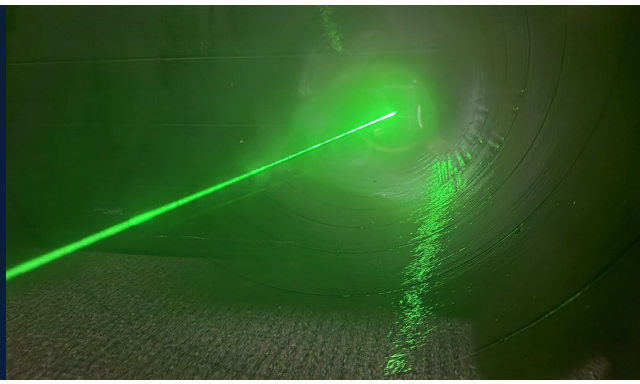
MONTANA STATE UNIVERSITY

Spectrum LAB
Montana State University

FOG & TURBULENCE TESTING CAPABILITIES

Testing impaired optical systems before real-world use

Custom fog and turbulence chambers for testing lidar, imaging and laser communication systems in controlled environments.



Real-world conditions, controlled environments

Fog and turbulence impair optical systems. Our chambers recreate these conditions in the lab, so optical systems can be tested under the controlled settings.

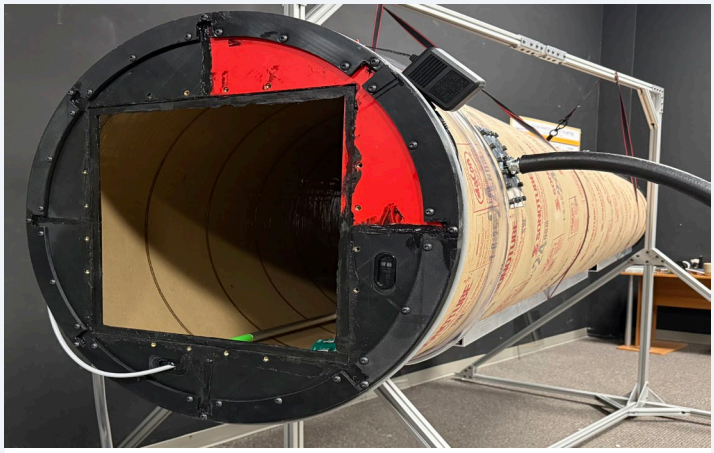
12 ft
Optical path through the fog chamber

16 in.
Square windows for large beams and optics

100×
Stronger beam flicker (scintillation) than calm air

365
Days a year of testing, no matter the weather

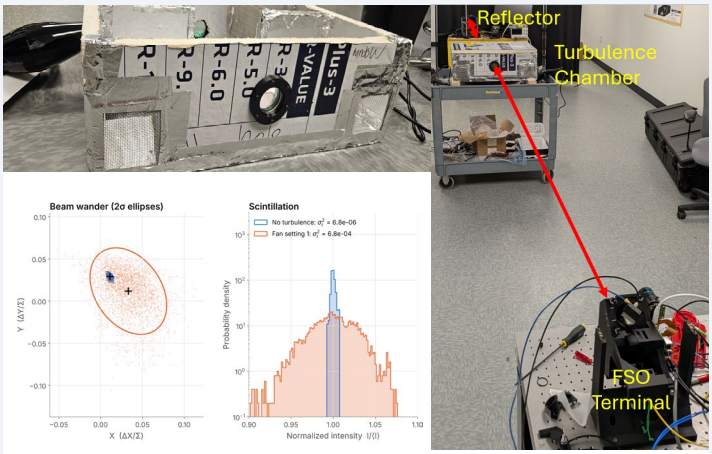
OUR TEST CHAMBERS



Fog Chamber

12 ft path · 16 in. square windows

- Fog machine with adjustable density
- Internal fans keep fog uniform along the path
- Used for imaging and optical communication through fog



Turbulence Generator

Hot-air turbulence in a controlled lab setting

- Hot and cold airflows mix along the optical path
- Dividers control airflow generating turbulence
- Induces beam wander and scintillation vs. a calm-air baseline

Work with us

- Test lidar, cameras and laser links before going outdoors
- Compare system performance with and without fog or turbulence
- Free-space optical terminal testing through the turbulence chamber

TALK TO US ABOUT TESTING

spectrum.montana.edu

Mountains and Minds
Montana State University

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