OGM LXTA-12v

Signal Mate (prototype)

Lunasea 25NT-24-00

Lopolight 200-005

Standards Dictate Tolerance for Color Differences

One thing that stood out to us during testing was the variations of the "greens" that the LED tri-color lights displayed. This left us wondering what the standards that regulate navigation lights had to say about tolerance for differences in color. Does green have to be true green? Or could it be more yellow-green?

We asked Bob White, president and owner of IMANNA Laboratory Inc., an approved testing facility that evaluates navigation light compliance. He gladly offered to shed some light on the subject.

According to White, the U.S. Coast Guard, the American Boat and Yacht Council, and the International Regulations for Preventing Collisions at Sea (COLREGS) for large vessels, all agencies use the same standards to define acceptable wavelengths for each color.

These guidelines for chromaticity are defined using a colored X-Y diagram (below) developed by the International Commission on Illumination (CIE, for its French name). To be compliant, the green, red, white, or yellow lights must have wavelengths (measured in nanometers) that fall within certain boundaries on the diagram. Each corner of the boundaries are defined by X and Y coordinates. The coordinates can be found in Section 33 of the Code of Federal Regulations (CFR).

Effectively, the rules allow slight shifts to either the blue or yellow side of green.

1931 CIE Chromaticity Diagram