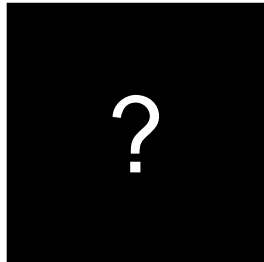


Light Shaping > Cells Arrays

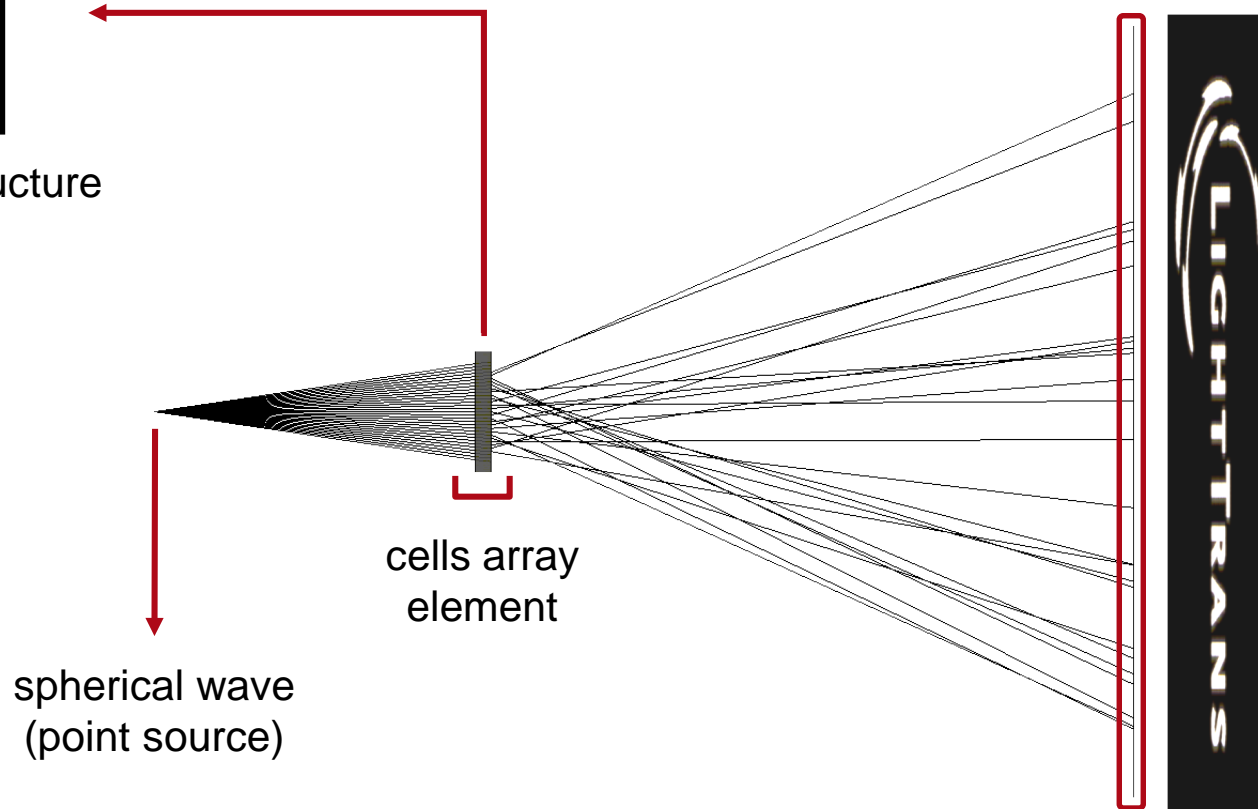
## **Shaping of White Light by Using Prism / Grating / Mirror Cells Arrays**

