



UNIMORE

UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA

Centro Interdipartimentale
En&Tech

BRIGHT-LAB

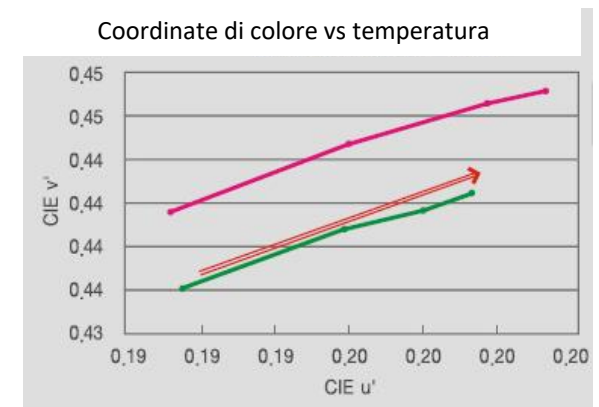
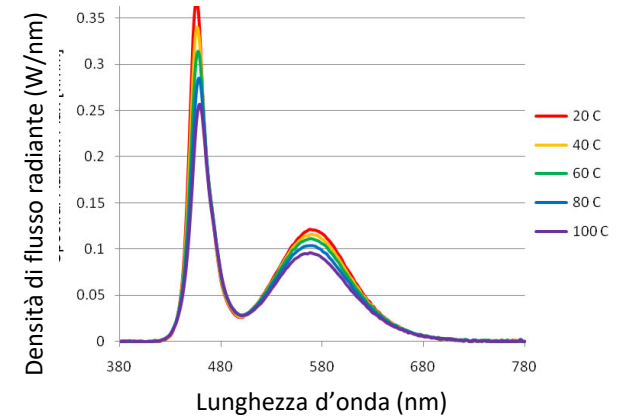
**Tecnopolo di Reggio Emilia
Capannone 19, area ex-Reggiane**

www.enetech.unimore.it

Lab capabilities 1/2

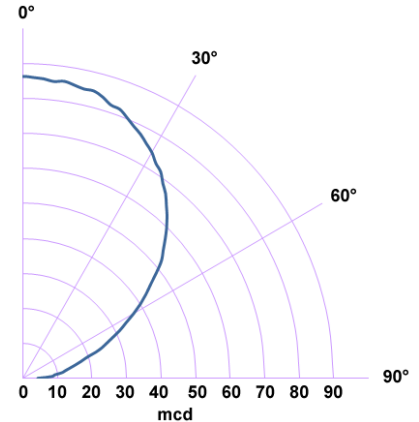
➤ Measurements for qualification, selection and benchmarking of LEDs, LED arrays, light engines, LED lamps, lighting systems:

- Electro-thermal-optical characterization
- Radio- and photometric measurements:
 - ❖ Radiant flux(W), luminous flux (lm), and efficiency as a function of current and temperature,
 - ❖ Spectral density of radiant flux and luminous flux,
 - ❖ luminance (cd/m^2) and illuminance (lux).
- Colorimetry:
 - ❖ CCT,
 - ❖ Chromatic coordinates,
 - ❖ Color render index (CRI).



Lab capabilities 2/2

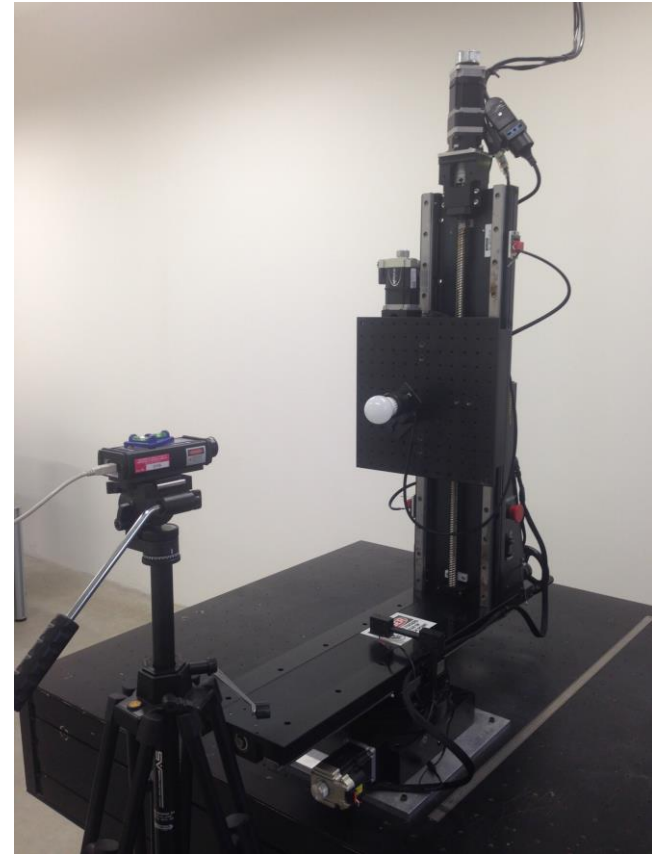
- Goniometric characterization
 - ❖ Radiant/luminous flux as a function of angle,
 - ❖ Chromaticity and CRI as a function of angle.
- **Surface reflectance** (eg solar concentrators)
- **Radiance and luminance of LCD displays**
- **Engineering services for product development:**
 - Design of LED drivers
 - Optical design (lenses, mirrors, concentrators)



Instruments

➤ ETO system:

- Integrating sphere (20")
- Temp control: 15°-100° C, 6" termochuck.
- Spectrophotometer: 250-900 nm



➤ Radiogoniometer:

- DUT with diagonal up to 72 cm
- Spectrophotometer: 380-780 nm

Contacts

Prof. Giovanni Verzellesi

DISMI e En&Tech, Univ. of Modena and Reggio Emilia

giovanni.verzellesi@unimore.it

Prof. Luigi Rovati

DIEF e En&Tech , Univ. of Modena and Reggio Emilia

luigi.rovati@unimore.it