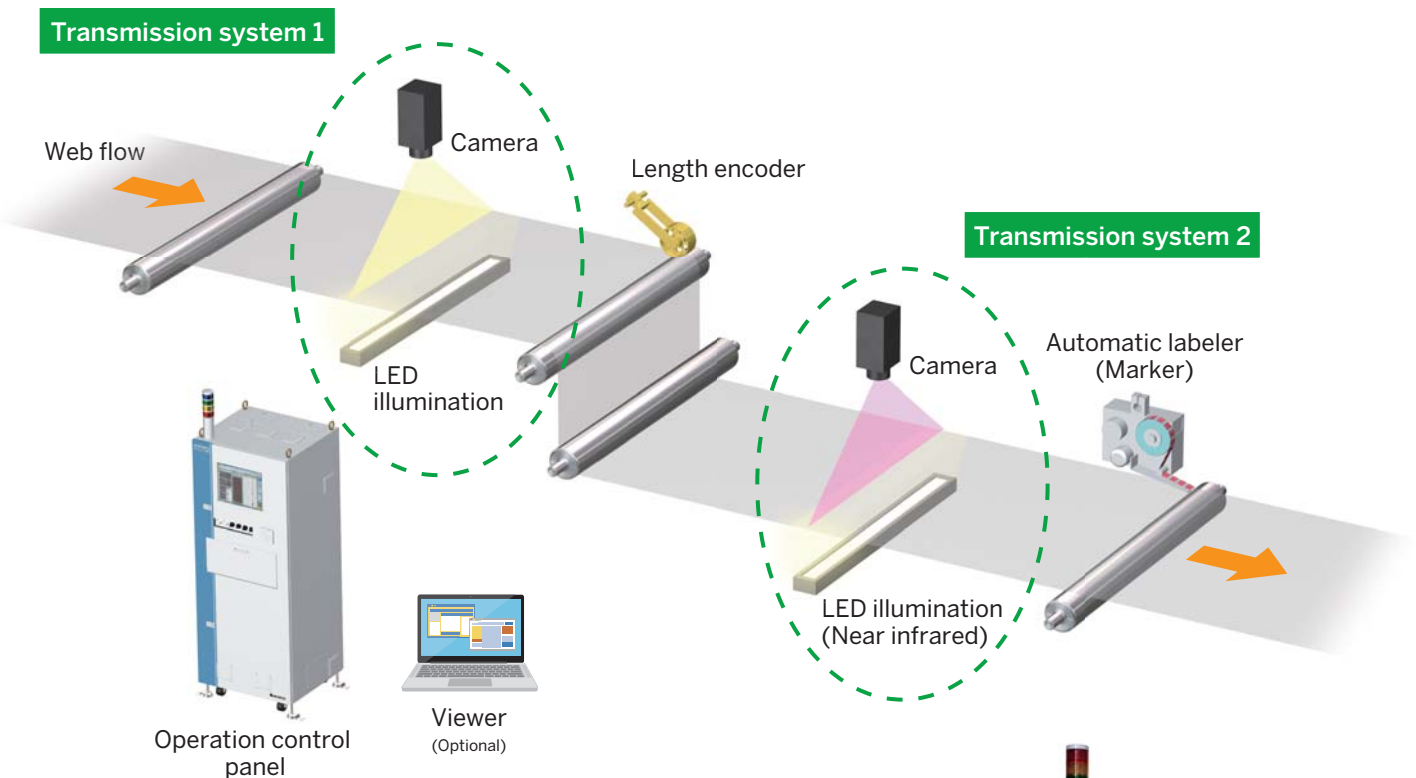


Nireco technology enables your facility to achieve higher yields by preventing the flow of faulty films.

Separator films used in lithium secondary batteries are critical in the structure of the battery insulation. Mujiken⁺, through the combination of near-infrared LEDs and other optical systems, together with a range of algorithms and parameters that we have developed over many years, performs more accurate detection and identification of defects.

Example of the layout of the separator film inspection process



Camera

The camera produces detailed resolution in the transverse direction (TD) relative to the moving material.

4096 pixels, 320 MHz, 8192 pixels, 320 MHz, 10-bit line sensor

Length encoder

The encoder outputs a detailed calculation reference for the moving material in the motion direction (MD).

Lamp units

LED (white, near infrared)

Detectable defects

Foreign material, fish eyes, burns, pits, dents, smudges, density streaks, bubbles, grime, pinholes, lint, bulges, color unevenness

Functions

Automatic luminance correction circuit, 10-bit grayscale input circuit, automatic shading correction circuit, spot and streak defect detection circuit, 2-dimensional filtering, high-speed joining merge, automatic edge detection, automatic defect classification, re-classification, density mapping



Types of detected defects

Original image

Binarization

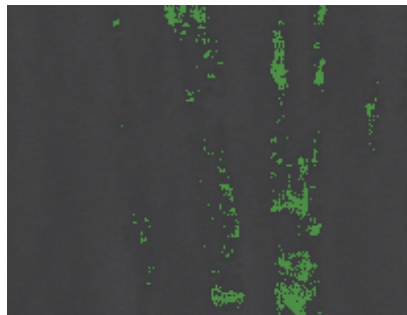
Substrate defects



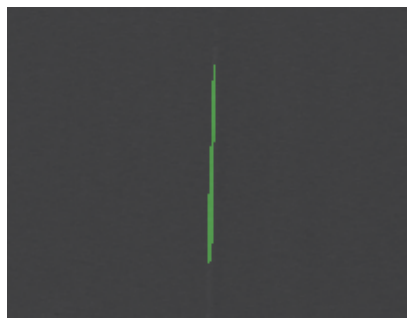
Pinholes



Uneven coating



Streaks



- Other
- Missed coatings
 - Coat peeling
 - Foreign material
- * We can perform sample tests.

The contents of this catalog are subject to change without notice.
Please confirm details with our Sales Division during your planning stage.



● Hachioji Office
2951-4, Ishikawa-machi, Hachioji, Tokyo, 192-8522, Japan
Telephone : +81-42-660-7330 Facsimile : +81-42-645-6658

Web Site <http://www.nireco.com> E-Mail info-kensa@nireco.co.jp