



Get Into the **ZONE**

with **STERLING®** Zonal Optics



PURPOSELY DIFFERENT

ECONOMICALLY RELEVANT

UNIQUELY LSI



Today, **LSI Industries** is redefining the way we think about **lighting solutions** with its revolutionary **Zonal Optics**.

Specifically designed to take full advantage of LED technology, LSI's Zonal Optics enable us to rethink traditional boundaries, explore new angles to deliver unprecedented light quality, precision light placement, control and significant energy savings for tremendous flexibility in lighting your space. It is Zonal optics that allow LSI's Sterling (XSB) LED area light deliver the proper balance of efficacy, distribution efficiency and high lumen output to provide evenly distributed illumination — with the fewest possible number of fixtures.

Deliver more light, more affordably with precision lighting control —where it matters most when it matters most.



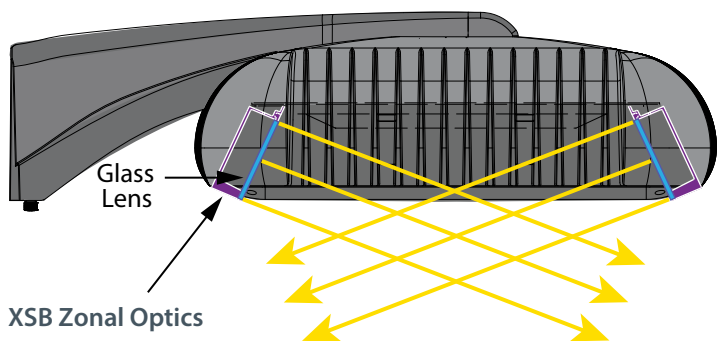
In **traditional fixture designs**, light is refracted through a single, flat glass lens. This can cause **light loss and wasted energy** as you attempt to illuminate spaces far away from the light fixture. Light transitioning through glass at high angles results in **reflection and loss of efficiency. Until now, there were no alternatives.**

Today, LSI's Zonal Optics feature multiple independently positioned optic units with the fixture so to avoid the high angle light loss commonly found in a single lens fixture. With LSI's unique Zonal Optics, precisely angled, side mounted LED optical modules place light exactly where you want it. Each module has a glass lens mounted perpendicular to the LEDs and is angled to produce the widest distribution with the highest efficacy possible. The result?

- **Significantly greater lighting impact**
- **Gains in efficacy**
- **Reduction in energy consumption**
- **Better, more uniform lighting distribution**

