Ci5000 Weather-Ometer®

Setting the Standard for Xenon Weathering

Accelerating Your Expertise
The Atlas Vision

Shaping the future of the materials testing world in partnership with our customers.

The Atlas Mission

Our mission is to help our customers worldwide provide the most reliable and durable product solutions through our combined experience and expertise in weathering instruments and testing, custom capabilities, consulting and global support.

Focused On Your Goals

Atlas pioneers innovative ways for companies to test the weatherability of their products. From our industry-leading accelerated weathering equipment to the consulting services of our expert laboratory staff, our approach to the market is clear: Provide our customers with superior, easy-to-use technology and advanced testing solutions to determine how long their products will last. Every step of the way, Atlas is there - Accelerating Your Expertise.

Quality at Every Step

Producing the very best instruments is not something we take lightly. Every instrument must pass customer specified test parameters and we visually inspect all xenon lamps and optical filterglass per strict quality specifications. We test every instrument for material compliance before being shipped. The Ci5000 meets relevant CE, UL, CSA, ISO and EN safety and electrical standards for both machinery and laboratory test equipment.

Learn from the Experts*

Your instrument purchase includes attendance to a free Weather-Ometer® Workshop. This hands-on course guides new users through the operation, calibration and maintenance of your Weather-Ometer. We make sure you know all of the instrument features to maximize the efficiency and effectiveness of your testing.

* Offer may differ by country

Making the Most Advanced Instruments Even Better

The Ci5000 includes a simplified operating system and an incredibly fast, fully-digital architecture to produce the most reliable and efficient instrument we’ve ever made. It all adds up to be the most advanced xenon weathering test instrument on the market.

Simplified Control Navigation

The larger user interface makes operating the Weather-Ometer® easier than ever. The Ci5000 delivers exceptionally precise and reliable control of all test parameters for repeatable, reproducible and reliable results.

Revolutionary Innovations

Atlas remains on the cutting edge of state-of-the-art technology, delivering features such as our Specific Specimen Surface Temperature (S³T) System and Full Spectrum Monitoring (FSM).
Which Light is Right?

Choosing the “right light” is one of the first steps in creating an accurate and reliable weathering test program. The Ci5000 simulates solar radiation using xenon lamps and advanced filter systems specifically designed for weathering. Atlas xenon lamps are developed exclusively for weathering to meet high performance criteria for their spectral power distribution, lifetime irradiance stability and lot-to-lot uniformity.

The Ci5000 uses interchangeable glass filters that tailor the xenon light spectrum to match light conditions in your products’ end use environment.

Sunlight vs. Artificial Light Sources
A Comparison of Relative Spectral Power Distribution

Common Applications

The Ci5000 is perfectly suited for testing:

- Automotive Materials
- Plastics
- Inks
- Paints and Coatings
- Packaging
- Photovoltaics
- Textiles including Industrial and Geotextiles
- Pigments, Dyestuffs, Stabilizers and Additives
 FEATURES

A Higher Order of Weathering Testing Performance Through Superior Science

The Ci5000 Weather-Ometer®, with its advanced digital control system, represents monumental achievement in applying digital and optical technologies in an easy-to-use laboratory weathering instrument. The Ci5000 is approved by many OEMs in the automotive, paints & coatings and plastics industries as the exclusive platform to deliver accurate, reproducible and repeatable results for predicting service life. The Ci5000 has been certified CE, UL, CSA, ISO and EN compliant.

Rotating Sample Rack
Maximizes exposure uniformity over all specimens. Total exposure area of 11000 cm², the best exposure area per cost ratio of any xenon weathering instrument.

Controlled Irradiance
Up to 2-sun irradiance levels or higher based on your test requirements. Narrow band (340 nm or 420 nm), broad band (300-400 nm) or illuminance control/Lux (400-750 nm) with an optional channel that switches between monitoring and control.

Test Chamber Temperature
Closely simulates your material’s end use environment.
**Smart Damper**
Reduces test variability in chamber temperature and humidity and compensates for changes in ambient laboratory conditions.

