

Ci3000

XENON WEATHER-OMETER® &
XENON FADE-OMETER®



 **ATLAS**
MATERIAL TESTING SOLUTIONS

AMETEK

Xenon Weathering

Making the Most Advanced Instruments Even Better

Atlas instruments have become the industry standard for weather durability testing, and the new Atlas Ci3000 Weather-Ometer® / Fade-Ometer® is no exception. The ergonomically designed Ci3000 simplifies operation and features increased capacity, improved uniformity, and an easy-to-use touch screen interface. You can count on the Ci3000 to perform dependably day after day.

Simplified Control Navigation

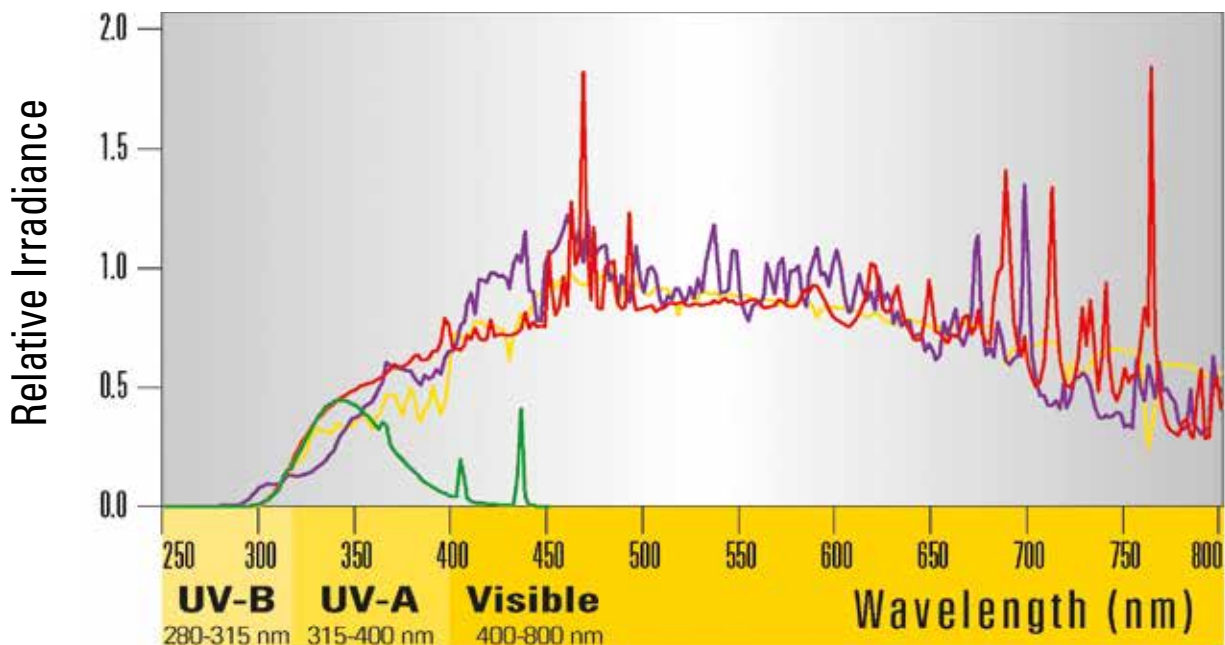
The larger user interface makes operating the Weather-Ometer easier than ever. The Ci3000 delivers exceptionally precise and reliable control of all test parameters for repeatable and reproducible results.

Commitment to Quality

Producing the very best instruments is not something we take lightly. Every instrument must pass customer-specified test parameters. We inspect all xenon lamps and optical filter glass to strict quality specifications. The Ci3000 meets relevant CE, UL, CSA, ISO, EN and UKCA safety and electrical standards for both machinery and laboratory test equipment.



