What's New in LucidShape 2026

Accelerate Concept-to-Validation in Automotive Lighting

Introduction

LucidShape version 2026 delivers new tools and model building workflows that streamline the development of exterior and interior automotive lighting systems. The release supports higher fidelity source modeling, expanded regulatory coverage, improved visual comparison tools, and faster design iteration across concept, styling, and validation phases.

At a Glance Features

- Interoperability with VisionSym
- Light Source Apodization
- Spectral Power Distribution Export
- Regulation & Benchmark Updates
- Luminance Clipping
- Script Gallery Enhancements
- Collimator Enhancements

KEYSIGHT

Robust Optical Model Configuration for VisionSym

You can configure your optical model in LucidShape for subsequent visualization in VisionSym. VisionSym is a GPU-accelerated Monte-Carlo rendering engine designed for optical and automotive lighting engineers who require fast, photometrically accurate visualization during concept development, styling evaluation, and performance validation. VisionSym delivers high fidelity HDR renderings while maintaining direct interoperability with LucidShape's Advanced Analysis tools, enabling unified appearance and photometric workflows.

Figure 1. VisionSym rendering of combined lit and unlit appearance

Light Source Apodization

A new apodization workflow converts a measured ray file into spatial and angular LID files.

- Enables effectively unlimited ray simulation while maintaining the emitter's spatial and angular characteristics.
- Reduces noise in luminance analyses and near-field studies.
- Creates reusable source models for repeated design tasks.

Figure 2. Application example: Apodized light source as center display luminance

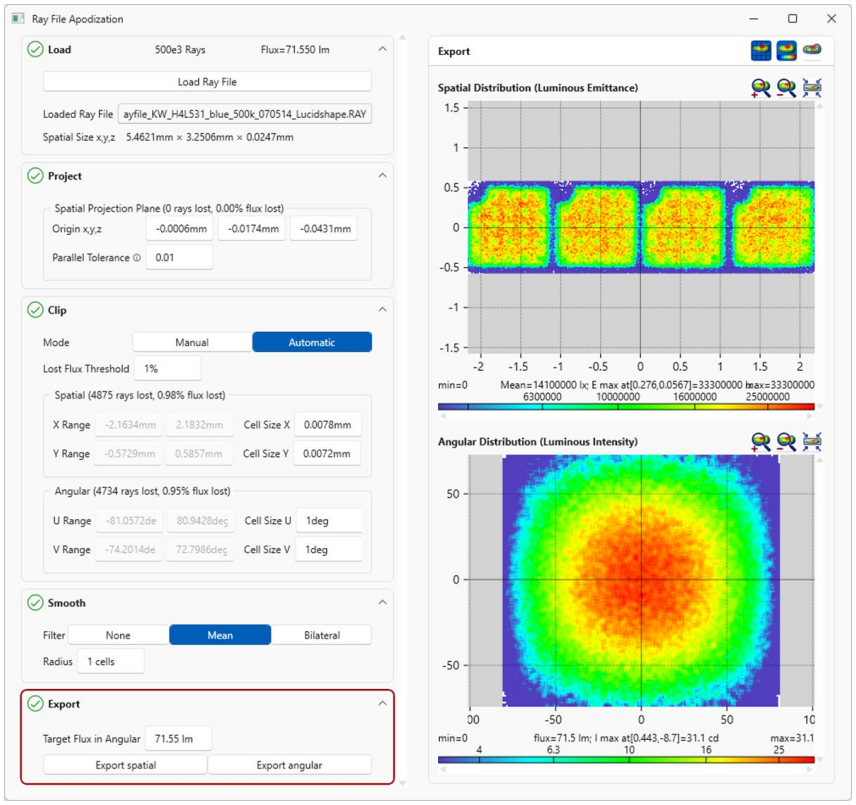

Figure 3. Apodization dialog with spatial and angle plots

Spectral Power Distribution Export

Exports the combined Spectral Power Distribution (SPD) from spectral LIDs into a reusable ASCII file.

- Ensures consistent color behavior across simulations
- Simplifies workflows involving mixed-emitter white sources
- Accelerates evaluations of color targets and CIE compliance

