



## GRACoL7 – A Brief Overview

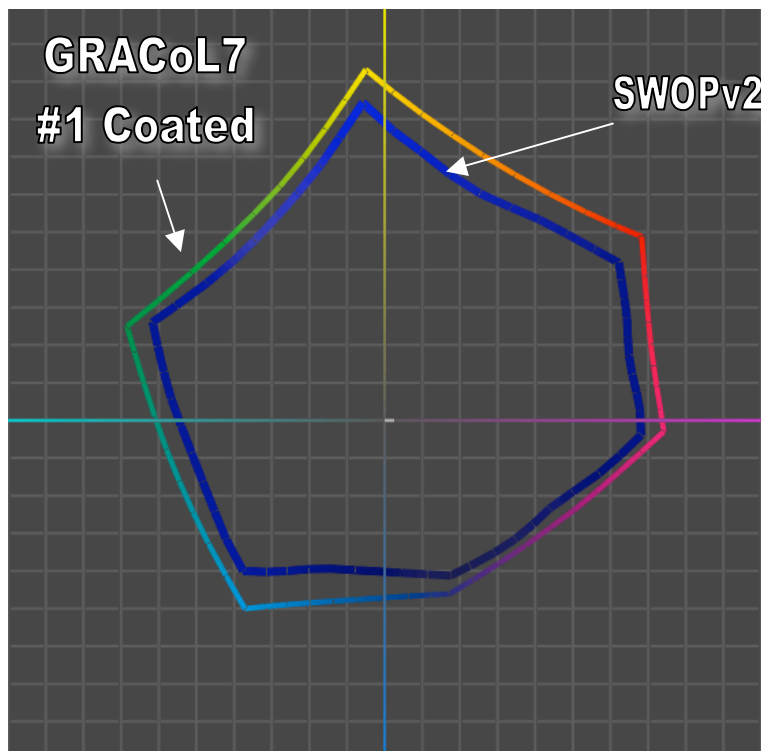
### Background

GRACoL7 is the seventh edition of the specification for the General Requirements for Applications in Commercial Offset Lithography. “G7” is the calibration methodology used to make a digital printer or press conform to the GRACoL7 specification. Though the word “Offset” appears in the GRACoL title, in fact the G7 methodology can be applied to a variety of printing condition, including traditional and inkjet proofers, to ensure consistent performance throughout the entire print production workflow.

### G7 Benefits to the Print Buyer

By encouraging print providers to adopt G7, print buyers can expect consistent results across multiple print providers. G7 also helps achieve more consistent results across an individual print run, so there is a potential improvement with an individual press as well as multiple providers.

In addition, printing to G7 specifications can lead to prints with greater saturation and density. The Adobe CS default CMYK working space, and default industry standard, is SWOPv2 (Specification for Web Offset Printing). This space has a smaller gamut than GRACoL7 (see below) and a relatively dim/yellow white point not consistent with most high quality sheetfed stocks.



So RGB images that are separated to the default SWOP, or CMYK designs and layouts created in SWOP, can lose some of the saturation and density that is well within the reach of a typical sheetfed press. Separating and printing to G7 addresses this issue.

#### Benefits to Print Producers

G7 also provides substantial benefits to the print producer. Unlike previous standards, G7 focuses on producing neutral grays through the entire tonal range, yielding a visually more pleasing result that is more easily maintained over time. This is primarily achieved by creating a Neutral Print Density Curve (NPDC) that yields similar lightness (the L of Lab) results between 3-color (CMY) gray and single-color black (K) throughout the entire tonal range.

Once the G7 process is in place, printers can more quickly get a job up to color since they need to measure fewer patches, thus saving time and making each job more profitable. In addition, G7 provides a methodology that can help ensure consistency across multiple presses, providing printers the flexibility to assign jobs to the most readily available press and the confidence that the job will come out right.

In addition, G7's focus on gray balance means that fewer patches need to be measured to ensure consistency during a given run. And if measurement is not feasible, a visual inspection of the three-color gray vs the K patch allows for superior results compared to what would otherwise be possible.

Lastly, if you are doing trade printing, or just occasionally need to match jobs printed at another location, it will put your customers at ease if they know you are conforming to industry standards.

#### Overview of Methodology

The G7 methodology is described in great detail in the G7 How To Training Guide found at <http://www.gracol.org/>. In brief, for each press/stock/line screen combination the following will be done:

1. Evaluate press and make sure it is printing to manufacturer's specifications
2. Print a calibration target to characterize current state of platesetter/press.
3. Compare current state to G7 NPDC values
4. Apply correction to platesetter curves to achieve desired NPDC values
5. Print calibration chart on press again to ensure that desired results have been achieved. Make refinements if needed.
6. Review quality control methods to ensure consistent results over time
7. Calibrate proofer to ensure it is matching newly calibrated press

#### What It Takes to Get G7 Calibrated

In conjunction with a qualified G7 Expert Consultant like Spectraflow, a printing plant can get G7 calibrated in a relatively short amount of time, assuming the presses are in good operating condition. In a typical environment, a printer may want to calibrate two presses, two stocks (maybe house coated and matte), and one line screen (maybe 175 lsi). This would represent a total of 8 combinations. In a single day, it's usually feasible to perform 2 press runs along with the required analysis and adjustments to the plate curves. Add a day for proofer calibration, and the entire G7 calibration can be typically performed in a single week or less for a single press.

Call Spectraflow at 415-382-8681 for more information about G7 calibration.