# Task / System Illustration



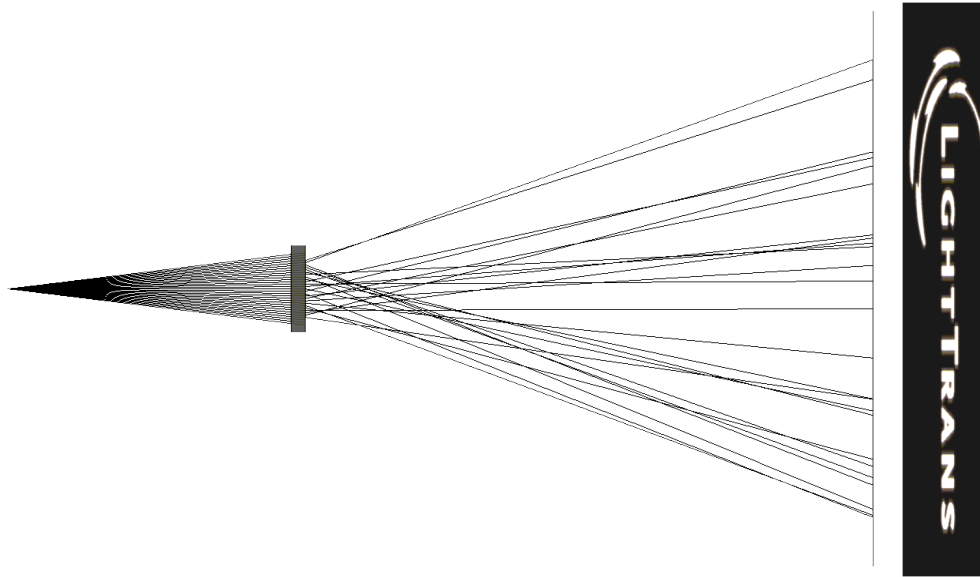
cell array structure  
built up with

- prisms
- gratings
- mirrors



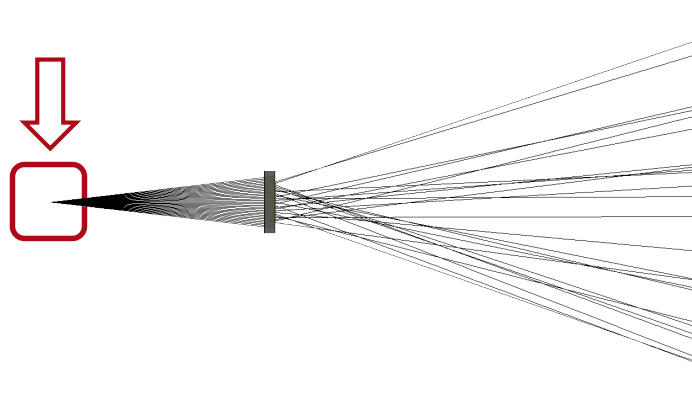
# Highlights

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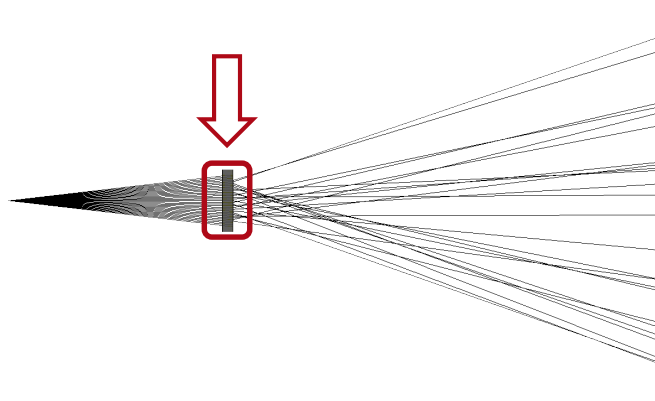
innovative user-friendly design method of light deflecting elements including partially coherence and dispersion effects

