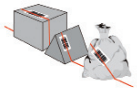
DS6400

Industrial Bar Code Scanners

Configuration SW Tool

ACR4™ technology



PackTrack™

APPLICATIONS

- Automated warehousing
- Medium conveyor sorting
- Reading on forklift trucks
- Picking systems
- Automated shop floor

ADVANTAGES

- Extended reading range from 300 to 2500 mm thanks to FLASH™ dynamic focus technology
- DIGITECH™ technology permits full software control over signal processing parameters. Scanner setup can therefore be optimized simply loading optimized software recipes, thus enabling excellent performance in all reading conditions
- ACR4™ reconstruction technology increases the maximum tilt angle and overall read rate on damaged barcodes
- Available with integrated software programmable Oscillating Mirror and built-in connectivity to Ethernet, Profibus and DeviceNet
- Easy and simple configuration thanks to Genius™ multi-language software tool

HIGHLIGHTS

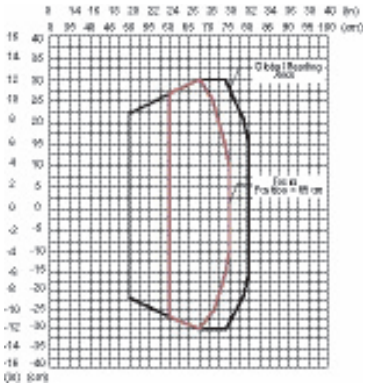
- FLASH™ dynamic focus technology
- Reading range from 300 to 2500 mm
- ACR4™ reconstruction technology improves reading of damaged barcodes
- DIGITECH™ technology enables excellent reading performance
- PACKTRCK™ technology to minimize the gap between objects and increase system productivity
- Linear and integrated Oscillating Mirror versions
- Built-in connectivity to Ethernet / Profibus / DeviceNet
- Display and keyboard for scanner monitoring and diagnostics

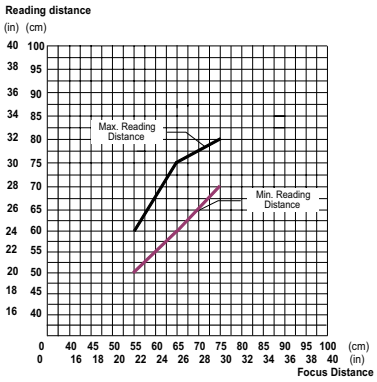
GENERAL DESCRIPTION

DS6400 is an industrial fixed position barcode reader specifically designed for the needs of various Auto ID applications in manufacturing and logistics. DS6400 is based on the same concept as DS6300: a complete modular solution in terms of reading performance, built-in connectivity, ease of use and maintenance.
The DS6400 embeds a linear motor providing a dynamic focus system called FLASH™, fully controlled via software, which covers an impressive reading range of over 2 meters. FLASH™ is capable of moving the focus position from the minimum to the maximum position in less than 10 ms.
DS6400 features a practical display with keyboard that increases the scanner's ease of use by showing barcode data read (local echo), statistics and diagnostic information; moreover, it offers built-in connectivity to Ethernet, DeviceNet and Profibus networks.

READING DIAGRAMS

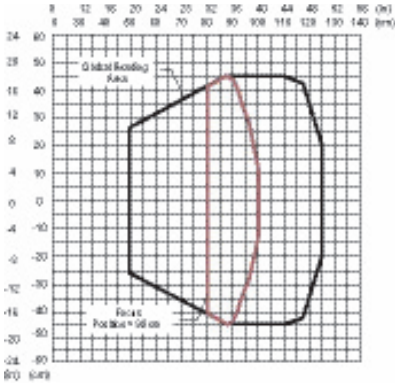
DS6400-100-0XX
Resolution: 0.20 mm/8 mils

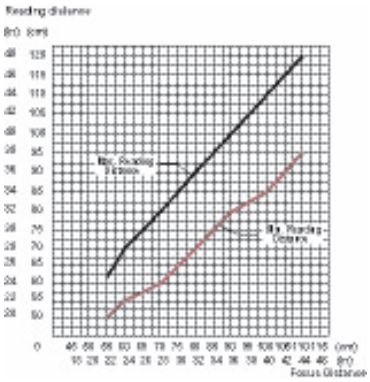




CONDITIONS
Code = Interleaved 2/5 or Code 39
PCS = 0.90
Pitch angle = 0°
Skew angle = 10° - 20°
Tilt angle = 0°