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



● **Global Solar Radiation**
Average Miami Sunlight
26° South Direct

● **Xenon-Arc Lamp**
As used in the Ci3000 Weather-Ometer® with Right Light® filters

● **UVA-340 Fluorescent Lamp**
As used in the Atlas UVTest®

● **Metal Halide Global**
As used in large-scale solar simulation chambers

Which Light is Right?

Choosing the “right light” is one of the first steps in creating an accurate and reliable weathering test program. The Ci3000 simulates solar radiation using xenon lamps and advanced filter systems specifically designed for weathering. Atlas xenon lamps meet high-performance criteria for their spectral power distribution, lifetime, irradiance stability, and lot-to-lot uniformity.

The Ci3000 uses interchangeable glass filters that tailor the xenon light spectrum to match light conditions in your products’ end-use environment.

Controlled Irradiance

The Ci3000 is equipped with the latest in Atlas’ controlled irradiance technology allowing for greater precision and repeatability in weathering testing. Up to 2-sun irradiance levels or higher can be achieved depending on your test requirements. Narrow band (340 nm or 420 nm) or broad band (300-400 nm) irradiance control is available with optional monitoring at a second wavelength to meet global test requirements.



Filter Combinations		Test Conditions	Irradiance Ranges [W/m ²]			
Inner	Outer		Lamp Power	340 nm	420 nm	300-400 nm
Right Light	Quartz	Weathering tests requiring the most precise match to sunlight available (Daylight Type I)	Min 1300 W Max 5000 W	0.34 2.30	0.71 3.84	39 227
Right Light	CIRA-Quartz	Weathering tests requiring the most precise match to sunlight available and less infrared radiation (Daylight Type I)	Min 1300 W Max 5000 W	0.35 2.42	0.77 4.24	42 241
Boro-S	Boro-S	Most common combination for weathering tests (Daylight Type II)	Min 1300 W Max 5000 W	0.34 1.98	0.72 3.80	37 209
Boro-S	Soda Lime	Most common combination for indoor (lightfastness) tests (Window Glass)	Min 1300 W Max 5000 W	0.31 1.67	0.76 3.70	33 194
Boro-S	Soda Lime + Float Glass in Auxiliary Lantern	Common combination for testing European automotive interior trim materials	Min 1300 W Max 5000 W	0.12 0.68	0.63 3.54	24 142
Quartz	Boro-S	Weathering tests with somewhat more and shorter UV than sunlight (Extended UV)	Min 1300 W Max 5000 W	0.41 2.24	0.77 3.89	38 226
Quartz	CIRA-Boro-S	Weathering tests with somewhat more and shorter UV than sunlight and less infrared radiation (Extended UV)	Min 1300 W Max 5000 W	0.37 2.40	0.76 4.22	41 235
Quartz	Quartz	Unfiltered xenon for upper atmosphere and extraterrestrial applications	Min 1300 W Max 5000 W	0.38 2.55	0.72 3.96	43 242
Quartz	CIRA-Soda Lime + Float Glass in Auxiliary Lantern	Lightfastness test for automotive interior materials to meet GMW 2414TM & ISO 105-B02	Standard Calibration	N/A	2.20	N/A
Quartz	Boro-S + SF-5 in Auxiliary Lantern	Lightfastness test for automotive interior materials to meet Ford FLTM B0 116-01	Standard Calibration	N/A	1.06	N/A

Note: All measurements taken with a new lamp. Deviations may occur at the lower and upper irradiance limits depending on laboratory conditions and facility infrastructure. Contact Atlas for guidance if the limits cannot be reached.

Features

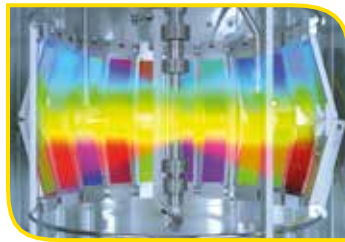
High-Performance, High-Efficiency Weathering Testing

The new Ci3000 Weather-Ometer® performs accelerated material durability testing to a wide range of standards (ASTM, ISO, SAE, etc.). The redesigned instrument features a substantial increase in sample capacity and a user-friendly digital control system. Enhanced performance and improved uniformity make the Ci3000 a logical choice for your weathering testing program.

