# Unique Identification Program (UID)

What is Unique Identification?

The UID program is designed by the Department of Defense (DoD) to enhance total asset visibility, improve lifecycle item management and accountability, and enable clean financial audits.

UID DataMatrix is a globally unique and unambiguous mark that ensures data integrity and data quality throughout its life and supports multi-faceted business applications and users. The technology used to mark an item is the 2D DataMatrix ECC 200 Symbol.
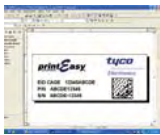
Design

- Tyco Electronics software & hardware (printers, ribbons) are capable of producing a high quality UID mark on Tyco Electronics labels and cable identification products. PrintEasy is powerful label design and printing software with DataMatrix capability and several enterprise database connectivity options for your UID printing and storage needs.

Print

- The Tyco Electronics T300 Series and T400 Series thermal transfer printer range is specially designed to print on specialty label and cable identification products. These high performance, heavy duty printers provide crisp, high quality DataMatrix marks for your UID applications.

Read

- DataMatrix symbols require a special 2 dimensional reader. Ordinary linear barcode scanners cannot read DataMatrix symbols used in UID. Tyco Electronics offers both standard (BSC-200) and high resolution (VLD-100) two dimensional readers.

Validate

- To validate that construction of the UII string is correct per the MIL spec, Tyco Electronics offers validator products. The VLD-100 validator is a simple point and shoot imager that validates UII constructs. Simply scan the DataMatrix mark and know if the encoded information is to the spec or not!

Verify

- To conform to quality standards called out in the MIL specifications, Tyco Electronics offers fixed mount verifiers that grade the UID code for its quality conformance. Detailed UID reports with the barcode pictures can be archived for future reference.

Design

Tyco Electronics PrintEasy software is powerful yet easy to use Windows based label design and printing software. With PrintEasy software, you can quickly and easily combine 2D DataMatrix text and graphics into professional quality labels. Carefully organized menus and pop-up dialogs display all your options in plain, easy to understand words.

The true WYSIWYG display allows you to create and view your labels with precision, giving you total control over your labels' appearance before printing. PrintEasy software is ideal for use with the Tyco Electronics range of thermal transfer printable pressure sensitive label products. PrintEasy software is pre-loaded with all of Tyco Electronics standard thermal transfer label templates, which allows you to simply select the Tyco Electronics part number you want to print and you are ready to go.
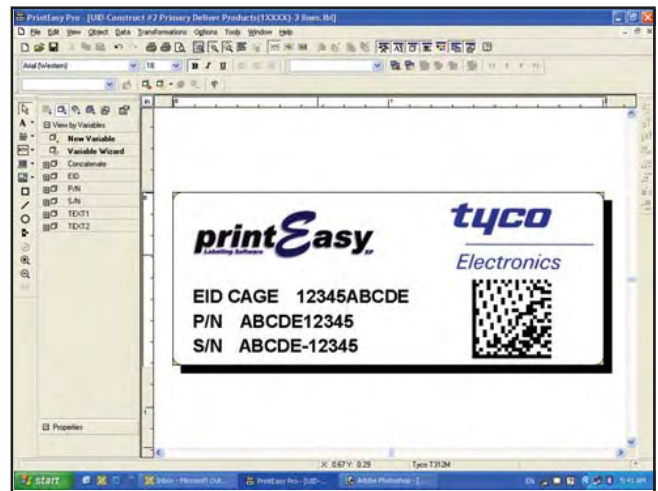
Features

- Support for 2D Datamatrix code, unlimited width & height
- Easy entry of special and unprintable control characters
- Excellent database connectivity options including Microsoft ODBC support including: Access, Btrieve, dBase, Excel, Oracle, Paradox, Clipper, FoxPro, Interbase, ASCII text files, SAP (mySAP.com and R/3)
- Variety of functions including concatenate, sequentially numbered variables and support for custom programming including visual basic scripting
- Minimum recommended computer configuration:

Computer:	IBM compatible PC
Processor:	Intel Pentium processor, 200 MHz minimum
Ram:	64 MB
Operating System:	32-bit Windows 95, 98, ME, NT (Service Pack 6), 2000 or XP
Disk Space Required:	50 to 205B free hard disk space (depending on edition used and options)
Format:	CDROM

Print

T312M & T312S Series High Performance, Cost Effective Thermal Transfer Printers

The T300 series printers are high performance, yet cost effective thermal transfer printers with a 4.1" printhead. The rugged and durable metal construction makes them suitable for demanding industrial and commercial environments. The enhanced memory and 32 bit processor provide fast data processing and print speeds. Optional accessories are available for added convenience and efficiency.

