DPM TECHNOLOGY

Direct Part Marking (DPM) is a process that allows users to imprint a bar code directly on an item instead of printing the code on a paper label. Different technologies are available to directly mark objects: laser / chemical etching, dot peening and ink jet printing. Each of these methods have specific advantages and disadvantages in terms of durability, cost and ease of reading.

The PowerScan™ 9500-DPM product series are rugged handheld area imagers specifically addressed and capable of reading codes marked with DPM.

READING CAPABILITIES

The PowerScan DPM series include the latest optics and software from Datalogic to make the reading of codes with DPM easy and intuitive. The typical reading distance is from contact to 4-5 cm / 1.5-1.9 in, depending on the DPM technology used, the code resolution, and the material and surface type. The scanner is also capable of reading standard bar codes on printed labels. High density optics allow the capture of very small, high-resolution codes in a range from near contact up to 15.0 cm / 5.9 in.

SOFT WHITE ILLUMINATION

The intuitive aiming system provides the highest first-pass reading rates. A soft-pulsed white illumination light results in reduced flashes and is very gentle to the eyes.

MOTIONIX™ MOTION-SENSING TECHNOLOGY

Datalogic's Motionix™ motion-sensing technology detects the natural actions of the operator to automatically switch the scanner into the desired scanning mode.

FEATURES

- Supports any kind of Direct Part Marked (DPM) code
- Snappy omnidirectional reading
- Intuitive aiming system
- Soft white light illumination
- Datalogic's Motionix™ motion-sensing technology
- Ergonomic shape
- Image capture
- Datalogic's 3GL™ (3 Green Lights) technology and loud beeper for good-read feedback
- Water and Particulate Sealing Rating: IP65
- EASEOFCARE Service Plans offer a wide range of service options to protect your investment, ensuring maximum productivity and ROI

- **Cordless Products**
  - Bluetooth® 2.0 Compliant: Class 1 or Class 2 configurable via software

INDUSTRY-APPLICATIONS

- Manufacturing Shop Floor
  - Work-in-Progress
  - Sub-Assembly
  - Component Tracking
  - Quality Control
  - Time and Cost Analysis
  - Line Inventory Control

TECHNICAL SPECIFICATIONS

DECODING CAPABILITY

1D / LINEAR CODES	Autodiscriminates all standard 1D codes including GS1 DataBar™ linear codes
2D CODES	Aztec Code; China Han Xin Code; Data Matrix; MaxiCode; Micro QR Code; QR Code
POSTAL CODES	Postnet; Royal Mail Code (RM4SCC)
STACKED CODES	EAN/JAN Composites; GS1 DataBar Composites; GS1 DataBar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; MacroPDF; MicroPDF417; PDF417; UPC A/E Composites

ELECTRICAL

CURRENT	Operating (Typical): 350 mA Standby/Idle (Typical): 120 mA
INPUT VOLTAGE	5 VDC +/- 10%

ENVIRONMENTAL

AMBIENT LIGHT	0 - 100,000 lux
DROP RESISTANCE	Withstands 50 drops from 2.0 m / 6.6 ft onto a concrete surface
ESD PROTECTION (AIR DISCHARGE)	20 kV
HUMIDITY (NON-CONDENSING)	0 - 95%
PARTICULATE AND WATER SEALING	IP65
TEMPERATURE	Operating: –20 to 50 °C / –4 to 122 °F Storage/Transport: –40 to 70 °C / –40 to 158 °F

INTERFACES

INTERFACES	RS-232 / USB / Keyboard Wedge Multi-Interface

PHYSICAL CHARACTERISTICS

COLORS AVAILABLE	Yellow/Black; Other colors and custom logo options are available for minimum quantity purchase.
DIMENSIONS	21.2 x 11.0 x 7.4 cm / 8.3 x 4.3 x 2.9 in
WEIGHT	330.0 g / 11.6 oz

