

Consultative Committee for Photometry and Radiometry (CCPR)
24th Meeting (19 - 20 September 2019)

Questionnaire on activities in radiometry and photometry

Reply from: NMISA

Delegate: Rheinhardt Sieberhagen

1. Summarize the progress in your laboratory in realizing top-level standards of:

(a) broad-band radiometric quantities:

UV radiometry

- The aim is to implement a detector-based as well as the “full calibration method” as described in CIE 220:2016. This will rely on the development work done under “Spectral power responsivity” and “Spectral irradiance of sources”
- A new automated calibration setup was procured and installed

(b) spectral radiometric quantities :

Spectral power responsivity

- Expansion of wavelength range to include 200 nm – 390 nm and 1 050 nm – 1 100 nm
- A laser-driven light source was procured and is being investigated as a UV source for a double monochromator
- A 1kHz tuneable laser is being set up as an alternative spectral power/irradiance/radiance responsivity measurement set-up

Spectral irradiance of sources

- Expansion of wavelength range down to 200 nm
- Application to UVGI traceability
- Characterisation of measurement system is underway

(b) photometric quantities :

Luminous flux :

- Participation in CCPR-K4 using re-furbished goniophometer
- Characterisation of 2,4 m integrating sphere

Spectrophotometry :

- NMISA is piloting the APMP-K5 diffuse reflection key comparison

- Responsible for CIE Reportership DR2-64
- NMISA is responsible for the UV Transmittance pilot study (200 nm – 400 nm)

LEDs :

- NMISA developed an NMS for LEDs ; in 2018 the facility was ISO 17025 assessed and was accredited as a calibration laboratory for luminous flux and chromaticity coordinates
- The LED calibration lab was reassessed in 2019 to extend on the already accredited parameters and to add power factor and luminous efficacy

2. What other work has taken place in your laboratory in scientific or technological areas relevant to the CCPR?

The South African National Space Agency (SANSA) approached NMISA P&R during 2016 to be part of a task group that would develop a scope for a national calibration and validation (CAL/VAL) facility, with the key focus on the EO-SAT1 satellite, but also keeping in mind the needs of private space technology companies.

Discussion with SANSA and other private companies are in progress. A project has been launched to determine the requirements of the users and subsequently for a facility that will answer to the requirements.

3. What work in PR has been/will be terminated in your laboratory, if any, in the past /future few years? Please provide the name of the institution if it has been/will be substituted by a DI or accredited laboratory.

None

4. What are present, new or emerging needs of users of your services that are not being supported sufficiently by current CCPR activities or initiatives? In the light of this information please suggest desirable changes in the future working program of the CCPR.

None

5. What priorities do you suggest for new research and development programmes at NMIs in the area of Photometry and Radiometry?

No suggestions.

6. Are there any research projects where you might be looking for collaborators from other NMIs or are there studies that might be suitable for collaboration or coordination between NMIs?

None

7. Have you got any other information to place before the CCPR in advance of its next meeting?

None

8. Bibliography of radiometry and photometry papers of your laboratory since the last CCPR (September 2014)?

None