The 300 dpi printhead on the T312M and T312S produces crisp, high quality text, barcodes and graphic images on Tyco Electronics thermal transfer printable cable identification and labeling products.

Printer Specifications

Print head width	104mm (4.09")
Print head resolution	T312M/T312S*: 12dpmm (305 dpi)
Print speed (maximum)	T312M/T312S: 203mm/sec (8 inch/sec)
Media sensor	Transmissive - adjustable
	Reflective (fixed)
Memory	T312M/T312S: 6MB DRAM and 2MB Flash
Communication interface	Bi-directional parallel (Centronics) and serial (RS232)
Printer dimensions	T312M/T312S:
	283mm W x 495mm D x 394mm H
	(11.2" W x 19.5" D x 15.5" H)
Printer weight	T312M/T312S: 25kg (55 lbs)
Shipping weight	T312M/T312S: 29kg (63 lbs)

Media Specifications

Maximum print width	104mm (4.09")
Maximum media width	114mm (4.48")
Minimum media width	T312M/T312S: 20mm (0.76")
Maximum media roll dia.	203mm (8.0")
Media core diameter	76mm (3.0")
Ribbon wind	Ink side out

Product Order Code	Description
T312M-PRINTER	T312M thermal printer - standard
T312M-R-PRINTER	T312M thermal printer - internal rewind option
T312S-PRINTER	T312S thermal printer - standard
T312S-C-PRINTER	T312S thermal printer - cutter option
T312S-R-PRINTER	T312S thermal printer - internal rewind option

T424 Series High Performance & High Speed Thermal Transfer Printer

Printer Specifications

Print head width	T424S*: 81mm (3.2")
Print head resolution	T424S*: 23.5dpmm (600 dpi)
Print speed (maximum)	T424S: 102mm/sec (4inch/sec)
Media sensor	Transmissive and reflective Reflective (fixed)
Memory	16MB SDRAM and 4MB Flash
Communication interface	Bi-directional parallel (Centronics), serial (RS232), and USB 2.0
Printer dimensions	T424S*: 263.5mm W x 495.3mm D x 393.7mm H (10.37" W x 19.5" D x 15.5" H)
Printer weight	T424S*:22.7kg (50 lbs)
Shipping weight	T424S*: 27kg (59 lbs)

Media Specifications

Maximum print width	T424S*: 81mm (3.2")
Maximum media width	T424S*: 114mm (4.5")
Minimum media width	T424S*: 20mm (0.76")
Maximum media roll dia.	203mm (8.0")
Media core diameter	76mm (3.0")
Ribbon wind	Ink side out

Product Order Code	Description
T424S-PRINTER	T424S thermal printer - standard*

*Not available in Europe, Middle East or Africa

The T424 Series printers are high performance thermal transfer printers suitable for a variety of mission critical applications.

With the highest print resolution of 600 dpi, the T424S produces unmatched quality of crisp, high quality text, barcodes and graphic images in a limited space - ideal for printing linear and DataMatrix codes on Tyco Electronics thermal transfer printable pressure sensitive label products.

Read

BSC-200
Hand Held Imager

Basic Imager for Bar Codes and 2D Symbols

The BSC-200 imager is a portable hand held solution for reading both linear bar codes and 2D symbols. The BSC-200 reads a wide range of bar code symbols created from a variety of printing and marking methods.

- **Read Area:**

  The BSC-200 imager's advanced "dual decode zone" technology allows the user to easily capture 2D symbols and linear bar codes at varying distances from 2 to 20" (50.8 to 508mm). This wide read area allows the symbols to be decoded fast and reliably.

  Fast processing speeds also add to the BSC-200's ability to acquire and decode multiple symbologies, with no adjustment of the imager required.

- **Ease of use:**

  BSC-200 imagers feature point-and-click targeting with a red laser spot to quickly center the symbol in the field of view. Beeper, vibrator and multi-purpose LEDs provide real-time feedback to signal successful decoding.

- **Applications:**

  The BSC-200 imager is a strong reading solution for applications needing to read linear bar codes and 2D symbologies with a portable handheld device.