READING PERFORMANCE

DIRECT PART MARKING (DPM) CAPABILITY	Codes are readable when marked by laser or chemical etching or ink jet printed; Data Matrix codes are also readable when marked by dot peening
IMAGE CAPTURE	Graphic Formats: BMP, JPEG, TIFF Greyscale: 256, 16, 2; JPEG, TIFF
IMAGER SENSOR	864 x 544
LIGHT SOURCE	Aiming: 630 - 680 nm VLD Illumination: White LED reading light
PRINT CONTRAST RATIO (MINIMUM)	15%
READING ANGLE	Pitch: +/- 40°; Roll (Tilt): 360°; Skew (Yaw): +/- 40°
READING INDICATORS	Beeper (Adjustable Tone and Volume); Datalogic's 3GL™ (Three Green Lights) technology and loud beeper for good-read feedback: Datalogic 'Green Spot' on the Code; Dual Good Read LEDs
RESOLUTION (MAXIMUM)	1D Codes: 2.5 mil; 2D Codes: 4 mil

READING RANGES

TYPICAL DEPTH OF FIELD

Depth of Field ranges on bar codes printed with DPM technology may vary depending on the printing technology, the code type and the resolution of the code. Other factors include the surface material the DPM technology is used on (metal, plastic, shiny or polished, opaque, etc.). The following specs represent standard bar codes that are traditionally printed black on white on paper labels.

2 mils	2.8 to 6.3 cm / 1.1 to 2.4 in
2.5 mils	2.5 to 7.8 cm / 0.9 to 3.0 in
5 mils	1.2 to 9.0 cm / 0.4 to 3.5 in
4 mils Data Matrix	2.6 to 5.2 cm / 1.0 to 2.0 in
5 mils Data Matrix	2.2 to 7.2 cm / 0.8 to 2.8 in
10 mils Data Matrix	2.0 to 10.5 cm / 0.8 to 4.1 in
5 mils PDF	1.2 to 9.0 cm / 0.4 to 3.5 in
10 mils PDF	1.0 to 12.5 cm / 0.4 to 4.9 in
13 mils EAN-13	2.5 to 16.0 cm / 0.9 to 6.3 in

SAFETY & REGULATORY

AGENCY APPROVALS	The product meets necessary safety and regulatory approvals for its intended use. The Quick Reference Guide for this product can be referred to for a complete list of certifications.
ENVIRONMENTAL COMPLIANCE	Complies to China RoHS; Complies to EU RoHS; Complies to R.E.A.C.H.
LASER CLASSIFICATION	Caution Laser Radiation - Do not stare into beam CDRH Class II; IEC 60825 Class 2
LED CLASSIFICATION	IEC 62471 Class 1 LED

UTILITIES

DATALOGIC ALADDIN™	Datalogic Aladdin configuration program is available for download at no charge.
OPOS / JAVAPOS	JavaPOS Utilities are available for download at no charge. OPOS Utilities are available for download at no charge.
REMOTE HOST DOWNLOAD	Available on request

WARRANTY

WARRANTY	3-Year Factory Warranty

TECHNICAL SPECIFICATIONS

CORDLESS COMMUNICATIONS

BLUETOOTH WIRELESS TECHNOLOGY	Piconet: Max. Readers per Radio Receiver Using Commercial Dongle: 7; Using Cradle: 4
PROFILES	HID (Human Interface Device) SPP (Serial Port Profile)
PROTOCOL	Bluetooth 2.0 Certified Class 1 or Class 2 (Configurable)
RADIO FREQUENCY	2.40 to 2.48 GHz
RADIO RANGE (OPEN AIR)	Class 1: Exceeds 90 m/295 ft Class 2: Exceeds 40 m/131 ft Range distances are measured using the base station. Range with connection to other Bluetooth peripherals may show different results.
SECURITY	Data Encryption; Scanner Authentication

DECODING CAPABILITY

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POSTAL CODES	Australian Post; China Post; IMB; Japanese Post; KIX Post; Planet Code; Portuguese Post; Postnet; Royal Mail Code (RM4SCC); Swedish Post;
STACKED CODES	EAN/JAN Composites; GS1 DataBar Composites; GS1 DataBar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; MacroPDF; MicroPDF417; PDF417; UPC A/E Composites

ELECTRICAL

BATTERY	Battery Type: Lithium-Ion 2150 mAh Charge Time: External Power: 4 Hours; Host Power: 10 Hours
READS PER CHARGE	Continuous Reading: 30,000+
CRADLE INDICATOR LEDS	Battery Charging (Red); Charge Completed (Green); Power/Data (Yellow)
CURRENT	Charging (Typical): External Power: 800 mA @ 10 VDC; POT: 500 mA @ 5 VDC
OPERATING (TYPICAL)	150 mA @ 10 VDC
INPUT VOLTAGE	External Power: 10-30 VDC; POT: 5 VDC +/- 10%

