



Some yellow beer is so light that it's practically translucent, which can be a challenge for breweries. Image Credit: Flickr user Nicola

I once asked a beer critic what he looks for in a high-quality glass of light beer like American lager or German pilsner. He said, "I want to see every line of my fingerprint through the glass." In other words, he wants the lightest beer to have far more clarity than an opaque style like stout. However, one of the challenges that brewers have with lighter beer is measuring that clarity accurately. [Translucent liquids](#) diffuse light and can play tricks on your eyes. This is why it's important to measure your beer with a spectrophotometer before you bottle it. Using this method, you'll get a more consistent color and ensure that your beer is free of any cloudy haze.

Clarity Is Vital in Yellow Beer

Light beer, particularly styles that are [yellow or gold in color](#) (rather than amber or brown), require far more transparency than their darker peers. Amber ales can be a little hazy, and stouts should always be as opaque as possible, but yellow beer is almost always more appealing when it's crystal clear. That comes down to the way you brew the beer. On the [Lovibond unit scale](#), light yellow beer typically falls under a 3 (and sometimes as low as a 1 on the scale). In order to get this measurement, the beer has to be brewed in a very specific way.

The pH of the water used in the brew needs to be lower than that used for darker beer. Breweries also have to decrease the steep time and kettle boil time of the mash to get a light color and opacity. Finally, brewers making pale yellow beer have to filter out proteinous matter during fermentation so that the beer appears clear and not turbid, which in turn makes the beer [appear lighter in color](#) to the naked eye. Beer critics and picky customers look for the clearest yellow beer on the market because it's a sign that the brewery followed all of these steps, and took great care with the brewing process. Brewers that successfully attain a translucent final batch will appear higher in quality to discerning drinkers than brewers who have [hazier products](#).



A high-quality light beer will have a consistent yellow color throughout, with very little opacity.
Image Source: Flickr user Quinn Dombrowski

Measure Before You Bottle

If you want your beer to stand out on the shelf, or impress the toughest critics, you'll need to ensure that the opacity is exactly where you need it to be, long before you bottle your product. For the best results, you should measure your beer's color and opacity four times during the brewing process. First, measure the color as you steep the mash; once you reach a color that's slightly lighter than you want your final product to be, you'll know that it's ready for the next step. Measure the color again during the kettle boil to make sure that your brew isn't getting too dark. Then, when you're ready to ferment, you can start measuring both the color and turbidity of the beer. Your final measurement happens after you filter out the excess protein, and should primarily revolve around measuring the beer's opacity (or in the case of light yellow beer, lack thereof).

One of the major challenges with light-colored beer is that diffused light can make it difficult to measure the color and opacity by sight alone. You might think that your beer appears too dark, when in reality, its true color is being obscured by the dark objects around it. This is why you need to use actual spectrophotometers to make these calculations — never rely on your eyes.



The extreme transparency of yellow beer can make it difficult to measure color and opacity. Image Credit: Flickr CC user Bernt Rostad

The Best Types of Spectrophotometers for Light Beer

Before you order a spectrophotometer, you'll need to make sure that the instrument can accurately measure [transparent liquids](#), and that it can handle the large number of measurements that you need to make. The best [type of instrument](#) depends on just how translucent you want your final product to be at the end of the brew. Do you expect your beer to look like apple juice, or will it be slightly more opaque than this? The problem with brewing beer is that it can range from being as clear as water to as opaque as pulpy orange juice. This is why we recommend using an instrument like the [UltraScan VIS](#). This spectrophotometer includes extended wavelength measurement, and it can measure liquids via either reflected or transmitted color. This means that it can handle anything from the most transparent beer to the most opaque.

To get started with this instrument, or any other spectrophotometers designed to measure beer, [contact our expert staff](#) at HunterLab. Our local distributors can give you advice on exactly which equipment you'll need for your industry, allowing you to focus on what you do best: brewing the clearest beer on the market.