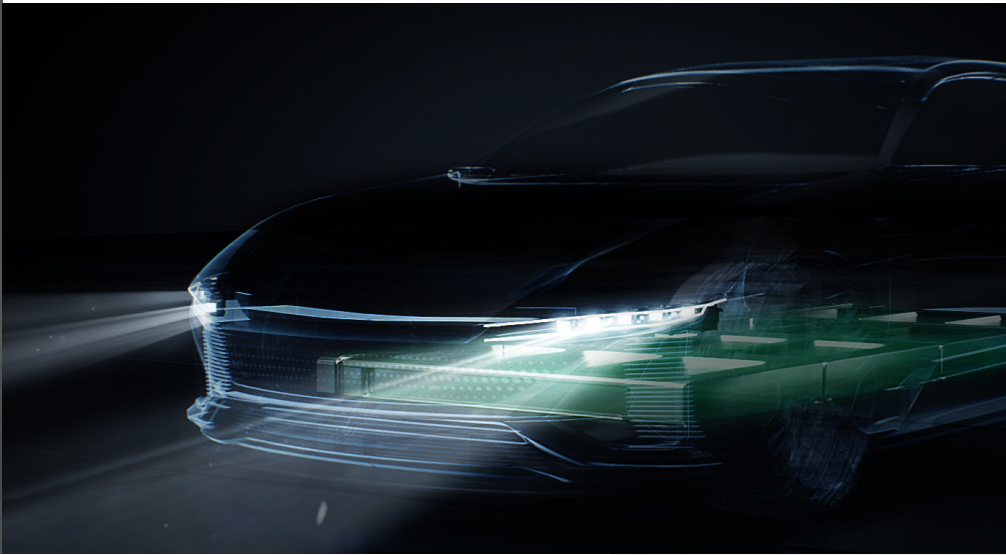


Automotive LED  
C-series Gen3

Industry-leading efficacy to  
optimize headlamp performance



Future  
Mobility Trend

As the electric vehicle market continues to expand, maximizing battery performance has become critical. In meeting the growing need to reduce battery consumption and improve overall vehicle efficiency, demand for lighter and more efficient components has increased substantially. The energy-conserving LEDs stand out as the perfectly suited lamp solutions for EV markets.







Feature

- Industry-leading luminous efficacy
- Superior color consistency with improved color over angle (CoA)
- Ceramic-based package with excellent thermal management

Benefit

- Lessen headlamp power consumption by more than 10%
- Reduction of heat dissipation structure size by more than 20%
- Increasing headlamp design flexibility with slimmer or smaller lamp

Products Lineup

	Color	Power (W)	Number of Chips	Dimension (L x W x H mm)	LES Size (mm)	Typ. Flux (lm)	Efficacy (lm/W)	Typ. Vf (V)	Typ. Rth_el (K/W)
	White	1	1	1.2 x 1.6 x 0.77	0.74 x 0.74	138	138	3.0	3.3
	White	3	1	1.5 x 1.9 x 0.77	1.03 x 1.03	410	137	3.0	2.5
	White	6	2	2.7 x 3.1 x 0.77	2.14 x 1.03	808	135	6.0	1.5
	White	9	3	3.8 x 3.1 x 0.77	3.25 x 1.03	1212	135	9.0	1.0
	White	12	4	4.9 x 3.1 x 0.77	4.36 x 1.03	1615	135	12.0	0.8
	Amber	3	1	1.5 x 1.9 x 0.77	1.03 x 1.03	250	83	3.0	3.0

\* 1W: 350mA, 25°C, White (0.32, 0.33)  
3-12W: 1.0A, 25°C, White (0.32, 0.33), Amber (0.57, 0.42)

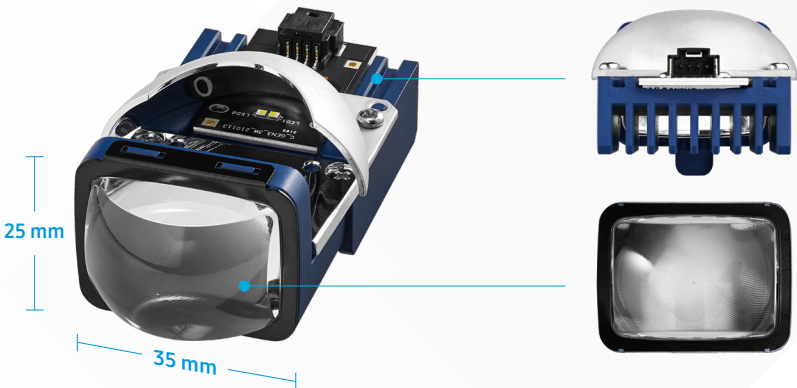
# Compact and Efficient Headlamps

Reduce the size of the heat dissipation structure leading to lighter and more energy-saving lamps