DS6400-100-0XX
Resolution: 0.25 mm/10 mils





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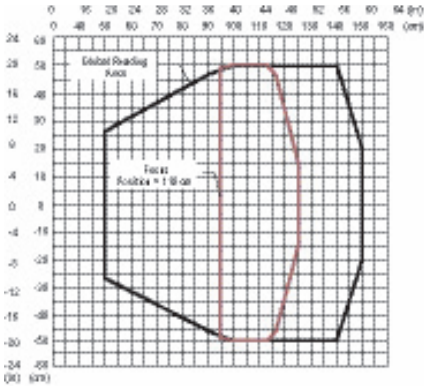
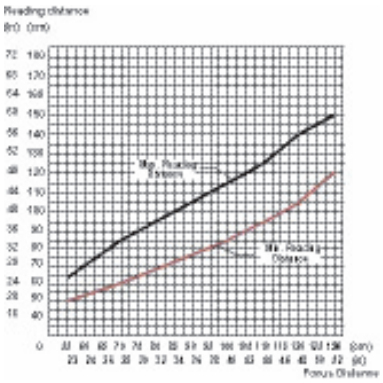
DS6400-100-0XX
Resolution: 0.30 mm/12 mils





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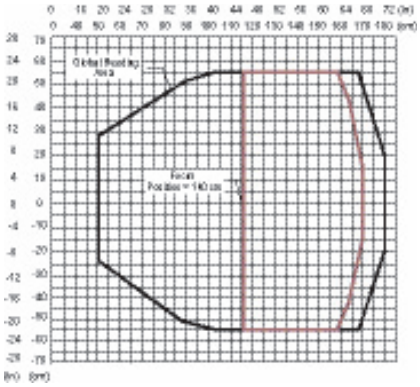
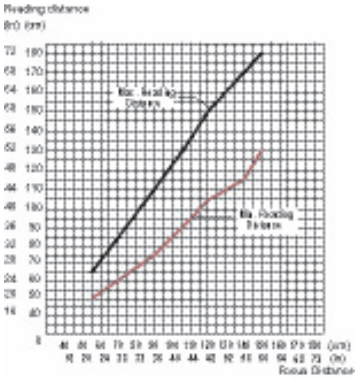
READING DIAGRAMS

DS6400-100-0XX
Resolution: 0.38 mm/15 mils





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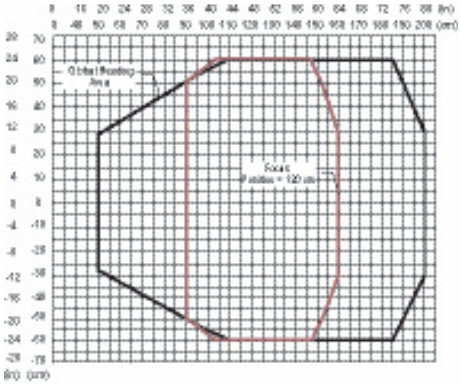
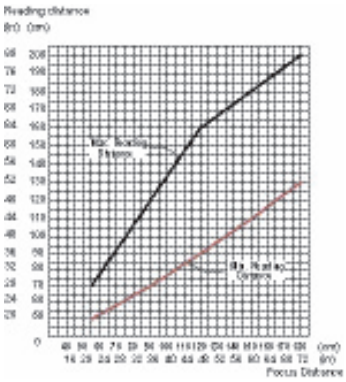
DS6400-100-0XX





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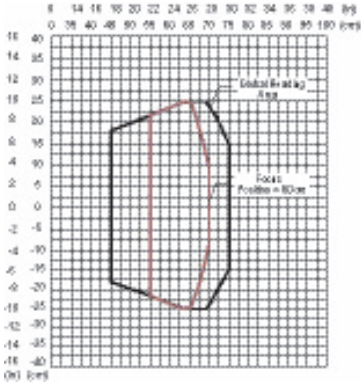
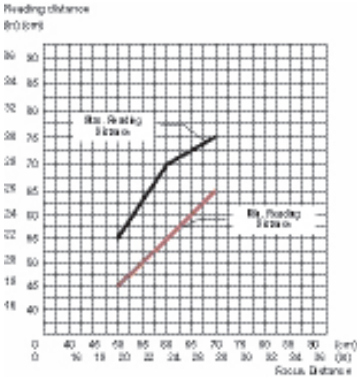
(Oscillating Mirror)
Resolution: 0.20 mm/8 mils