# Specification: Light Source



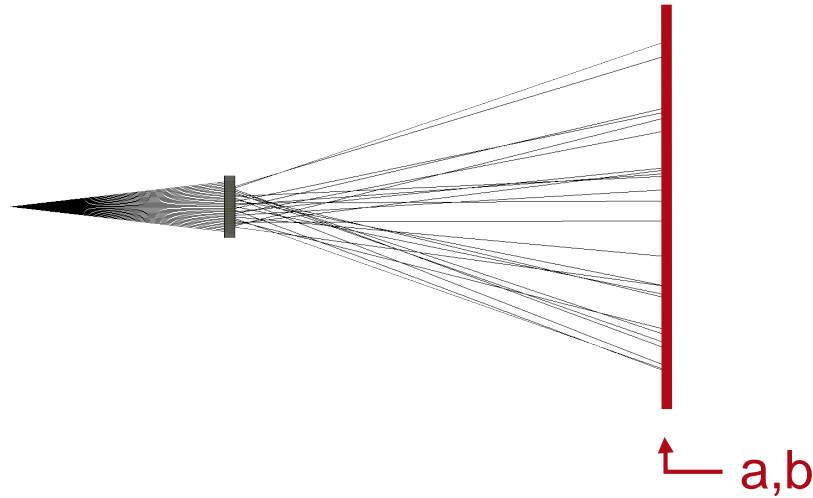
Parameter	Description / Value & Unit
type	RGB LED
emitter size	100×100μm
wavelength	473nm, 532nm, 635nm (RGB white light)
polarization	circularly polarized light
