



TECHNICAL NOTE

TN-001

Yxy - Recommended Measurement Settings

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Purpose

HSG Labs Technical Notes provide practical information, technical recommendations, and best practices related to the installation, configuration, operation, maintenance, and application of HSG Labs products.

Document Revision History

Date	Version	Comment
2026/06/29	1.00	Document release

General Description

Modern light sources and displays use a wide range of technologies, including LEDs, OLEDs, laser phosphor, RGB laser projectors, and quantum dot displays. These technologies exhibit different spectral characteristics and may also employ temporal modulation (PWM, scanning, or other driving techniques).

To ensure accurate and repeatable measurements, the spectrometer acquisition parameters should be adapted to the measured source. Integration time, scan averaging, and digital filtering all influence measurement stability, noise, and the ability to correctly capture temporally modulated light sources.

The following recommendations provide practical guidelines for selecting these parameters in typical measurement conditions.

4P recommendations

From version 1.2.4

- Exposure: *Auto adjust*

An automatic process that determines the best exposure to use according to the measured signal. This method takes longer but gives better results if the target and exposure time are not known in advance.

- Average: *Auto*

With the Auto averaging option, an automatic process sets the best averaging to use according to the target.

- Smoothing: *0*

The principle is to increase the smoothing with very unstable and reduce with narrow sources (Laser, LED, OLED, LCD).

- ND Filter: *OFF*

The Neutral Density Filter can be used to decrease the light that will go to the spectrometer that permit to reach very high Luminance values and/or increase the measurement time.

SPECTRO recommendations

From version 1.0.0

- Exposure: *Auto adjust*

An automatic process that determines the best exposure to use according to the measured signal. This method takes longer but gives better results if the target and exposure time are not known in advance.

- Average: *20*

Automatic averaging, as on the 4P, will be added soon. In the meantime, we recommend setting the average to at least 20 for new laser and OLED sources.

- Smoothing: *0*

The principle is to increase the smoothing with very unstable and reduce with narrow sources.

- ND Filter: *OFF*

The Neutral Density Filter can be used to decrease the light that will go to the spectrometer that permit to reach very high Luminance values and/or increase the measurement time.

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