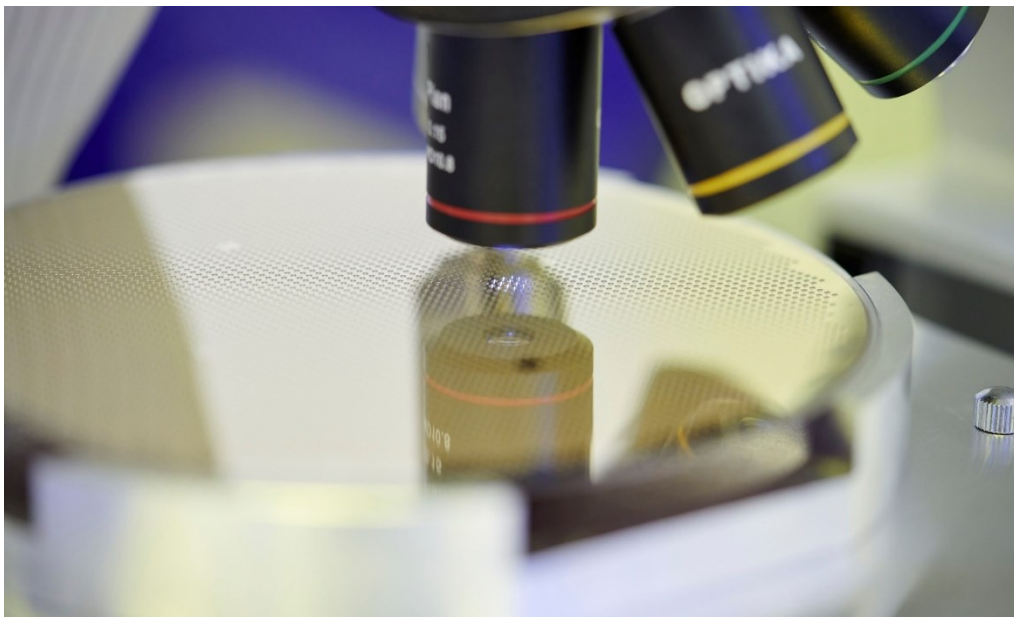


Optics Testing Metrology & Reliability Competence



2022 V1

For customized projects please Contact us:

info@simtrum.com

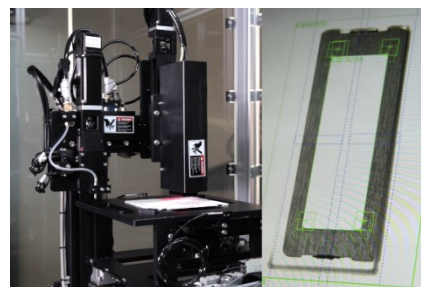
Introduction

SIMTRUM provide the highest standards of quality service to our customers. We are certified in both the Quality and Environmental Management systems, ISO 9001:2015 & 14001:2015 respectively, attesting to the stringent practices that we hold in place to meet the demands of our clients. As a continuing effort to meet customer requirements, we has implemented IATF 16949:2016 Automotive Quality Management system and targeting to get certified in 1Q-2023.

Our metrology lab consists of state of art equipment, catered to measure specifications with tight tolerances and stringent optical specifications, a key requirement for Optic and precision manufacturing. Measurements follow established ISO & ASTM standard requirements, as well as customised to customer-specific requirements. High-performance microscopes and profilometers provide high optical resolution and more accurate measurement for a variety of high-precision products. Our optical measurement solutions are in a class of their own for measuring and characterizing minuscule features with high accuracy and repeatability.