**VibraSonic Dual Nozzle Humidity Control**
Accurately replicates humidity levels to meet stringent global test requirements; a second nozzle is standard on the Ci5000 to expand humidity range.

**Black Panel Thermometer (BPT) or Black Standard Thermometer (BST)**
Controls and monitors temperature at specimen level to ensure test repeatability.

**Xenon Lamp Cooling System**
The Ci5000 is equipped with a new, ground-breaking xenon lamp cooling system that dramatically reduces the amount of cooling water used.

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**Intuitive User Touch Screen Interface**
Increases functionality that makes the Ci5000 easy to program, monitor and calibrate.

**Programmable Stepped Changes in Irradiance, Temperature, Humidity and Other Test Conditions**
To meet any user defined test program or cycle.

**Advanced Digital Control**
Digital control with rugged, state-of-the-art embedded electronics.

**Additional Features**

**Data Acquisition**
Streaming data output in a format that can be read in real-time or stored onto a portable media. Connection sources include USB or Ethernet.

**SmartLight Monitor**
Verifies that the correct light capsule is installed.

**Water Purity Notification**
Signals when incoming water quality falls below the factory set point.
CONTROL

Enhanced Control System Enables Complex, Custom Test Programs or Simple, Preprogrammed Test Operation

Easy to Understand Icons Simplify Navigation
New icons make getting to the information you need fast and easy
- Large, Touch Sensitive Buttons
- Clear, Easy-to-See Icons

Two Simple-to-read Pages and On-screen Trend Plot Monitor All Critical Status Information
- Rack Temperature: Black Panel Temperature (BPT), Black Standard Temperature (BST) or Both
- Chamber Temperature
- Relative Humidity
- Irradiance

Monitor all critical set points and compare with real time readings for:
- Incoming Deionized Water Quality
- Lamp Cooling Water
- Countdown in Time or Radiant Exposure
- Phase Type and Duration
- Optional Temperature Panel
- Second Irradiance Channel
14 Preprogrammed Tests for Standard Voltage and 12 Preprogrammed Tests for Low Voltage

The test list includes:
- ISO
- GM
- JASO
- ASTM
- Ford
- AATCC
- SAE

Space for Several Custom Test Programs

Existing test methods can be copied and edited for custom applications

Simplified Setup of Elective Control Features

Set variance level notification for critical variables on one screen:
- Irradiance
- Chamber Temperature
- Rack Temperature (BPT, BST or both)
- Relative Humidity
- Auto Restart After Power Interruption

Multi-lingual Capability

Select the desired language:
- English
- German
- Chinese
- French
- Japanese
- Spanish
- Korean
- Turkish

New User Functionality

Sample Management:
- Operators can keep track of multiple tests within the same Weather-Ometer® right on the user interface. Up to 10 individual sample sets can be tracked at once, either by time or by radiant dosage.

E-mail Notification:
- Your Weather-Ometer can alert you by e-mail when user define test conditions have been met.
Rotating Sample Rack

The inclined rotating rack delivers the best exposure uniformity:

- Samples are rotated continuously during test. No need to manually rotate test samples.
- Uniform specimen and chamber temperature, RH, irradiance and spray.
- Allows for even and consistent airflow over sample surfaces.
- Can accommodate three dimensional samples:
  - Small Components
  - Finished Products
  - Bottles
  - Automatic Selection for Irradiance Values.

Intelligent Controlled Irradiance (Ci) System

A closed loop system automatically adjusts lamp output in real-time delivering the most stable radiant exposure:

- Narrow band (340 nm or 420 nm), broad band (300-400 nm) or illuminance control/Lux (400-750 nm).
- Irradiance defined by user during test programming or by factory programmed test methods.
- Intelligent control will only allow the user to select an irradiance that matches the defined test method.
- Wattage regulating system.