- **System Integration:**

  BSC-200 imagers are available in 2 configuration options:

  - Batch: A wireless way to collect thousands of decoded symbols for later download, capable of performing more than 4000 reads from a single battery charge and buffers a minimum of 1 MB of data in nonvolatile memory. (battery purchased separately)

  - Cabled: Cabled units include USB, RS-232. (RS-232 available through the purchase of optional connector kit - contact Tyco Electronics)

- **Symbologies:**
  The BSC-200 automatically discriminates between all major 2D matrix and linear bar code symbologies, and offers time stamp capabilities for logging data. Symbologies include:

  2D Symbologies:
  - MaxiCode
  - Aztec Code
  - QR Code
  - Data Matrix (ECC 200)

  Stacked Symbologies:
  - UCC Composite
  - PDF417 (with Macro support)
  - Micro PDF417

  Linear Bar Codes:
  - Codabar
  - GoCode
  - RSS
  - Code 128
  - UPC/EAN/JAN
  - Codablock F
  - Code 93
  - Code 39
  - Standard postal codes
  - Int 2 or 5

- **BSC-200 Accessories:**
  - Long-life 1300 mA lithium-ion battery
  - Two-bay battery charger
  - RS-232 kit

SPECIFICATIONS & OPTIONS:
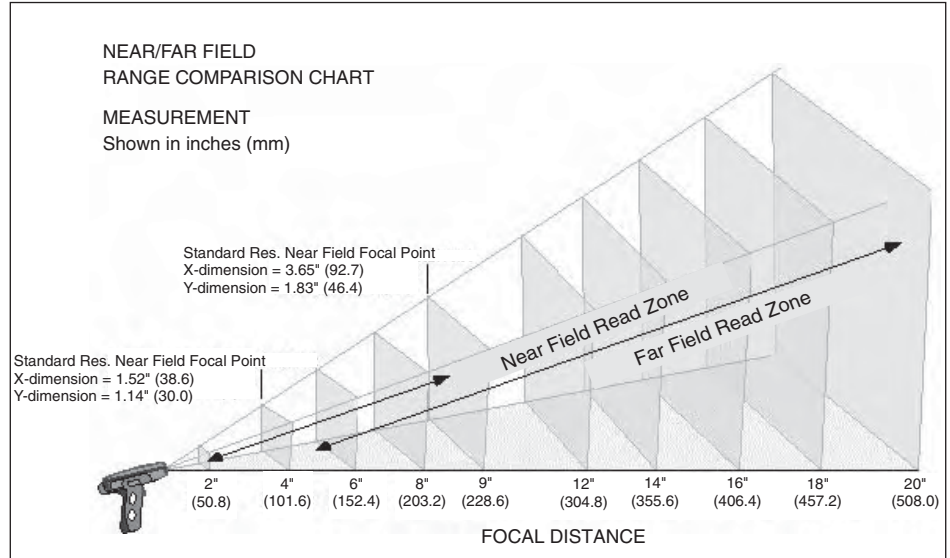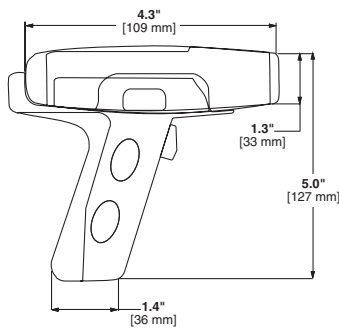
- **Imager Mechanical:**
  Height: 1.3" [33 mm]
  Width: 1.8" [46 mm]
  Depth: 4.3" [109 mm]
  Weight: 2.5 oz. [71.5 g]
  not including cable

- **Handle Mechanical:**
  Height: 3.8" [96.5 mm]
  Width: 1.2" [30 mm]
  Depth: 1.4" [36 mm]
  Weight: 1.2 oz. [59.8 g]

- **Additional Physical Characteristics:**
  Battery Weight: 2.1 oz. [59.5 g]
  Battery Blank: .5 oz. [13.6 g]
  Cable Length: 6' [1.8 m]

NEAR/FAR FIELD
RANGE COMPARISON CHART

MEASUREMENT
Shown in inches (mm)

Standard Res. Near Field Focal Point
X-dimension = 3.65" (92.7)
Y-dimension = 1.83" (46.4)

Standard Res. Near Field Focal Point
X-dimension = 1.52" (38.6)
Y-dimension = 1.14" (30.0)

Near Field Read Zone

Far Field Read Zone

| 2" (50.8) | 4" (101.6) | 6" (152.4) | 8" (203.2) | 9" (228.6) | 12" (304.8) | 14" (355.6) | 16" (406.4) | 18" (457.2) | 20" (508.0) |