Mechanical Measurement

- OGP ZIP 250E Smartscope
- Keyence LM 1100 Optical Measurement Machine
- Motorised Force Gauge
- RCA & Linear Abrasion Testers
- Scanning Electron Microscope
- Customised Automated Visual Inspection Systems



Automated Visual Inspection (AOI)

Optical Measurement

- Mitutoyo Form Tracer CS-5000
- Taylor Hobson PGI Optics
- Melles Griot MTF / EFL Test Bench
- Zygo Verifire Laser Interferometer
- Zygo NX2 3D profiling interferometer
- Keyence 3D Surface Profiler VK-X3000
- Luminance Meter & Light Gain Testers
- Agilent Cary 7000 UV-Vis-NIR Spectrometer
- Olympus Micro Spectrophotometer



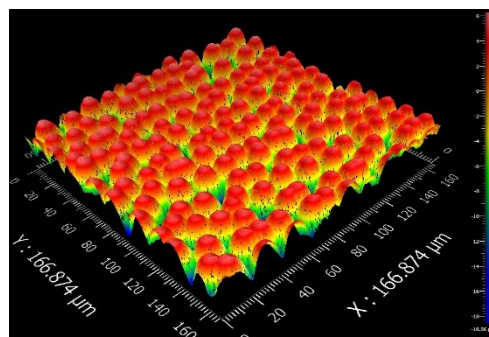
Rudolph Wafer Level Inspection

Reliability Capability

- Memmert Temperature & Humidity chamber
- Memmert Temp Cycling Chambers
- Solder Reflow Oven

