

# PI-2000 Technical Specifications

## General

<b>Camera Type</b>	3 chip CCD Camera, NTSC format <ul style="list-style-type: none"> <li>648 X 494 pixels X 256 grey levels of red, green and blue</li> </ul>	<b>Option:</b> Higher Resolution <ul style="list-style-type: none"> <li>1024 X 768 X 1024</li> </ul>	
<b>Camera Module Size (max)</b>	648 mm height X 186 mm diameter (Main Tube) X 178.5 mm (radius from centre of tube to component box edge)		
<b>Camera Standoff Height from Disc</b>	3.3 mm		
<b>Defect Detection Capability</b>	Minimum Defect Size Detected: Greater than 0.250 mm in any direction Minimum Threshold of Detection: 4-5 grey levels above average image noise level Contrast Level: Minimum required defect to background contrast level varies with defect and ink type		
<b>Types of Defects Found</b>	Printed Color Defects: <ul style="list-style-type: none"> <li>Pinholes</li> <li>Color Shifts</li> <li>Ghosting / Feathering</li> <li>Missing / Excessive Ink</li> <li>Large Area Printing Watermarks</li> </ul>	Surface Type Defects: <ul style="list-style-type: none"> <li>Squeegee Marks</li> <li>Scratches / Dust</li> <li>Raised Print</li> <li>Print Thickness Variations</li> <li>CD-R Spectral Ink</li> </ul>	Other Special Defects: <ul style="list-style-type: none"> <li>CMYK Comparison</li> <li>Clamp Area Defects</li> <li>Centre Hub Print Defects</li> <li>Off-Line Inspection Mode</li> <li>Dark Ink Inspection Mode</li> </ul>
<b>Machine Interface</b>	16 digital inputs; 16 digital outputs 0-24VDC - NPN or PNP compatible		
<b>Hardware Components</b>	Rack Mount Industrialized computer complete with I/O interface module; monitor; Windows® Operating System Camera module with integrated optics and 3 Solid state light sources for superior print and surface defect detection performance		
<b>Cable</b>	10 m camera cable, 12 m I/O cable Camera cable fully compliant to IEC-61000-4-2 level 4 and IEC-61000-4-4 level 4 electrical immunity		
<b>Learning Process</b>	4-50 discs can be used to train models; Discs can be tested while being learned		
<b>GUI Language Support</b>	English, French, German, Chinese, Japanese		
<b>Reject Classification</b>	By Size, by Location (Cartesian or Zone)		
<b>Cycle Time</b>	Up to 100 parts per minute depending on print machine cycle time Acquisition is completed in 290 msec, total processing time <600 msec.		
<b>Required Disc Alignment</b>	To within 0.050 mm for best print inspection results		
<b>Number of Camera Heads</b>	One Camera Head supported per processor		
<b>Mounting</b>	Precise Mounting Plate supplied with system allows for easy maintenance and adjustment		
<b>Operating Conditions</b>	Power: 100-240 VAC, 500 watts, 50-60 Hz. Temperature: 10-40 °C Humidity: 10-60% RH (non-condensing)		
<b>Fume Evacuation system</b>	Air pressure jets constantly evacuate the fumes from the lower light assembly		
<b>Air Requirement</b>	Fine filtered medical-grade dry air feed capable of 1-2 bar (15-30 psi) pressure. Flow rate of 0.1 m3/min (3 cu. Ft./min)		