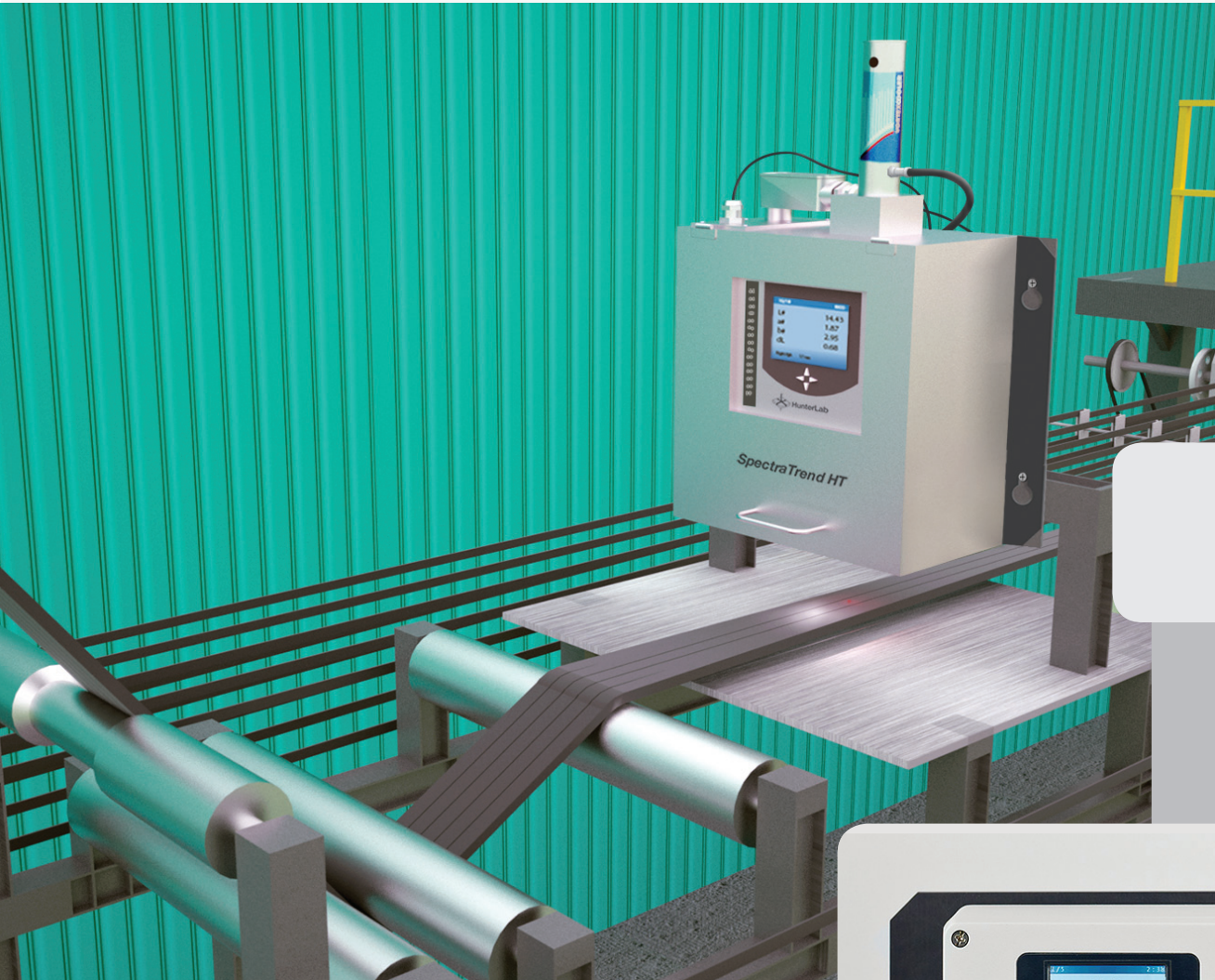


The world's true measure of color

# HunterLab

## SpectraTrend<sup>®</sup> HT

*in-process textile solutions*

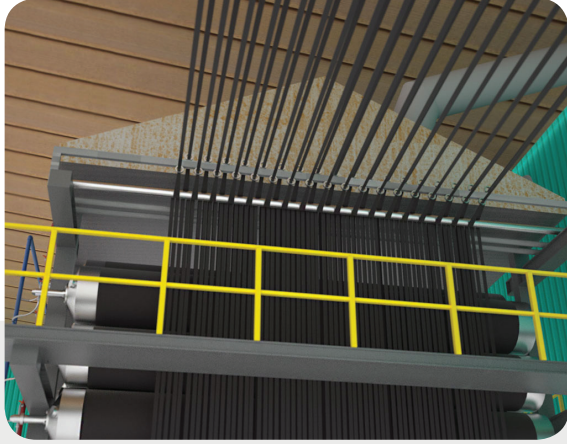


measure  
color  
the way your  
eye sees it



# A dynamic approach to Color Process Monitoring and Analysis

SpectraTrend® HT takes non-contact Color and Shade measurement to their highest levels, combining versatility, simplicity and performance in one easy-to-use compact design. SpectraTrend® HT supports implementation of today's Total Quality Management programs such as LQM, PAT, Six Sigma, DMAIC, and others that share a common goal of producing consistent product quality and reducing waste.



