

**Microscan's Quadrus® Verifier is an ISO/IEC 15415 and AS9132-compliant Data Matrix verifier ready for factory floor use. The Quadrus Verifier is a precision instrument certified to ISO/IEC 15426-2 Data Matrix conformance standards ensuring that your marks will be verified accurately every time.**

Unlike most verifiers that are mounted on scientific stands designed for the lab, the Quadrus Verifier is a fully-contained, compact device that is easy to integrate into a factory setting. Quadrus Verifier's fully enclosed illumination chamber provides the controlled lighting environment required for accurate, repeatable verification. No on-site calibration of optics or lighting is needed to verify marks with Quadrus Verifier. Simply present the part to the Verifier, trigger, and receive a symbol verification report.

# QUADRUS® VERIFIER

## DOD-READY VERIFIER FOR THE FACTORY FLOOR

### Factory Floor Ready

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

### ESP® Easy Setup Program

Offers complete symbol verification reports. The report shows the image, decoded data, time stamp and allows the user to input operator name and company name. Formats include .pdf, .html, .csv, and .rtf.

### ISO/IEC 15426-2 Certified

ISO/IEC 15426-2 is a standard that certifies verification hardware to ensure results are consistent and repeatable. Quadrus Verifier is a precision verifier that conforms to ISO/IEC 15426-2, which is required to perform ISO/IEC 15415 verification.

### ISO/IEC 15415 Compliant

Quadrus Verifier provides verification of 2D symbols for ISO/IEC 15415 parameters:

- Fixed Pattern damage
- Reference decode algorithms
- Symbol Contrast
- Modulation
- Unused Error Correction
- Axial non-uniformity
- Grid non-uniformity
- Print growth (ungraded)

### AS9132

Verifies directly-marked Data Matrix symbols in accordance with the parameters called out in the AS9132 standard:

- Quiet Zone
- Dot ovality
- Cell fill
- Contrast
- Dot center offset
- Angle of distortion
- Symbol type

### MIL-STD-130 - UID Ready

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



### Fully Calibrated System

Quadrus Verifier provides the user with a ready-to-use, ISO/IEC 15426-2 certified system. To use, simply center a symbol in the field of view and trigger the Quadrus Verifier. There is no need to focus the optics or set the light angles, as these are calibrated and set at the factory. These fixed optics and pre-set illumination angles ensure the Quadrus Verifier provides consistent, reliable, and accurate results every time.

### Illumination Chamber

The illumination chamber is specifically engineered to block out ambient light to provide a controlled environment needed for consistent and repeatable results.



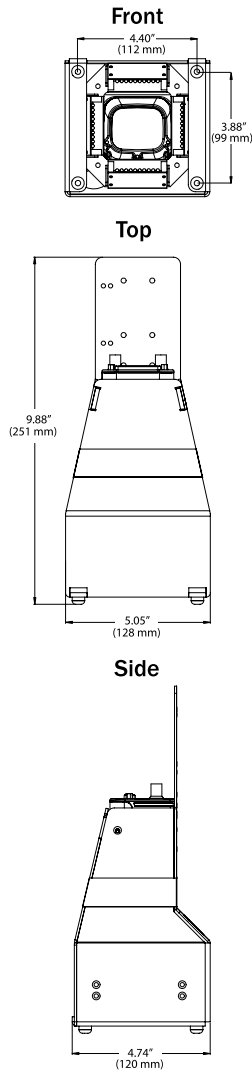
ISO/IEC 15415 Verification Test Parameters		Poor Quality	Poor Quality
<b>High Quality Symbol</b> 	Contrast		Modulation
	Axial Non-uniformity		Grid Non-uniformity
	Unused Error Correction		Print Growth
	Fixed Pattern Damage		Underprint
			Overprint

# QUADRUS<sup>®</sup> VERIFIER

## SPECIFICATIONS AND OPTIONS

### MECHANICAL

**Height:** 9.88" (251 mm)  
**Width:** 5.05" (128 mm)  
**Depth:** 4.74" (120 mm)



### FOV/ELEMENT SIZE CHART

Symbol*	Min. Element Size	FOV
	≥.0075 (0.19 mm)	.49 X .37" (12.5 X 9.4 mm)
	≥.010 (0.25 mm)	.66 X .5" (16.8 X 12.7 mm)
	≥.0125 (0.32 mm)	.82 X .62" (20.8 X 15.7 mm)
	≥.015 (0.38 mm)	.98 X .72" (24.9 X 18.8 mm)
	≥.020 (0.50 mm)	1.31 X .99" (33.3 X 25.2 mm)



\*Symbol samples are 26 X 26 size at element size, 88 numeric/64 alphanumeric characters

### CONNECTORS/PIN ASSIGNMENTS

**Host Connector:** 25-pin D-subminiature plug

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

### 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, 333 mA at 24 VDC  
**Trigger, New Master, Input 1:** (Optoisolated) 5 to 28 VDC rated, (12mA at 24 VDC).  
**Outputs 1/2:** (Optoisolated) 1 to 28 VDC rated, (I<sub>CE</sub> < 100mA at 24 VDC, current limited by user).  
**Output 3:** Light control, (Optoisolated) 1 to 28 VDC rated, (I<sub>CE</sub> < 100mA at 24 VDC, current limited by user).

### SAFETY CERTIFICATIONS

Designed for: FCC, CE

### ISO CERTIFICATION

Issued by RWTÜV, USA Inc.  
 Cert. No. 03-1212



ISO 9001:2000  
**Certified QMS**

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 Specification, DoD - Rev - E Electronic  
 Specifications subject to change.

### ENVIRONMENTAL

**Operating Temperature:** 0° to 43°C (32° to 109°F). If mounted on nonmetal surface, maximum operating temperature is 40°C (104°F).  
**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  
**Lead Radiation CCS:** EN60825-1

### LIGHT SOURCE

**Type:** High output LEDs  
**External (45°, 30°):** 660 nm



### LIGHT COLLECTION

**CCD Array:** 656 x 496 pixels

<sup>a</sup>Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

<sup>b</sup>Signal ground: Used for communication and signal line grounds only. Not to be used as power or chassis return.

<sup>c</sup>The default is activated by connecting pin 11 to ground pin 7.

<sup>d</sup>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.

### SYMBOLS VERIFIED

Data Matrix (ECC 0-200)

### STANDARDS:

**Data Matrix Verification:**  
 AS9132, ISO/IEC 15415 (2D)  
**Verifier Conformance:** ISO/IEC 15426-2

### VIDEO OUTPUT

**Signal System:** EIA  
**Number of Scanning Lines:** 525 lines/ 2:1 interlaced  
**Output:** Analog 1 Vp-p/75 ohm

# MICROSCAN<sup>®</sup>

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