FOCAL DISTANCE

Diagram dimensions: 4.3" [109 mm], 1.3" [33 mm], 5.0" [127 mm], 1.4" [36 mm]

Read Ranges, Standard Resolution

Narrow Bar-Width	Read Range Distance
.0075" [.191 mm]	3.2 o 3.9" [81 to 99 mm]
.015" [381 mm]	3.0 to 9.0" [76 to 229 mm]
.020" [.508 mm]	3.0 to 11.5" [76 to 292 mm]

Field of View, Standard Resolution

Distance inches [mm]	Decode Zone (1024 x 640 pixel, Default)
Near: 4" [101.6]	1.52x1.14 {38.6 x 30 mm]
Far: 9" [228.6]	3.65 x 1.83" [92.7x 46.4mm]

- **Environmental:**
  Operating Temperature:
  0° to 40°C [32° to 104°F]
  Storage Temperature:
  -20° to 60°C [-4° to 140°F]
  Humidity:
  5 to 90% (non-condensing)

- **CE Standards:**
  Immunity: EN55024
  ESD: EN61000-4-2
  Radiated RF: EN61000-4-3
  Keyed Carrier: ENV50204
  EFT: EN61000-4-4
  Conducted RF: EN61000-4-6
  Emissions: EN55022, Class B
  Radiated, Class B Conducted

- **Symbology Types**

Linear Bar Codes: Code 39, Code 128, I2 of 5, Codabar, UPC/EAN, Codablock F, Go Code, RSS, Code 93, PLANET, PostNet, KIX Code, Postal Codes (Japan, Australia)

2D Symbologies: Data Matrix (ECC 200), MaxiCode, Aztec Code, QR Code

Stacked Symbologies: PDF417, UCC Composite, Micro PDF417

- **Light Collection Options:**
  Sensor: CMOS, progressive scan,
  1.33 MP (1024 by 1280) 256 gray scale
  Field of View:
  Near: 21.5° horizontal by 16.2" vertical
  Far: 22.9° horizontal by 11.6" vertical
  Standard Resolution Focal Point:
  Near: 4" [101.6 mm]
  Far: 9" [228.6 mm]
  Sensor Array:
  Near field: 1024 by 640
  Far field: 1024 by 640

- **Communication Protocols**
  Standard Interface: USB
  Optional interface: RS-232

- **Indicators:**
  Statue Indicators: Memory status,
  Battery power, Successful decode,
  and Connection Status
  Programmable Indicators:
  Beeper or Vibrate option;
  communicates scanner operation and
  communication functions to user

- **Image Output Options:**
  Format: JPEG, Raw
  (uncompressed)
  Time Stamp: Interval logging

- **Read Parameters**
  Pitch: ±60° (front to back)
  Skew: ±60°
  Tilt: 360°
  Focal Range: 4 to 20 [102 to 508 mm]
  Rotational Tolerance: ±180°
  Print Control Resolution: 25% (bar
  codes); 35% (PDF417); absolute
  dark/light reflectance differential,
  measure at 650 nm.
  Target Beam: Visible Laser Diode at
  630 nm, Class 2
  Ambient Light Immunity:
  Sunlight: up to 9,000 ft. candles 96,890
  lux
  Shock: Withstands multiple drops of
  6.5' (2 meters) to concrete

- **Electrical:**
  Power Requirements: 5 VDC (mA)
  Typical: 310   Peak: 310 Sleep: 3

- **Safety Certifications:**
  Designed for: FCC, CE

- **ISO Certification:**
  Issued by RWTüV, USA Inc.
  ISO 9001:2000 - Cert. No. 03-1212

Validate

VLD-100 Hand Held Imager/Validator

The VLD-100 Imager/Validator is optimized to read both linear bar codes and 2D symbols. It is an aggressive hand held imager/validator for decoding symbols on low contrast substrates such as metal, plastic, rubber, polyester, vinyl, Kapton, polyvinyl fluoride and glass. The VLD-100 can read marking methods such as dot peen, thermal transfer and laser/chemical etch. Containing custom optics and Tyco Electronics' decode algorithms, the VLD-100 combines the decoding power of Tyco Electronics' popular smart camera, VRF-100, into a portable hand held device.

- **Optical Options:**

   The VLD-100 hand held imager/validator is available in:
   - The high resolution version is custom designed to optimize resolution for reading small 2D symbols.