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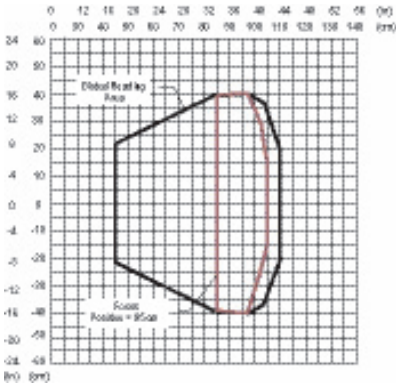
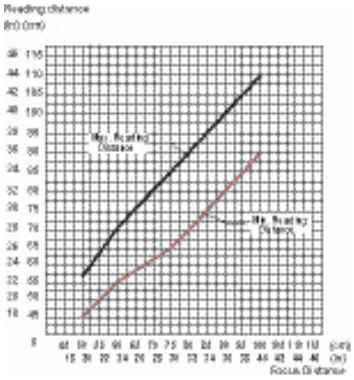
READING DIAGRAMS

DS6400-105-0XX (Oscillating Mirror)
Resolution: 0.25 mm/10 mils





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PCS = 0.90
Pitch angle = 0°
Skew angle = 10° - 20°
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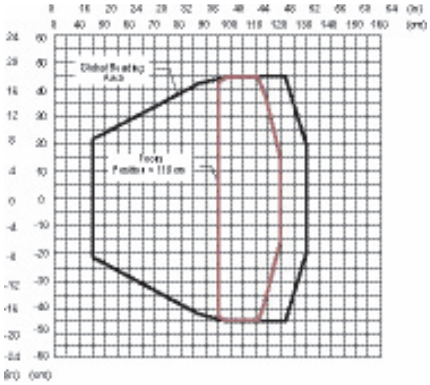
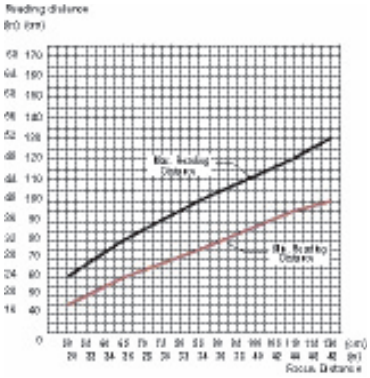
DS6400-105-0XX (Oscillating Mirror)
Resolution: 0.30 mm/12 mils





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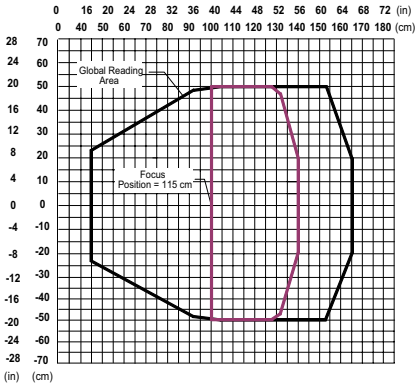
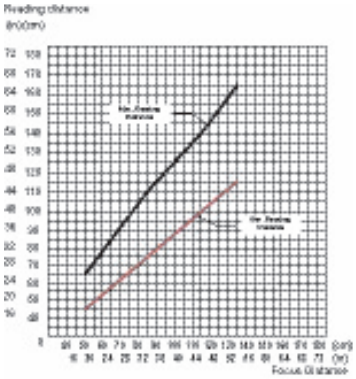
READING DIAGRAMS