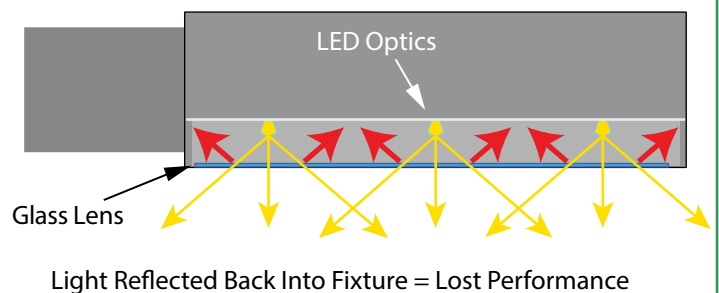
XSB Zonal Optics

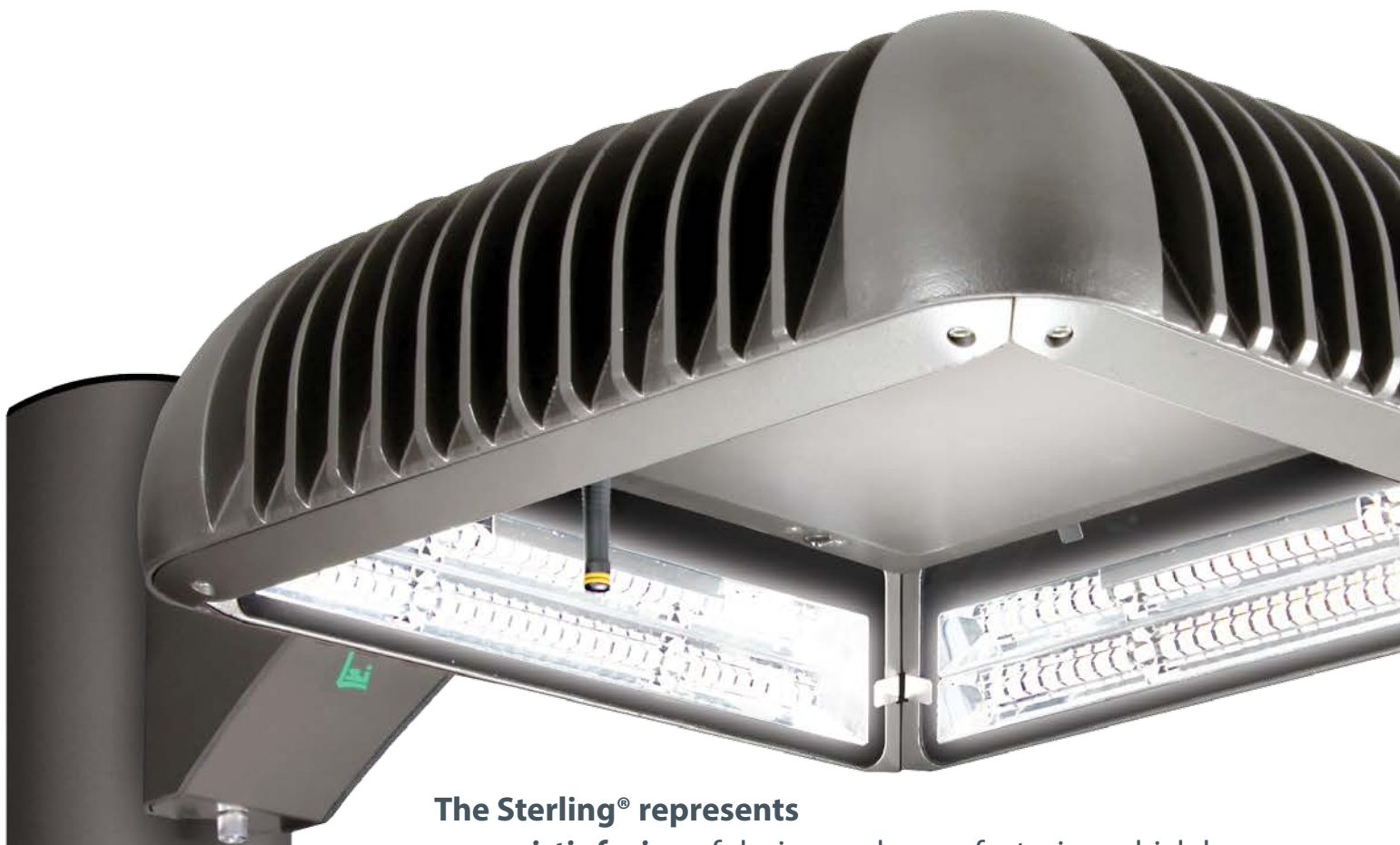
Delivered Light



Typical Flat Lens LED Fixture

Delivered Light





The Sterling® represents
a ***synergistic fusion*** of design and manufacturing which has produced an advanced luminaire platform that features the integration of a unique ***energy-efficient*** light module to create (4) ***Zonal Optic Platforms***. These ***Zonal Optic Platforms*** are used to generate the (12) Sterling distributions.

- (4) Zonal Optic Platforms
- (12) Distributions
- IES G3 Compliant Distributions
- DLC Listed – High Lumens/Watt Efficacy (5000K Color Temperature Standard complies with DLC standard)
- Integral Backlight Cutoff – Standard on FTX/FT/FTAX Distributions
- Up to 89% Front-side Lumen Distribution Efficiency on FTX/FT/FTAX Distributions