- **LightRay Optics Accessory:**

   Tyco Electronic's LightRay Optics solution further enhances its ability to read directly marked parts. By directing the illumination toward the symbol at off-axis angles, the LightRay Optics increase symbol contrast and filters out texture noise. The LightRay Optics are designed so that it is positioned at the correct focal distance and angle. No training is needed to find the best angles for reading low contrast symbols. Either optical accessory easily attaches on to the end of the VLD-100. Two options are available: the LightRay Optics 100 Series and the LightRay Optics 200 Series.

   LightRay Optics 100 Series generates off-axis diffuse illumination

   LightRay Optics 200 Series generates dark field illumination

- **Ease of Use:**
   The VLD-100 features point-and-click targeting with a red laser spot to quickly center the symbol in the field of view. Beeper, vibrator and multi-purpose LEDs provide real-time feedback to signal successful decoding.

- **Applications:**
   The VLD-100 provides outstanding performance validating challenging 2D codes.

   <u>Automotive and Aerospace:</u> reads codes marked on steel, iron, aluminum, rubber, and glass parts by laser etch, dot peen, metal stamp, and thermal transfer products.

   <u>Electronics:</u> reads codes laser etched on printed circuit boards and components.

   <u>Department of Defense:</u> reads UID codes on a variety of substrates. Software enables it to validate UII code format for suppliers and constructs the UID string for DoD operators

- **System Integration:**
   All Tyco Electronics imagers are available in 2 configuration options:
   - Batch: A wireless way to collect thousands of decoded symbols for later download, capable of performing more than 4000 reads from a single battery charge and buffer a minimum of 1 MB of data in non-volatile memory.
      - Cabled: Cabled units include USB, RS-232. (RS-232 available through the purchase of optional connector kit - contact Tyco Electronics)

- **Symbologies:**
   The VLD-100 imager/validator reads all standard linear bar codes plus:
   <u>2D Symbologies:</u>
   - Data Matrix (ECC 0200)   - QR Code
   - MaxiCode   - Aztec Code
   <u>Stacked Symbologies:</u>
   - UCC Composite   - PDF417 (Macro Support)
   - Micro PDF417

SPECIFICATIONS AND OPTIONS:

- **Imager Mechanical:**
  Height: 1.3" [33 mm]
  Width: 1.8" [46 mm]
  Depth: 4.3" [109 mm]
  Weight: 2.5 oz. [71.5 g]
  not including cable

- **Handle Mechanical:**
  Height: 3.8" [96.5 mm]
  Width: 1.2" [30 mm]
  Depth: 1.4" [36 mm]
  Weight: 1.2 oz. [59.8 g]

- **Additional Physical Characteristics:**
  Battery Weight: 2.1 oz. [59.5 g]
 Battery Blank: .5 oz. [13.6 g]
  Cable Length: 6' [1.8 m]
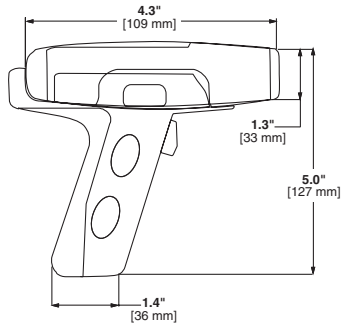
- **Environmental:**
  Operating Temperature:
  0˚ to 40˚C [32˚ to 104˚F]
  Storage Temperature:
  -20˚ to 60˚C [-4˚ to 140˚F]
  Humidity: 5 to 90% (non-condensing)

- **CE Standards:**
  Immunity: EN55024
  ESD: EN 61000-4-2
  Radiated RF: EN61000-4-3
  Keyed Carrier: ENV50204
  EFT: EN61000-4-4
  Conducted RF: EN61000-4-6
  Emissions: EN55022, Class B Radiated,
  Class B Conducted

- **Symbology Types**
  Linear Bar Codes: Code 39, Code 128,
  12 of 5, RSS, UPC/EAN, Codabar,
  Codablock F, Go Code, Code 93,
  PLANET, PostNet, KIX code, Postal
  Codes
  Stacked Symbologies: PDF 417, UCC
  Composite, Micro DF417
  2D Symbologies: Data Matrix,
  MaxiCode, Aztec Code, QR Code
  Note: VLD mode decodes Data Matrix
  ECC 0-200 and QR code only.
  Basic model decodes Data Matrix ECC
  200 plus all other listed symbologies.

