



NOVA SERIES

# GUARDIAN

**CROSS DIRECTION WEB PROFILE**

Scanning Frame System

MOISTURE • COAT WEIGHT • THICKNESS • WEB TEMPERATURE

PROCESS SENSORS  
CORPORATION 



# NOVA SERIES GUARDIAN

## Cross Direction Web Profile Scanning Frame System

### Leading Applications:

- Hot Melt & Film Thickness
- Wet End Water Based Coat Weight
- Dry End Organic Coat Weight
- Exit and Inlet Dryer Moisture
- Re-Moisturizers (LAS, Steam Curtains and Water Decks)

### Measure Coatings and Moisture on:

- Paper
- Film
- Foil
- Metal
- Textiles
- Non-Woven
- Extrusions
- Foam
- Tags
- Tapes
- Labels
- Release Liners
- Packaging Materials
- Narrow Webs
- Coatings
- Laminations
- Other Substrates

- **Maintain Uniform Web Profile**
- **Reduce Edge Curl and Lay Flat Issues**
- **Improve Quality Assurance and Control**

Edge curl and lay flat issues are a problem in the label and converting industry. Uneven moisture stratification can cause shrinkage or expansion of cellulose fibers. Curled stock is a problem for printing and packaging. Coatings can also get thinner or thicker at the edges. A NIR transmitter cross directional web profile greatly helps to reduce curl or coating issues and improve process control operation.

### Benefits of Near Infrared Technology

- Accurate, Fast, Reliable & Low Maintenance
- No Government Regulations
- Easy Calibration, Operation & Standardization
- Best Return On Investment

### The Near Infrared (NIR) Operating Principle

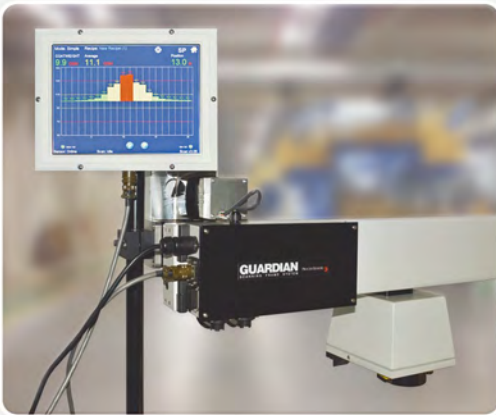
The MCT transmitter shines NIR light wavelengths, selected specifically by PSC, for the measurement and application being performed, typically 1.94 $\mu$  for moisture or water based coatings and 2.34 $\mu$  for hydrocarbon depositions or film thickness. The NIR light is then directed onto the product being measured, normally a moving web and measures the returned energy to provide a calibrated display of percent moisture, GSM, #/ream or other engineering units. Additionally, IR web temperature can also be built into the MCT Nova Series Transmitter.

## Choose Your Nova Series Guardian



### Guardian CD Web Profile System Industry Standard

The **Guardian Profile System** connects to a PC with a 19" Display at a Central Console. Larger displays, up to 65", for multiple scanners and measurements, can be integrated into a single distributed system. The Guardian System can also be operated manually or via a Human Machine Interface (HMI).



**Entry Level Profile System**  
**Process Sensors Guardian Cross Direction Web Profile System** can be as simple and inexpensive as an automatic scanning frame with 12" Operator Interface (OI) for profile display and controls mounted on frame end.



### Simple Cross Direction Scanning System with Digital Display

This system allows for automatic scanning across web or jogging to fixed position for machine direction measurement and display on a 5.7" touch screen with alarms, alerts and analog and digital outputs.