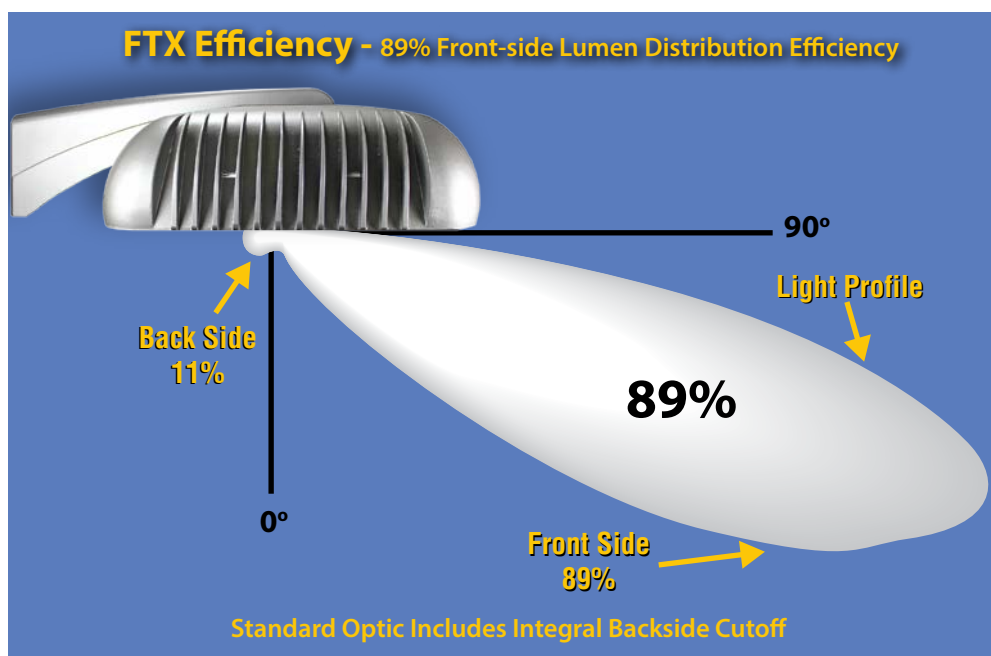
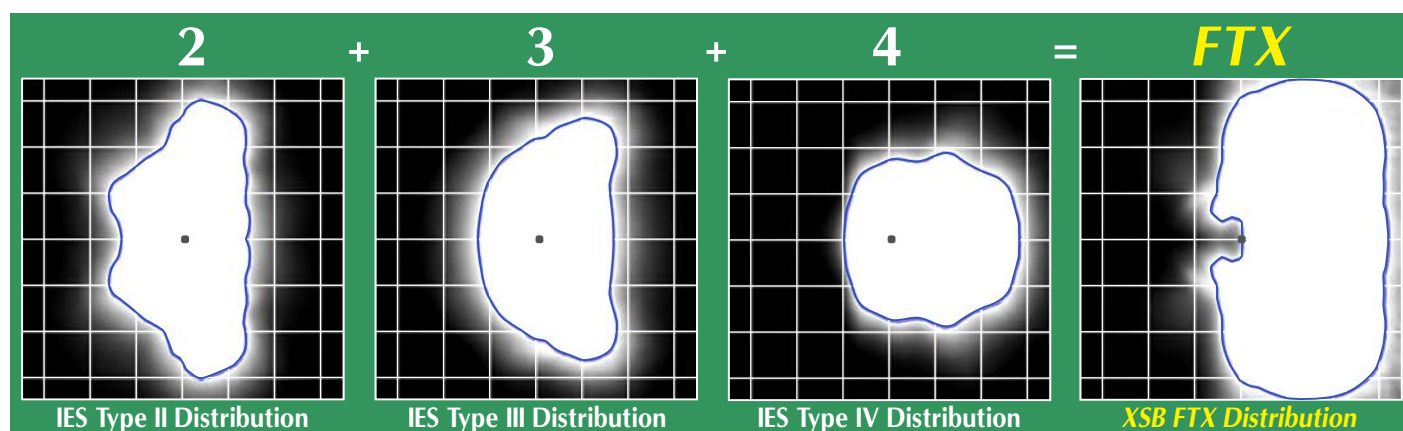


Typically outdoor luminaires are classified by the ***Illuminating Engineering Society (IES)*** by their distribution or patterns of light. These classifications were developed around HID technology based fixtures and are still utilized today to classify LED luminaires. The classifications typically used for ***Large Commercial, University, Automotive, Petroleum and Quick Service Restaurant*** markets are the IES Type II, III, and Type IV distributions. They are classified by the distribution of their forward and lateral projections.

Type IV produces more of a forward light projection while the **Type II** and **III** distributions produce more of a lateral side to side light projection.

FTX Zonal Optic Platform #1

The FTX Zonal Optic, unique to the Sterling, is a hybrid optic LSI developed to incorporate the best forward and lateral projection components of the IES Type II, III, and Type IV distributions.



The FTX Zonal Optic distributes 89% of its total available lumens in front of the fixture while allowing only 11% behind the fixture, eliminating the need for external shields or modifications to the optic which can significantly reduce overall efficacy.