Available in two models – the Ci3000 Weather-Ometer® covers multiple weathering testing applications, while the Ci3000 Fade-Ometer® specializes in lightfastness testing applications.

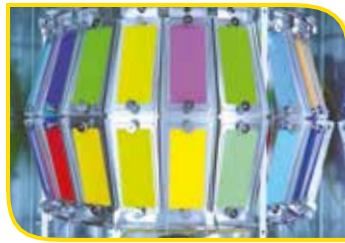
Best-In-Class Uniformity

An improved rack design provides the best tier-to-tier uniformity of all test parameters



Increased Sample Capacity

The two-tier rack nearly doubles the capacity to accommodate 38 samples vs. 20 samples in the Ci3000 single-tier design



Improved Specimen Rack

Two rack options – single-tier and two-tier are available to suit your capacity needs



Enhanced DI Cooling System

The newly designed DI water cooling system provides safe, efficient, and reliable cooling of your xenon-arc lamp

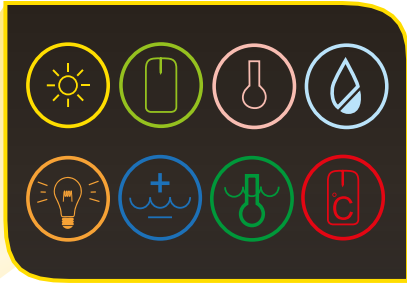


Emergency Stop Button

Integrated safety feature



Making Testing Easier



Stacked Indicator Light

Easy-to-see test status indicator

Touch Screen User Interface

- Larger touch screen interface
- Several built-in notifications and reminders to aid in instrument uptime and reliability
- Direct setting and control of all test parameters
- Greater use of symbols to optimize screen space for visual output of vital data
- High-contrast layout to reduce eye strain



14 Factory Pre-programmed Test Methods*

The test list includes:

- ISO
- GM
- JASO
- ASTM
- Ford
- AATCC
- SAE

* Ci3000 Fade-Ometer® comes with 6 factory pre-programmed test methods

Fine-Tune Operational Tolerances to Suit Your Lab Conditions

Set operational tolerances for each system to dial in the performance of the Ci3000 to your specific lab conditions

- Heater
- Damper
- Blower
- Cooling water temperature



Multiple Languages Available

- Mandarin
- Czech
- English
- French
- German
- Japanese
- Korean
- Polish
- Russian
- Spanish
- Turkish



Optional Tray Table & Side Shelf

Convenient horizontal tray table to aid in holding sample racks, logbooks, laptop computers and much more. Additional side shelf allows for extra prep space or xenon lamp storage

Functionality & Controls

Irradiance

Rotating Sample Rack

The inclined rotating rack delivers the best exposure uniformity

- Samples are rotated continuously during exposure. No need to manually reposition test samples
- Uniform specimen and chamber temperature, RH, irradiance and spray
- New rack design allows for even and consistent airflow over sample surfaces