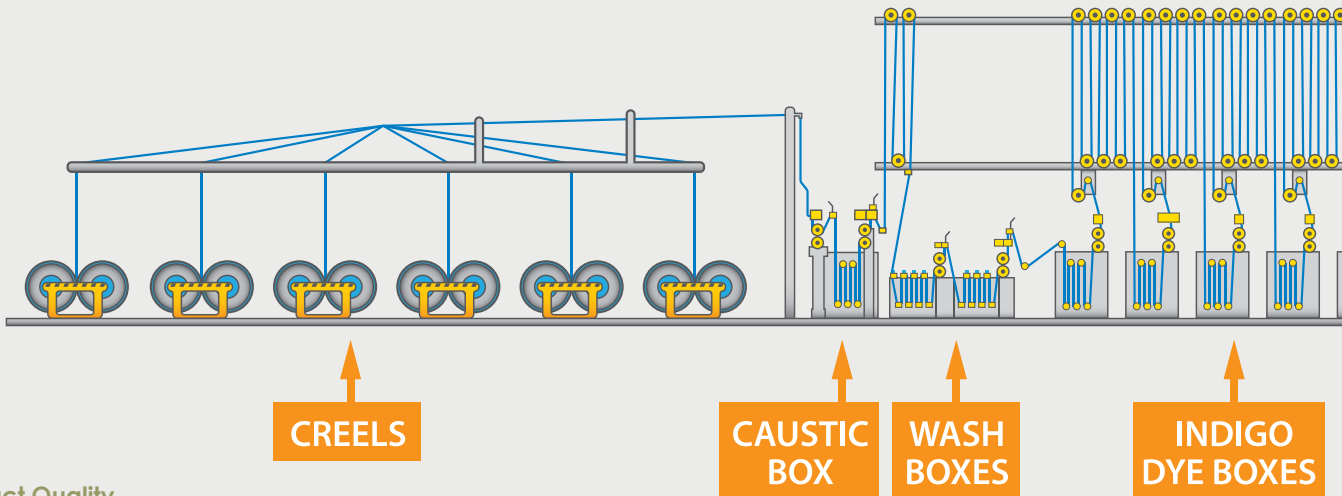
## Implementation of color control in denim manufacturing

### Reduce color changeover time ●

- Improved efficiencies and reduced seconds

**Problem:** When repeating an old dye lot or repeating from sample dye lot, it is important to achieve same or similar shade. In most cases, this takes longer than what is actually required, resulting in excessive and unnecessary wastage, and reduced plant efficiency.

**Problem Solved:** The SpectraTrend HT solves the problem of identifying precisely when the last of the old color shade has run through, and when the first of the new color shade has begun, shortening color changeover times by 50% or more, and reducing wastage.

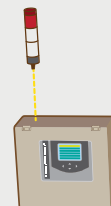


### ● Ensure Product Quality

- Defective product containment = reduced CoQ (Costs of Quality)

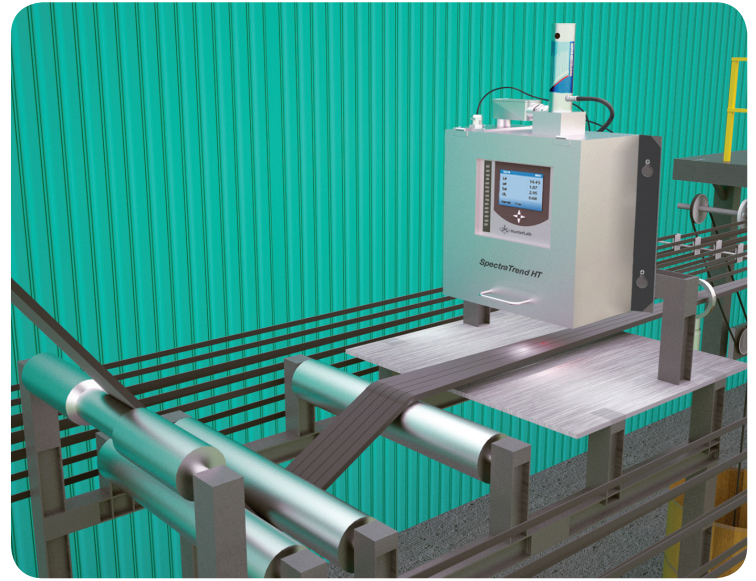
**Problem:** Color drift is a normal part of rope dyeing, the result of many process variables. When this happens between time-interval based static QC inspections, the resulting defective product goes unnoticed and ends up in a customers hands.