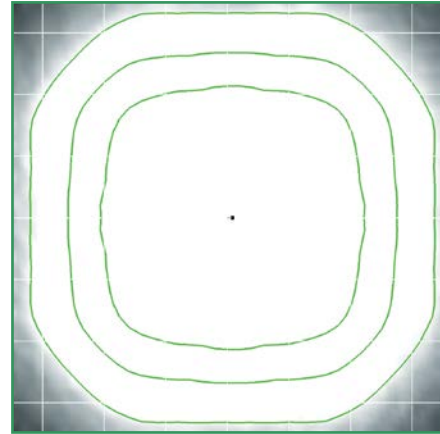
$$2 + 3 + 4 = \text{FTX}$$

5X Zonal Optic Platform #2

Along with the Type FTX Zonal Optic, the Sterling® is also available with Type 5X Zonal Optic. This distribution is a symmetric distribution which features a highly efficient 360 degree pattern of illumination.

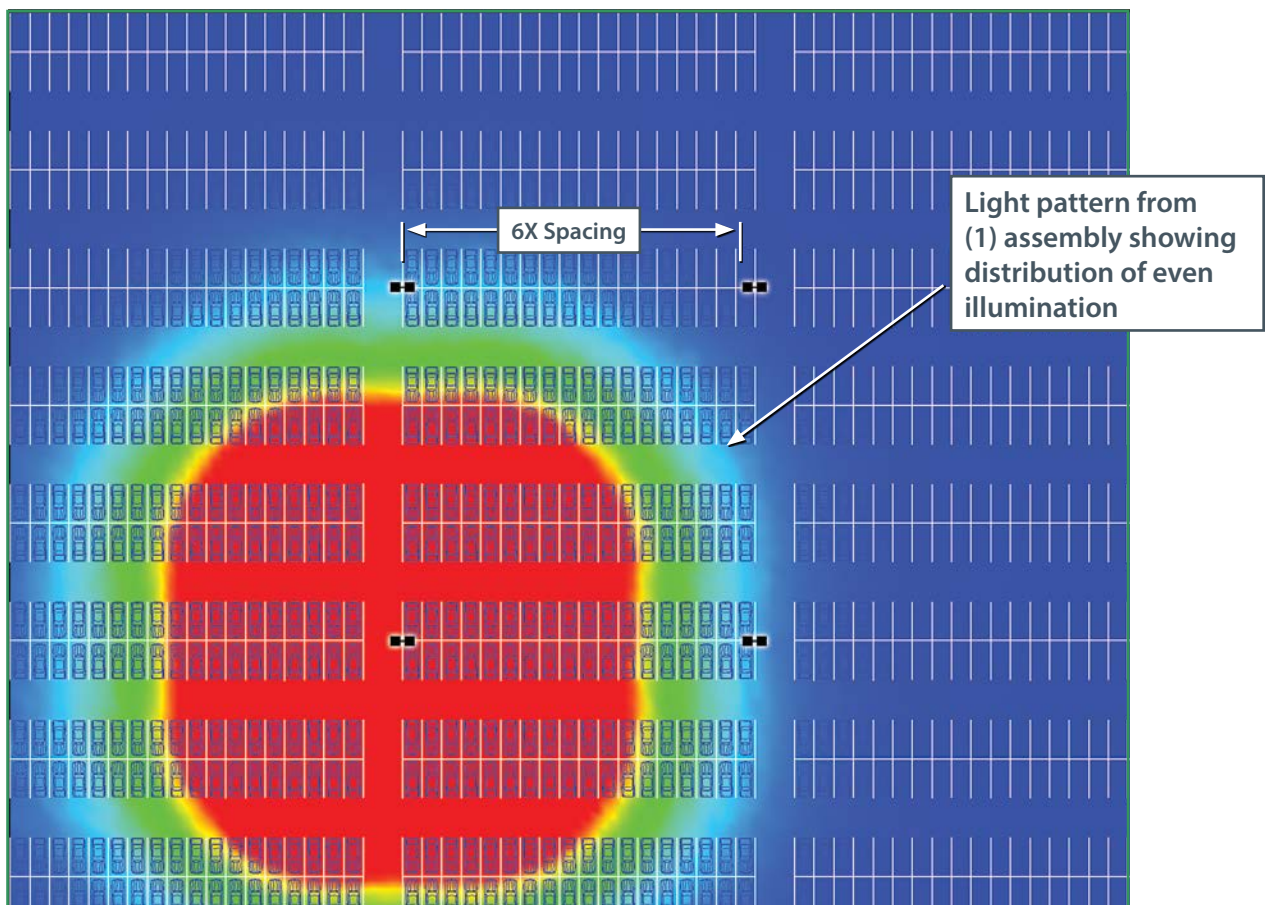
- Greater than 6X Spacing to Mounting Height Ratio
- Uniform even illumination
- DLC Listed
- 5000K Color Temperature
- No Uplight

