-time image output for OCR and video coding
  - SMART decoder
  - Integrated focus control
  - Tracking software
  - Host and Aux interfaces
  - External parameter memory
  - Remote diagnostics
- **Accessories**
  - CLV Setup Software
  - RDT400 Remote Diagnostic Software
  - Mechanical mounting frame
  - Incremental encoder
  - Reading trigger sensors

**ICR890**

- **Reading Ranges**
  - Module width (mm): 1,400 to 3,000 Hz
  - Module width (mm): 2,000 to 2,500 Hz
  - Module width (mm): 1,500 to 2,500 Hz
- **Application Areas**
  - Parcel identification
  - Logistics & distribution
  - Mail-order business
- **Technical Data**
  - Scanning frequency: 500 to 19,100 Hz
  - Operating voltage: 24 V DC ± 10 %
  - Data interfaces: RS 232, RS 422/485, CAN, Ethernet, 2 x GBit Ethernet
  - Switching inputs/outputs: 14 x IN/6 x OUT
  - Dimensions (L, W, H): Depending on application
  - Weight: Depending on application
  - Enclosure rating: IP 64
- **Special Features**
  - High-End CCD Camera System
  - OMNI bar code and 2D code identification in all positions
  - Real-time image output for OCR and video coding
  - SMART decoder
  - Integrated focus control
  - Tracking software
  - Host and Aux interfaces
  - External parameter memory
  - Remote diagnostics
- **Accessories**
  - CLV Setup Software
  - RDT400 Remote Diagnostic Software
  - Mechanical mounting frame
  - Incremental encoder
  - Reading trigger sensors

- **Standard**
- **Optional**
## Volume Measurement Systems

### Product Overview Automatic Identification Technology

<table>
<thead>
<tr>
<th><strong>PRODUCT</strong></th>
<th><strong>VMS410/510</strong></th>
<th><strong>VMS420/520</strong></th>
<th><strong>VMS200</strong></th>
</tr>
</thead>
</table>

#### Reading ranges

- **Speed v (m/s)**
  - 0
  - 1
  - 2
  - 3

- **Scale interval (d)**
  - 5 mm
  - 10 mm

- **Measurement of cubic objects**
- **VMS410**: 1 sensor
- **VMS510**: 1 sensor, system OIML-R-129 and MID certified

- **Measurement of cubic and non-cubic objects**
- **VMS420**: 1 sensor
- **VMS520**: 2 sensors, system OIML-R-129 certified

- **Measurement of cubic and non-cubic objects**
- **System with 2 sensors**
- **LMS200** and control cabinet including IPC and power supply

#### Application areas

- **Parcel identification**
- **Logistics & distribution**
- **Mail-order business**

#### Technical data

- **Scanning frequency**: Max. 500 Hz
- **Operating voltage**: 24 V DC ± 15 %
- **Data interfaces**:
  - RS 232/RS 422
  - Ethernet
- **Switching inputs/outputs**: 6 x IN/4 x OUT
- **Dimensions (L, W, H)**:
  - 179/130/106 mm

- **Weight**: 2.3 kg
- **Enclosure rating**: IP 54/IP 65

**Special features**

- **Object size (L x W x H):**
  - min. 50/50/50 mm (1.2 m/s)
  - min. 100/100/50 mm (2 m/s)
  - max. 2.5/1/1 m
- **Scale interval**:
  - d = 5 mm at v = 1.2 m/s
  - d = 10 mm at v = 2.0 m/s

- **Object size (L x W x H):**
  - min. 50/50/50 mm
  - max. 2/1/1.6 m
- **PTB certificate**
- **Scale interval**: d = 5 mm at v = 2 m/s

- **Object size (L x W x H):**
  - min. 100/100/100 mm
  - max. 7.5/3/3 m
- **Accuracy typical ±20 mm

#### Accessories

- **SOPAS Engineering Tool Software**
- **Mounting bracket, can be adjusted in 3 axes**
- **RDT400 Remote Diagnostic Software**
- **CDM420 connection module**
- **External parameter memory**
- **Reading trigger sensors**
- **Incremental encoder**

- **SOPAS Engineering Tool Software**
- **2 mounting brackets, each can be adjusted in 3 axes**
- **Interface converter**
- **Gateways for PROFIBUS, DeviceNet and Ethernet**
- **Reading trigger sensors**
- **Incremental encoder**

- **SOPAS Engineering Tool Software**
- **2 mounting brackets, each can be adjusted in 3 axes**
- **Interface converter**
- **Gateways for PROFIBUS, DeviceNet and Ethernet**
- **Reading trigger sensors**
- **Incremental encoder**

---

*Standard
Optional

---

_SICK_ | PRODUCT OVERVIEW AUTOMATIC IDENTIFICATION TECHNOLOGY | 15
## Product Overview

### Automatic Identification Technology

#### Connection Modules

- **CDB400**
  - Standard
  - Optional
  - For 1 CLV405
  - CDB410 for 1 CLV41x
  - CDB420 for 1 CLV42x to CLV/X490, 1 ICR84x/85x or 1 ICR86x
  - 4 x PG cable glands
  - 2 x PG cable glands/2 x M12 for CAN network configuration