Resin Control

- GoTech Melt Flow Analyser
- Radweg Moisture Analyser

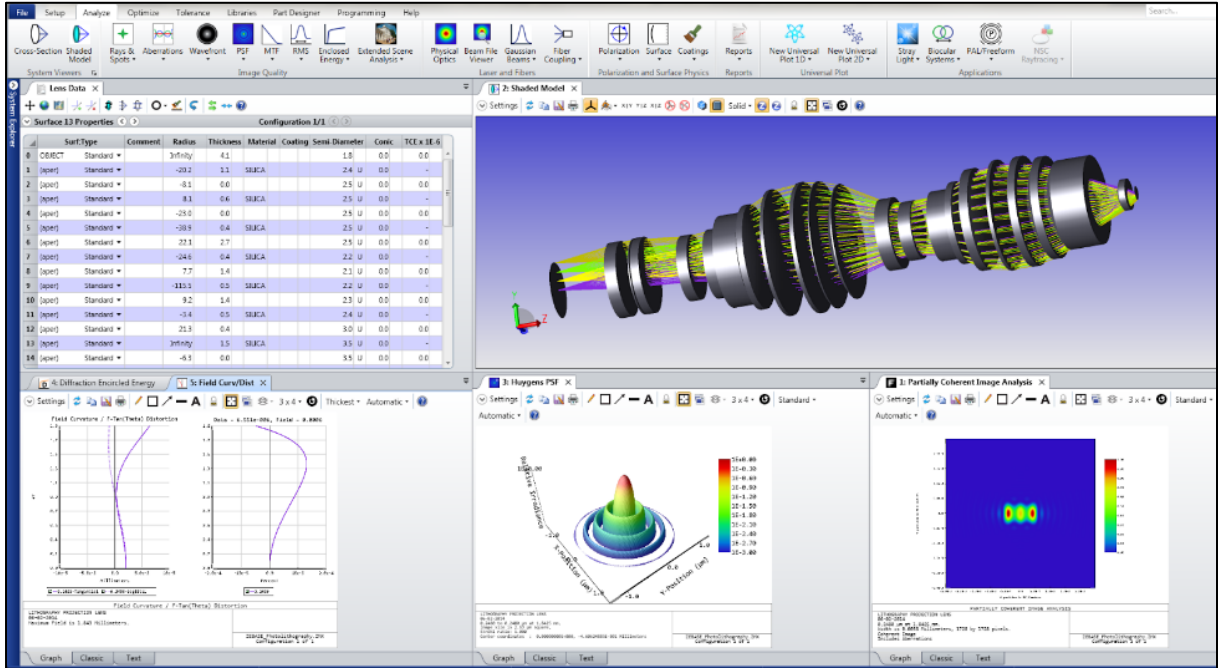


Zygo Nexview 3D Topography Analysis

Optical Design & Simulation Software

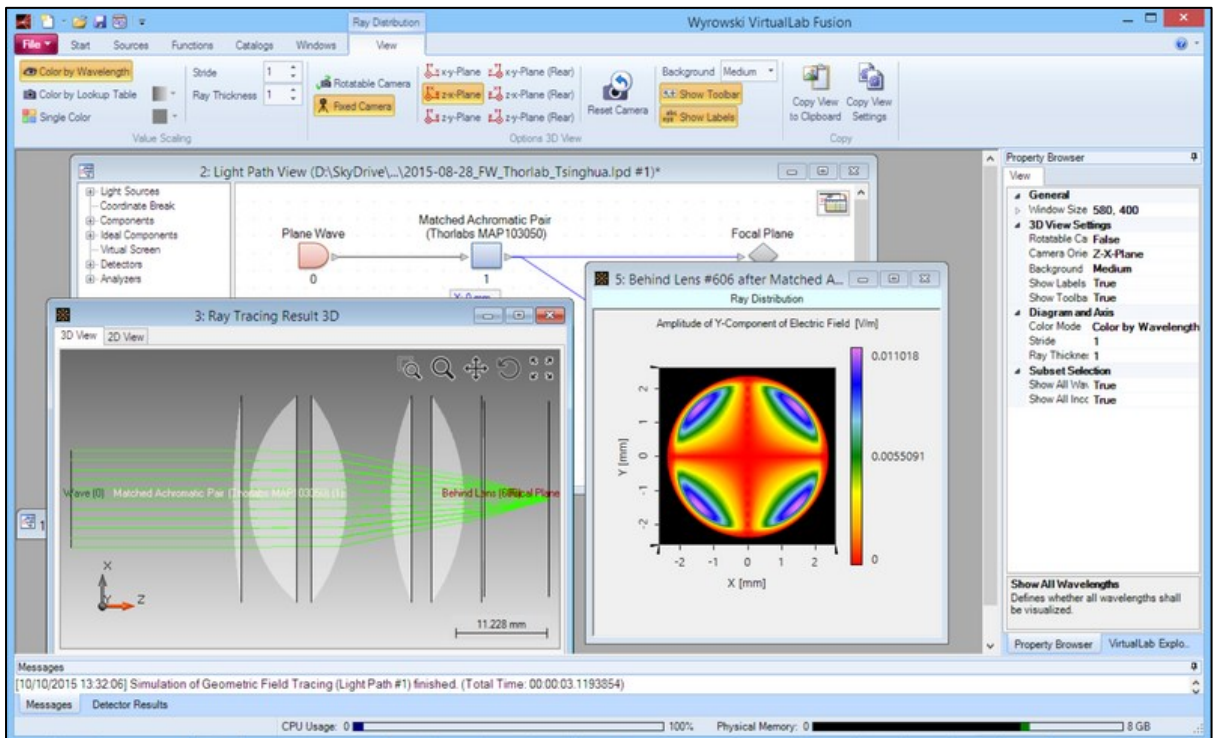
Zemax OpticStudio

Refractive imaging & illumination designs & simulations.