XSB 5X Distribution



Spacing to Mounting Height Ratio

Refers to the ratio of the spacing of the fixture assembly to the fixture mounting height



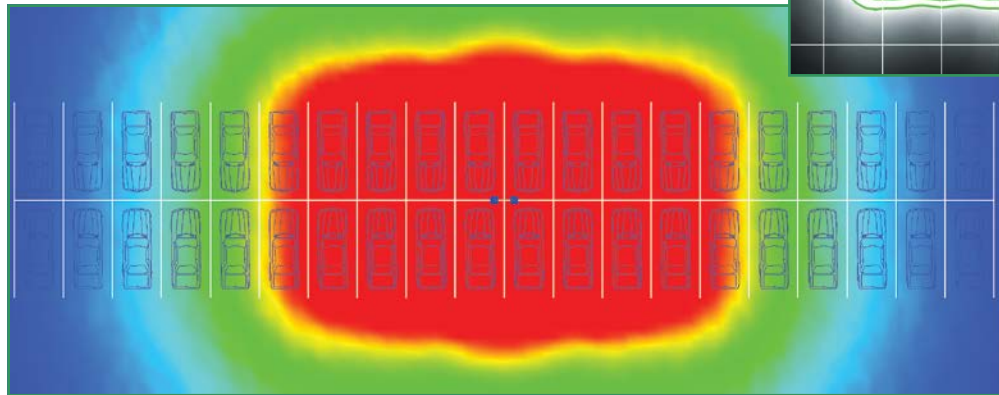
Retail Market Zonal Optics

The AIX and FTAX Zonal Optics, which are unique to LSI, were developed to maximize illumination for interior spaces and automotive front row illumination. The AIX creates a rectangular, uniform pattern of light to maximize pole spacing on the interior while the FTAX provides high impact uniform illumination for the automotive front row.

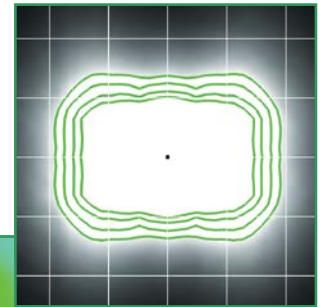
AIX Zonal Optic Platform #3

Interior

- Uniform Even Illumination
- DLC Listed
- 5000K Color Temperature
- No Uplight



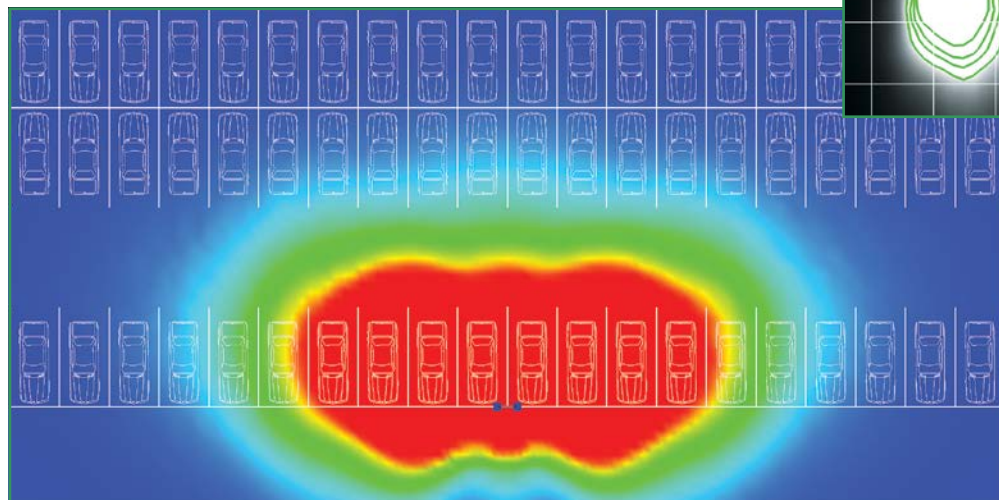
XSB AIX Distribution



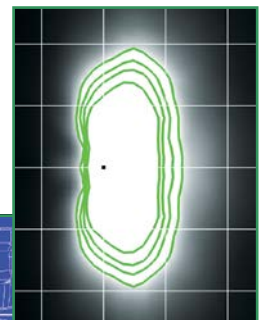
FTAX Zonal Optic Platform #4

Automotive Front Row

- High Impact Uniform Even Illumination
- Integral Backlight Cutoff
- DLC Listed
- 5000K Color Temperature
- No Uplight