- **CDM400**
  - Standard
  - Optional
  - For 1 CLV410
  - CDM420 for 1 CLV41x
  - CDM490 for 1 CLV/X490 or 1 LMS400
  - CDM420 for 2 scanners
  - External Host and Aux interface connectors

- **MUX400**
  - Network controller for up to 32 scanners
  - Diagnosis LEDs
  - DUV installation into the control cabinet
  - Connection to fieldbus via CDM420/490 with additional module

#### Technical Data

**CDB400**
- Operating voltage: 18 to 30 V DC
- Data interfaces: RS 232, RS 422/485, CAN (depending on scanner type), service interface (Aux)
- Switching inputs/outputs: 2 x IN/2 (3 or 4) x OUT
- Dimensions (L, W, H): 124/113/54 mm
- Weight: 250 g (without accessories)
- Enclosure rating: IP 65

**CDM400**
- Operating voltage: 18 to 30 V DC (100 to 250 V AC)
- Data interfaces: RS 232, RS 422/485, CAN (depending on scanner type), service interface (Aux)
- Switching inputs/outputs: 2 x IN/2 (3 or 4) x OUT
- Dimensions (L, W, H): 192/167/70 mm
- Weight: 870 g (without accessories)
- Enclosure rating: IP 65

**MUX400**
- Operating voltage: 24 V DC
- Data interfaces: RS 232, RS 422/485, service interface (Aux)
- Switching inputs/outputs: 1 x IN/5 x OUT
- Dimensions (L, W, H): 237/104.5/120 mm
- Weight: 1.3 kg
- Enclosure rating: IP 20

#### Special Features

- **CDB400**
  - Diagnosis LEDs
  - Configuration switches
  - Termination resistor for network configuration
  - Closed lid installation
  - Connection diagram integrated in the lid
  - Extension slot for additional module

- **CDM400**
  - Diagnosis LEDs
  - Configuration switches
  - Termination resistor for network configuration
  - Closed lid installation
  - Connection diagram integrated in the lid
  - Extension slots for additional modules

#### Accessories

- **CDB420**
  - External parameter memory
  - CMC400

- **CDM410**
  - CMP400 power supply
  - CDM420/CDM490: External parameter memory
  - CMC400
  - CMP400 power supply
  - CMP490 power supply (optional lid, CDM490)
  - CMD400 display module (optional lid)
  - Gateways CMF400 for PROFIBUS, DeviceNet and Ethernet

- **MUX400**
  - CLV Setup Software, CLV Connect Software
  - CDM420, CDM490 connection modules
  - Gateways CMF400 for PROFIBUS, DeviceNet and Ethernet
  - Reading trigger sensors

---

*Standard* ○ *Optional*
Fieldbus Networks

Different SICK bar code scanners are possible to integrate into a SICK CAN Scanner Network and configured as a total project via the CLV Setup Software. The use of optional CMF400 fieldbus gateways allows the integration into fieldbuses such as PROFIBUS, DeviceNet or Ethernet networks.
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>LMS400</th>
<th>LMS200 to 291</th>
<th>LD-OEM, -PDS, -LRS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanning range</strong></td>
<td><img src="image" alt="Scan Range LMS400" /></td>
<td><img src="image" alt="Scan Range LMS200-291" /></td>
<td><img src="image" alt="Scan Range LD-OEM, PDS, LRS" /></td>
</tr>
</tbody>
</table>
| **Application areas** | • Intralogistics, robotics  
• Tote and pallet handling  
• High-bay warehouse management | • Volume/contour measurement  
• Intralogistics, robotics, traffic  
• Overhang checking  
• Collisions prevention/building security | • Intralogistics, robotics  
• Overhang checking in storage and retrieval systems  
• Navigation of AGVs |
| **Technical data** | 150 to 500 Hz  
70°  
0.1 to 1.5°  
24 V DC ± 15 %  
RS 232/RS 422, Ethernet | 75 Hz  
90/100/180° (type-dependent)  
0.25 to 1°  
24 V DC ± 15 %  
RS 232/RS 422  
1 x IN/3 x OUT  
155/210/156 mm (LMS200)  
351/265/236 mm (LMS211)  
351/265/228 mm (LMS221)  
4.5 kg (LMS200/LMS291)  
9 kg (LMS211/LMS221)  
IP 65 (LMS200/LMS291)  
IP 67 (LMS211/LMS221) | 5 to 15 (10) Hz  
75 Hz  
90/100/180° (type-dependent)  
0.25 to 1°  
24 V DC ± 15 %  
RS 232/RS 422  
1 x IN/3 x OUT  
155/210/156 mm (LMS200)  
351/265/236 mm (LMS211)  
351/265/228 mm (LMS221)  
4.5 kg (LMS200/LMS291)  
9 kg (LMS211/LMS221)  
IP 65 (LMS200/LMS291)  
IP 67 (LMS211/LMS221) |
| **Special features** | • Typical range at 10 % reflectivity: 3 m  
• "Level Control" application integrated | • Typical range at 10 % reflectivity:  
LMS200: 10 m (Indoor)  
LMS211/221: 30 m/43 m (Outdoor)  
LMS211/221: operating temperature down to –30 °C  
"Field monitoring" application integrated  
External, programmed application possible | • Typical range at 10 % reflectivity:  
OEM/PDS: 34 m  
LRS: 80 m  
PDS: "Field monitoring" application integrated  
OEM: Programmed, customer-specific application can be loaded |
| **Accessories** | • SOPAS Engineering Tool Software  
Mounting bracket, can be adjusted in 2 axes  
External parameter memory  
CDM490 connection module  
Reading trigger sensors  
Incremental encoder | • LMSiBS Configuration Software  
Mounting brackets  
Weather protection hoods  
Dust prevention shield  
Reading trigger sensors  
Purging air fans  
Scan finder  
External evaluation units | • SOPAS Engineering Tool Software (OEM, LRS) respectively  
LD-PDS Configuration Software  
Mounting bracket  
Scan finder |

