

# ThermaLock 4100D

## Rugged direct thermal labels for tough indoor and outdoor conditions

When you need a direct thermal label that will withstand the most demanding environments, Zebra's ThermaLock 4100D delivers. This direct thermal label can handle extreme cold, direct sunlight, rain, snow and exposure to a wide range of chemicals. You get a unique combination of benefits—the simplicity of direct thermal printing, with great outdoor performance and lifecycle. The label remains crisp and highly legible with easy-to-scan barcodes for up to 12 months outdoors—and even longer in indoor and shaded areas. Compatibility with Zebra's direct thermal mobile, desktop and industrial printers enables maximum application flexibility—use it in indoor and outdoor facilities, as well as out in the field. On-the-spot printing is exceptionally easy—there are no ribbons for workers to carry or change. And the new technology in this next generation of Zebra's trusted and popular ThermaLock 4000D increases chemical and moisture resistance, making the ThermaLock 4100D Zebra's most rugged direct thermal label yet.



### Designed for the Toughest Environments and Applications

While traditional direct thermal media are susceptible to UV light, heat and chemicals, the ThermaLock 4100D uses a unique print technology to produce an image that will last up to a year—even in the most demanding conditions. The labels are designed to withstand temperatures—as low as -65°F/-54°C and up to 165°F/74°C—as well as exposure to sunlight, a wide range of chemicals, moisture and more. And the permanent acrylic adhesive keeps these labels in place, regardless of the environmental conditions when they were applied.

### Save Time and Improve Labeling Accuracy With On-The-Spot Printing

The ability to print labels with unique data at the point of application improves worker productivity and workflow efficiency. The need to travel back and forth to a centralized desktop printer to retrieve labels and the opportunity to inadvertently apply the label to the wrong asset are eliminated.

### Health- and Environmentally-Conscious Engineering

These BPA/BPS-free/Phenol-free labels protect the environment and the safety of everyone who comes in contact with them—from workers who load label stock into the printers and apply the labels to customers who purchase labeled goods.

### High Quality, Trouble-Free Printing

This premium grade label is specially coated to provide optimal print performance at up to 4 inches per second (4 ips).

### The Flexibility for Many Indoor and Outdoor Labeling Applications

ThermaLock 4100D labels are ideal for: shipping containers in a port; inventory in outdoor areas—such as a warehouse yard, garden center or vehicles in an outdoor auction yard; work-in-process and raw materials in a manufacturing plant; no-fade citation labels that can be printed even in the rain or snow; smudge-free specimen labels in a laboratory; blood bags collected at local blood drives; plants at a farm or indoor growing facility and more.

### Simplified Printing — No Ribbon Required

The ThermaLock 4100D is compatible with Zebra's direct thermal mobile, desktop and industrial printers, providing all the benefits of direct thermal printing—there's no ribbon to stock, monitor and replenish.

**ThermaLock 4100D — the rugged direct thermal label built for your most demanding indoor and outdoor environments.**

For more information, please visit [www.zebra.com/supplies](http://www.zebra.com/supplies)

# Specifications

## Material Construction

RM Number	10035994RM
Facestock	Glossy silver polypropylene film; 3.1 mils
Adhesive	Permanent acrylic adhesive
Liner	2.3 mils
Total thickness +/- 10%	5.9 mils
Environment	Indoor and Outdoor use

## Temperature Performance

Minimum Application Temperature <sup>1</sup>	25°F/-4°C
Service Temperature Range <sup>2</sup>	-65°F to 165°F/-54°C to 74°C

## Recommended Printers and Settings

Printers	Direct thermal printer; use Zebra desktop, mid-range, and high-performance thermal printers for optimal performance
Ribbons	N/A

## Adhesive Strength

Corrugate	5 min: 15 oz./in.; 24 hr: 19 oz./in.
Steel	Attraction between adhesive and surface is so great that the facestock rips
Polycarbonate	Attraction between adhesive and surface is so great that the facestock rips
Polyethylene	5 min: 35 oz./in.; 24 hr: 35 oz./in.

## Chemical Resistance

Weak Chemicals	Blood, Body Fluid, Salt Water, Water, Window Cleaner: Test in your application
Moderate Chemicals	Alcohol, Ammonia, Bleach, IPA: Test in your application
Harsh Chemicals	Gasoline: Test in your application Grease: Not recommended
Extreme Chemicals	Acetone, IR Reflow, MEK, TCE, Xylene: Test in your application

## Regulatory and Compliance

BPA/BPS-free/Phenol-free

## Product Performance and Suitability

Recommended storage conditions	1 year duration when stored at 68° F to 77° F/20° C to 25° C at 40 to 50% RH
Expected life span in application <sup>3</sup>	Up to 12 months outdoor exposure

## Footnotes

1. When the label is applied, the environment and surface should be above this temperature.
2. Following correct application and appropriate dwell time (usually 24 hrs) the media will withstand this temperature range.
3. Following correct application and appropriate dwell time (usually 24 hrs) we expect, but do not warrant, a life span as indicated. Specifications are subject to change without notice.

\* Specifications are subject to change without notice.

\* The gray color of the label is not uniform -there are darker streaks throughout the label. That is a normal part of the manufacturing process for Thermalock 4100D.

## Markets and Applications

### Logistics

- Labeling of packaging material including corrugate, plastic, glass and metal

### Retail

- Lawn and garden centers

### Healthcare

- Laboratory testing

### Manufacturing

- Work-in-process labels

### Government

- Citation labels

### Other

- Short term outdoor labeling
- Replacement of thermal transfer labeling applications



NA and Corporate Headquarters  
+1 800 423 0442  
inquiry4@zebra.com

Asia-Pacific Headquarters  
+65 6858 0722  
contact.apac@zebra.com

EMEA Headquarters  
zebra.com/locations  
contact.emea@zebra.com

Latin America Headquarters  
zebra.com/locations  
la.contactme@zebra.com