### Guardian System Features:

- Cross Direction Zoned Web Profile
- Zone, Profile and Roll Averages
- Roll Reports and Data Archiving
- Designated Lane and Machine Direction Measurements

### Guardian System Components

- MCT Nova Series Near Infrared Transmitter
- Automatic Industrial Scanning Frame
- Automatic Web Edge Detection Option
- Operator Interface and PC Based Software Systems
- Alarms, Alerts, Scan Speed, Product Recipes, Diagnostics
- Wall, Console, Arm Bracket and Pedestal Housing Options
- Ethernet Communication and Analog Outputs
- Central and Local Display Options

## NOVA SERIES

# GUARDIAN Cross Direction Web Profile Scanning Frame System

### Specifications: Scanning Frame

Power: \_\_\_\_\_ 90-260VAC 15A  
Outputs: \_\_\_\_\_ • 3x 4-20mA Selectable sources  
• Live NIR Value • Scan NIR Average Values  
• Live Temperature & Scan Temperature Average Value  
Inputs \_\_\_\_\_ • Web Break • Web Length • Cooling Air  
• Sensor Window Purge  
Ambient Temperature: \_\_\_\_\_ 0-50°C (32-120°F) with  
air cooling up to 80°C (160°F)

### Specifications: Operator Interfaces

#### Touch Screen PC – Windows based

Cross Web Profile Displays, Machine Direction Trends,  
Scan Average Trends  
NIR Constituents: \_\_\_\_\_ 1 or 2  
Product Temperature: \_\_\_\_\_ 80°C (160°F)  
Recipe Codes: \_\_\_\_\_ Unlimited  
Communication to Frame: \_\_\_\_\_ Ethernet  
Power: \_\_\_\_\_ 90-260VA  
Multi Frame Operation: \_\_\_\_\_ 19" Screen – Larger Optional

#### 12" Touch Screen

Non-PC based, Cross Web Profile,  
Single Frame Operation, Machine Direction Trend  
NIR Constituent: \_\_\_\_\_ 1  
Product Temperature: \_\_\_\_\_ 80°C (160°F)  
Recipe Codes: \_\_\_\_\_ 100  
Communication to Frame: \_\_\_\_\_ RS485  
Power: \_\_\_\_\_ 24VDC from Frame

#### 5.7" Touch Screen

Non PC based, Single Frame Operation, Digital Displays Only  
NIR Constituents: \_\_\_\_\_ 1, 2 or 3  
Product Temperature: \_\_\_\_\_ 80°C (160°F)  
Recipe Codes: \_\_\_\_\_ 100  
Communication to Frame: \_\_\_\_\_ RS485  
Power: \_\_\_\_\_ 24VDC from Frame

### NIR Measurements:

Moisture Range: \_\_\_\_\_ Min 0.1%, Max 95%  
Coatings Range: \_\_\_\_\_ Min 0.1 GSM, Max 250 GSM  
Moisture Accuracy: \_\_\_\_\_ ±0.1%  
Coatings Accuracy: \_\_\_\_\_ ±0.1 gr/m  
Repeatability: \_\_\_\_\_ ±0.2%

### Maintenance:

Warranty: \_\_\_\_\_ 24 months Parts/Labor  
Routine Cleaning: \_\_\_\_\_ None Required  
Calibration Verification: \_\_\_\_\_ Calibration Check Standard  
Cooling: \_\_\_\_\_ Vortex Air Cooler (optional)

### CE Compliance

EMC Directives  
EN50081-1 & EN50081-2,  
EN61010-1  
Low Voltage Directive

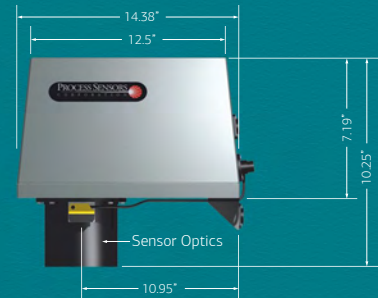
### Fieldbus Interfaces

(for non-profile data)

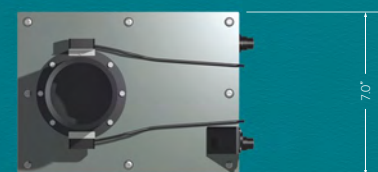
Ethernet IP, Devicenet, Profibus, Profinet,  
OPC-DDE Server

### Dimensions: MCT Transmitter

Front View



Bottom View



All Power and Interface  
Connections on Rear Panel

### Dimensions: Operator Interface

Front View



Bottom View



Single Cable to Scan Controller

Scanning Frame: Available in 36"-160" widths



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