LightTrans VirtualLab

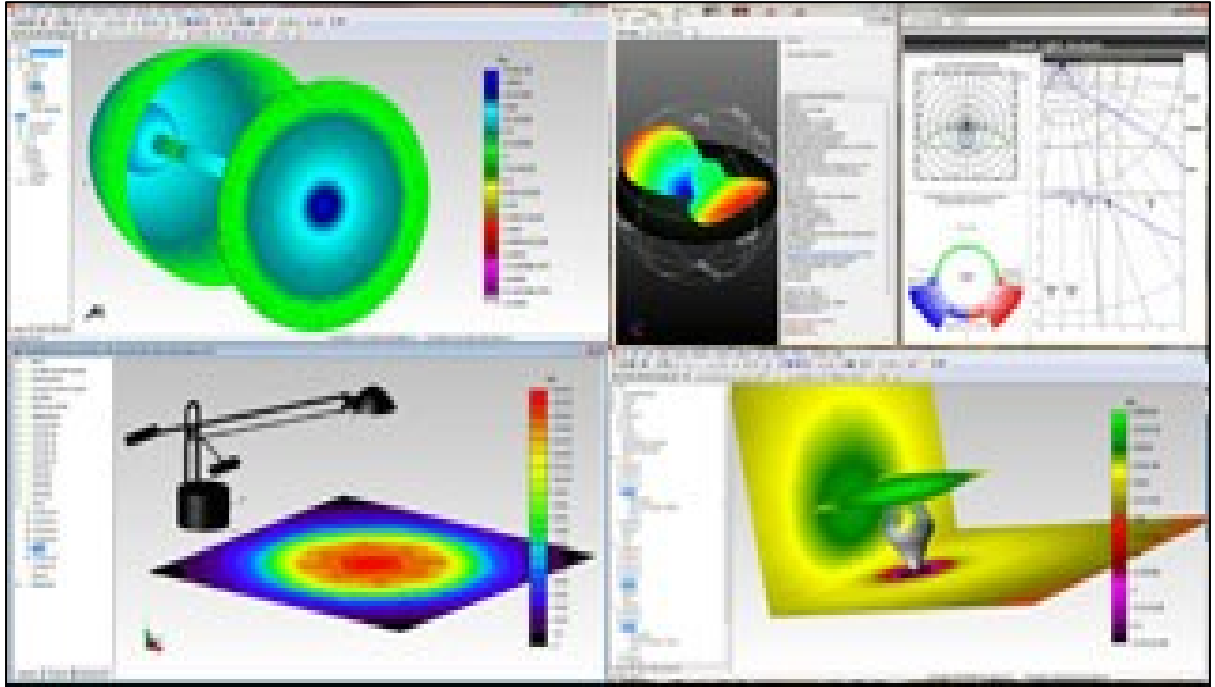
Design & optimization of diffractive beam-splitters, beam-shapers, diffusers and custom image projectors for a single wavelength light sources.