DS6400-105-0XX (Oscillating Mirror)
Resolution: 0.38 mm/15 mils





CONDITIONS
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PCS = 0.90
Pitch angle = 0°
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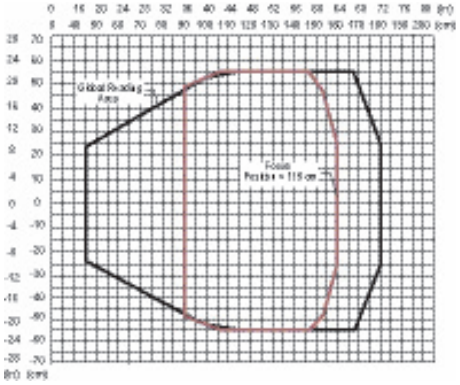
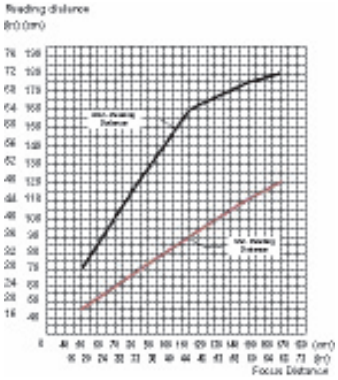
Tilt angle = 0°

DS6400-105-0XX (Oscillating Mirror)
Resolution: 0.50 mm/20 mils





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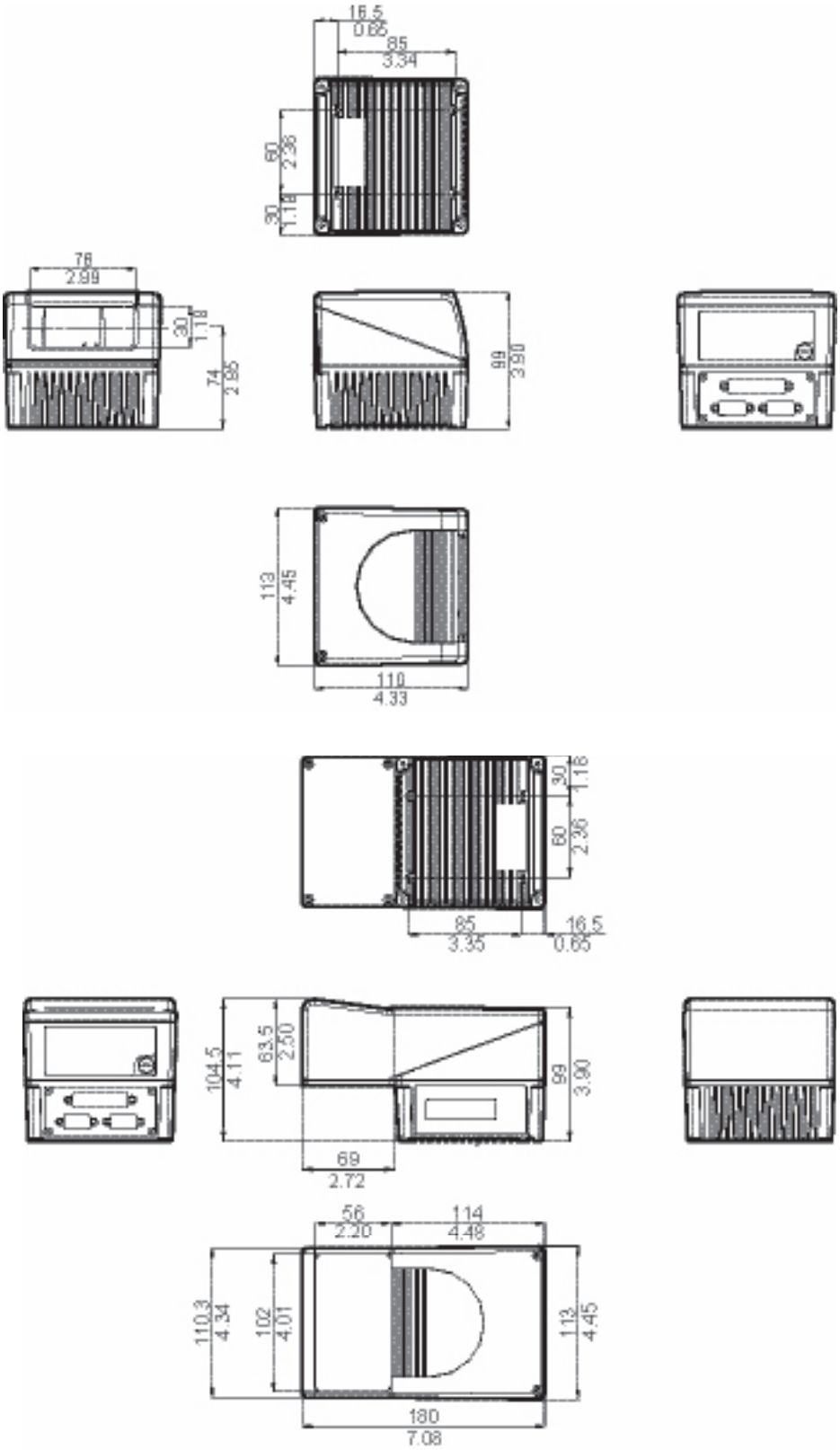
DIMENSIONS

