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Accreditation number
1923
Accredited since 1985

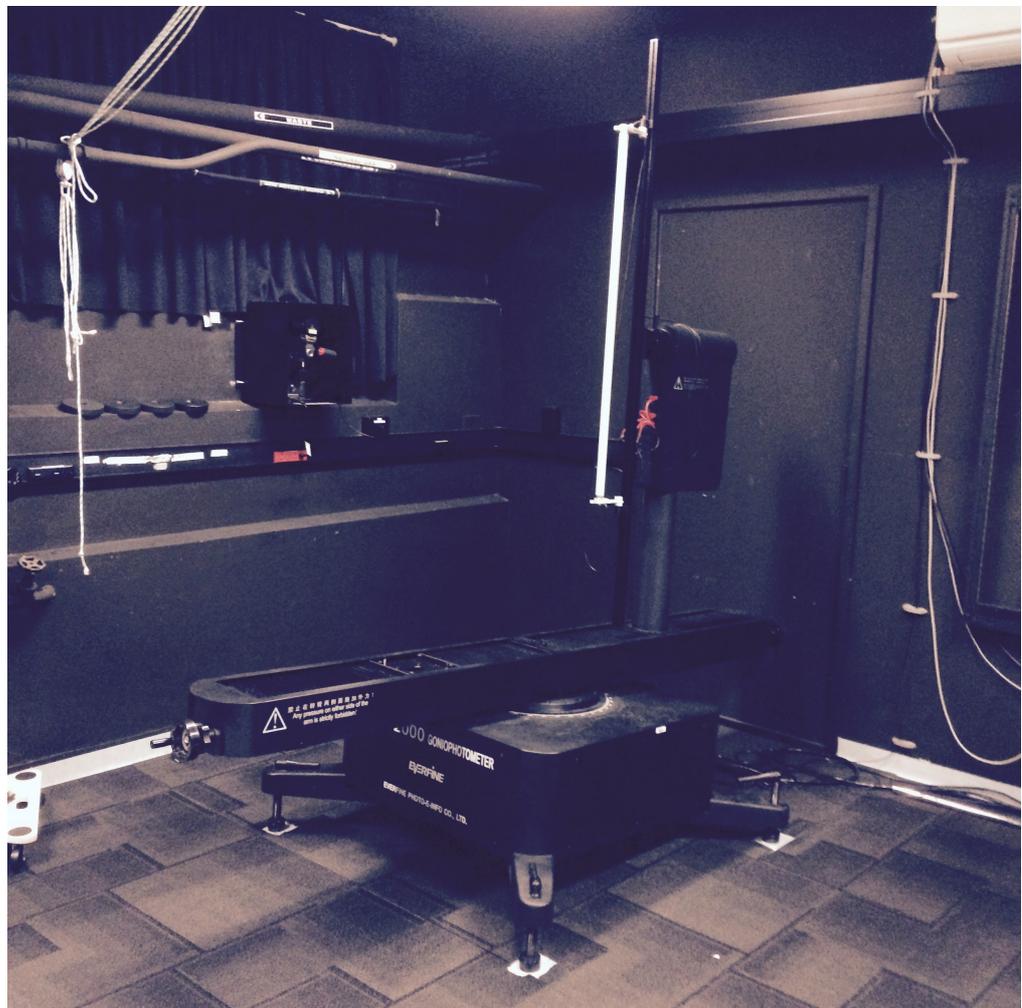
DoTARS RVS
Certified Laboratory
4936
VCA
Certified testing
Authority
FAJ 135
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Approved laboratory
LAB20098, 20132
and 20192

Welcome to the new format of the ORLAB newsletter. We have decided to take notice of the UNSW branding guidelines, which include the footer to this page (we have added the School and ORLAB logos) and the university's tag line "Never stand still". It also serves to remind us all that we are part of the School of Optometry and Vision Science. Some elements maintain the link with the old style.

The News

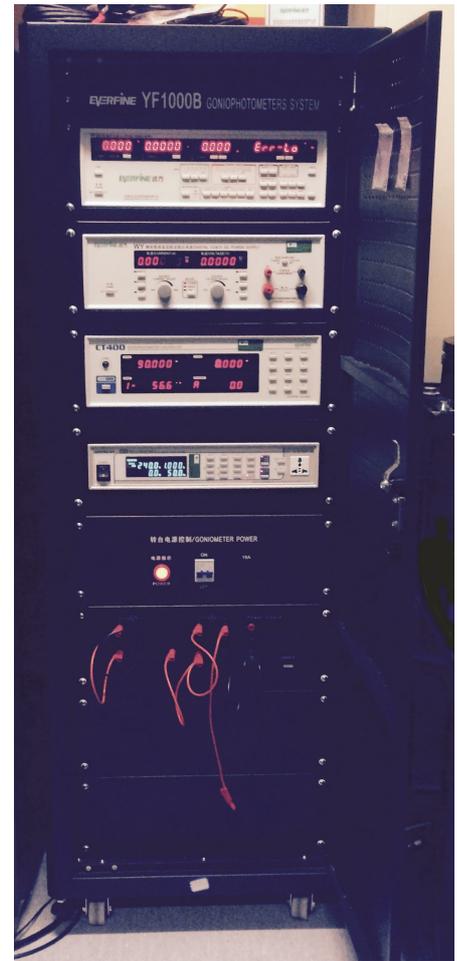
This year so far has been a period of consolidation. We have a number of new pieces of equipment that each require commissioning. We then have to understand the uncertainties and assemble an error budget and compile our application to NATA for the extension to scope of accreditation.

The most important of these is the B/β C/γ goniophotometer (see photo).