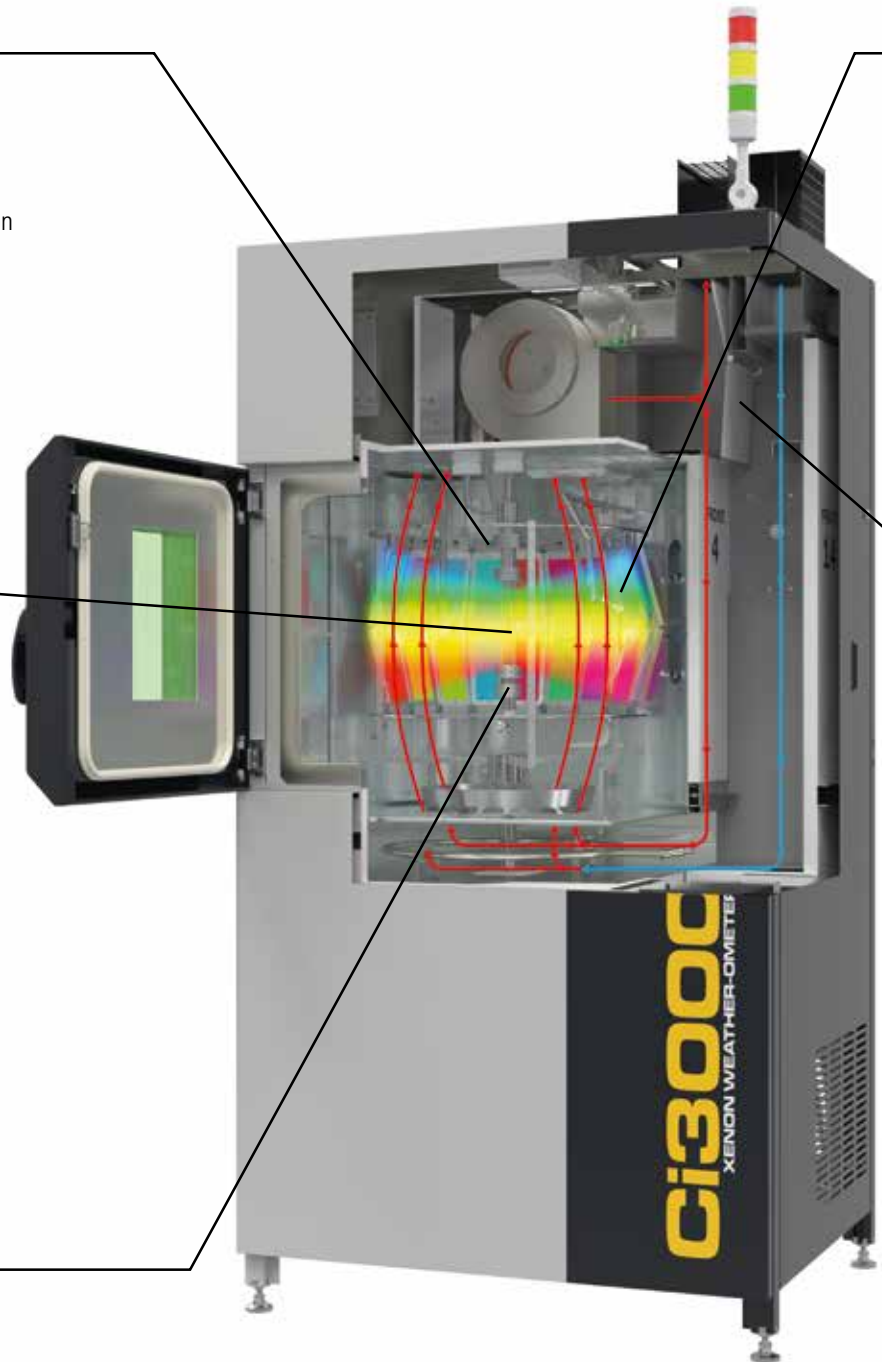
Intelligent Controlled Irradiance (Ci) System

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

- Narrow band (340 nm or 420 nm) or broad band (300-400 nm)
- Irradiance defined by user during test programming or by factory pre-programmed test methods
- Intelligent control allows a user to only select a test method that matches the available wavelength control

New Industrial Design

The Ci3000 design provides easier access to the chamber for xenon lamp assembly mounting, routine maintenance, and cleaning



Temperature

Simultaneous Control of BPT/BST and CHT

- Advanced PID algorithms allow for discrete manipulation of rack panel temperature (BPT/BST) and chamber temperature (CHT)
- SmartDamper, variable speed blower and chamber heater independently control BPT/BST and CHT
- Instrument performance envelope is optimized allowing maximum flexibility in custom test applications



