The standard is a technical document which is written with engineers and lighting design companies in mind. It is not designed for users who wish to build or set up their own viewing area; rather it is a highly technical set of specifications which enables lighting manufacturers to design, test and certify color viewing systems. The standard specifies a set of five conditions which all must be present in order to assure the benefits of the standard.

The five conditions include:

**COLOR QUALITY**

Chromaticity

Chromaticity Aim Point \( u'_{10} = .2102; \ v'_{10} = .4889 \)

The apparent color of a light source is specified by its chromaticity coordinates. The aimpoint and tolerance are specified in CIE color space. When two viewing systems are plotted, the closer the plot, the greater the visual color agreement between the viewing systems.

Color Temperature

Correlated color temperature is the relation between the color emitted by a black body radiator when heated to a specific temperature. It is measured in degrees Kelvin.

Spectral Power Distribution

The true "fingerprint" of a light source, spectral power distribution is the key factor in how a light source renders colors. The closer a light source's spectral power distribution is to D50 the more accurate it is. CRI and CIE51 tests are used to insure that your light source closely approximates D50.

**LIGHT INTENSITY**

Aimpoint

Consistent light intensity is critical to consistent image rendition. The standard provides a target intensity designed to allow full tonal visibility of shadow detail without washing out highlights. The second part (Practical Appraisal) specifies a lower light intensity (500 lux) for tone reproduction evaluation.

- **Prints and Proofs**
  - 2000 lux
  - Preferred (should be) tolerance +/- 250 lux
  - Required (shall be) tolerance +/-500 lux

- **Transparencies**
  - 1270cd/m²
  - Preferred (should be) tolerance +/- 160cd/m²
  - Required (shall be) tolerance +/- 320cd/m²
Surround color and reflectance affect color appearance. The two light blue dots above appear different in both hue and brightness due to the differences in the background field. In order to assure consistent color appearance and tonal range, the surround condition is specified.

The presence of excessive glare can be very distracting to press operators, QC personnel and others attempting to make critical color judgments. As illustrated by the images to the left, glare can hide reproduction detail and potentially cause very costly errors. While the standard does not explicitly specify lighting geometry, GTI® has tested nearly all techniques and found that there is an optimal geometry for each installation (see example to the right).

We offer color viewing products that meet the five conditions of the ISO 3664:2009 standard

Economical Desktop Viewers • Color Viewing Stations in a Selection of Sizes
Color Viewing Stations for Digital Presses • Remote Proofing Color Viewing Stations
Custom-Made Press Consoles • Color Matching Booths with a Selection of Light Sources