Long Arc Xenon is the Closest Simulation of UV, Visible and IR Solar Radiation.
The Ci5000 Weather-Ometer® meets or exceeds the following industry standards:

- **AATCC**
  - TM 16.3-2012
  - TM 16E-1998
  - TM 169

- **ASTM**
  - C1442
  - C1501
  - D904
  - D3424
  - D3451
  - D4101
  - D4303
  - D4355
  - D4798
  - D5010
  - D5071
  - D5794
  - D6083
  - D6551
  - D6577
  - D6692
  - D6965
  - D7869
  - G151

- **Ford**
  - FLTM B0 116-01

- **GM**
  - GMW 14162
  - GMW 3414TM
  - GME 60292

- **ISO**
  - 105-B02
  - 105-B04
  - 105-B06
  - 105-B10
  - 12040
  - 16474-1
  - 16474-2

- **Jaso**
  - M346

- **MIL STD**
  - 810 G

- **SAE**
  - J1885
  - J1960
  - J2412
  - J2413
  - J2527

- **VDA**
  - 621-429
  - 621-430
  - 75202

- **VW**
  - PV 1303
  - PV 3929
  - PV 3930

This is a sample of global standards that can be met by the Ci5000. For more information on additional or specific standards, contact your local Atlas representative. Standards are subject to change without notice. This might lead to the inclusion or exclusion of certain standards.
The Ci5000 Offers Thorough Climate Control to Best Replicate Your Materials’ End Use Environment

Precise Humidity Control
The electronic sensor provides direct and accurate measurements of relative humidity and enables automatic control at the specimen level

- 10% RH to 95% RH in light cycles*
- Up to 100% in dark cycles*

* Dependent on other parameters such as lamp power, chamber temperature, ambient lab conditions, etc.

Specimen and Rack Spray
Custom designed precision nozzles provide uniform spraying of samples with deionized water

- The specimen spray applies water to the exposed surface of the sample which simulates rain to induce temperature shock and erosion effects
- The rack spray applies water to the back of the sample to cool the specimen temperature below the dew point during dark cycles causing condensation on the exposed surface
TEMPERATURE CONTROL

Consistent, Controlled Temperature Delivers Repeatable and Reproducible Results

Smart Damper
- Balances test chamber temperature, BPT or BST and humidity levels and compensates for changes in ambient laboratory conditions
- Recirculates chamber air, introduces ambient air or a combination of the two

Black Panel Thermometer (BPT) or Black Standard Thermometer (BST)
- Controls and monitors temperature at specimen level to ensure test repeatability
- Control of one sensor type while simultaneously monitoring the other

BPT/BST Temperature vs. Chamber Temperature (CHT)
- BPT and BST sensors simulate an estimate of the maximum temperature on a sample’s surface
- CHT measures the temperature of the air circulating within the chamber
- Controlling both sample and air temperature delivers superior repeatability and can closely match the samples end use environment

Simultaneous Control of BPT/BST and CHT
- Advanced PID algorithms allow for discrete manipulation of test parameters
- Smart Damper, variable speed blower and chamber heater are independently controlled
- Instrument performance envelope is optimized allowing maximum flexibility in custom test applications

Temperature and Humidity Control
Operable ranges of temperature control at various irradiance levels (under normal laboratory conditions).

Black Panel Temperature Control Performance
- Inner Filter: Type S Borosilicate Glass
- Outer Filter: Type S Borosilicate Glass
- Relative Humidity: 20% (+/-2%)
- Environment Temperature: 68° F (20° C)
- Environment RH: 36%

Minimum Delta BPT/CHT @ 45° C
Minimum Delta BPT/CHT @ 60° C
Maximum Delta BPT/CHT @ 45° C
Maximum Delta BPT/CHT @ 60° C
Optional Features and Accessories to Extend the Capabilities of Your Next Weather-Ometer®

Hybrid Cooling System
Improved xenon lamp cooling system dramatically reduces water consumption

- Expanded LiquiAir options include onboard mounting
- Reduces water consumption up to 100%*

* Dependent on options, ambient lab conditions, and test methods

WXView ("Weather" View)
Our new WXView data acquisition program allows users to archive test data or monitor conditions remotely in real time.

