

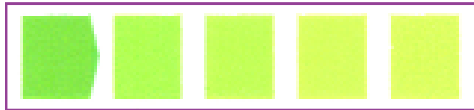
**UV FASTCHECK™ STRIPS [N010-002] DATA SHEET**

*Introducing a simple, highly accurate method for measuring specific UV dosage -  
Photochromatic labels change color based on the UV energy received*

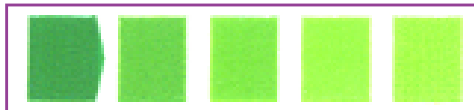


(Prior to Exposure)

All five squares are yellow, first square will change color immediately in UV light.



The first square is the deepest green.  
The rest are increasing degrees of yellowish green.



The first square is now a dark green.  
The other squares are progressively more green.



Now the 1st square is blue and the next 2 squares are a blue-green. The 4th and 5th squares are a deeper green.

Introduced Spring 2005, our UV FastCheck Strips are simple, reliable and easy-to-use indicators of accumulated UV light dosage. They are the first product that can be used to determine levels of UV dosage with a simple visual inspection due to the 5 separate color changing zones. Each of the 5 zones begin to change color after a specific amount of UV dose that has been received. The first zone (the one shaped differently) begins turning from yellow to blue. Then each subsequent color zone starts to change colors when its specific chemistry has received the proper amount of UV to activate its color change.

The versatility of this unique UV measurement tool allows users to measure a significant range of UV doses. FastCheck Strips measure UV dose from 0mJ/cm<sup>2</sup> to greater than 5,000mJ(5J)/cm<sup>2</sup>. Due to their paper-thin profile and thermal stability they can be used in all applications where a radiometer is not impossible including web and sheet fed printing, exposure verification, 3-D curing and personal UV exposure level testing.

The FastCheck Strips' clearly identifiable color change enables users to visually differentiate dose differences. UV FastCheck Strips can be coupled with a handheld colorimeter to measure the dose even more precisely. **Note:** Keep your exposed Strips away from light sources (in their protective envelope inside a drawer or dark cabinet) so that ambient UV won't continue the color change. Strips have the potential to change color; therefore it is highly advised that values be checked immediately upon exposure. For optimum reading results, measurements should be recorded with a spectrophotometer.

Strips change from yellow to varying shades of blue-green and about 16 different shades can be visually detected. Customers can create their own color chart to identify different levels of dosage but for those who wish to determine changes at a greater level of sensitivity, a spectrophotometer can measure about 10 times what is visible to the naked eye offering a millijoule palette of some 160 different color values. We have also prepared a handy comparative dose chart to be used with the UV FastCheck Strips to help determine approximate millijoule levels. The new UV Fastcheck Chart is a printed sample due to the fact that the original FastCheck chart fades as it ages. The chart will be included at no charge when ordering the UV FastCheck Strips. The FastCheck Chart is **only** a guide and exhibits similar – but not exact - hues to what will actually be achieved when exposing the FastCheck strips to UV light.

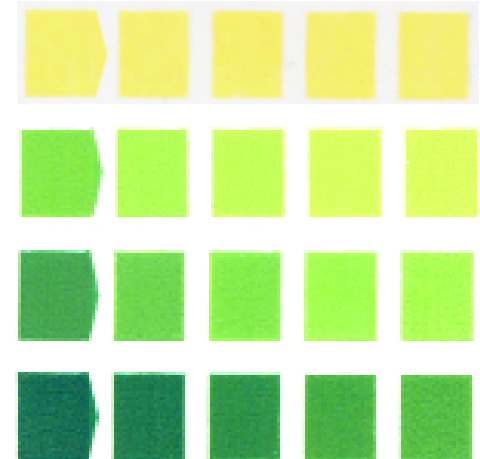
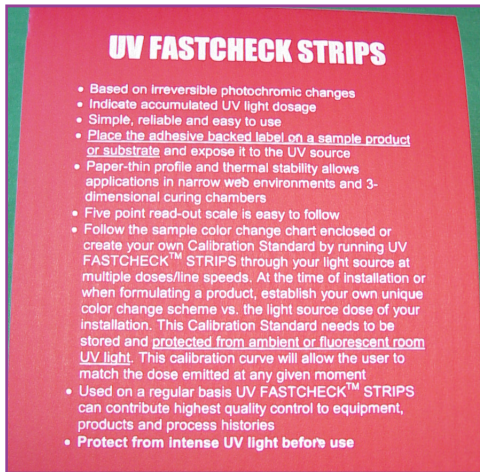
**FEATURES & BENEFITS:**