OSCILLATING MIRROR VERSION



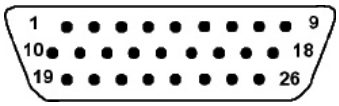
mm / inch

ELECTRICAL CONNECTIONS

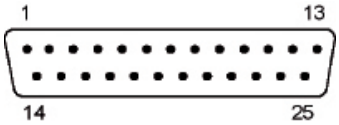
All the connectors available for each DS6400 model are the following:

SCANNER MODEL	CONNECTORS
Master/Slave	25-pin male serial interface and I/O connector 9-pin male Lonworks connector* 9-pin female Lonworks connector
Ethernet	26-pin male serial interface and I/O connector 9-pin female Lonworks connector RJ45 modular connector

The DS6400 Master/Slave models are equipped with a 25-pin male D-sub connector for connection to the host computer, power supply and input/output signals. The DS6400 Ethernet models adopt a 26-pin male connector instead of the 25-pin one.



26-pin Connector

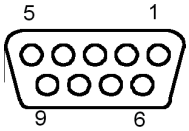


25-pin Connector

25-PIN/26-PIN D-SUB CONNECTOR PINOUT				
Pin	**Name**		**Function**	
1	CHASSIS		Chassis - internally connected to GND	
			Cable connected to chassis	
20	RXAUX		Receive data of auxiliary RS232 (referred to GND)	
21	TXAUX		Transmit data of auxiliary RS232 (referred to GND)	
8	OUT 1+		Configurable digital output 1 - positive pin	
22	OUT 1-		Configurable digital output 1 - negative pin	
11	OUT 2+		Configurable digital output 2 - positive pin	
12	OUT 2-		Configurable digital output 2 - negative pin	
16	OUT 3A		Configurable digital output 3 - polarity insensitive	
17	OUT 3B		Configurable digital output 3 - polarity insensitive	
18	EXT_TRIG/PS A		External trigger (polarity insensitive) for PS	
19	EXT_TRIG/PS B		External trigger (polarity insensitive) for PS	
6	IN 2/ENC A		Input signal 2 (polarity insensitive) for Encoder	
10	IN 2/ENC B		Input signal 2 (polarity insensitive) for Encoder	
14	IN 3A		Input signal 3 (polarity insensitive)	
15	IN 4A		Input signal 4 (polarity insensitive)	
24	IN_REF		Common reference of IN3 and IN4 (polarity insensitive)	
9,13	VS		Supply voltage - positive pin	
23,25,26	GND		Supply voltage - negative pin	
Pin	**RS232**	**RS232**	**RS485 Full-Duplex**	**RS485 Half-Duplex**
2	Main Interface Signals (SW Selectable)	TX	TX485 +	RTX485 +
3		RX	* RX485 +	
4		RTS	TX485 -	RTX485 -
5		CTS	* RX485 -	
7		GND_ISO	GND_ISO	GND_ISO

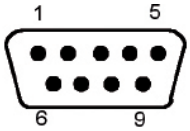
* Do not leave floating, see DS6400 Reference Manual for connection details.

ELECTRICAL CONNECTIONS



Female (all models)

9-pin Local Lonworks Connectors



Male (Master/Slave model)

9-pin Local Lonworks Connectors

1	CHASSIS	Cable shield internally connected by capacitor to chassis
9	VS	Supply voltage - positive pin
2	GND	Supply voltage - negative pin
6	VS_I/O	Supply voltage of I/O circuit
3	REF_I/O	Reference voltage of I/O circuit
4	SYS_ENC_I/O	System signal
5	SYS_I/O	System signal
7	LON A	Lonworks line (polarity insensitive)
8	LON B	Lonworks line (polarity insensitive)

In DS6400 Ethernet models a RJ45 Modular Jack is provided for Ethernet connection. This interface and the connector pinout are IEEE 802.3 10 BaseT and IEEE 802.3u 100 BaseTX compliant.