XSB FTAX Distribution



LSI Zonal Optics

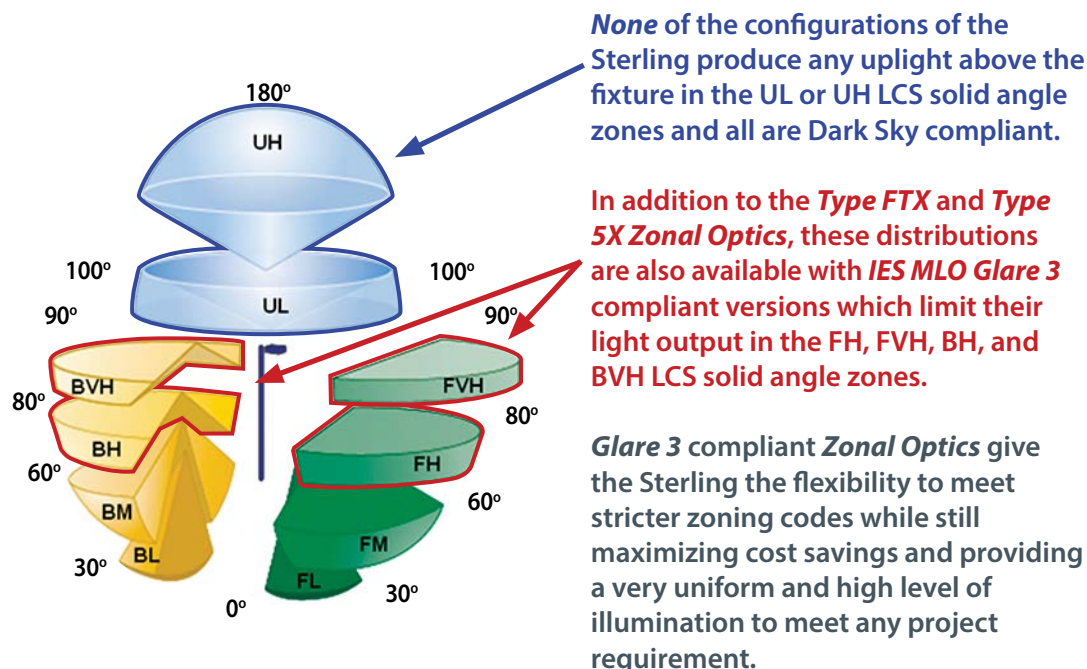
A New Optic for a New Standard



IES Luminaire Classification System

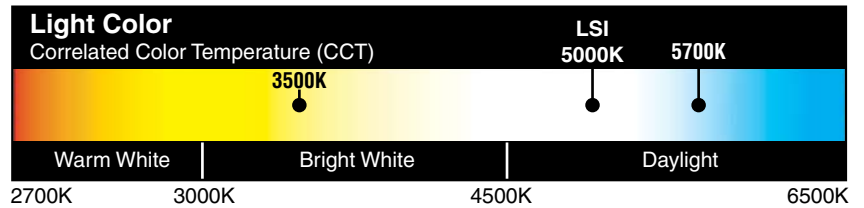
Today's IES Luminaire Classification System (LCS) quantifies the light distribution in front of the luminaire, behind the luminaire, and above the luminaire. This system has replaced the Cutoff classification system used previously to evaluate a lighting fixture and is utilized by the IES Model Lighting Ordinance (MLO). Refer to IES document TM-15-11 or IES MLO 2011 for complete details.