number of lateral modes	3×3
total number of lateral and spectral modes	27

# Specification: Cells Array



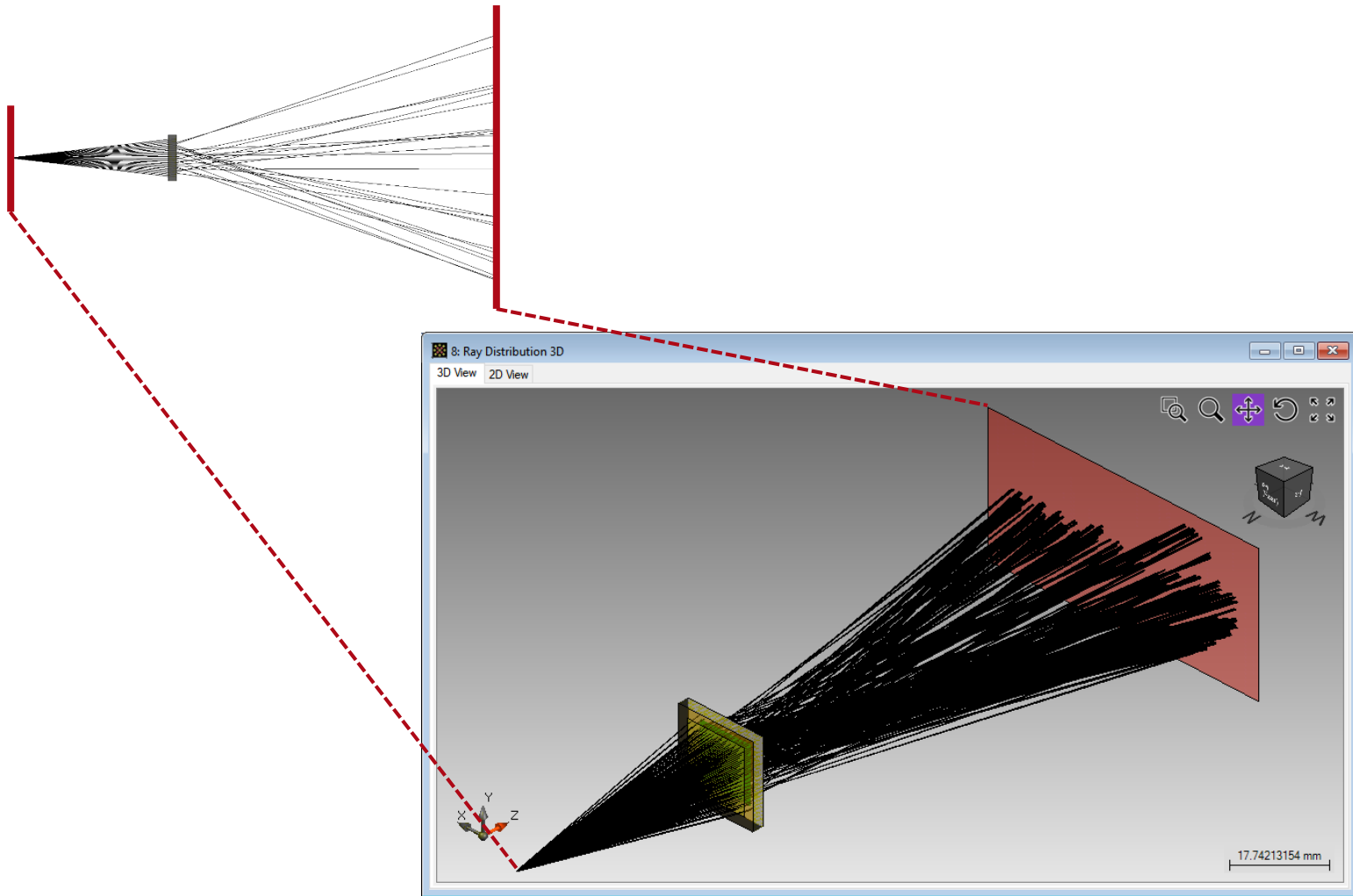
Parameter	Value & Unit
number of cells	100×100
cell size	125μm×125μm
array aperture	12.5mm×12.5mm

