Spectral Responsivity System

Instrument for testing the spectral characteristics of optical detectors

Model SRS

System Variations

- SRS-IS (System with an integrating sphere for spectral irradiance responsivity)
- SRS-EX (System for an extended wavelength range) – in preparation

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Quality in Optical Radiometry

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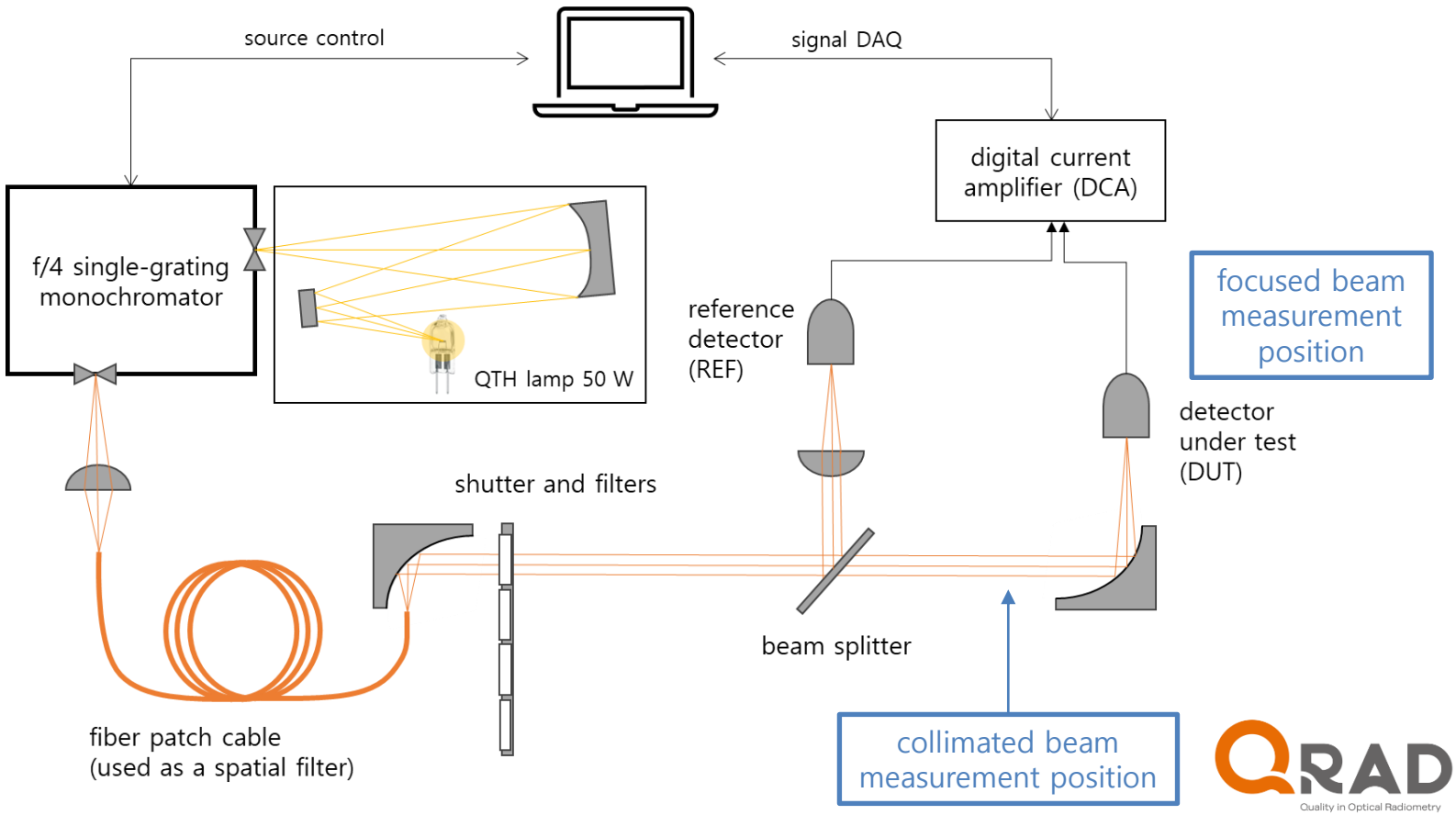
- SRS
- SRS-IS
- SRS-EX

The System

- Fully automated measurement of spectral responsivity of optical detectors
  - Wavelength range from 300 nm to 1600 nm
  - Measurement traceability verified at KRISS
- Customized instrumentation solution including a software



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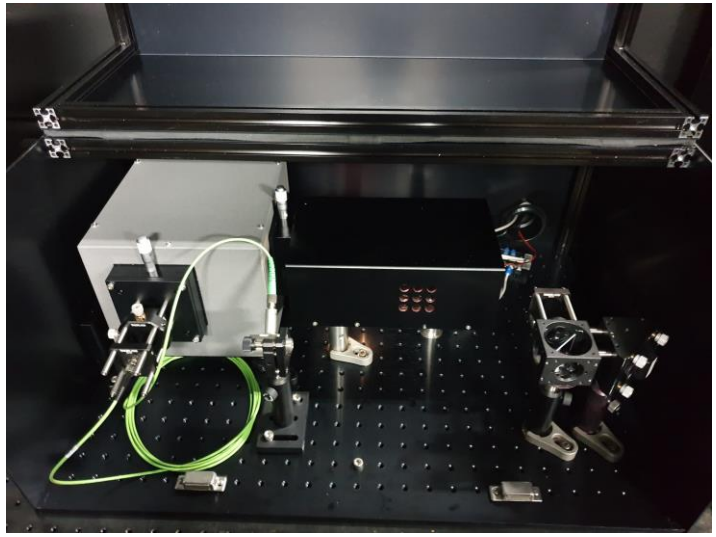
Basis Model Specifications

