EQUITECH

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EQUISPEC™ IPS
IN-LINE PROCESS SPECTROPHOTOMETER

INTRODUCTION

The EquiSpec™ IPS comprises a spectrophotometer and a touchscreen industrial computer integrated into a NEMA4 stainless steel box. The IPS is designed and equipped specifically for use in the production environment where the ambient conditions can include dust, vibrations, and variations in temperature or relative humidity. In addition, the IPS contains a thermoelectric cooling and heating device to keep the temperature inside the box at a constant level for maximum measurement stability.

The IPS uses fiber optics and probes to illuminate the sample and transport the signal back to the analyzer.

The IPS and process probes are designed to be used in high-temperature, high-pressure and corrosive environments.

CHEMICAL MEASUREMENTS

In both lab and process settings, Process Analytical Technology (PAT) can enhance efficiency and accuracy in chemical and pharmaceutical processes, reducing waste and maintaining end-product integrity. PAT can be the answer for challenges such as:

- Reaction end-point determination
- Monitoring product purity, color, and clarity
- Monitoring concentrations of liquids, powders
- and gases
- Accountability tracking for sensitive materials
- Cleaning validation
- Waste reduction
- Reaction optimization

COLOR MEASUREMENTS

Color monitoring is a critical function in various production and laboratory settings. The environment where it can be measured includes liquids, slurries, pastes, or solids, and the measurement target could be color, haze, gloss, transmission, or yellowness. Therefore, color monitoring is essential to:

- Achieve greater consistency and matching in the production of pigmented materials such as plastics, paints, inks, textiles, and cosmetics
- Maintain color matching in Masterbatch production
- Minimize time, sampling, and scrap required to achieve color tolerance
- Monitor color at high extrusion speeds
- Maintain tight color tolerances

OPTICAL

Repeatability RMS delta E (white tile)	Maximum 0.01 RMS delta E CIELAB*
Inter-Instrument Agreement (LASP)	Maximum 0.08 ave. delta E CIELAB*
Short-term repeatability (p-p of 20 consecutive measurements)	
L*a*b* white tile	0.02
L*a*b* selected high chroma BCRA II	0.04
L*a*b* selected neutral or low chroma BCRA II	0.02
Spectral 420 - 680 nm, white tile, % full scale	0.10
Spectral 400 - 420 & 680 - 700 nm, white tile, % full scale	0.15
Illumination	Xenon Flash
Detector	1024 x 64 pixel CCD
Instrument Configurations	All fiber-optic, double beam
Cross Talk	< 0.5%
Spectral Range	380 - 780 (refl.); 300 - 820 (trans.)
Wavelength Accuracy	< ± 0.25mm
Wavelength Reproducibility	< ± 0.05mm
Wavelength Resolution	0.75nm, nominally w/25 micron slit
Photometric Range	0 - 200% reflectance
Photometric Resolution	0.001%
Measurement Time	Probe dependent; typically 1 to 5 seconds

GENERAL

Interface	15 in. touch display
Enclosure	NEMA 4x, TE-cooled
Dimensions	62W x 58H x 24D cm (24.5 x 23.0 x 9.5 in.)
Weight	45.5 kg (100 lbs.)
Mounting Holes	4
Horizontal Spacing	47.0 cm (18.5 in.), center-to-center
Vertical Spacing	54.9 (21.6 in.), center-to-center
Diameter	1.0 cm (0.4 in.) Accepts 3/8 in. bolts
Temperature (operating)	15 - 45 °C
Electrical Requirements	100-120 VAC, 2.8 A, 50 - 60 Hz
	200 - 240 VAC 1.6 A, 50 - 60 Hz
External Ports	USB (2), RS-232 (1), Ethernet (1)

CONTACT US

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