SmartDamper™

- 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

Moisture

Humidity Control/Specimen and Rack Spray

Direct measurement of relative humidity enables automatic control at the specimen level

- 10% RH to 75% RH in light cycles; Up to 100% in dark cycles*
- Specimen (front) spray simulates rain (Ci3000W only)
- Rack (back) spray in dark phase simulates condensation (Ci3000W only)

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



Data Acquisition Software



WXView II

Data from your Ci3000 can be accessed, viewed, and analyzed remotely with WXView II software

- Multi-site monitoring
- Data collection and storage on Local Area Network or Cloud
- Monitoring of test progress and instrument status
- Downloading of archived test data
- PDF reporting
- Email alerts
- ICH compliant reporting

Options

LiquiAir™ Cooling System

A recirculating DI water cooling system that reduces tap water consumption up to 100%*

- Various mounting configurations available, including onboard or wall-mounted options, depending on installation requirements
- A recirculating DI water cooling system aiding superior lamp performance

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



Auxiliary Filter Lantern

- For meeting special test requirements:
 - ISO 105-B02
 - FLTM BO 116-01
 - GMW 3414TM



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 NB 340 nm
 - XenoCal BB 300-400 nm
 - XenoCal NB 420 nm



Sample Holders

These charts are a representative sample of specimen holders available for the Ci3000 Weather-Ometer®. For specific information about specimen holders that best meet your needs, please contact your local Atlas representative.

One-tier configuration

Part Number	Holder Type	Description	Application	Max Size mm WxHxD	Exposure Size mm WxH	Capacity
19163900	SL-3T	Single exposure window with spring clip back	Coatings, textiles, plastics, automotive interior or exterior	67 x 145 x 3	50 x 121	20
07303900	SL-3T w/Glass	Single exposure window with glass and adjustable back	Textiles, paper, plastic film, carpet, automotive interior	67 x 145 x 3	50 x 121	20
20017900	RD-3T	Single or three exposure window with "bulldog" clip	Coatings on various substrates, plastics, textiles, glass	77 x 152 x 10	57 x 134	20
20215700	CD-3T	Three exposure windows with spring clip back	Textiles, paper, plastic film, automotive interior	67 x 145 x 3	3 windows: 38 x 50	20
7303800	CD-3T w/Glass	Three exposure windows with glass and spring clip back	Textiles, paper, plastic film, automotive interior, wood	67 x 145 x 15	3 windows: 38 x 50	20
19164800	DB-3T	Single exposure window with two spring clip backs to accommodate both thin and thick specimens	Coatings, textiles, plastics, automotive interior or exterior	67 x 145 x 9	50 x 121	20
19183400	Polystyrene Reference Chip	Holds polystyrene reference chips	Reference materials	50 x 88 x 2	43 x 82	20
19186700	TEX-3T	Single exposure window with mask, adjustable	Textiles, foam, foam-backed materials	45 x 134 x 12	19 x 119	29
19188501	3 x 6 Panel	3" x 6" panel holder	Coatings, rigid plastic, wood	76 x 152 x 9	76 x 146	17
19210200	4 x 6 panel	4" x 6" panel holder	Coatings, rigid plastic, wood	104 x 155 x 12	101 x 146	14
19184600	Drop-in Tensile Bar	Drop-in tensile bar holder	Plastics	77 x 144 x 3	76 x 125	15
06150400	WPTC-3T	Widest and deepest available holder	Carpet, foam-backed materials, patterned materials	165 x 146 x 12	131 x 100	8
11500099	Textiles for KG1	Holder to meet the specific requirements of PSA D47 1431	Materials to be tested per PSA D47 1431	46 x 135 x 12	38 x 125	29
19210600	Adjustable Holder	Holds specimens of varying sizes and shapes, including tensile bars and disks	Any	55 x 137 x 5	55 x 127	20
19212100	Tensile Bar Holder	Holds an 85 mm long tensile bar	Plastics	85 x 145 x 3	71 x 121	15