Optical Design & Simulation Software

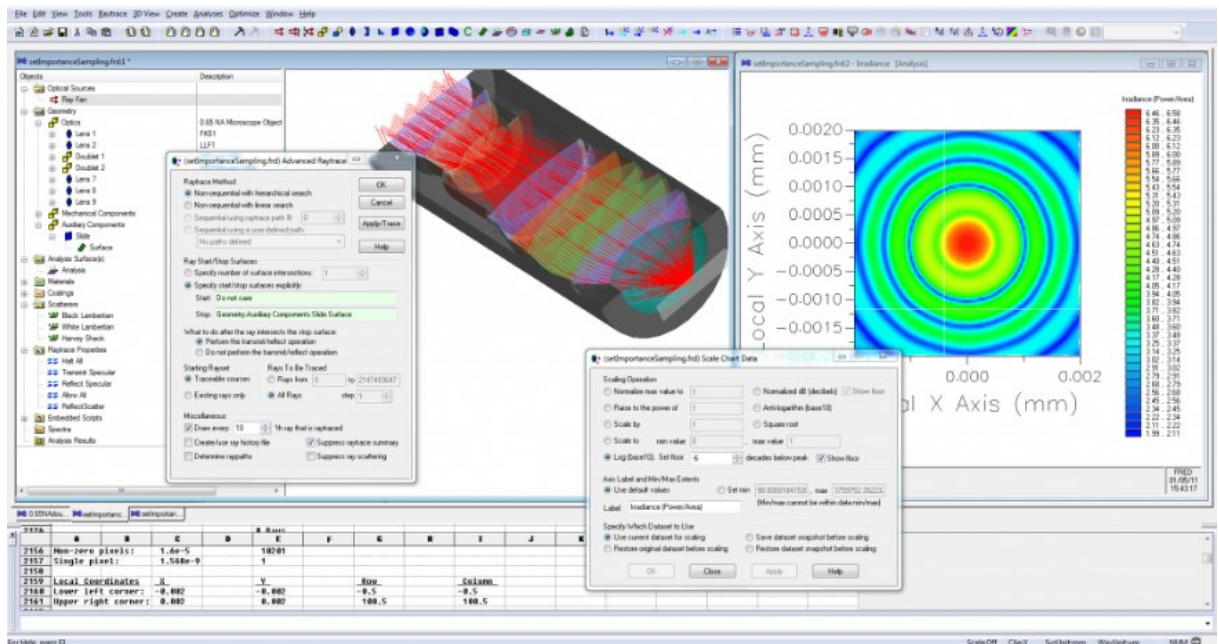
TracePro

Simulation of the propagation of light through any optomechanical system by raytracing.



FRED

Simulation of the propagation of light through any optomechanical system by raytracing.



Equipment

Memmert UF 110+ Universal Oven

The universally applicable lab oven U is Memmert's classic appliance for temperature control in science, research and material tests in industry. The technologically perfected masterpiece made of high-quality, hygienic, easy-to-clean stainless-steel leaves nothing to be desired in terms of ventilation and control technology, overtemperature protection and precisely tuned heating technology.

Features

- UF 110+ is an appliance for temperature control in quality assurance, science, research and industry.
- Use for precise drying, heating, ageing, burn-in, hardening and etc.
- Made of high-quality, hygienic, easy-to-clean stainless-steel leaves nothing to be desired in terms of ventilation and control technology, overtemperature protection and precisely tuned heating technology.
- Temperature range from +20 to +300°C.



Technical Data

General Specifications	
Working temperature range	at least 5 (UN/UNplus/UNm/UNmplus) or 10 (UF/UFplus/UFm/UFmplus) above ambient temperature to +300 °C
Setting accuracy temperature	up to 99.9 °C: 0.1 / from 100 °C: 0.5
Setting temperature range	+20 to +300 °C
Temperature sensor	1 Pt100 sensor DIN class A in 4-wire-circuit
ControlCOCKPIT	SingleDISPLAY. Adaptive multifunctional digital PID-microprocessor controller with high-definition TFT-colour display
Timer	Digital backwards counter with target time setting, adjustable from 1 minute to 99 days
Function setpointWAIT	the process time does not start until the set temperature is reached
Calibration	three freely selectable temperature values
Adjustable parameters	temperature (Celsius or Fahrenheit), fan speed, air flap position, programme time, time zones, summertime/wintertime

Equipment

Memmert Humidity chamber HCP105

Active humidity control creates a controlled environment for accelerated life tests and 85/85 tests.

Features

- Active humidity control creates a controlled environment for environmental testing, environmental simulation, accelerated service life tests and 85/85 tests according to IEC 60068-2-67 and IEC 60068-2-78.
- Active microprocessor control for humidifying and dehumidifying, including digital indication and auto diagnostic system ensures even more rapid reaching of set humidity and very short recovery times.
- Temperature range from +18 to +90°C.
- Humidity range from 20 to 95% rh.



Technical Data

General Specifications	
Working temperature range	+7 above ambient temperature up to +90 °C
Setting accuracy temperature	0.1 °C
Setting temperature range	+18 to +90 °C
Temperature sensor	2 Pt100 sensors DIN Class A in 4-wire-circuit for mutual monitoring, taking over functions in case of an error
ControlCOCKPIT	TwinDISPLAY. Adaptive multifunctional digital PID-microprocessor controller with 2 high-definition TFT-colour displays.
Timer	Digital backwards counter with target time setting, adjustable from 1 minute to 99 days
Function setpointWAIT	the process time does not start until the set temperature is reached
Calibration	three freely selectable values each, temperature and humidity