## Application Demonstration

With industry-leading light efficacy and unmatched thermal management, lamps using the Samsung C-series Gen3 lower the drive current by more than 10%. This simplifies the heat dissipation structure by over 20%, resulting in more energy-efficient and lighter lamps.



### More compact and lighter headlamp with high-efficient LEDs

C-series Gen3

Ref.



		C-series Gen3 *410 lm	Ref. *370 lm	Remark
Heatsink	Area (mm <sup>2</sup> )	20,337	26,249	-23%
	Weight (g)	75	95	-21%
	Fin (ea)	9	13	-30%

# Compact and Efficient Headlamps

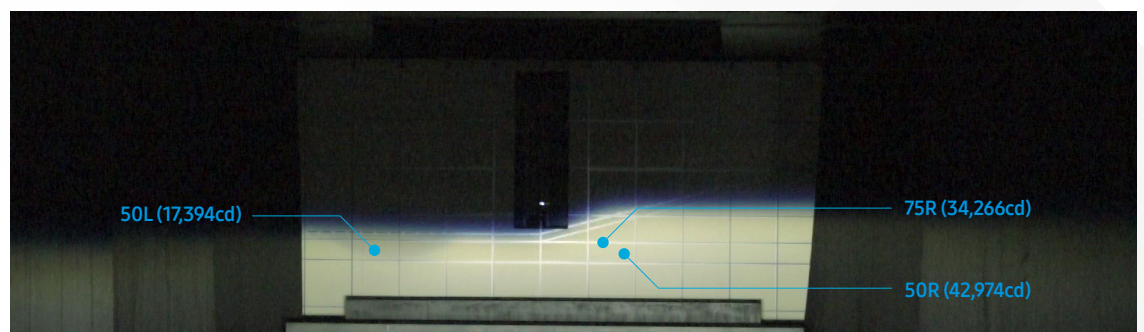
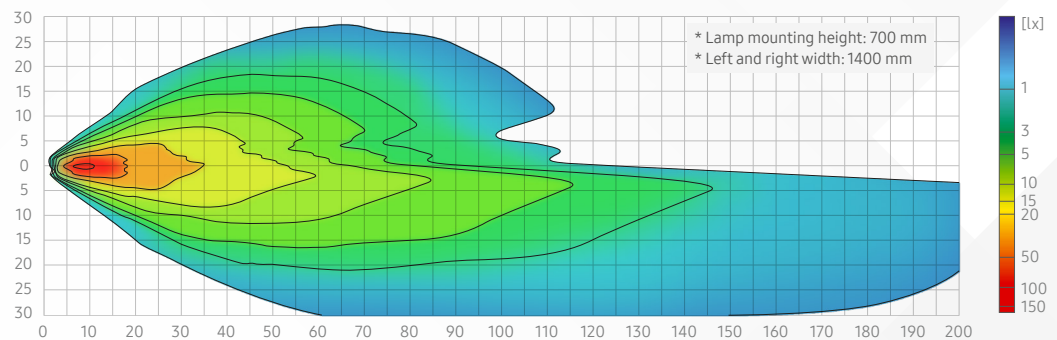
Superior light distribution  
with compact optic design



## Light Distribution Demonstration

25 mm height of the compact optic realizes superior light distribution with its highly efficient LEDs. The actual light distribution measurement shows that a headlamp with C-series Gen3 performed well, more than satisfying the UNECE Reg. 112 for low beams with about 120% margin at the most point. Road performance proves excellent far-field illumination and wide coverage, that is also suitable for premium class vehicles.

- Luminous Flux: 1950 lm
  - Electrical Power: 15.6W
  - Flux on the Road: 797 lm
  - Optical Efficiency: 41%
  - Maximum Intensity: 36,888 cd
- \* H [45,-45], V [10,-20] deg



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