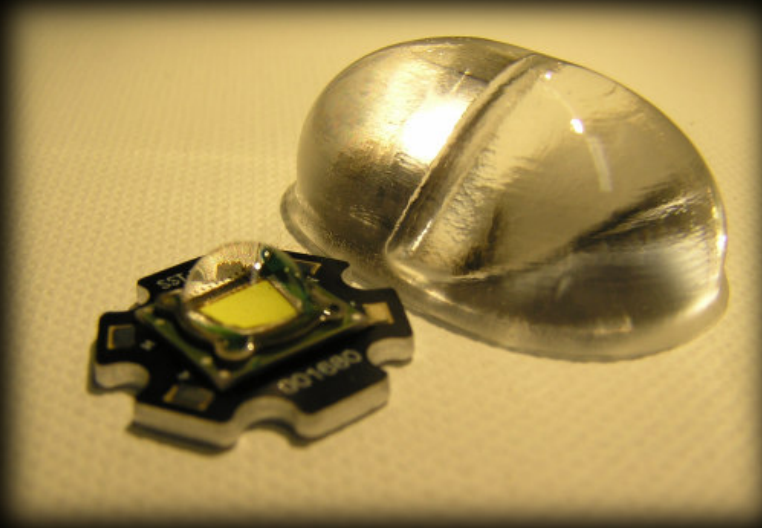


# Upstream's FreeForm Optics

- Application specific optimal light distribution
  - significant energy saving
- Easy to use, modular: single lens makes the beam
- Flexible: almost any beam shape with simple component
- Fast to realize: custom design and prototypes in a week



# FreeForm lens example $55^{\circ} \times 155^{\circ}$



A photograph showing the light distribution made by  
one FreeForm lens

# FreeForm Optics for Street Lighting



Light distribution with conventional streetlamp lens

FreeForm lens delivers up to 70 % more light to the street area and enables greater distances between lamps

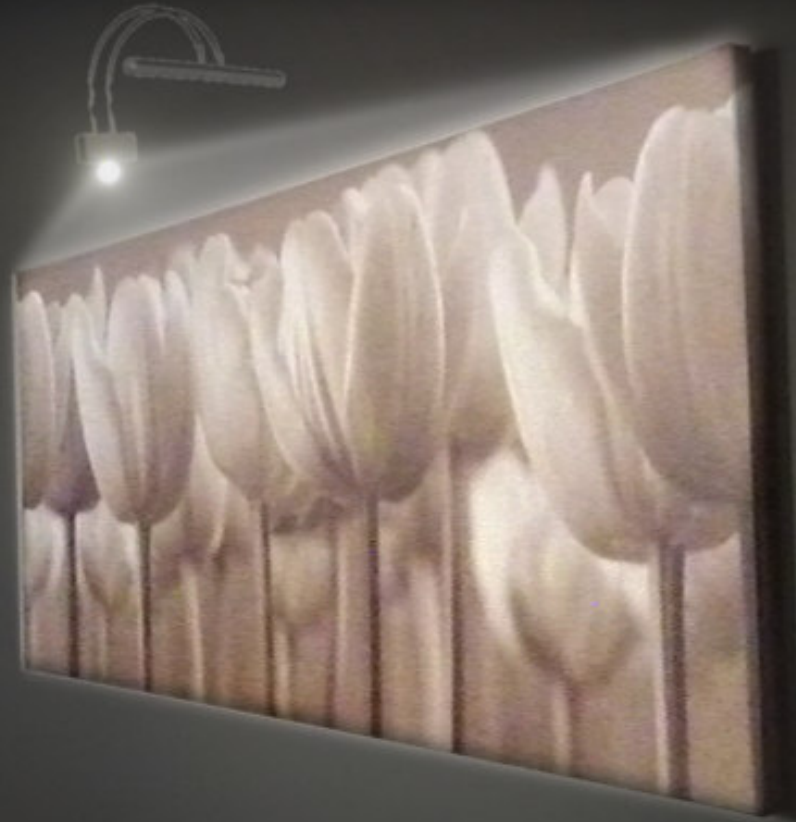
# FreeForm Optics for Commercial Lighting

- Uniform lighting with smaller amount of LEDs
- Backlighting for advertising panels
- Billboard lighting



Conventional vs. FreeForm

# FreeForm Optics for Interior Decoration



Emphasis of the shape and color of an object