

V O L V O

# THE NEW PLASTIC OPTICS: LOWERING COSTS AND EXPANDING APPLICATIONS

## AUTOMOTIVE LIGHTING INSIGHTS

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2020.07.06

# What are the usage ?

Headlamp

Rearlamp

Interior lighting

❖ A long success story with Car Manufacturers & Tier 1's



Extract from Arkema presentation

# What are the stakes ?

Outside :

- UV resistance
- Scratch resistance
- Aesthetic
- Mechanical resistance

Internal component :

- Optical efficiency
- Thermal properties

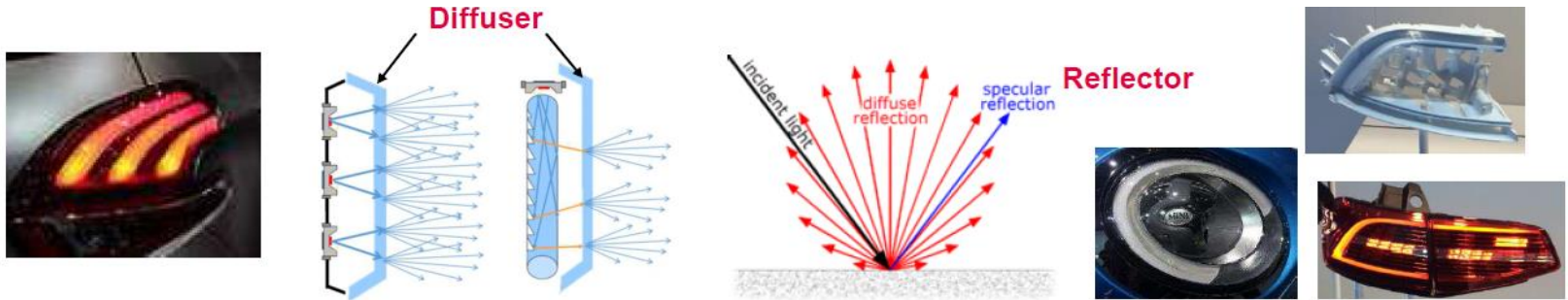


*XC90 Thor's Hammer*

# Optical properties

Diffuser or Reflector technology :

- Transmittance
- Reflectivity
- Diffusive material with high optical efficiency
- No color shift when long plastic part (> 500mm)

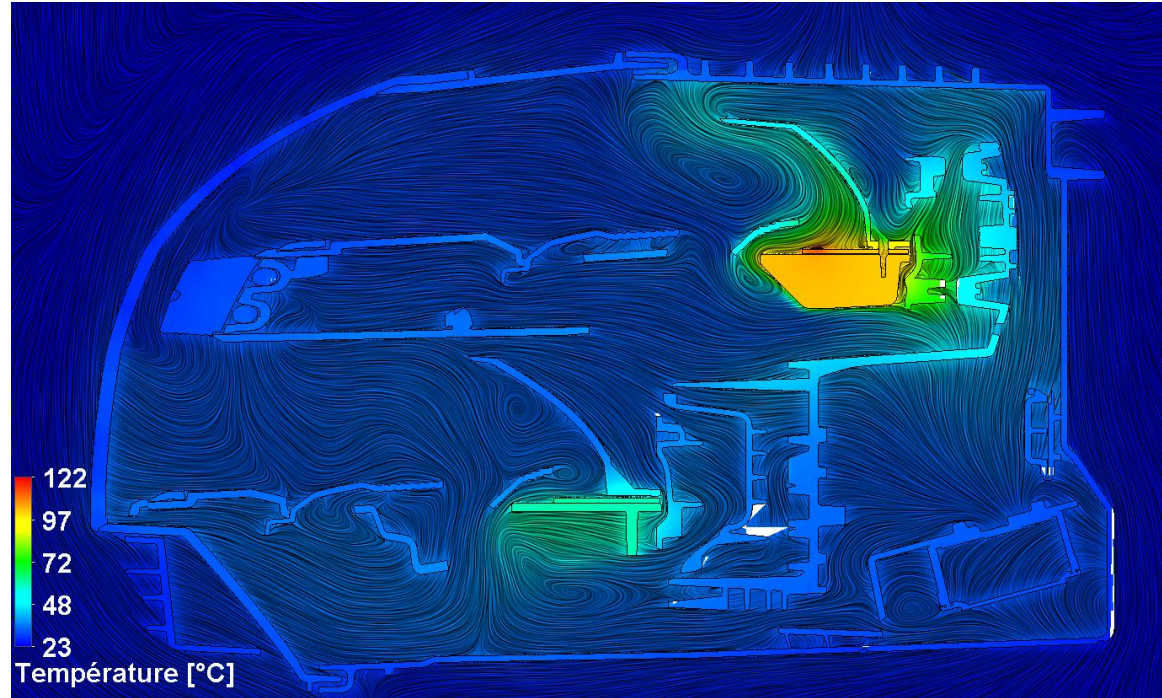


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# Thermal properties

120 – 160 °C

No color shift



*Example of thermal simulation with LED ON, XC60 Volvo Headlamp*

# What are our needs ?



*Exploded view of XC60 Volvo Thor's Hammer*

More sustainable material

Less coating (UV coating, metallization)

Better transmittance, reflectivity, Homogeneity

Weight reduction