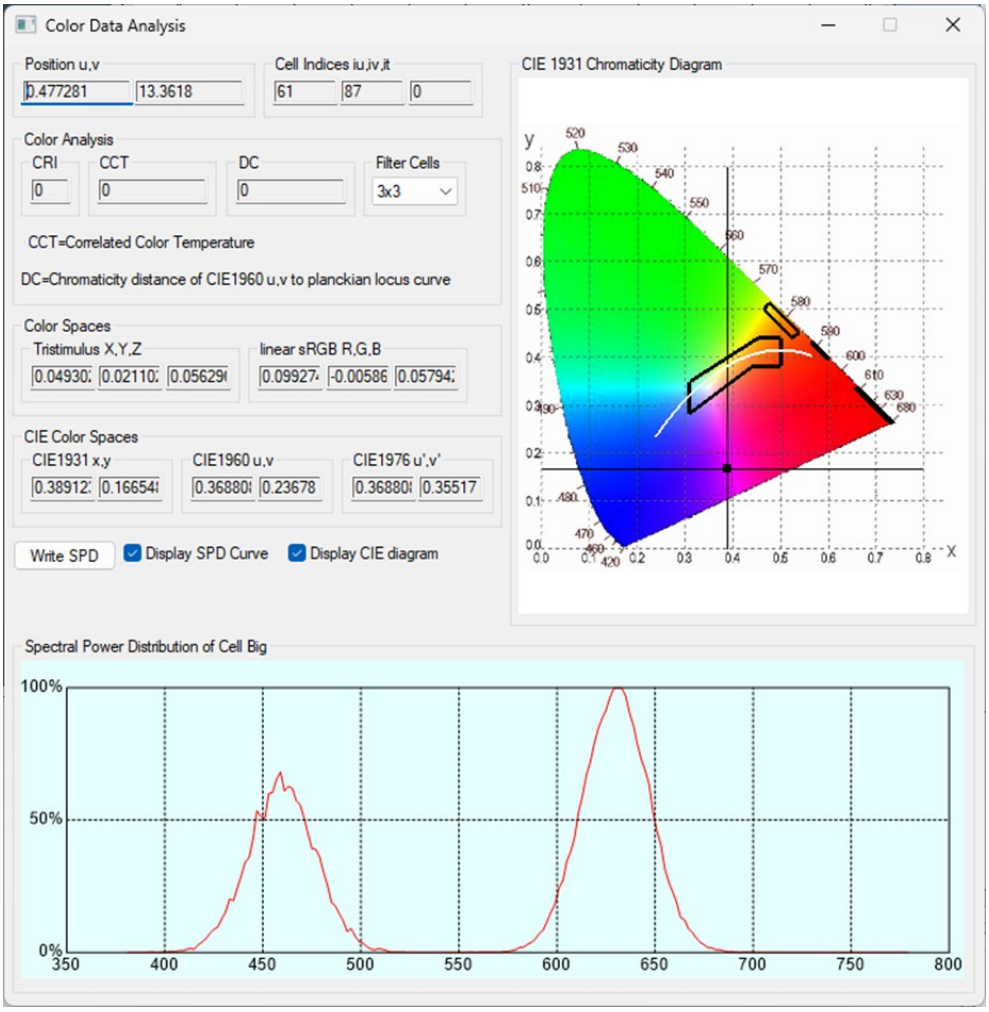

Figure 4. Color Data Analysis dialog showing “Write SPD” with adjacent SPD plot

Regulation & Benchmark Updates

LucidShape includes updated test tables and regulatory workflows for key industry standards:

- ECE R149-01 / R148-01
- China GB 4599-2024 and GB 5920-2024
- SAE J595
- IIHS Aiming Matrix (tilt/rotation tolerance)
- C-IASI and C-NCAP cutoff and ADB scenarios

Benefits of these updates include:

- Reduces manual regulatory setup
- Aligns with key global markets
- Supports earlier compliance evaluations

Luminance Clipping for HDR Comparisons in Advanced Analysis

Improves the luminance range across multiple HDR images.

- Enables true side-by-side comparisons of lamp functions
- Maintains consistent background appearance
- Useful for uniformity assessments and appearance reviews

Figure 5. Four luminance images of a tower taillamp with identical background brightness (fixed range)

Script Gallery Enhancements

New automation tools simplify repetitive tasks and data preparation. Additions include:

- RGB Histogram
- RGB Light Source Calibration (Excel)
- Save Isolines Images (batch LID export)
- Reverse Bird's-Eye View
- First Steps in LucidShell Script

Benefits:

- Moves routine operations into automated scripts
- Reduces time spent on data prep
- Helps teams standardize outputs

