

Title: Why D65 Spectral Fidelity Matters in Industrial Spectrophotometry

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Abstract:

This paper explores the critical role of colorimetric spectrometers conforming to the spectral power distribution (SPD) of Illuminant D65, a vital standard for accurate daylight simulation in color measurement. We comprehensively analyze the competitive advantages these spectrometers offer over non-conforming instruments, highlighting their importance for precise, consistent, and industry-compliant color assessment. By illustrating how D65 conformity enhances product quality and measurement accuracy, this study underscores its necessity across industries, including food, paints, plastics, printing, and textiles. Ultimately, we demonstrate that adopting D65-conforming spectrometers is key to maintaining a competitive edge and meeting evolving industry standards.