# Solar Thermal Research Lab (STRL)

<http://www.solarme.uwaterloo.ca/about_strl.html>

## Location

ERC 3009

General Lab: ERC 3009

Surface Optics Lab: ERC 3004

Rooftop test platform

## Management

Director:

* Michael Collins ([mike.collins@uwaterloo.ca](mailto:mike.collins@uwaterloo.ca); x33655)

Tour operator:

* Michael Collins
* John Wright ([jlwright@mecheng1.uwaterloo.ca](mailto:jlwright@mecheng1.uwaterloo.ca); x36849)

## Users

* Graduate Students (mechanical engineering)
* Undergraduate Students (nanotechnology)
* Industrial Contracts:
  + Exova (National test facility)
  + Renewability
  + Brooklyn Concretes

## Research

* Windows Shading Research
* PV/Solar Thermal Hybrid Systems
* Solar Optical Property Measurement Techniques
* Fundamental Numerical & Experimental Studies of Solar & Building Related Heat Transfer Processes
* Greywater Heat Recovery
* Heat Pump Assisted Solar Systems

## Selected Projects

* Window shading models for building energy simulation (ASHRAE)
* Solar Building Research Network (SBRN)

## Equipment

* Optical Testing:
  + UV/VIS/NIR Spectrophotometer
  + Fourier Transform Infrared Reflectometer (FTIR)
  + Gier Dunkle DB-100 Infrared Reflectometer
  + Gier Dunkle MS-251 Solar Reflectometer
  + Broad Area Illumination - Integrating Sphere
* Main Lab:
  + Heat Pump Test Rig
  + Greywater Test Rig

## Supporting Partners

* NSERC (Discovery, Strategic, RTI, Network)
* CFI
* ORF
* ERA
* NRCAN (CANMET)
* other small contracts

## Access Rights

* Open to university faculty/student
  + Fees depends on usage
  + ($50/test for optic testing)
* Open to public/industry for a fee
  + $150/test for optic testing
  + May add hourly rate for technicans
* Process:
  + Email/call Prof. Mike Collins about projects details (reply time depends on project & avaliability)
* Training:
  + Industry - no training needed (technicans)
  + students - 1.5 hr to train