- Accurate visual readings of dosage across the entire UV spectrum
- Monitor UV dose in difficult-to-access curing environments
- Detect UV lamp degradation and equipment failures
- Insure your UV source is performing properly and meeting expectations
- Greater range of color change provides clearer, more precise UV dose determination
- Determine dose profile in 3-D curing chambers or across wide webs to insure an even and consistent cure
- Measure the dose of sunlight in outdoor curing applications
- Evaluate and compare multiple UV light sources

**SPECIFICATIONS:**

- 200 FastCheck Strips per package (20 adhesive backed UV FastCheck Strips per sheet; 10 sheets per package); one printed FastCheck Chart included with each package
- UV FastCheck Strips Dimensions: ½"H x 2-1/8"W (13mm x 54mm)

**Establish Your Own Reference UV FastCheck™ Strips [N010-002] for “Good” & “Bad” UV Cure**



1. Set up your UV curing system at a speed and intensity that you know it is curing properly.
2. Remove one adhesive backed UV FastCheck Strip from the carrier sheet and stick it securely onto the material that you will be passing through your UV curing system. Pass the material with the Strip through your UV curing system at the speed and intensity that matches Step 1 above. This becomes the reference Strip for a “Good” cure.
3. Now, monitor the curing characteristics as you incrementally increase your line speed. When it is just beginning to undercure, pass another UV FastCheck Strip through your UV curing system. This becomes the reference Strip for a “Bad” cure.
4. You now have your reference Strips representing “Good” and “Bad” cure. If so desired, you can add a third, helpful reference; the “Minimum Cure” Strip:

A “Minimum Cure” Strip will represent the point at which product is still successfully curing, but it is time to perform maintenance on your UV curing system. (That may mean swapping your UV lamps and/or reflectors for new ones, or simply cleaning from them the residue that accumulates over time.) Remember, UV Intensity Labels only indicate UV dose received and do not tell you what is causing the decline in measured UV dose. That is up to you to ascertain.

5. To create a “Minimum Cure” Strip, gradually decrease the line speed from the setting you used to create the “Bad” product. Pass UV FastCheck Strips through your system just until a noticeable color change is observed. Once a visual difference has been reached, check to insure that you are successfully curing your product. This now becomes your third reference Strip.
6. Keep your reference Strips away from light sources (in their protective envelope inside a drawer or dark cabinet) so that ambient UV won’t continue the color change: **Note:** Strips have the potential to change color; therefore it is highly advised that values be checked immediately upon exposure. For optimum reading results, measurements should be recorded with a spectrophotometer.
7. You need to establish how often you are going to evaluate your UV curing system. Some send a UV FastCheck Strip through their system at the beginning of each day while others check at the start of each shift or even every hour. Whatever you determine your needs to be, you must compare each UV FastCheck Strip tested to your reference Strips prior to curing this product\* on this UV curing machine.\*

**\*Each machine and each product cured on it will require its own reference set. Additional reference sets will need to be created if this product is cured on different UV curing machines.**

### **Testing Your Flexo System for UV Intensity Uniformity with UV FastCheck™ Strips [N010-002]**

***Whether you are using a single or multi-lamp UV Flexo system, it is crucial that your UV lamps have a consistent UV intensity output. An uneven intensity distribution can lead to hot and cold spots in your curing, causing spoiled product.***

1. You need to perform this test for each of the UV lamps in your UV curing system individually.
2. Turn on only one UV lamp at a time.
3. Set your web to a manageable rate (50ft/min or 100ft/min) so as to be able to retrieve the Strips after they have passed beneath the UV curing lamp.
4. Remove 3 adhesive backed UV FastCheck Strips from their carrier sheet and stick them securely onto the left, center and right portions of the web to be passed under the first UV curing lamp. Orient the Strips to run parallel to the web in the direction of travel.  
  
UV lamps deteriorate from the outer ends first so if a lamp in your system is beginning to fail, the ends are typically where you will first notice the UV intensity to drop off.
5. Run the press.
6. Remove the exposed Strips (either by cutting that section out or by peeling off the exposed Strips). Next to each of the 3 Strips, record what position it was in (left, center or right) and which UV lamp it was exposed to (1st, 2nd, etc.).
7. Continue this process until all of the UV lamps in your system have each been tested.
8. Examine the exposed Strips for each lamp in your UV curing system. If your system has a uniform UV intensity across the web and from lamp to lamp, all of your Strips should have the same color pattern. If color differences are noticed, determine which lamp(s) are performing differently.

***Note: Keep your exposed Strips away from light sources (in their protective envelope inside a drawer or dark cabinet) so that ambient UV won't continue the color change. Strips have the potential to change color; therefore it is highly advised that values be checked immediately upon exposure. For optimum reading results, measurements should be recorded with a spectrophotometer.***