**Problem Solved:** Real-time color measurements taken within the process stream can identify defective product, enabling downstream containment and ensuring the defective product does not leave the factory.



# Rope Dye Range Application

The SpectraTrend HT sensor is mounted over the warp yarn in a fixed-point position over the coiler section of the range. Depending upon the yarn count and the number of ends per rope, the number of ropes that are gathered together and threaded through guides for passage under the sensor head is determined. Typically, the number of ropes used ranges from 2 to 4 - depending on the yarn count and number of ends per rope.

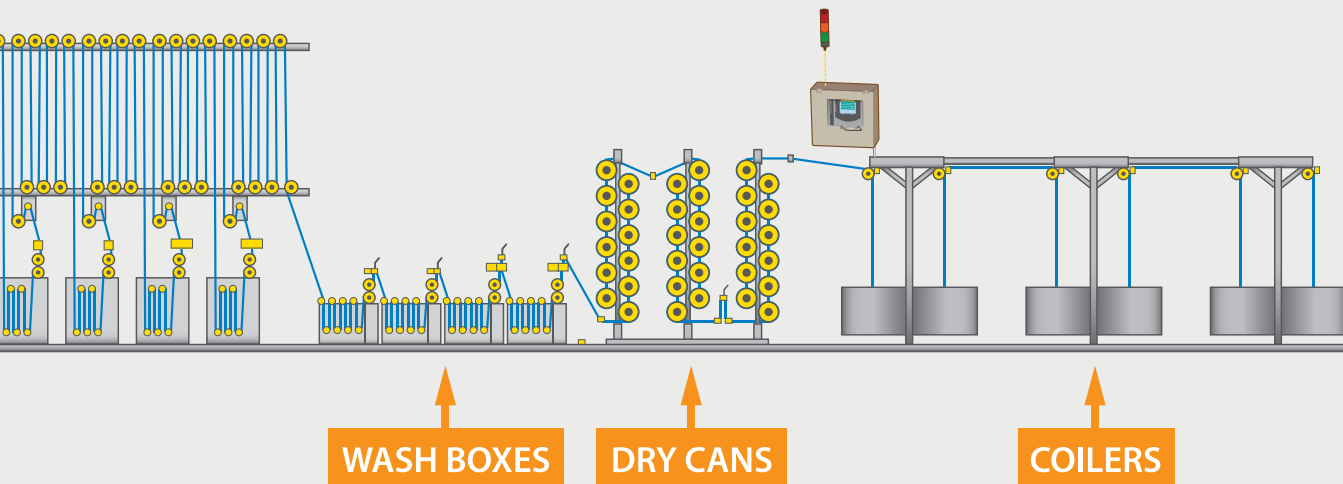


## ● Reduce Wastage

- Identify color change in real-time, take corrective action before a 'fail' condition

**Problem:** There are many variables associated with indigo dyeing; the dye shade needs to be continuously monitored and corrected. This is difficult to maintain and monitor as a manual operation.

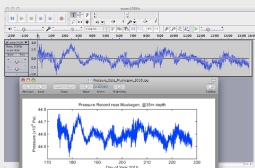
**Problem Solved:** Color stability and color change-outs can be more tightly monitored and adjusted through the real-time continuous data provided by the SpectraTrend HT.



## ● Enhanced GMPs (Good Manufacturing Practices)

**Problem:** Variations between operators shift to shift combined with inadequate data collection and process information make it difficult to track any shade variation from one dye lot to another.

**Problem Solved:** Continuous Process Improvement is provided through real time data collection, whose analysis allows better understanding of the impact of process variables on color management and control, resulting in improved overall plant efficiencies.



# Denim Rope Package

- SpectraTrend HT System 2
- Positive Forced Air Environmental Enclosure with Vortex
- Analog output
- Standard Ethernet communications - enables multiple sensor placements and connections to any PC on the network



## SpectraTrend HT Key Features and Benefits

SpectraTrend HT provides several benefits to denim producers which include:

- The ability to detect and correct changes in real-time. This reduces the overall amount of undesired waste and associated costs.
- The ability to contain defective dye lots and ensure it does not ship to a customer. This will have a large impact on their total costs of quality.
- The ability to collect historical color data as a tool to improve their overall process. This data can be used to compare to other process data enabling determination and root cause analysis of color problems.
- The ability to improve efficiencies of color changeovers and reduce associated wastage costs.

For more information go to [www.hunterlab.com](http://www.hunterlab.com)  
or contact your local HunterLab representative.