OPTIMIZING INSPECTION IN MANUFACTURING

WHAT MATTERS IN EQUIPMENT INSPECTION

USING A HYPERCENTRIC LENS TO GET A 360° VIEW

Imaging lenses can be optimized to meet a wide variety of application needs. Fixed focal length lenses are used in a wide range of applications and can image angular fields of view with a broad range of working distances. Conversely, a hypercentric lens images a conical field of view. This allows a single lens to image all sides of an object at once.

In this demo a TECHSPEC® Hypercentric Lens is used in conjunction with a low angle ring light illuminator to image the circumference of a vial and read a 2D bar code. Since the Hypercentric lens images all sides of the vial at once, each bar code is read regardless of vial orientation. In comparison the fixed focal length lens only images one side of each vial missing most of the bar codes.

FEATURED STOCK PRODUCTS

TECHSPEC® Compact Fixed Focal Length Lenses

- Most Universal Imaging Lens
- Industry Leading Price to Performance Ratio

TECHSPEC® Hypercentric Lenses

- Simultaneously Images Top and Sides of an Object
- Ideal for Component Inspection

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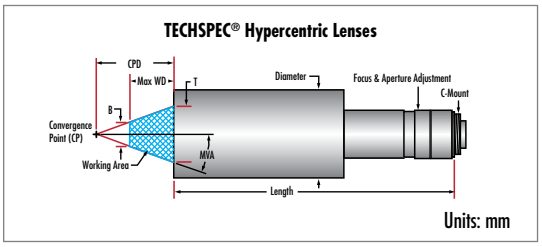
TECHSPEC® HYPERCENTRIC LENSES

- Simultaneously Images Top and Sides of an Object
- Can be used as a Long Working Distance Borescope
- Ideal for Component Inspection

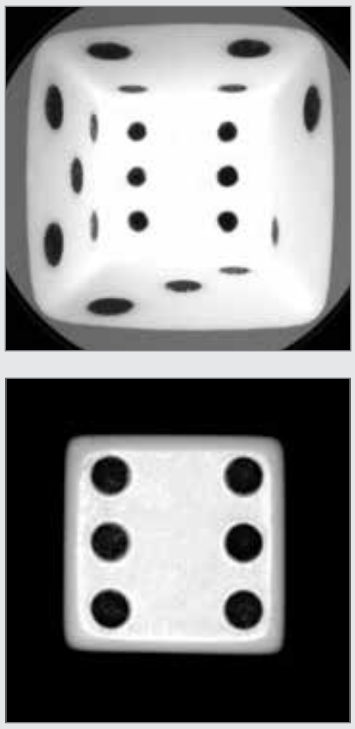
TECHSPEC® Hypercentric Lenses provide a converging view of an object, focusing on the top and surrounding sides simultaneously, and are used to eliminate the need for multiple camera and lens setups in machine vision inspection or identification applications. TECHSPEC® Hypercentric Lenses are ideal for inspecting parts such as pharmaceutical vials, batteries, tubes, or manufacturing parts. These lenses provide a conical-shaped working area, and are optimized for use with monochromatic light. When 0.5 - 1.5mm spacers are positioned between the lens and camera, these lenses can also be used as long working distance borescopes, simultaneously focusing on the internal walls and bottom surface of an object. The borescope working distance is the area past the convergence point (CP) of the standard working area. The use of larger spacers increases the borescope focus distance.

Note: All specifications are defined at 660nm.

Learn more at www.edmundoptics.eu/hypercentric



TECHSPEC® HYPERCENTRIC LENSES		*Circular Image is Produced on Maximum Sensor Format	
Sensor Format (Vertical)*	1/3"	1/2"	2/3"
Convergence Point Distance (CPD):	28.2mm	28.2mm	28.2mm
T (Near aperture):	37.2mm	37.2mm	37.2mm
B (Far aperture):	9.4mm	10.4mm	11.5mm
Max. View Angle (MVA):	33°	33°	33°
Max. Working Distance (WD):	21.1mm	20.1mm	19.5mm
Max. Depth of Field:	18mm	14mm	9.5mm
Dimensions (Dia. X L):	58.9 x 176.4mm	58.9 x 160mm	58.9 x 158mm
Stock Number:	#86-584	#86-585	#86-586



Images of dice using a Hypercentric Lens (top) and a Fixed Focal Length Lens (bottom)

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