- All standard test parameters such as rack temperature, chamber temperature, % RH and irradiance
- Control parameters such as lamp power, fan speed, heater output, and damper position
- Convenient options allow user to save, print, or extract a snapshot of test data
- Automatic scaling of Y-axes
- Magnify and demagnify functions
Additional Options

Auxiliary Filter Lantern
For meeting special test requirements.

S³T Monitoring System
Atlas’ patented Specific Specimen Surface Temperature (S³T) monitoring system provides users more information about their test specimens.

- Critical for service life prediction
- Utilizes non-contact IR pyrometer
- Emissivity settings
- Traceable calibrations

XenoCal® Irradiance Calibration Device
- For independent irradiance calibration and measurement at the sample plane
- Evaluation and graphical display of measured values on a PC by means of the XenoSoft analytical software
- Available with different wavelength sensitivities:
  - XenoCal BB 300-400 nm
  - XenoCal NB 340 nm
  - XenoCal WB 300-800 nm
  - XenoCal NB 420 nm

Sample Holders
This chart is a representative sample of specimen holders available for the Ci5000 Weather-Ometer®. For specific information about specimen holders that best meet your needs, please contact your local Atlas representative.

<table>
<thead>
<tr>
<th>Holder Type (Part Number)</th>
<th>Application</th>
<th>Max. Size mm WxHxD</th>
<th>Exposure Size mm WxH</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD-3T (20017300)</td>
<td>Coatings on various substrates, plastics, textiles, glass</td>
<td>77 x 152 x 10</td>
<td>57 x 134</td>
<td>111</td>
</tr>
<tr>
<td>SL-3T (19163900)</td>
<td>Textiles, plastic film, automotive interior</td>
<td>67 x 145 x 3</td>
<td>50 x 121</td>
<td>111</td>
</tr>
<tr>
<td>SL-3T with Glass (07303900)</td>
<td>Textiles, paper, plastic film, carpet, automotive interior</td>
<td>67 x 145 x 15</td>
<td>50 x 121</td>
<td>111</td>
</tr>
<tr>
<td>CD-3T (20215700)</td>
<td>Textiles, paper, plastic film, automotive interior</td>
<td>67 x 145 x 3</td>
<td>3 windows: 38 x 50</td>
<td>111</td>
</tr>
<tr>
<td>CD-3T with Glass (07303800)</td>
<td>Textiles, paper, plastic film, wood, automotive interior</td>
<td>67 x 145 x 15</td>
<td>3 windows: 38 x 50</td>
<td>111</td>
</tr>
<tr>
<td>TEX-3T with Mask (19186700)</td>
<td>Textiles, foam, foam-backed materials</td>
<td>45 x 134 x 12</td>
<td>19 x 119</td>
<td>170</td>
</tr>
<tr>
<td>Polystyrene Reference Chip (19183400)</td>
<td>Polystyrene reference chips</td>
<td>50 x 88 x 2</td>
<td>43 x 82</td>
<td>93</td>
</tr>
<tr>
<td>4 x 6 Panel (19210200)</td>
<td>Coatings, rigid plastic, wood</td>
<td>104 x 155 x 12</td>
<td>101 x 146</td>
<td>71</td>
</tr>
<tr>
<td>3 x 6 Panel (19186501)</td>
<td>Coatings, rigid plastic, wood</td>
<td>76 x 152 x 9</td>
<td>76 x 146</td>
<td>87</td>
</tr>
<tr>
<td>Solar Panel (19190400)</td>
<td>Rigid plastic, roofing material, solar panels, wood</td>
<td>127 x 138 x 9</td>
<td>119 x 119</td>
<td>51</td>
</tr>
<tr>
<td>Adjustable Bottle (19178100)</td>
<td>Bottles, labels, printing inks, adhesives, liquids, pills</td>
<td>69 x 101 x 43</td>
<td>50 x 121</td>
<td>111</td>
</tr>
</tbody>
</table>

Atlas Ambient Air Conditioning Unit (ACU)
Option for lower test temperature applications or conditions where ambient lab air is not controlled. Updated industrial design and tighter temperature/humidity control.