Two-tier configuration

Part Number	Holder Type	Description	Application	Max Size mm WxHxD	Exposure Size mm WxH	Capacity
23006100	SL-2T	Single exposure window with spring clip back	Textiles, plastic film, automotive interior	67 x 145 x 3	50 x 121	38
23006120	CD-2T	Three exposure windows with spring clip back	Textiles, plastic film, automotive interior	67 x 145 x 3	50 x 121	38

Performance

Standard Features

An easy-to-use touch screen user interface that provides:

- Full color 13" display of all test parameters
- Direct setting and control of irradiance: 340 nm, 420 nm or 300-400 nm
- Direct setting and control of BPT/BST
- Direct setting and control of chamber air temperature
- Direct setting and control of relative humidity
- 2-tier enclosed specimen rack
- Xenon lamp cooling system
- Stacked test status indicator light
- Air intake dust filter
- Easy access to chamber for routine maintenance
- Calibrated xenon reference lamp or XenoCal® for Ci calibrator
- SmartDampertm to reduce test variability in chamber temperature and humidity and compensate for changes in ambient lab conditions
- SmartLighttm monitor verifies that correct light capsule is installed
- Streaming data output via Ethernet or USB port, USB thumb drive included
- Display of diagnostic messages
- 14 pre-programmed methods in Ci3000W, 6 pre-programmed methods in Ci3000F
- Space for 12 custom programs; sub-cycle capability
- Multi-language capability (Mandarin, Czech, English, French, German, Japanese, Korean, Polish, Russian, Spanish, Turkish)
- Filter combinations to meet all common test methods
- Chamber viewing window in door
- Specimen and rack spray (Ci3000W only)
- Humidification system
- Water purity indicator with alarm
- Automatic test countdown based on time or radiant exposure
- Universal electrical configurations to meet local frequency, voltage, and electrical requirements
- Designed to meet CE, UL, ISO, EN, CSA and UKCA safety requirements
- Emergency stop button

International Standards

The Ci3000 Weather-Ometer® meets or exceeds the following industry standards:

AATCC	TM 16.3-2012		TM 16E-1998		TM 169			
ASTM	C1442 D4459 D6662	C1501 D4798 D6695	D904 D5010 D7869	D3424 D5071 G151	D3451 D5794 G155	D4101 D6083	D4303 D6551	D4655 D6577
Ford	FTLM BO-116-01							
GME	60292							
ISO	105-B02 12040	105-B04 16474-1	105-B06 16474-2	105-B10	11341	3917	4892-1	4892-2
JASO	M 346							
MIL STD	810 H							
SAE	J2412	J2527						
T/CSAE	104-2019							
VDA	75202							

This is a sample of global standards that can be met by the Ci3000. 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.

Specifications

Physical Dimensions

Height	73.1 in (185.6 cm)
Width	37.9 in (96.2 cm)
Depth	32.5 in (82.55 cm)
Floor Space	58 in x 101 in (146 cm x 256 cm)
Total Exposure Area	1-Tier: 339 in ² (2188 cm ²) 2-Tier: 535 in ² (3451 cm ²)

Electrical Specifications

Wiring Connections: 3 Phase, 3 Wire w/Ground

Operating Voltage Range	200-240 VAC
Maximum Current	60A
Frequency	50/60 Hz
Maximum Power	10kW

Wiring Connections: 3 Phase, 4 Wire w/Ground

Operating Voltage Range	340-415 VAC
Maximum Current	60A
Frequency	50/60 Hz
Maximum Power	10kW

Compressed Air Supply

Facility Air Pressure	80-100 psi (552-689 kPa)
Instrument Air Pressure Regulator Setting	70 psi (483 kPa)
Flow Rate	4 ft ³ /min (0.11 m ³ /min) max
Purity	Free of oil, water, particulates