RJ45 Modular Jack

RJ45 MODULAR JACK PINOUT		
Pin	**Name**	**Function**
1	TX +	Transmitted data (+)
2	TX -	Transmitted data (-)
3	RX +	Received data (+)
6	RX -	Received data (-)
4,5,7,8	NC	Not connected

MODELS AND ACCESSORIES

MODELS	
Order No.	**Description**
931351093	DS6400-100-010 DYN. FOCUS, LINEAR, M/S
931351095	DS6400-100-011 DYN. FOCUS, LINEAR, PROFIBUS
931351097	DS6400-100-012 DYN. FOCUS, LINEAR, ETHERNET
931351099	DS6400-100-015 DYN. FOCUS, LINEAR, DEVICENET
931351103	DS6400-105-010 DYN. FOCUS, OSC. MIRROR, M/S
931351105	DS6400-105-011 DYN. FOCUS, OSC. MIRROR, PROFIBUS
931351107	DS6400-105-012 DYN. FOCUS, OSC. MIRROR, ETHERNET
931351109	DS6400-105-015 DYN. FOCUS, OSC. MIRROR, DEVICENET

ACCESSORIES	
Order No.	**Description**
93A201100	GFC-60 90° MIRROR
93A201102	GFC-600 90° MIRROR CLOSE DISTANCE
93ACC1721	FBK-6000 FAST BRACKET KIT (2 PCS)

TECHNICAL DATA

	DS6400-100-01X	DS6400-105-01X
DIMENSIONS	110 x 113 x 99 mm (4.33 x 4.45 x 3.9 in)	113 x 180 x 104.5 mm (4.45 x 7.08 x 4.11 in)
WEIGHT	1.5 kg. (3.3 lb)	2.0 kg. (4.4 lb)
CASE MATERIAL	Aluminum	
OPERATING TEMPERATURE	0 to 40 °C (32 to 104 °F),	
STORAGE TEMPERATURE	-20 to 70 °C (-4 to 158 °F)	
HUMIDITY	90% non condensing	
VIBRATION RESISTANCE	IEC 68-2-6 test FC 1.5mm; 10 to 55 Hz; 2 hours on each axis	
SHOCK RESISTANCE	IEC 68-2-27 test EA 30 G; 11 ms; 3 shocks on each axis	
PROTECTION CLASS	IP64 for standard models; IP65 on request	
LIGHT SOURCE	Visible laser diode (630 to 680 nm)	
SCANNING SPEED	600 to 1200 scan/s SW programmable	
RESOLUTION	Down to 0.20 mm (8 mils)	
READABLE SYMBOLOGIES	Code 2/5, Code39, Code93, Code128, EAN/UPC, EAN128, Codabar, Pharmacode, ISBN128	
MULTILABEL READING	Up to 10 different symbologies during the same reading phase	
COMMUNICATION INTERFACES	Main Port: RS232/RS485 up to 115.2 Kbit/s	
	Auxiliary Port: RS232 up to 115.2 Kbit/s	
OTHER AVAILABLE INTERFACES	Lonworks (Master/Slave), Ethernet, Profibus, DeviceNet	
DIGITAL INPUTS	Three SW programmable and One “Encoder”, optocoupled, NPN/PNP	
DIGITAL OUTPUTS	Three SW programmable, optocoupled, event driven	
DISPLAY & KEYPAD	LCD 16 x 2 characters & 3 keys	
LED INDICATORS	Power On, Phase On, Data Tx	
DEVICE PROGRAMMING	Windows™ based SW (Genius™) via serial or Ethernet link	
	Serial Host Mode Programming sequences	
OPERATING MODES	‘On-line’, ‘Serial On-line’, ‘Continuous’, ‘Test’, ‘PackTrack™’	
LASER CLASSIFICATION	Class 2 - EN60825-1; Class II - CDRH	
LASER CONTROL	Safety system to turn laser off in cases of motor slowdown or failure	
POWER SUPPLY	15 to 30 VDC	
POWER CONSUMPTION	15 W typical, 20 W max	