# Specification: Detectors

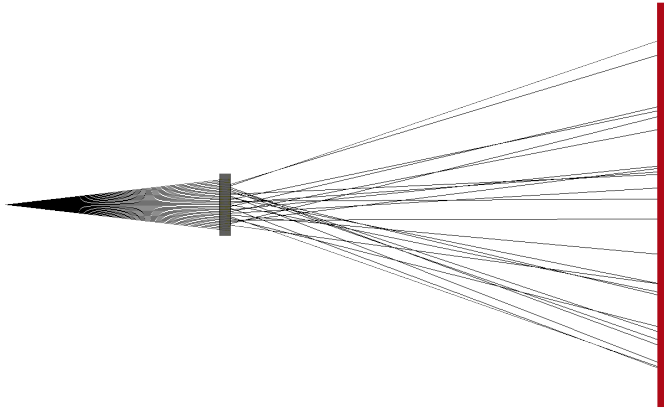


Position	Modeling Technique	Detector/Analyzer
full system	3D ray tracing	3D ray tracing system visualization
a	ray tracing	spot diagram
b	field tracing	2D intensity pattern

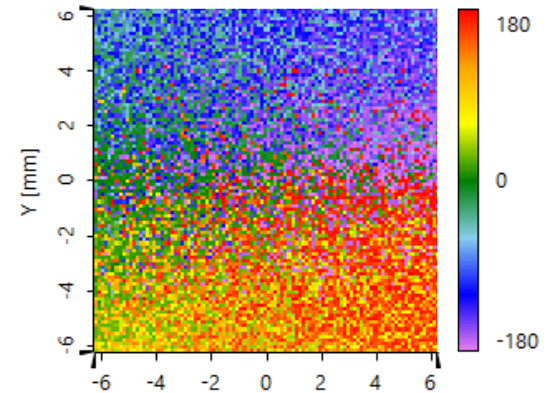
# Results: 3D System Ray Tracing



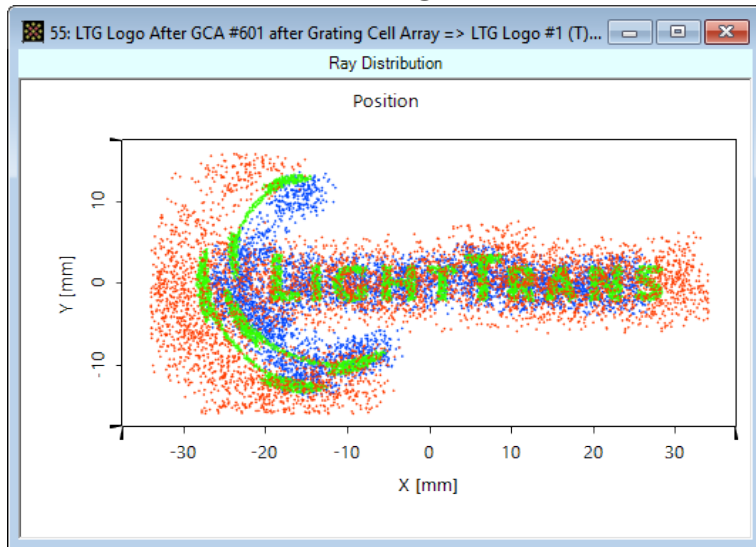
# Results: Grating Cells Array



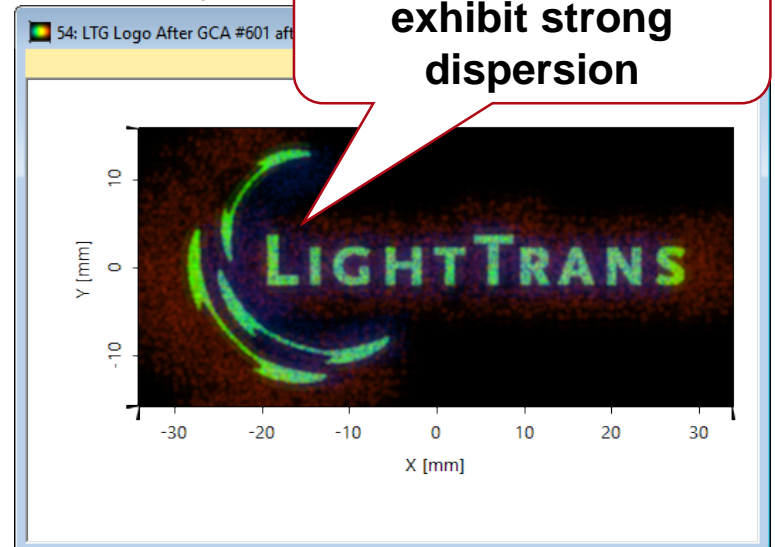
orientation of gratings in array ( $^{\circ}$ )



