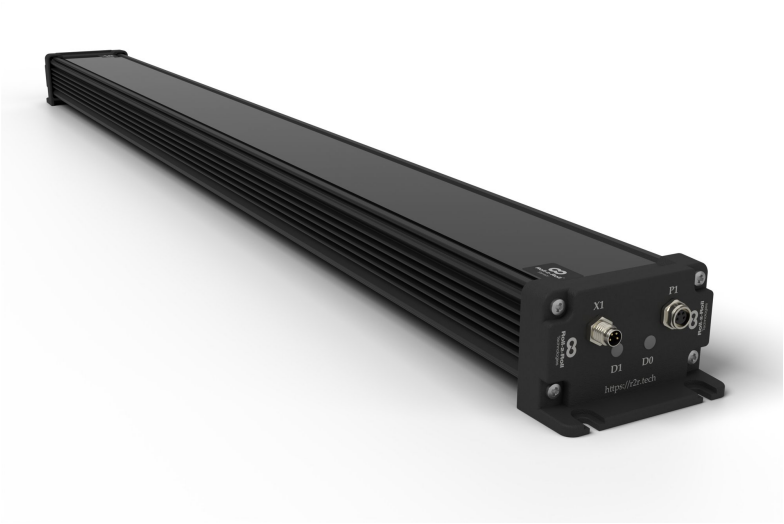
Roll-2-Roll Technologies

PRODUCT BROCHURE

# 1DC 768




One Sensor. Infinite Possibilities.

## Key Features

- **All-in-one design** – integrated sensor and controller eliminates external hardware, cables, and complexity
- **Zero recalibration** – sensor adapts automatically to any material (clear, opaque, metallic, nonwoven, mesh)
- **High resolution** – 0.0635 mm (0.0025 in) hardware resolution across the entire sensing width
- **Material-agnostic detection** – patented fiber-optic technology based on light scattering and spatial filtering
- **IP67 protection** – sealed aluminum housing withstands harsh industrial environments (IP68 available on request)
- **Native industrial Ethernet** – EtherNet/IP, PROFINET, EtherCAT, Modbus TCP, CC-Link IE Field Basic
- **Vacuum compatible** – operates reliably in vacuum chamber applications

## Benefits

- **Stop paying for separate controllers** – all-in-one design eliminates external hardware and reduces total system cost
- **Eliminate integration complexity** – just power and one Ethernet cable replaces multi-component wiring
- **End unplanned downtime** from cable failures and connector issues between sensors and controllers
- **Stop losing hours** to sensor recalibration when switching between materials
- **Prevent hidden scrap** from temperature-related inaccuracies that plague ultrasonic sensors

## Specifications

| | | | |
|---|---|---|---|
| **Sensor Type** | Fiber-optic (diffuse-reflective) | **Sensing Range** | 768 mm (30.2 in) |
| **Hardware Resolution** | 0.0635 mm (0.0025 in) | **Firmware Resolution** | Up to 0.015875 mm |
| **Repeatability** | ±0.127 mm (±0.005 in) | **Linearity Error** | <0.25% |
| **Response Time** | 20 ms standard (about 7.6 ms with special firmware) | **Camera Rate** | 25–132 Hz (maximum with special firmware) |
| **Working Distance** | 15–25 mm (0.6–1.0 in) standard; 50–100 mm special | **Max Edges** | 128 |
| **Light Source** | IR (880 nm), UV (385 nm), or White | **Camera Type** | CMOS line scan camera |
| **Input Voltage** | 20-30 VDC | **Current Draw** | 150-1500 mA |
| **Power Connector** | M8 4-pin male A-Coded | **Network Connector** | M8 4-pin female A-Coded |
| **Protocols** | EtherNet/IP, PROFINET, EtherCAT, Modbus TCP, CC-Link IE Field Basic | | |
| **Operating Temp** | -10°C to 65°C (14°F to 150°F) | **Protection Class** | IP67 (IP68 available on request) |
| **Housing Material** | Aluminum alloy (powder coated) | **Vacuum Compatible** | Yes |
| **Controller Required** | No (built-in) | **Interface** | Industrial Ethernet / APP / PLC |

## Applications

- Web guiding (edge, center, and contrast guiding)
- Edge position measurement
- Multiple edge position measurement (up to 128 edges)
- Center position measurement
- Line/contrast position measurement
- Width measurement and coating width measurement
- Multiple strip width measurement
- Thread/string counting
- Flag detection and splice detection

- Tear detection and simple inspection

## Compatibility

### SUPPORTED LINE SPEEDS

1000+ fpm

### SUPPORTED MATERIAL TYPES

Nonwoven, Porous/Perforated

### SUPPORTED WEB WIDTHS

Medium (12"-48"), Wide (48"-72"), Extra Wide (>72")

## Available Configurations

| Part Number | Configuration |
|---|---|
| **7-020005** | Mounting Bracket for 1" or 25 mm Extrusion for WPS, ODC Family and 1DC Series |
| **7-020006** | Mounting Bracket for 1.5" or 40 mm Extrusion for WPS, ODC Family and 1DC Series |
| **8-000014** | 1DC 768-IR EP |
| **8-010014** | 1DC 768-IR PR |
| **8-020014** | 1DC 768-IR MB |
| **8-060014** | 1DC 768-IR EC |

## Supporting Documentation

### Manuals (3)

- 1DC Series: Product Data Sheet
- Register Map for 1DC Series Roll-2-Roll® Sensor (v 4.3a+)
- Sensor Installation Recommendations: Inspection Applications

### 2D Drawings (3)

- 1DC 768-xx QD
- New Mounting Brackets for WPS, ODC Family and 1DC Series - 1.5 in or 40 mm extrusion
- New Mounting Brackets for WPS, ODC Family and 1DC Series - 1in or 25 mm extrusion

### 3D Models (3)

- 1DC 768
- Mounting Bracket for 1.5in or 40mm Extrusion for WPS, ODC Family and 1DC Series
- Mounting Bracket for 1in or 25mm Extrusion for WPS, ODC Family and 1DC Series

### Support Files (2)

- EtherNet/IP EDS File for Roll-2-Roll® Communication Module
- Rockwell/AB Add-on Instructions for 1DC Series of Roll-2-Roll® Sensor

Scan for datasheets, 3D models & full documentation
https://r2r.tech/products/sensors/1dc-768

### Ready to Get Started?

Contact our experts to discuss how this product fits your application.
**Phone:** +1 (888) 290-3215 | **Email:** experts@r2r.tech | **Web:** r2r.tech