

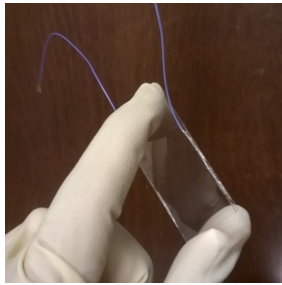
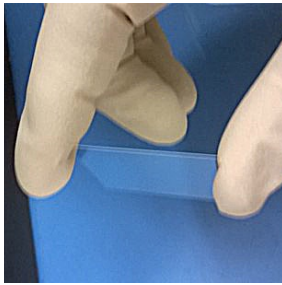




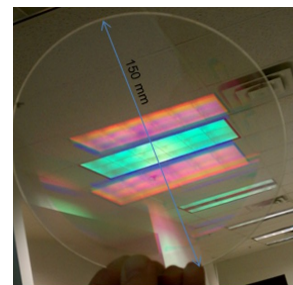
## ORDERING INFORMATION

Meadowlark can provide custom systems to meet your needs using the patented liquid crystal polarization grating (LCPG) beam steering technology. When contacting us for a quote, please provide:

- Clear Aperture (mm)
- Operating Wavelength (nm)
- 1D or 2D Steering
- Number of Angles
- Maximum Steering Angle (°)
- Response Time/Switching Speed (ms)
- Housing/Mechanical Interface Requirements
- Description of Application & Additional Details



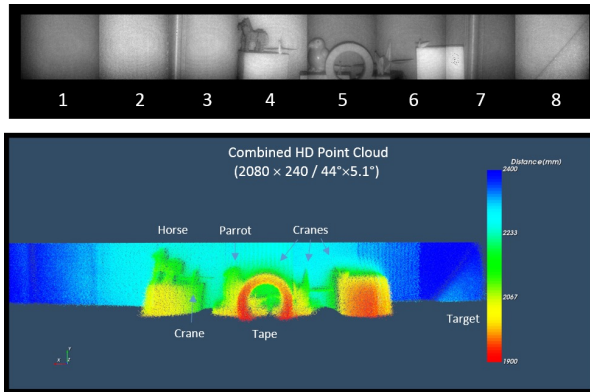
LCPG (left) and LC halfwave switch (right) on 200  $\mu\text{m}$  glass.



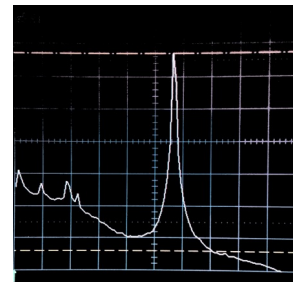
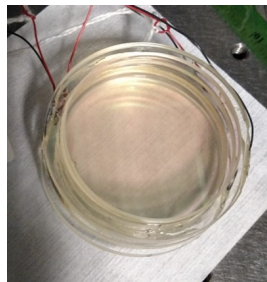
A 2-mm LCPG-based variable optical attenuator (left) and a 15-cm diameter LCPG (right).

## Non-Mechanical Steering for a Range of Aperture Sizes

Meadowlark can build LCPGs and LC switches using thin 200  $\mu\text{m}$  glass and with apertures ranging from 2 mm to 200 mm. Thin glass enables discrete steering to  $>1,000$  revolvable angles with transmissive assemblies  $< 1$  cm thick. Meanwhile the ability to steer large beams over large angles makes this approach unique among non-mechanical steering technologies for replacing large gimbals or steering large collection apertures in optical receiver paths.



LCPG steering used to stitch 8 fields of view in flash lidar.



A 5 cm aperture LCPG steering system (left) used to steer coherent Doppler lidar. System had 1 dB insertion loss, 29 dB CNR on target (right) and no measurable contribution from side-lobes or leakage.

## LCPG Steering for Lidar

LCPG technology excels at non-mechanical beam steering for many narrowband sensors including lidar. To date, we have demonstrated LCPG beam steering for both coherent and direct detection lidars and both monostatic and bistatic architectures. Due to the ability to steer light in discrete steps over large angles, LCPG beam steering is particularly well suited to steering flash lidar systems and coherent doppler lidar wind sensing systems.