- **Indicators:**
  LED Indicators: Memory status, Battery
  power, Successful decode, and
  Connection Status
  Programmable Indicators: Beeper or
  Vibrate option; communicates scanner
  operation and communication functions
  to user

**NEAR/FAR FIELD
FOCAL DISTANCE COMPARISON CHART**

MEASUREMENT
SHOWN IN INCHES [MM]
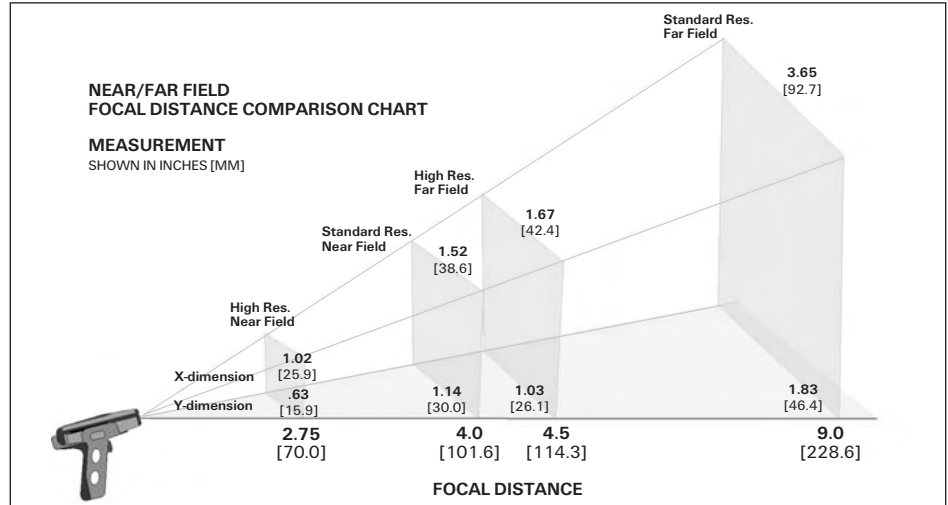
Read Ranges, High Resolution

Narrow Bar-Width	Read Range Distance
.005" [.127 mm]	1.75 to 4" [44.4 to 101.6 mm]
.0075" [.191 mm]	1.75 to 4" [44.4 to 101.6 mm]
.010" [.254 mm]	1.75 to 4.75" [44.4 to 120.6 mm]
.015" [.381 mm]	1.75 to 6" [44.4 to 152.4 mm]
.020" [.508 mm]	1.75 to 6.5" [44.4 to 165.1 mm]

Read Ranges with LightRay Optics

LightRay Options	Read Range Distance
LightRay 100 Series	Contact to .25" [6.35 mm]
LightRay 200 Series	Contact to .25" [6.35 mm]

- **Image Output Options:**
  Format: JPEG, Raw (uncompressed)
  Time Stamp: Interval logging

- **Light Collection Options:**
  Sensor: CMOS, progressive scan,
  1.33 MP (1024 by 1280) 256 gray scale
  High Resolution Field of View:
  Near and Far: 21˚ horizontal by 13˚
  vertical
  High Resolution Focal Point:
  Near: 2.75" (70 mm) Far: 4.5" (115 mm)
  Sensor Array:
  Near Field: 1024 by 640 (default)
  Far Field: 1024 by 640 (default)

- **Communication Protocols:**
  Standard Interface: USB
  Optional Interface: RS-232

- **Electrical:**
  Power Requirements: 5 VDC (mA)
  Typical: 310   Peak: 310 Sleep: 3

- **Safety Certifications:**
  Designed for: FCC, CE

- **ISO Certification:**
  Issued by RWTüV, USA Inc.
  ISO 9001:2000 - Cert. No. 03-1212

High Resolution, Near Field of View

Distance inches [mm]	Field of View Size (1024 x 640 pixel, Default)
2" [50.8]	.74" x .46" [18.8 x 11.6 mm]
2.5" [63.5]	.93 x.57" [23.5 x 14.5 mm]
2.75" [69.9]	1.02 x .63" [25.9 x 15.9 mm]
3" [76.2]	1.11 x .68" [28.3 x 17.4 mm]
3.5" [88.9]	1.30 x .80" [33.0 x 20.3 mm]
4" [101.6]	1.48 x .91" [37.7 x 23.2 mm]