Sterling Optic Control





Seeing is Believing



LSI Sterling 5000K complies with DLC Standard ▼



▼ Competitor 3520K



▼ Competitor 5700K



Typical Large Commercial Center / University

These unique Zonal Optics Platforms provide the flexibility to integrate streamlined design and efficiency into any project

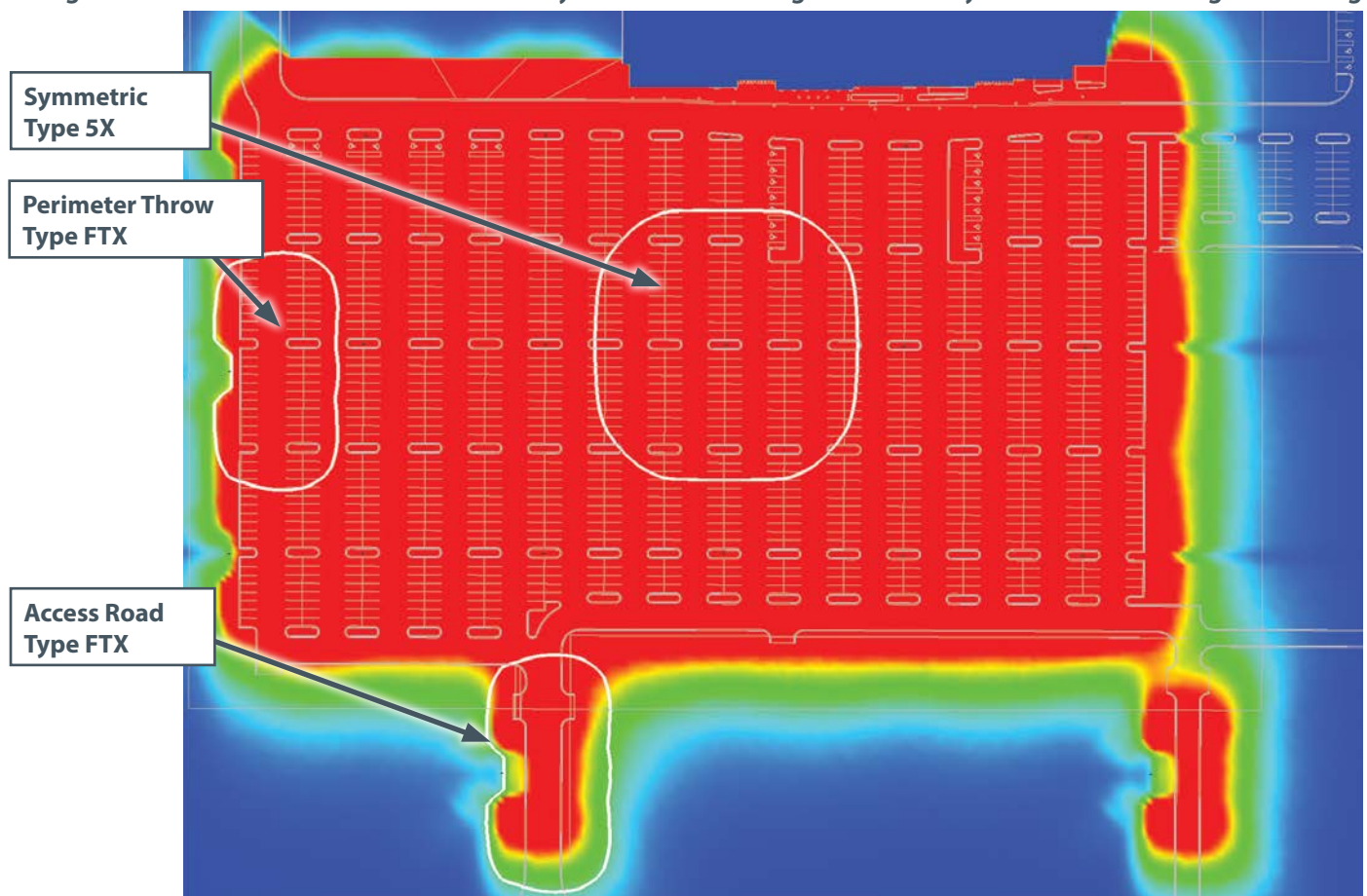
LSI Zonal Optics vs Industry Standard LED

- 48% Less Fixtures than Industry Standard.
- 25% Less Poles than Industry Standard.
- 30% Installation Savings
- No Energy Increase
- Virtually No Maintenance

LSI Zonal Optics vs Traditional Metal Halide

- 56% Less Energy than 1000w Metal Halide
- Virtually No Maintenance
- ROI < 3 years

Progressive Refinement Pseudo Color Radiosity Solution illustrating the uniformity of illumination using the Sterling



