5 LED Fixture Assessment Metrics

Five key metrics to consider when assessing and selecting an LED architectural fixture for an application.

1. BEAM SHAPE AND CBCP

When it comes to CBCP (center beam candle power) and beam quality there is a significant difference between CBCP and quality of the beam shape between a COB LED array and Clarté Lighting discrete LED TIR fixtures visually.

Discrete LED TIR optics have significantly higher CBCP with a beam that closely assimilates and improves upon the point light source halogen parabolic lamp.

- COB vs TIR LED optical fixtures - www.clartelighting.com/cob-vs-tir-optics/
- Highlights and Shadows of COB vs TIR fixtures - www.clartelighting.com/wp-content/uploads/2020/07/Clarte_HighlightShadow-1.pdf

2. COLOR

50% of a visual result is determined by color and 50% is determined by CBCP and shape of the beam emitted from an LED fixture.

Color Metric Comparison

- Option 1 Color Metrics- Leading Architectural COB LED array TM-30-18 color metrics.
  - Fidelity = 96
  - Gamut = 103
  - Red Color bin 1 = 98
  - 001 variation on the black body locus.
  - CRI = 95

- Option 2 Color Metrics - 90+ with halogen lens (H) TIR discrete LED TM-30-18 color metrics
  - Fidelity = 94
  - Gamut = 101
  - Red Color Bin 1 = 95
  - .0014 variation on the black body locus.
  - CRI = 96

- Overview of TM-301-18 color metrics
  - www.clartelighting.com/wp-content/uploads/2020/08/Clarte-TM-30-18.pdf

3. ADAPTABLE FEATURES

Most COB array LED fixtures don't accept optical accessories or are limited to 1 or 2.

90% of Clarté Lighting fixtures accept up to 4 optical accessories and 10% accept up to 3 optical accessories.

Architectural optical accessories create improved fixture flexibility while creating a more theatrical shape of the beam emitted from a Clarté Lighting fixture.

1. Manipulate beam shape
2. Shift kelvin temperature lower
3. Eliminate fixture surface brightness

Most LED fixtures do not allow for field changeable optics. All Clarté Lighting fixtures allow for tool less field changeable optics and accessories to create the desired visual result per fixture based upon the selected optic and accessory combination installed.

- www.clartelighting.com/wp-content/uploads/2020/12/Options1201.pdf

4. L70 LIFE AND WARRANTY

Fixture design and thermal management of the LED junction temperature is critical to life and long-term color point stability of an LED.

Clarté Ligting's LED fixture junction temperatures are designed to operate between 65C and 85C depending upon wattage and operate considerably cooler than comparable COB LED array fixtures which typically operate between 85C° to 105C°.

Clarté Lighting's L70 life is a minimum 100,000+ hrs. and designed to operate trouble free for 20+ years with extended color point stability.

Most LED fixtures have a 3 to 5 year warranty while Clarté Lighting's longer L70 life LED fixtures carry a 7 year warranty.

- www.clartelighting.com/wp-content/uploads/2018/04/10PointsOfLight_final_.pdf

5. FIXTURE PRICE

There are two types of COB LED fixtures in the market. Most residential and light commercial low-cost LED fixture solution utilize COB LED arrays with lesser TM-30-18 color metrics.

These lower cost COB array fixtrues lack the TM-30-18 color metrics that our outlined above in #1 color metric comparison of COB architectural LED arrays and Clarte' Lighting discrete TIR LED arrays.

Clarté Lighting TIR discrete TIR LED fixtures cost a minimum of 20%+ less per fixture as compared to the TM-30-18 metric comparison of architectural COB arrays outlined in the #1 color section above.