Equipment

Memmert Environmental test chambers CTC256

Memmert environmental test chambers guarantee the perfect atmosphere for climate and temperature tests

Features

- Rapid, precise and energy-saving temperature changes makes CTC with humidity unit a perfect duo for controlled material testing, function tests, ageing tests or climate tests on composites, concrete, plastics or electronic components in material technology, the automotive and aerospace industries, and electronics.
- Simulates the perfect atmosphere according to standards and reduces the time needed for certain processes through rapid temperature changes.
- Temperature range with humidity from -42 to +190°C.
- Temperature range without humidity from +10 to +95°C.
- Humidity range from 10 to 98% rh.



Technical Data

General Specifications	
Working temperature range	+7 above ambient temperature up to +90 °C
Temperature range	without humidity: from -42°C up to +190°C with humidity from +10°C up to +95°C
Temperature distribution(spatial)	+/- 0.5 up to 2K
Temperature sensor	2 Pt100 sensors DIN Class A in 4-wire-circuit for mutual monitoring, taking over functions in case of an error
Display	resolution of display for setpoint values 0.1°C up to 99.9°C, 0.5°C from 100°C and for actual values 0.1°C (LED)
Controller	Electronic microprocessor temperature controller with auto-diagnostic system
Timer	integrated timer for tempering profiles of up to 40 ramps each, each segment adjustable from 1 min. to 999 hrs.
Set-up display	digital display of all set parameters, such as temperature, weekdays, time, humidity, fan speed, programme status and set-up values - language to be chosen via set-up
Calibration	three freely selectable temperature values, humidity 2-point calibration at 20% and 90 % rh

Equipment

Grandetop GTC800 Climatic Test Chamber

Fast change rates testing chamber is suitable for testing the changes of instruments, electrical, electronic products, machine and parts under the rapid temperature change or the gradient conditions, takes advantage of compact, modern scroll compressors to bring fast temperature cycling to small form factor.

Features

- Temperature cycling rates from 3 to 30°C/min are possible.
- Temperature range from -40 to +150°C.
- Humidity range from 20 to 98% rh.



Buiged BGD860 Xenon Test Chamber

- BGD 860 Powerful, highly cost-effective, easy to use and convenient to maintain xenon test chamber.
- Use an imported air-cooled xenon lamp and relevant daylight filter, to simulate the full spectrum sun light of outdoor, ensure the test results obtained from laboratory have a perfect correlation with outdoor application.
- Ensure each sample can obtain the same and uniform irradiance during the whole test.
- Outer filter of soda lime.
- Irradiance range from 0.5 to 1.35 W/m² (420nm).
- Black Board Temperature range from +30 to 90°C.
- Humidity range from 20 to 75% rh.

Monitoring	Program	Calibration	Manual	Storage	Event	Maintenance
	Actual	Set				
@340nm	0.51W/m ²		Newest Event: No Alarm			
@420nm	0.92W/m ²	0.51W/m ²				
@300-400nm	60W/m ²	@340nm	Status indication:			
@300-800nm	550W/m ²					
Chamber Air	38.1°C	38.0°C	Heater <input type="checkbox"/>			
Humidity	50.6%RH	50.0%RH	Tank <input type="checkbox"/>			
BPT	63.2°C	63.0°C	Door <input type="checkbox"/>			
BST	65.5°C	BPT	Water flow <input type="checkbox"/>			
Segment Time	1H 42M	0H 28M	Front Spray <input type="checkbox"/>			
Total Time	345H 27M	1000H	Humidity <input checked="" type="checkbox"/>			
Energy	1.456MJ	0MJ	Back Spray <input type="checkbox"/>			
Lamp PWM	420	420	Air flow <input checked="" type="checkbox"/>			
Status	ISO 11341	1	<input type="button" value="Start"/> <input type="button" value="Pause"/> <input type="button" value="Stop"/>			