spot diagram

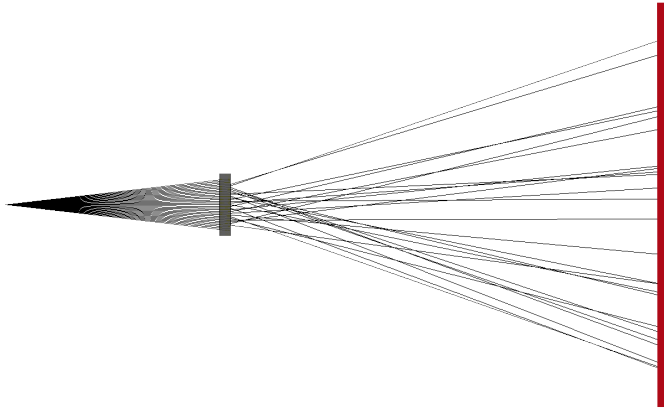


intensity pattern

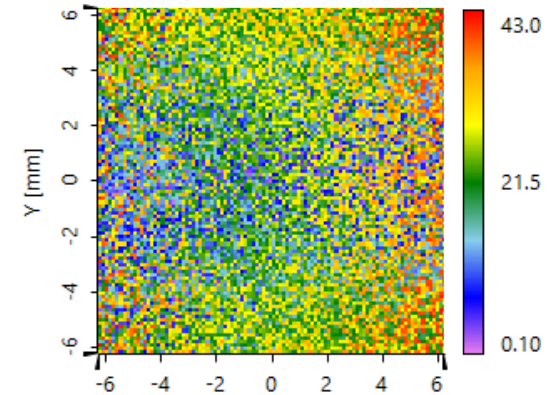




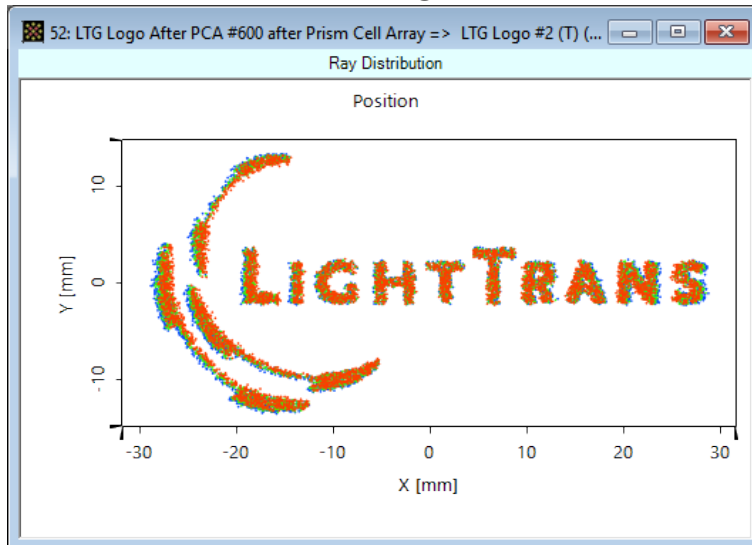
# Results: Prism Cells Array



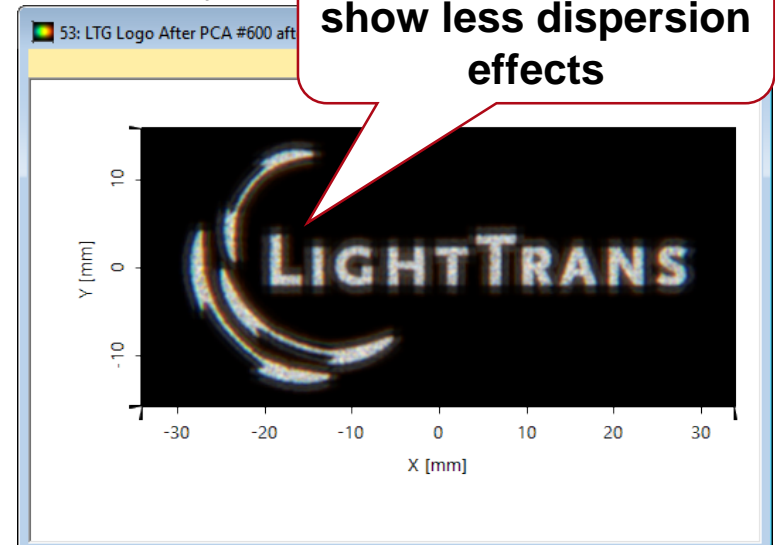
orientation of prisms in array ( $^{\circ}$ )



