

# X-Rite i1 Family: Optical Brightener Compensation



## Taking the mystery out of measuring color on optically brightened materials.

### Optical Brightening: What Is It?

Whether you are a photographer printing images to hang in a gallery or a print professional producing packaging, collateral, signage or other commercial products, optical brightening agents (OBAs) in paper affects color perception and your ability to accurately and effectively measure and manage color. OBAs are increasingly used by paper manufacturers to provide that “whiter than white” look that increases the perceived value of the substrates. X-Rite offers solutions that allow you to take advantage of the benefits of these high quality substrates while still producing the accurate color your customers expect and demand.

### Measurement Challenges

Papers containing OBAs produce a bluish cast when measured spectrally, but this is not what you actually see. X-Rite’s i1 family of spectrophotometric instruments offer two different ways to measure:

- Measuring with **No-Filter** triggers OBAs and produces a bluish cast. In this case, colors do not match what the human eye actually sees.
- When measuring with a **UVcut Filter**, OBAs present in paper are not triggered, resulting in measurement values that show a yellow cast, but again, the colors are not representative of what the human eye perceives.

The optimal color match lies somewhere between the measured values and visual perception. Another factor in the effect of OBAs on the ability to accurately measure color is the lighting under which the color will be viewed. Different lighting conditions will produce varied results for the same color on the same paper.

### Optical Brightening Compensation Achieved

X-Rite’s i1 family of spectrophotometric instruments and accompanying software have the ability to deliver the best possible match between visual perception and measurement results. They are in full compliance with the latest standards. M1 (D50) is now the specified measurement condition for GRACoL 2013, SWOP 2013 and ISO 12647-2. Verification to these standards should be done using the M1 measurement condition. In addition, M1 measurement conditions are required to achieve accurate proof-to-press-sheet matches in newer D50 lighting booths.

### X-Rite OBC Solutions

- i1Pro 2 - The first handheld profiling spectrophotometer that utilizes dual illumination functionality that accommodates 3 standard measurement conditions (ISO 13655 M0: Tungsten; ISO 13655 M1: D50; ISO 13655 M2: UV Cut) plus Optical Brightener Compensation (OBC) without changing filters or needing a second instrument.
- i1iSis 2 or i1iSis 2 XL - An automated spectral chart reader that is able to measure test charts using i1 spectral technology to accommodate the same M-Series measurement illumination conditions as the i1Pro 2.
- i1Profiler profiling software from X-Rite

### Need More Information about M-Series Measurement Conditions?

Download our informative white paper, *Successful Color Management of Papers with Optical Brighteners* by visiting [www.xrite.com/making-the-invisible-visible](http://www.xrite.com/making-the-invisible-visible).

	M0	M1 <sub>1</sub>	M1 <sub>2</sub>	M2	M3
Measure effect of OBAs		✓	✓		
Measure ink fluorescence		✓			
Measure non-OBA stock	✓	✓	✓	✓	
Cut the effect of OBAs				✓	✓
Cut first surface reflections					✓
Agree on M standard for use in exchanging data prior to measurement	When using any M standard to exchange data, it is essential to agree on a particular M standard measuring data.				

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## Using i1 Spectral Technology for Optical Brightener Compensation

- Connect your i1 spectrophotometer (i1Pro 2 or i1iSis 2), launch your i1Profiler software and select the Advanced user mode.
- Choose your desired workflow - CMYK or RGB Printer OBC Profiling
- Lay out and print a test chart either directly from i1Profiler or from any other application like Adobe® Photoshop® or using your RIP software.
- Measure the test chart with your i1 device using dual OBC mode. This process will determine what proportion of the reflection comes from the print color and what proportion comes from the optical brightener for each field.
- Generate the OBC Grey Evaluation Chart and print it either directly from i1Profiler or from any other application like Adobe® Photoshop® or from your RIP software. This chart contains four columns with different levels of grey.
- Compare the printed Grey Evaluation Chart with the OBC Standards (grey balance targets) provided with your i1 device. Select and note the fields that provide the best visual matches from the relevant column (light grey to dark grey).
- Enter the corresponding UV correction values (A-S) of the matching grey field in the OBC software screen.
- Define your further desired profile settings as usual and then generate your ICC profile. Your ICC profile will contain the correct data to compensate for any OBAs in your print substrate.

## The Result?

Profiles corrected with OBC result in much better visual agreement with the design intent than with ICC profiles based on No-Filter or UVcut Filter measurements alone.

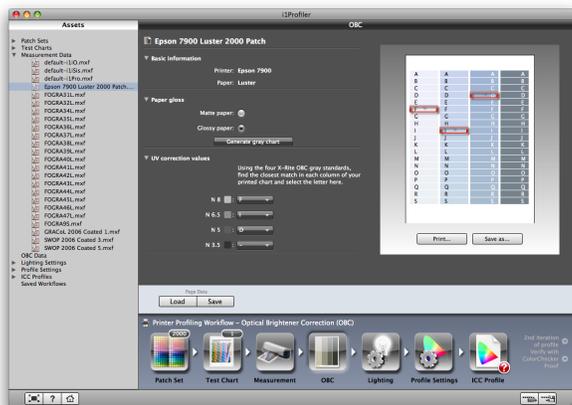
## XRGA Compliant

The X-Rite Graphic Arts Standard (XRGA) is X-Rite's calibration standard for graphic arts instruments. This includes new advances in color technology and changes required to meet ISO - 13655. The entire i1 Family of instruments are natively XRGA calibrated which ensures high quality data exchange and workflows where different instrumentation is used.

## X-Rite Color Management Solutions Supporting OBC

Part #	Description
EO2BAS	i1Basic Pro 2*
EO2PHO	i1Photo Pro 2
EO2PUB	i1Publish Pro 2
EOIS2	i1iSis 2* (includes OBC gray balance targets)
EOIS2XL	i1iSis 2 XL* (includes OBC gray balance targets)
EOPROF	i1Profiler

\*Customers must have i1Profiler software from X-Rite in order to be able to use the OBC function with the i1Basic Pro2, i1iSis 2 and i1iSis 2 XL.



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