High Resolution, Far Field of View

Distance inches [mm]	Field of View Size (1024 x 640 pixel, Default)
2" [50.8]	.74" x .46" [18.8 x 11.6 mm]
2.5" [63.5]	.93 x.57" [23.5 x 14.5 mm]
3" [76.2]	1.11 x .68" [28.2 x 17.4 mm]
3.5" [88.9]	1.30 x .80" [32.9 x 20.3 mm]
4" [101.6]	1.48 x .91" [37.6 x 23.2 mm]
4.5" [114.3]	1.67 x 1.03" [42.4 x 26.1 mm]
5" [127]	1.85 x 1.14" [47.1 x 28.9 mm]
5.5" [139.7]	2.04 x 1.25" [51.8 x 31.8 mm]
6" [152.7]	2.22 x 1.37" [56.5 x 34.7 mm]
6.5 [165.1]	2.41 x 1.48" [61.2 x 37.6 mm]

Field of View, LightRay Optics

LightRay Options	Field of View Size
LightRay 100 Series	Small Cir. .75" [19.1 mm]*
LightRay 200 Series	Small Cir. .75" [19.1 mm]*

*Large Circular TBD

- **Read Parameters**
  Pitch: ±60˚ (front to back)
  Skew: ±60˚   Tilt: 360˚
  Focal Range: 1 to 20 [25 to 508 mm]
  Rotational Tolerance: ±180˚
  Print Control Resolution: 25% (bar codes);
  35% (PDF417); absolute dark/light
  reflectance differential, measure at 650 nm.
  Target Beam:
  Visible Laser Diode at 630 nm, Class 2
  Ambient Light Immunity: Sunlight: up
  to 9,000 ft. candles 96,890 lux
  Shock: Withstands multiple drops of
  6.5' (2 meter) to concrete

Verify

VRF-100 Production Ready Data Matrix Verifier

The VRF-100 is an ISO/IEC 15415 and AS9132-compliant Data Matrix verifier for use in production environments. The ISO/IEC 15426-2 is a certified Data Matrix verifier that helps to ensure that your marks will be verified accurately every time.

Unlike most verifiers that are mounted on stands designed for the lab environment, the VRF-100 Verifier is a fully-contained, compact device that is easy to integrate into the production environment. The VRF-100 Verifier is factory-calibrated to specific traceability standards with a fully-contained housing, making it easy to integrate into existing applications. No on-site calibration of optics or lighting is needed to verify marks with the Verifier. Simply present the part to the Verifier, trigger, and receive the symbol quality report.

- **Production-Ready**

  It is the first 2D verifier designed specifically for use in a production environment. Its compact, lightweight design makes the Verifier easy to integrate into production processes. A self-contained, factory-calibrated system with flexible mounting allows the Verifier to be adapted to any application quickly and easily.

- **Calibrated System**

  It provides the user with a ready-to-use, ISO/IEC 15426-2 calibrated system. Simply present the part, trigger, and the Verifier will output the results. The user is not required to focus the optics, set the light angles. Fixed optics and pre-set illumination angles make the verifier consistent, reliable and accurate.

- **Illumination Chamber**

  The Verifier's fully-enclosed illumination chamber provides the controlled lighting environment for accurate, repeatable verification. The chamber is specifically engineered to produce the illumination angles required by the ISO/IEC 15415 standard.

- **VRF Software**

  Offers complete symbol verification reports

- **ISO/ICE 15426-2 Certified**
  The Verifier is ISO/IEC 15426-2 certified. It is precisely engineered to meet rigorous verification standards, ensuring accurate and consistent verification.

- **ISO/IEC 15415 Compliant**
  The Verifier provides verification of 2D symbols for parameters:
  - Symbol contrast
  - Modulation
  - Axial non-uniformity
  - Grid non-uniformity
  - Print growth (ungraded)
  - Fixed pattern damage
  - Reference decode algorithms
  - Unused error correction

- **AS9132**
  Verifies Data Matrix symbols in accordance with the parameters called out in the AS9132 standard:
  - Quiet Zone
  - Cell fill
  - Dot center offset
  - Symbol type
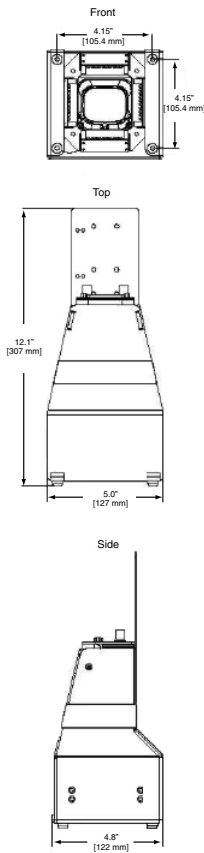 - Dot ovality
  - Contrast
  - Angle of distortion

- **MIL STD 130**
  Requires verification of Data Matrix symbols to both ISO/IEC 15415 and AS9132 standards as required by the MIL STD 130 specification.