spot diagram

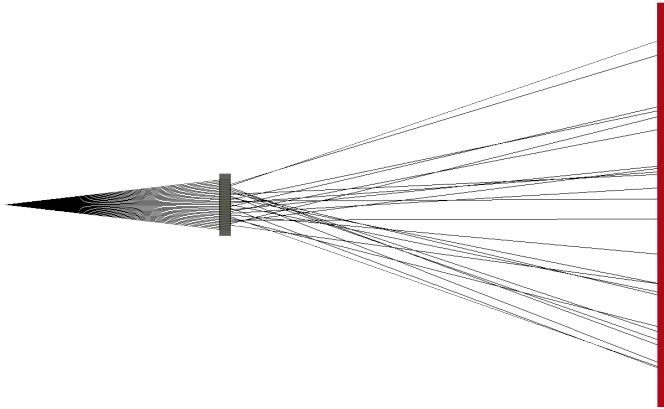


intensity pattern

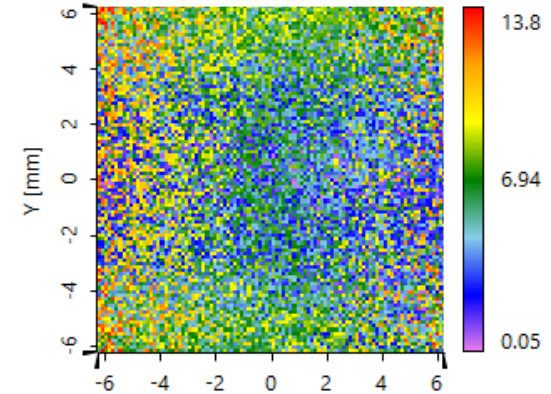


prism cells arrays show less dispersion effects

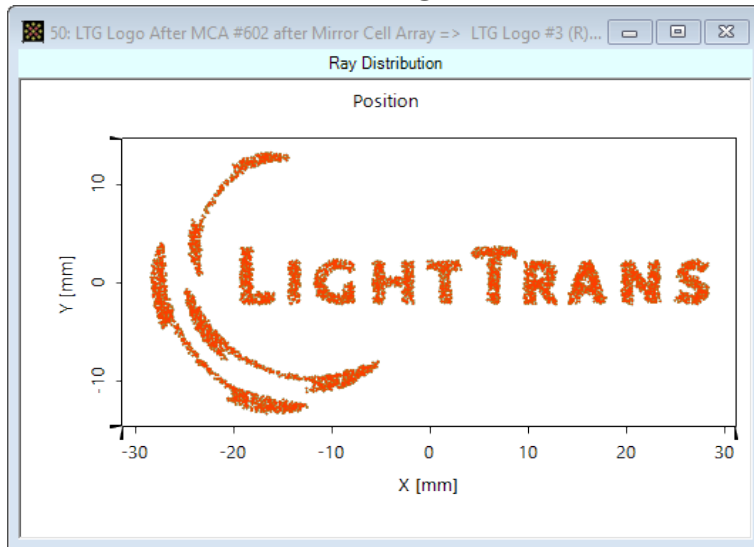
# Results: Mirror Cells Array



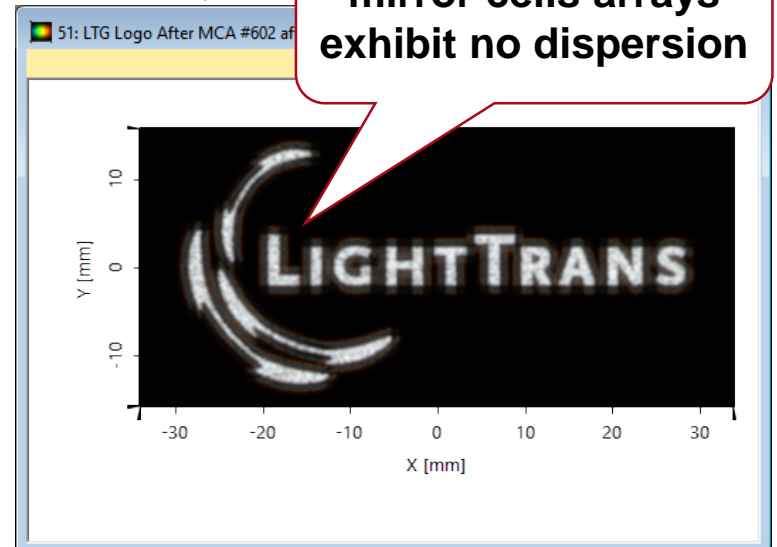
orientation of mirrors in array ( $^{\circ}$ )



spot diagram



intensity pattern



# Document & Technical Info

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code	CA.0002
version of document	1.2
title	Shaping of White Light by Using Prism / Grating / Mirror Cells Arrays
category	Cells Arrays (CA)
created by	Roberto Knoth (LightTrans)
used VL version	7.0.0.29

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## Specifications of PC Used for Simulation

Processor	i7-49010MQ (4 CPU cores)
RAM	32 GB
Operating System	Windows 10