ENVIRONMENTAL

AMBIENT LIGHT	0 - 100,000 lux
DROP RESISTANCE	Cradle: Withstands 50 drops from 1.2 m / 6.6 ft onto a concrete surface PBT9500-DPM: Withstands 50 drops from 2.0 m / 3.9 ft onto a concrete surface
ESD PROTECTION (AIR DISCHARGE)	20 kV
HUMIDITY (NON-CONDENSING)	95%
PARTICULATE AND WATER SEALING	IP65
TEMPERATURE	Operating: -20 to 50 °C / -4 to 122 °F Battery Charging: 0 to 45 °C / -32 to 113 °F
STORAGE/TRANSPORT	-40 to 70 °C / -40 to 158 °F

INTERFACES

INTERFACES	Keyboard Wedge RS-232; RS-485; USB: OEM USB; USB COM; USB HID Keyboard

PHYSICAL CHARACTERISTICS

COLORS AVAILABLE	Yellow/Black
DIMENSIONS	Cradle: 24.0 x 10.8 x 9.5 cm / 9.4 x 4.3 x 3.8 in PBT9500: 21.2 x 11.0 x 7.4 cm / 8.3 x 4.3 x 2.9 in
WEIGHT	PBT9500: 380.0 g / 13.4 oz

READING PERFORMANCE

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IMAGER SENSOR	864 x 544
LIGHT SOURCE	Aiming: 630 - 680 nm VLD Illumination: White LEDs
PRINT CONTRAST RATIO (MINIMUM)	15%
READING ANGLE	Pitch: +/- 40°; Roll (Tilt): 360°; Skew (Yaw): +/- 40°
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REMOTE HOST DOWNLOAD	Available on request

WARRANTY

WARRANTY	3-Year Factory Warranty

DPM TECHNOLOGY

Direct Part Marking (DPM) is a process for imprinting a bar code directly on an item or surface in a permanent manner instead of printing the code on a paper label that is adhered or attached to a surface. The intent is to create a permanent identifier for the item.

The main benefit of DPM technology is its durability. The permanent nature of the marking assures that the item can be identified throughout its full life cycle and throughout the supply chain, even while being exposed to harsh environmental conditions. Another important benefit of DPM technology is that it allows the marking of very small codes in limited spaces where a standard label cannot be applied in a reliable and stable mode.

Bar codes marked with DPM can be implemented on different surfaces and materials including plastic, metal, wood, rubber, leather, glass, etc.

DPM technology is used to enhance the supply chain traceability of car components, medical tools, military and defense equipment, fine jewelry, electronic parts or any application where there is the need to experience harsh chemical treatment, endure extreme conditions of moisture or temperature, include high-value assets or items that need to be identified throughout their lifetime.
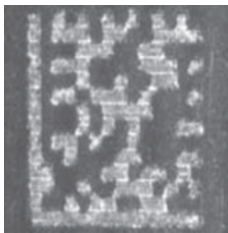
DIFFERENT MARKING TECHNOLOGIES

There are multiple methods for directly marking objects:

- Laser Etching
- Chemical Etching
- Dot Peening
- Ink Jet Printing

Each of these methods has specific advantages and disadvantages in terms of durability, cost and ease of reading.
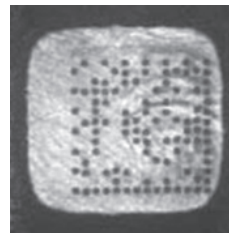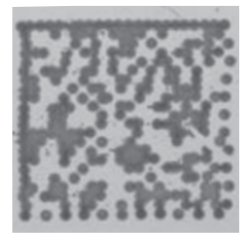
EXAMPLES OF DPM MARKED CODES

Laser Etching	**Chemical Etching**	**Dot Peening**	**Ink Jet Printing**

ACCESSORIES

Base Stations/Chargers

- BC9030-BT: Base/Charger, Multi-Interface
- BC9130-BT: Base/Dual Charger, Multi-Interface

Cases/Holsters

- HLS-P080:
  Universal Holster (HLS-8000)

Mounts/Stands

- HLD-P080
  Desk/Wall Holder (HLD-8000)
- 7-0404 Industrial Take-Up Reel

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