SPECIFICATIONS AND OPTIONS:
- **Mechanical:**
  Height: 12.1" [307 mm]
  Width: 5.0" [127 mm]
  Depth: 4.8" [122 mm]

Front
4.15" [105.4 mm]
4.15" [105.4 mm]

Top

12.1" [307 mm]

5.0" [127 mm]

Side

4.8" [122 mm]

- **Environmental:**
  Operating Temperature:
  40°C [104°F] Max.
  (if mounted on non-metal surface)
  Storage Temperature:
  -50° to 75°C [58° to 167°F]
  Humidity:
  Up to 90% (non-condensing)

- **Emissions/Immunity:**
  ITE Disturbances: EN55022, 1998
  (radiated and conducted), Class A
  General Immunity:
  EN55024: 1998 (residential)
  Heavy Industrial Immunity:
  EN61000-6-2:1999

- **Light Source:**
  Type: High output LEDs
  External: (45°, 30°): 660 nM

- **Light Collection:**
  CCD Array: 659 x 494 pixels

- **Symbology:**
  Data Matrix (ECC 0-200)
  Linear Bar Codes
  Stacked Bar Codes

ISO/IEC 15415
Verification Test Parameters

Good
Grade A Symbol

Contrast — Poor Quality
Modulation — Poor Quality
Axial Non-uniformity
Grid Non-uniformity
Error Correction
Print Growth — Underprint
Fixed Pattern Damage
Overprint

Pin. No.	Host RS232	Host & Aux RS232	Ethernet	In/Out
1		Chassis ground[a]		
2		TxD		Out
3		RxD		In
4	RTS	TxD		Out
5	CTS	RxD		In
6		Output 1 (+)		Out
7		Signal Ground[b]		
8		Output 2 (+)		Out
9		Trigger (-)		In
10		Trigger (+)		In
11		Default configuration[c]		In
12		Input 1 (+)		In
13			RxD (+)	In
14			RxD (-)	In
15		Output 3 (+)		Out
16			TxD (-)	Out
17		Power Ground[d]		
18		Power +10 to 28 VDC		In
19			TxD (+)	Out
20		Output 1 (-)		Out
21		Output 2 (-)		Out
22		Output 3 (-)		Out
23		Input 1 (-)		In
24		New master (-)		In
25		New master (+)		In

[a] Chassis ground: used to connect chassis body to earth ground only. Not to be used as power or signal return.
[b] Signal ground: Used for communication and signal line grounds only. Not to be used as power or chassis return.
[c] The default is activated by connecting pin 11 to ground pin 7.
[d] Power ground: Used for power return only.
Caution: If using your own power supply, verify correct connection of power and ground lines. Incorrect connections or use of "Chassis ground", "Power ground", and "Signal ground" lines could cause equipment or software failure.

- **Symbol Verification Parameters:**
  Max Characters: 78

- **Verification Standards:**
  ISO/IEC15415 (2D), AS9132

- **Video Input (Option):**
  Signal System: Progressive scan
  No. of Scanning Lines:
  525 lines/non-interlaced
  Input: Analog 1 Vp-p

- **Video Output (Option):**
  Signal Systems: EIA
  No. of Scanning Lines: 525 lines / 2:1 interlaced
  Output: Analog 1 Vp-p /75 ohm

- **Indicators:**
  LEDS: Read Performance, Power, Read Status, and Network Status
  Beeper

- **Communication Protocols:**
  Interface: RS-232, Ethernet

- **Electrical:**
  Power Requirements:
  Input, 10 to 28 VDC, 200 mV p-p max. ripple, 270 mA at 24 VDC (typ. CMOS), 333 mA at 24 VDC (typ. CCD)
  Trigger, New Master, Input 1: (Optoisolated) 5 to 28 VDC rated, (12 mA at 24 VDC)
  Outputs 1/2/3: (Optoisolated) 1 to 28 VDC rated, (I_{CE}< 100mA at 24 VDC, current limited by user).

- **Safety Certifications:**
  Designed for: FCC, CE, cUL, UL

- **ISO Certification:**
  Issued by RWTüV, USA Inc.
  ISO 9001: 2000 - Cert No. 03-1212
  ISO/IEC 15426-2

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