

RAINBOW

A New Paradigm for Industrial Color Measurement

CREATING NEW IN-LINE COLOR MEASUREMENT STANDARD

The RAINBOW System provides real-time inspection of color measurements directly on the production line. It assesses areas and creates a digital roadmap of color measurements, ensuring that deviations in color are detected and addressed.

EFFICIENCY AND PRECISION

This new technology is non-intrusive and uses laser technology to provide highly accurate readings within delta values specified by the quality department. System Rainbow reduces waste and enhances quality control by minimizing color deviations in real time.

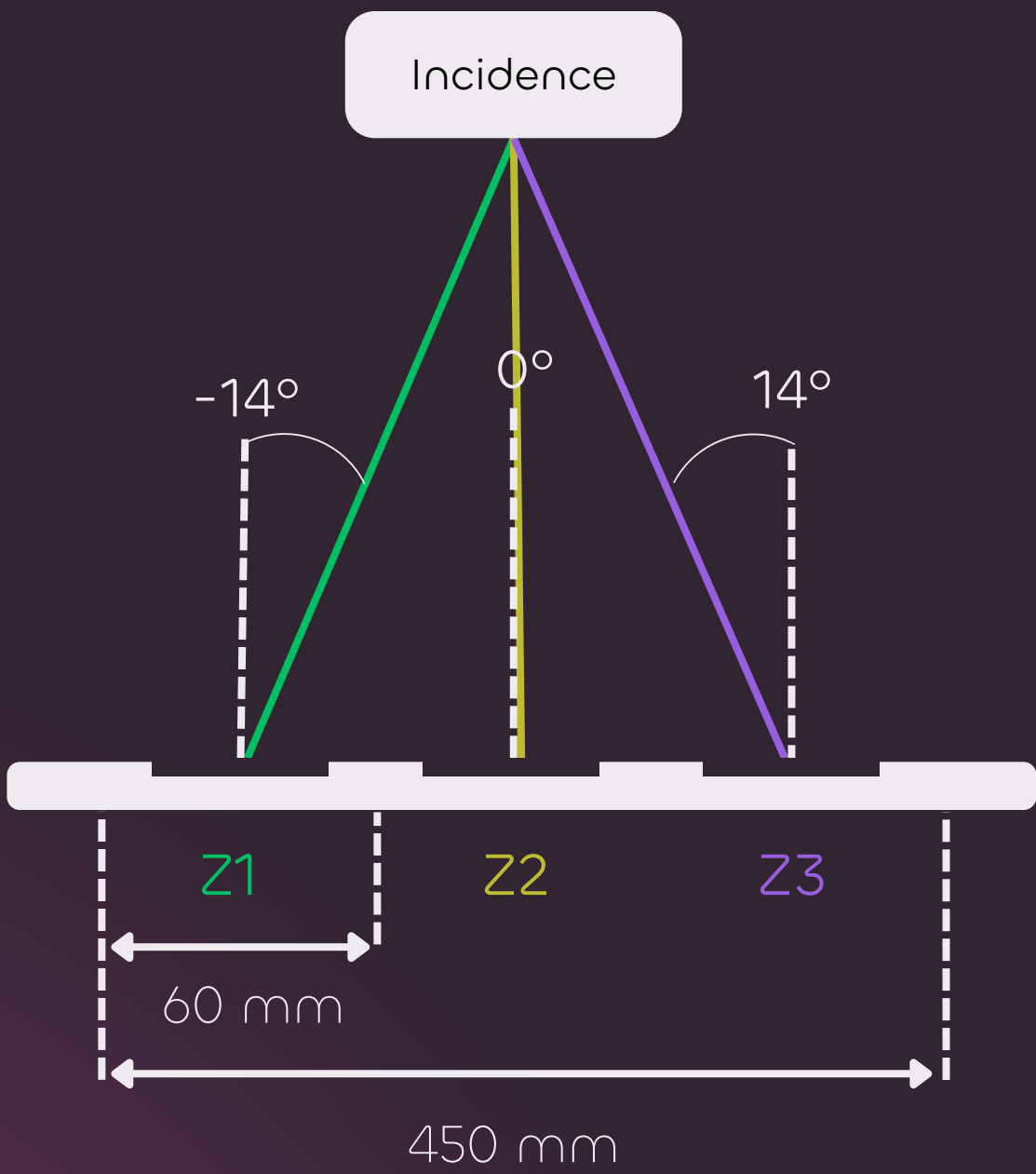
NEW STANDARD IN-LINE

- Laser based.
- 1 Sample / 2 sec.
- Multipoint.
- > 90% production inspected.
- No speed limitation.

TECHNICAL SPECIFICATIONS

Zone	Z1	Z2	Z3
*Geometry	-14°/65°	0°/45°	14°/23°
Measurement distance (machine aperture to sample)	> 70 mm		
Light source	Supercontinuum white light laser		
Laser spot diameter	≤ 4 mm		
Spectral sensor	High resolution optical spectrometer		
Spectral measurement range	400 nm - 750 nm		
Spectral resolution	< 3 nm		
**Measurement area	60 mm	60 mm	60 mm
Total measurement zone	450 mm		
Measurement time	< 100 ms	< 100 ms	< 100 ms
*Minimum measurement interval	2 s between zones		
Distance variation with error ΔL^ , Δa , $\Delta b \leq 0.4$	± 2 mm	± 2 mm	± 2 mm
***Repeatability (standard deviation for 10 repeated measurements of a white sample)	ΔL^* , Δa , $\Delta b \leq 0.1$	ΔL^* , Δa , $\Delta b \leq 0.1$	ΔL^* , Δa , $\Delta b \leq 0.1$
Reproducibility (standard deviation for 10 different measurements of a white sample over 1 hour)	ΔL^* , Δa , $\Delta b \leq 0.2$	ΔL^* , Δa , $\Delta b \leq 0.2$	ΔL^* , Δa , $\Delta b \leq 0.2$
Calibration	Automatic calibration in each measurement zone		
Environment light influence	NO		

*Incidence referred to the normal/detected to the specular.
**Customizable upon request from 10 mm up to 80 mm.
***By taking continuous measurements over 24 hours, the repeatability of ΔL^* , Δa , and Δb are ≤ 0.2 .



MECHANICAL SPECIFICATIONS

Environment temperature	5 - 40 °C
Machine size	976 mm x 2783 mm x 1020 mm
Machine weight	450 kg
User Interface	Specific HMI for coil coating industry (Color display 17")
I/O Interfaces	Ethernet, RS232, RS485, USB
Input Voltage	230 V AC
Max power consumption	3.6 kW