Photometric laboratories, being painted black and having black fittings, are not the most photogenic of subjects. At least the control panel has some lights!

One of the interesting recent developments in lighting has been around AS/NZS 1680.2.5 Interior lighting Part 2.5: Hospital and medical tasks. In the 1990s, when the standard was being revised, it became apparent that the previous system of nominating limits on correlated colour temperature (CCT) and CIE colour rendering index (CRI) was not working acceptably. Since ORLAB had one of the few portable (well, luggable) spectroradiometers in the country at the time, we became involved and the outcome was a metric based on the change in the colour of blood with oxygenation that was called the Cyanosis Observation Index (COI). The compliance value was based on fluorescent tube sources that were known to be satisfactory at the time. However, this was the time of the changeover from halophosphate (relatively low efficiency but good COI) to triphosphor (higher efficiency but poor COI) tubes. The triphosphor and modified triphosphor tubes have relatively low emissions in the region of the spectrum where the change with oxygenation takes place. As a consequence, few, if any, of the triphosphor based tubes ever complied with the COI requirements. So the standard seems to have been largely ignored. The change to LED sources has changed this situation. It is perfectly possible to have LED sources that are fully compliant with AS/NZS 1680.2.5. Some care needs to be exercised to do this and there is more than one way of achieving a complying COI. There also seems to be quite a close correlation between COI and CIE R_9 . But R_9 is not part of the CRI calculation. As a consequence, we have seen an increase in testing requests for COI with many products complying.



Info Note 1

As a departure from our TechNotes, which have tended to address matters only in the sunglass and eye protection area, we have issued our first InfoNote. This note draws attention to the sources of funding from the NSW and Federal governments particularly when collaborative projects are undertaken with the university. This should be of interest to our customers in all the industries that we service.

Research Projects

Several customers have assisted with samples for testing in a paintball eye protection project. I now have my Commissioner's Permit for a paintball marker and have applied for permission to acquire.

The project looking at eye and face damage from the test conditions used for eye and face protection (6mm steel ball at between 45 and 190 m/s) will impact its first victim this week (a pig's head, from my friendly butcher). We also have some 6mm plastic projectiles as well. The main intention is to establish if a 6mm steel ball at 120 m/s is a face hazard as well as an eye hazard.

A new project is looking at the lenses claimed to protect against blue light hazards that are alleged to come from LED sources and computer screens. The first part of the project has identified the relative risks and a walk in the midday sun rates many times more office and domestic lighting and computer screens.

As always, if you have a question that is puzzling you and that would benefit from some hard data, we are always willing to look at the possibilities.

Research publications

2015 looks like a bumper year so far!

Dain, S. J. (2015). The Visual Recognition of Cyanosis and the Influence of Lighting and Color Vision. In *Advances in Dermatology Research*. Nova Publishing.

Long, J. A., Honson, V., Katalinic, P., & Dain, S. J. (2015). Re: Is screening for congenital colour vision deficiency in school students worthwhile? A review. *Clinical and Experimental Optometry*, 98(2), 192. doi:[10.1111/cxo.12246](https://doi.org/10.1111/cxo.12246)

Hoskin, A. K., Dain, S. J., & Mackey, D. A. (2015). Severe alkali burns from beer line cleaners warrant mandatory safety guidelines. *The Medical Journal of Australia*, 202(2), 79. doi:[10.5694/mja14.01104](https://doi.org/10.5694/mja14.01104)

Dain, S. J., Casolin, A., Long, J., & Hilmi, M. R. (2015). Color vision and the railways: Part 1. The railway LED lantern test. *Optometry and Vision Science*, 92(2), 138-146.

Dain, S. J., Casolin, A., & Long, J. (2015). Color vision and the railways: Part 2. Comparison of the CN lantern used on the Canadian Railways and Railway LED lantern tests. *Optometry and Vision Science*, 92(2), 147-151.

Dain, S. J., Casolin, A., & Long, J. (2015). Color vision and the railways: Part 3. Comparison of FaLant, OPTEC 900, and railway LED lantern tests. *Optometry and Vision Science*, 92(2), 152-156.

Dain, S. J., & Ling, B. Y. (2015). Colour Vision: Development and Age-Appropriate Tests. In A. -H. Chen, & S. J. Leat (Eds.), *Paediatric Vision Care: Current Practice and Future Challenges* (pp. 147-174). McGraw-Hill Education (Asia). Retrieved from <http://www.mheducation.asia/>

Boon, M. Y., & Dain, S. J. (2015). The development of color vision and of the ability to appreciate color in picturebooks. In B. Kummerling-Meibauer, J. Meibauer, K. Nachtigaller, & K. J. Rohlfing (Eds.), *Learning from picturebooks: perspectives from child development and literacy studies* (pp. 71-95). Great Britain: Routledge.

See ORLAB at SPARC 27-29 May 2015

SPARC is Australia's premier event for the international lighting community. In addition to seminars, there is an exhibition at which ORLAB will be exhibiting for the first time. While ORLAB has undertaken work for the lighting industry for some time, it has generally been with the smaller sources that fit on our A/α goniophotometer. With our new goniophotometer we are able to service much more of the needs of the lighting community. We are the only university based and independent photometric laboratory in New South Wales.

<http://SPARCEvent.org>

Watch this space – new website coming

In conjunction with exhibiting at SPARC we intend to launch our new website. The present website dates back to 1996 and was originally written in raw html and hosted on an Apple Macintosh Quadra 950 in the ORLAB office. The content and look have not kept pace with the times. For those who remember Apple IIplus and Apple IIe, it was like word processing in Zardax in the 1980s.

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