**NOTE:** For detailed information please see the Product Overview “Laser Measurement Systems” (no. 8009106)
# Configuration and Diagnosis Software for Bar Code and 2D Code Scanners

<table>
<thead>
<tr>
<th>Function</th>
<th>SOFTWARE TOOLS FOR configurating, optimising and diagnosing the hand-held scanners</th>
<th>SOFTWARE TOOLS FOR configurating, optimising and diagnosing of bar code/2D code scanners</th>
<th>SOFTWARE FOR a fast construction of application-specific connection drawings inclusive connections to several PLC types</th>
<th>GRAPHICAL REMOTE VISUALISATION TOOLS to monitor and control the reading-performance of bar code scanners and other systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application areas</td>
<td>All hand-held scanners</td>
<td>• CLV405 to CLV/X490 • ICR84x/85x • OPS, ALIS • MUX400 • CMF400 fieldbus gateways</td>
<td>• CLV405 to CLV/X490 • ICR84x/85x • MUX400 • CMF400 fieldbus gateways</td>
<td>• CLV480/490, CLX490 • ALIS, OPS • ICR890 • RFI341 • VMS410/510/420/520</td>
</tr>
<tr>
<td>Special features</td>
<td>Windows-based Setup Software</td>
<td>Windows-based Setup Software</td>
<td>Easy selection of CLV/ICR connection diagrams for connecting to different host computer types</td>
<td>Visualisation and control of scanner system performance (max. 64 systems each with max. 24 scanners)</td>
</tr>
<tr>
<td></td>
<td>Clear visualisation of scanner parameters</td>
<td>Clear visualisation of scanner parameters</td>
<td>Listing of the CDB/CDM connection modules</td>
<td>Use of existing network infrastructures like Ethernet</td>
</tr>
<tr>
<td></td>
<td>Extensive, context based help system</td>
<td>Extensive, context based help system</td>
<td>Single scanner applications</td>
<td>Use of standard technologies like TCP/IP</td>
</tr>
<tr>
<td></td>
<td>Automatic scanner type detection</td>
<td>Automatic scanner type detection</td>
<td>SICK CAN Scanner Network</td>
<td>Remote-Access &amp; Remote-Service</td>
</tr>
<tr>
<td></td>
<td>Integrated terminal emulation for visualising the online communication</td>
<td>Integrated terminal emulation for visualising the online communication</td>
<td>Connection to PROFIBUS, DeviceNet, Ethernet</td>
<td>Permanent control of system-performance</td>
</tr>
<tr>
<td></td>
<td>Image download to the PC at 2D-handheld scanners</td>
<td>Option for printing the scanner configuration as profile bar codes</td>
<td>Scanner connection to PLC types S5, S7</td>
<td>Automatic control of system read rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Configuration of a SICK CAN Scanner Network solution</td>
<td>Linking up of CLV/ICR and hand-held scanners</td>
<td>Automatic control of single scanner read rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Image download and demonstration of the reading quality of ICR 84x/85x</td>
<td>Programmable alarms</td>
<td></td>
</tr>
</tbody>
</table>

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Range of Expertise

Industrial Sensors

Our complete range of sensors provides answers to suit any application in the field of automation. Even under rugged ambient conditions objects are reliably detected, counted and positioned in respect of their form, location and surface finish, as well as their distances established with pin-point accuracy.

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Whether the tasks involve identification, handling, classification or volume measurement, innovative Auto Ident systems and laser measuring systems function extremely reliably, even under rapid cycle times. They conform to the latest Standards and can be simply and speedily integrated in all industrial environments and external applications.

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