LS-200 Spectroradiometer
Allows for independent measurement of the spectral power distribution from 300 nm to 800 nm to verify conformance with performance based standards with convenient data output to a spreadsheet format.
FEATURES & SPECIFICATIONS

Standard Features

Full Color 12" Touch Screen Control
Panel Display of All Test Parameters
- Direct Setting and Control of Irradiance
- Direct Setting and Control of BPT/BST
- Direct Setting and Control of Relative Humidity
- Direct Setting and Control of Specimen and Chamber Air Temperature
- Display of Diagnostic Messages
- 14 Factory Pre-Programmed Test Methods
- Space for Several Custom Programs
- Multi-Language Capability (English, French, German, Spanish, Japanese, Chinese, Korean, Turkish)

Optional Features

Auxiliary Lantern
LS-200 Full Spectrum Monitoring Device
Dual BPT and BST Measurement/Control Including BPT and BST Sensors
Monitoring of Second Wavelength
LiquiAir Self Contained Xenon Lamp Cooling System
Specific Specimen Surface Temperature (S³T) Monitoring System
Ambient Air Conditioning Unit (ACU)
XenoCal® Irradiance Calibration Device

SmartDamper
SmartLight Monitor
Streaming Data Output USB or Ethernet
Air Heater
Xenon Lamp Cooling System
Air Intake Dust Filter
Three-tier Specimen Rack
Water Purity Indicator
Calibrated Xenon Reference Lamp
Chamber Viewing Door
316 Grade Stainless Steel Test Chamber
Universal Electrical Configurations to Meet Local Frequency, Voltage, and Electrical Requirements
Meets CE, UL, CSA, ISO and EN Compliance
Sample Management
E-mail Functionality
### Physical Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>198 cm (78 in)</td>
</tr>
<tr>
<td>Width</td>
<td>160 cm (63 in)</td>
</tr>
<tr>
<td>Depth</td>
<td>127 cm (50 in)</td>
</tr>
<tr>
<td>Floor Space</td>
<td>212 cm (83 in) x 293 cm (115 in)</td>
</tr>
<tr>
<td></td>
<td>Including Access Area</td>
</tr>
<tr>
<td>Total Exposure Area</td>
<td>11000 cm²</td>
</tr>
</tbody>
</table>

### Electrical Specifications

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Phase, Wire, Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring Connections</td>
<td>3 Phase, 3 Wire (3/PE)</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>440-480 VAC Phase to Phase</td>
</tr>
<tr>
<td>Maximum Current</td>
<td>60 Amps</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>24 kW</td>
</tr>
</tbody>
</table>

### Water Consumption

<table>
<thead>
<tr>
<th>Component</th>
<th>Pressure</th>
<th>Flow Rate (max*)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>138-344 kPa (20-30 psi)</td>
<td>Deionized Water @ 18.5° C</td>
</tr>
<tr>
<td>Humidification</td>
<td></td>
<td>0.2 l/min</td>
</tr>
<tr>
<td>Specimen Spray</td>
<td></td>
<td>0.2 l/min</td>
</tr>
<tr>
<td>Rack Spray</td>
<td></td>
<td>0.2 l/min</td>
</tr>
<tr>
<td>Xenon Lamp Cooling @ 6000W</td>
<td>1.9 l/min</td>
<td></td>
</tr>
</tbody>
</table>

### Weight

<table>
<thead>
<tr>
<th>Weight Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight of Fully Skidded and Wrapped Ci5000</td>
<td>943 kg (2080 lbs)</td>
</tr>
<tr>
<td>Weight of Ci5000 without Skid</td>
<td>807 kg (1780 lbs)</td>
</tr>
</tbody>
</table>

* Typical water usage will be less. Tap water requirements for lamp cooling with the LiquiAir system will be near zero.