Water Requirements

	Deionized Water	Tap Water at 18.5° C
Pressure	25-40 psi (172-276 kPa)	20-50 psi (138-345 kPa)

Flow Rate (max)

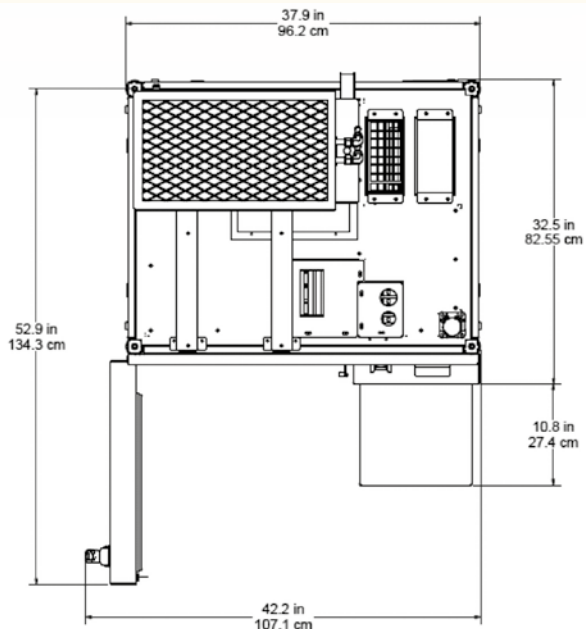
	Deionized Water	Tap Water at 18.5° C
Humidification	0.032 gal (0.12 L)/min	N/A
Specimen Spray	0.018 gal (0.07 L)/min	N/A
Rack Spray	0.018 gal (0.07 L)/min	N/A
Xenon Lamp Cooling at 2000 W	N/A	0.29 gal (1.1 L)/min
Xenon Lamp Cooling at 4000 W	N/A	0.396 gal (1.5 L)/min

Weight

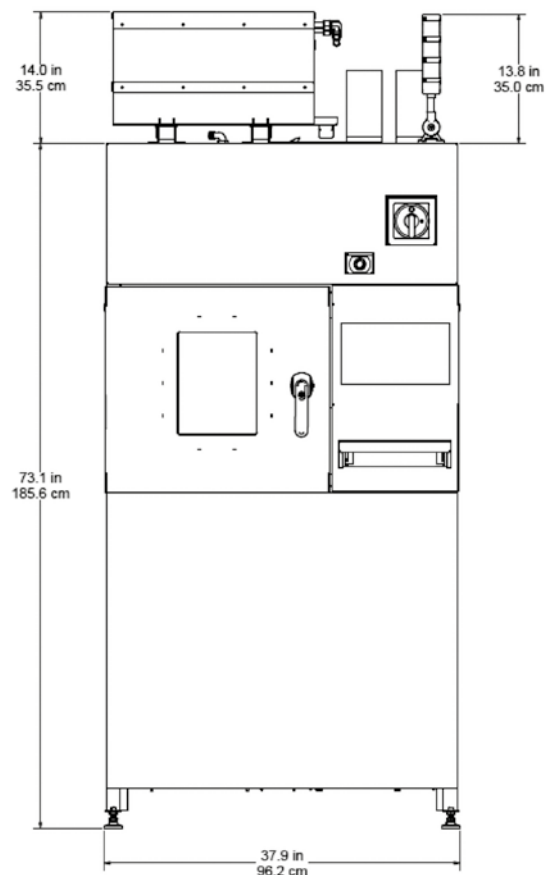
Instrument Alone	897 lbs (407 kg)
Fully Skidded and Wrapped	1002 lbs (454 kg)

Space Requirements

(Top view with LiquiAir™ option)



(Front view with LiquiAir™ option)



Atlas offers more than testing instruments. From technical advice to final test method implementation, Atlas provides the support that you need when determining the right weathering testing solution for your products. For more information, please contact your local Atlas sales office or visit us at www.atlas-mts.com



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