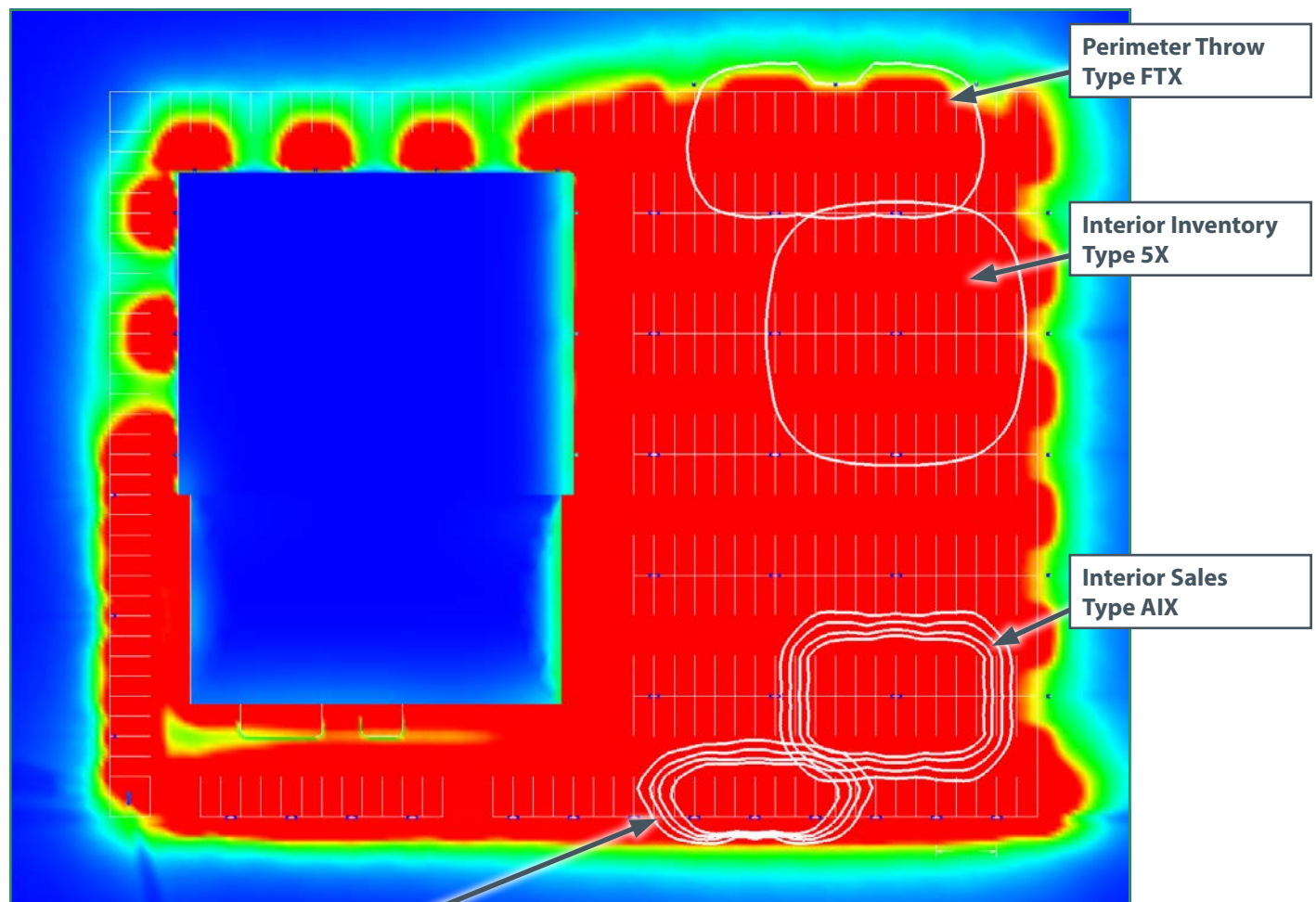
Typical Auto Dealership

LSI Industries has delivered optic systems specifically developed for the Automotive market for nearly 40 years. LSI's innovative FTAX and AIX Zonal Optic Platforms are uniquely designed to maximize automotive front row and interior sales row illumination on a dealership site.

LSI Zonal Optics vs Traditional Metal Halide

- 56% Less Energy than 1000w Metal Halide
- Virtually No Maintenance
- ROI < 3 Years

Progressive Refinement Pseudo Color Radiosity Solution illustrating the uniformity of illumination using the Sterling



Front Row - Type FTAX
High Impact Uniform Distribution





LSI Industries Inc. • 10000 Alliance Road • Cincinnati, Ohio 45242 • Phone 513.793.3200 • Fax 513.793.0147 • www.lsi-industries.com