



# CuDDI<sup>TM</sup>

Copper Digital Detection Imaging

by VISAYA <sup>TM</sup>

# CuDDI

## Copper Digital Detection Imaging

Copper corrosivity has become a critical indicator of sulfur compounds present after the refining process. Measuring corrosivity continues to be a challenge, as no accurate standardized test has been developed to date. Current corrosivity tests involve manual and visual assessments, resulting in human error and bias. The petroleum industry calls for a high-level, high-tech standard for copper detection.

The new Copper Digital Detection Imaging (CuDDI) instrument from Analytical Instruments, Inc. identifies exact levels of corrosivity present from petroleum through a 4-step automated vision algorithm and classification process, eliminating operator bias. Results are digitally recorded and are seamlessly integrated with LIMS software.



### Principle:

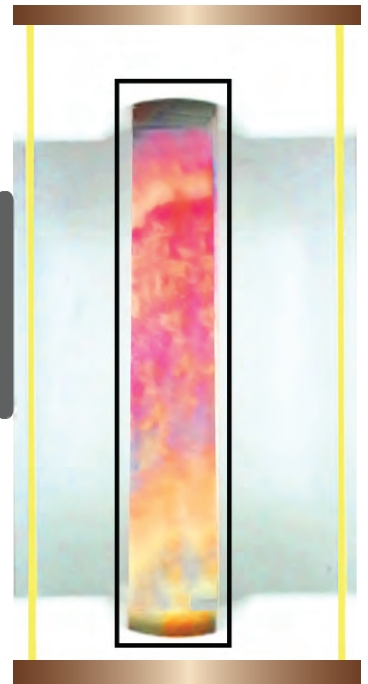
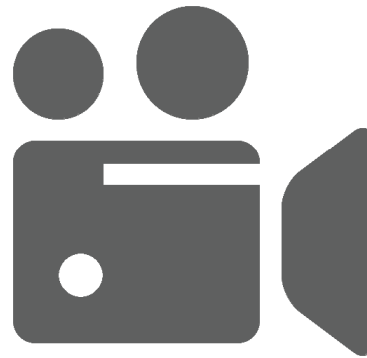
CuDDI's exclusive, patent pending design takes the guesswork out of copper corrosion detection. Its unique vision algorithm and light box records, calculates and displays accurate corrosivity ratings in a matter of seconds. A high-resolution camera with sophisticated optics provides higher precision machining and motors for the rotation of the copper strip. The results are not only a groundbreaking improvement on the rating, methodology and sample handling of current laboratory procedures; they are the new standard for copper detection.

### The CuDDI Method:

Copper digital detection imaging is a simplified process requiring minimal steps that effect maximum efficiency:

- Step 1: Insert strip into specialized holder
- Step 2: Place holder into instrument
- Step 3: LED light source is automatically activated and regulated
- Step 4: Software identifies first position and captures first image
- Step 5: Software then rotates the holder 180 degrees and captures second image
- Step 6: Readings are tabulated and processed through CuDDI algorithm
- Step 7: Final results are displayed on a high-resolution touch screen

Final Results are Clear, Concise and Cutting-Edge.



# Copper Digital



## A Better Rating

CuDDI's improvements over current test rating output and analysis include:

- Easy-to-Use Touch Screen Driven Software
- 1-2-3 Button Operation
- Digital Image Logging Complete with Operator Notes and Calculated Results
- Integrated Industrial Computer for Easy Interface with Network
- Direct LIMS Connectivity
- USB, Ethernet and HDMI Outputs

## A Better Method

CuDDI's improvements over current test procedures and end results include:

- Removes Inherent Bias with Manual Rating
- Voltage and Current Controlled Light Box for Consistent Ambient Light Environment
- Automatic Detection of Copper Strip Size
- Long-lasting LED Light Source
- Auto Rotation of Strip for Recording of Both Sides



## A Better Sample

CuDDI's improvements over current test sample handling and errors include:

- Enables Single-Hand Loading via Copper Strip Slide Holder
- Eliminates Fingerprints and Unwanted Markings on Strips
- Slide Holder Doubles in Functionality as Tool for Manual Verification
- Prompts Operator When Strip Shrinks to Unusable Size
- Provides Auto Recognition of Sides A & B

## Technical Specifications

Applicable Test Methods	ASTM D130, D1838
Corrosion Detection Range	1a, to 4C
Display Units	Color, ASTM Rating and Strip Size
Detection Method	Patent Pending CMOS Digital Detection
Precision	+/- 0.25% of Raw Reading
Optical Design	Patent Pending Optical Arrangement
Light Source	LED, 7,000K
Measuring Time	< 30 seconds
Calibration	Vision Calibration with Standard
Display	10.1" Projective Capacitance Touch (Multi Touch)
Interface	Ethernet x2, USB 3.0 x1, USB 2.0 x4, HDMI, VGA, USB Printer, USB Mouse and Keyboard
Memory / Storage	32 GB SSD Storage
Temperature Range	10° to 35° C
Humidity	Up to 85% Non Condensing
Power	Auto-switching 90 ~ 264VAC, 47 ~ 63Hz, 280 Watt Power Supply
Space Requirements	80 mm (3") on Sides and Back
Dimension	350x300x270mm (14x12x11")
Weight	10 Kg. (22 lbs.)
Gross Dimensions & Weight	400x350x530mm, 15 Kg. (15x14x21" 33lbs.)

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