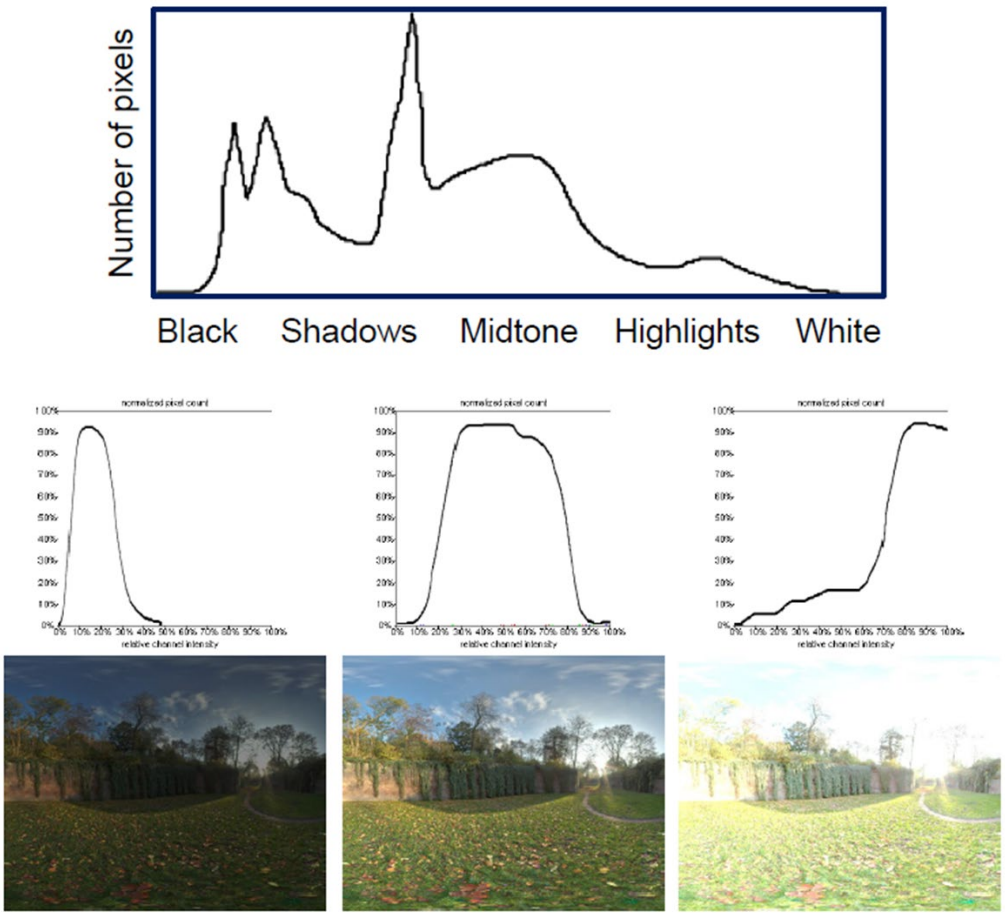

Figure 6. Script Gallery example, RGB Histogram tool

Collimator Enhancements

Collimator enhancements provide improved control for near and far field targets, per quadrant curve shaping, and front shape aware optimization.

- More robust solver behavior for DRLs, turn indicators, and edge lit optics
- Greater directional tuning control
- Better handling of multiple surface interactions

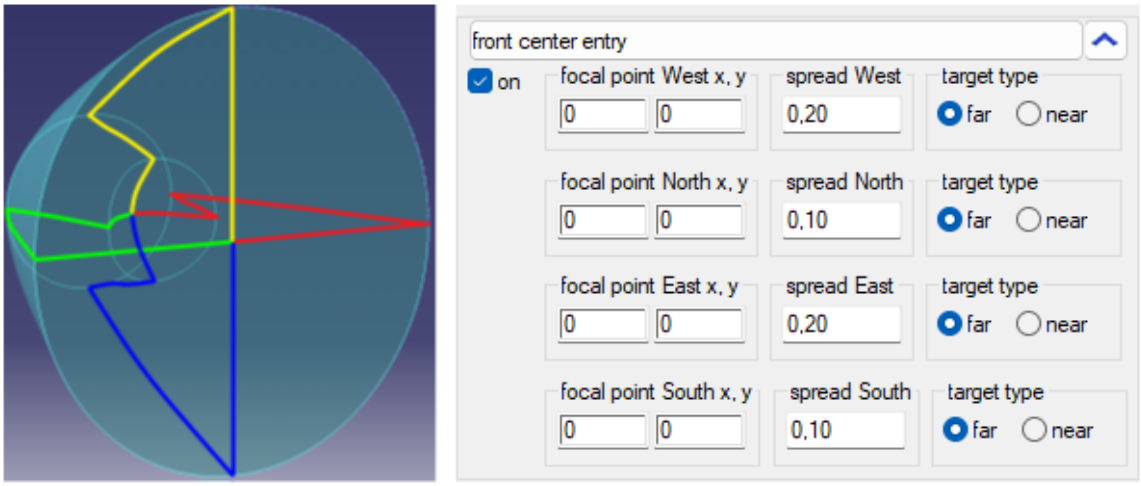

Figure 6. Four-curve collimator with per-quadrant settings

Mini Pillow Enhancements

Mini-pillow enhancements enable full facet parameter editing through Comma-Separated Value (CSV) roundtrip export/import.

- Mass edit hundreds or thousands of facets efficiently
- Apply textures or patterns programmatically
- Accelerate last meter uniformity and texture refinement

Conclusion

LucidShape reduces design cycles through more accurate source modeling, expanded regulatory automation, improved visualization tools, and faster editing workflows.

The result is fewer prototype loops, clearer visual communication, and faster convergence toward uniformity, color, and regulatory targets across headlamps, DRLs, turn indicators, taillamps, and interior accent lighting.