- Spectral light source
  - QTH lamp with a single-grating monochromator
  - Wavelength tunable from 300 nm to 1600 m
  - Spectral bandwidth < 5 nm
  - Wavelength accuracy < 0.2 nm
  - Spectral stray < 10^{-4} above 350 nm, < 10^{-3} below 350 nm
  - Radiant power stability < ±0.02%
- Beam characteristics
  - Collimated beam with a diameter of < 10 mm
  - Focused beam with a diameter of > 100 μm
  - Radiant power: 10 nW ~ 500 nW depending on wavelength and beam formation
- Measurement accuracy
  - Uncertainty for spectral power responsivity 0.6% ~ 1.8% (k = 2) with the reference detectors from KRISS

system enclosed in a light-tight box
size: 800 mm(L) x 600 mm(W) x 300 mm(H)



- OPTIONS
  - Standard detectors for calibration certified by KRISS (Si and InGaAs)
  - 3-axis motorized stage for precise alignment of DUT
  - Variable ND filter for radiant power control (e.g. for linearity test)

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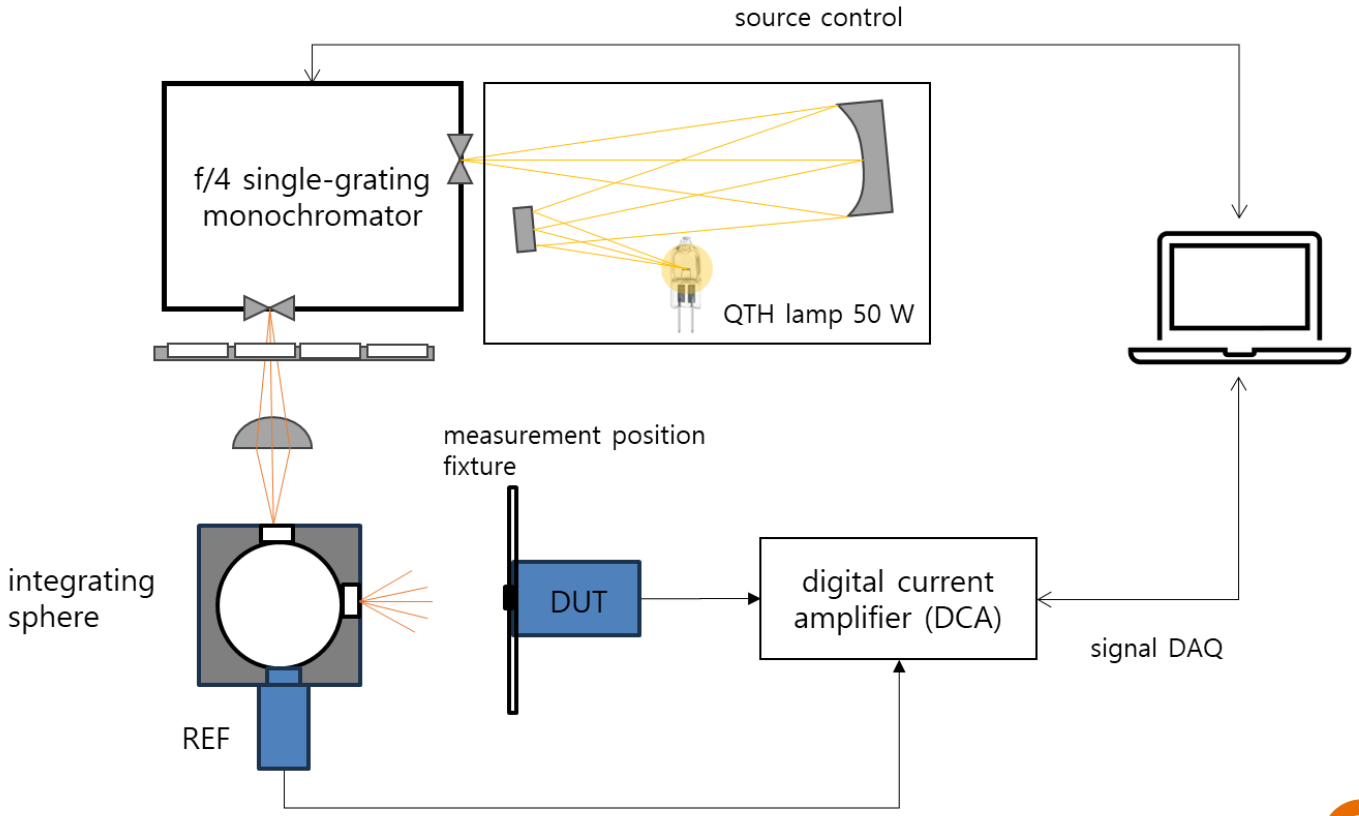
System with an Integrating Sphere

- Designed for spectral irradiance responsivity measurement
  - Suitable for testing of detectors with very small active area and imaging sensors
  - Irradiance uniformity < 0.5 % in an area of 10 mm x 10 mm (typical)
- Specification of the system customized for the target application
  - Size of integrating sphere, size of the uniform irradiance area, etc.



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