

Street & Tunnel Lighting Solutions

SAMSUNG

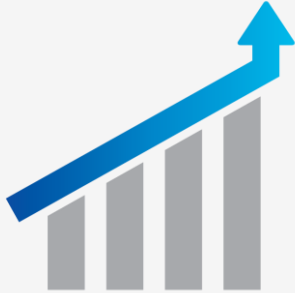
Robust Performance for Outdoor Environment



Outdoor Lighting Solutions

Samsung LED line-up is created with the key considerations in mind

Performance Improvement



Continuous performance improvement for cost saving

Long Life Time



Long lumen maintenance of LM80 L90 100K+ hours

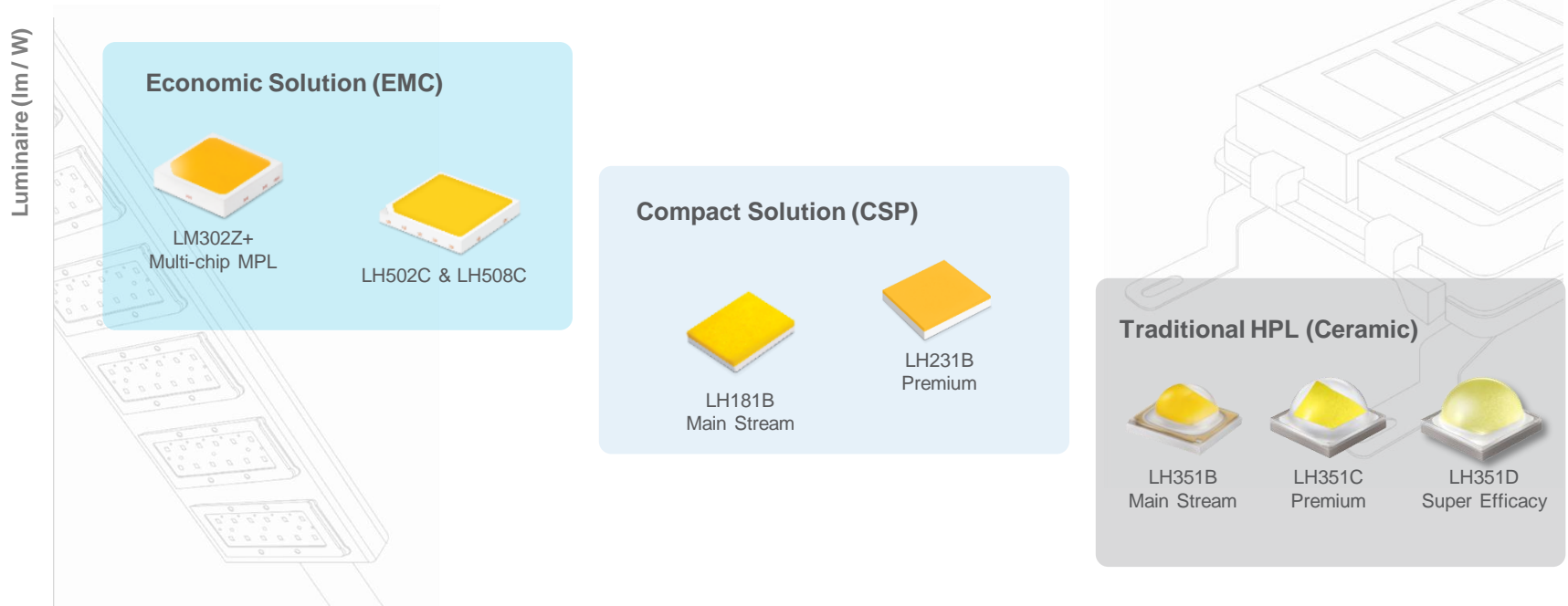
Enhanced Quality



Industry proven reliability under harsh outdoor environment

Outdoor Lighting Solutions

Samsung LED provides a wide range of outdoor lighting solutions



Cost Competitiveness

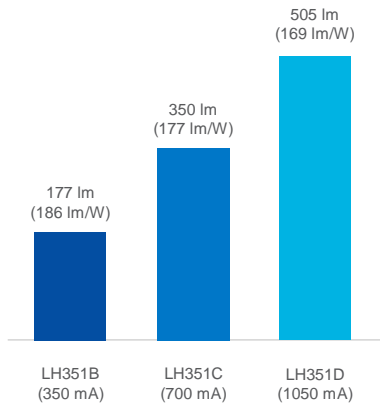
Reliability

Ceramic 3535 LED



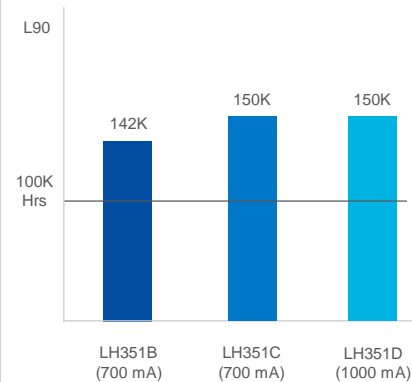
Ceramic 3535 LED is the best LED solutions for outdoor applications

Industry-leading Performance



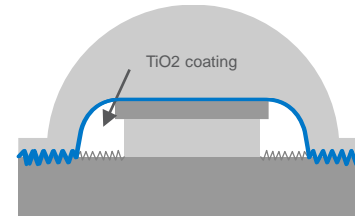
@ 4000K, CRI70+, 85°C

Long Lifetime



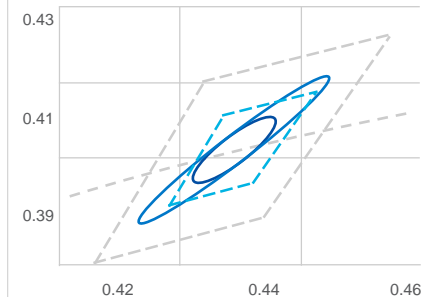
L90 > 100K Hrs

Superior Sulfur Resistance



TiO₂ coating on silver plating

High Color Consistency



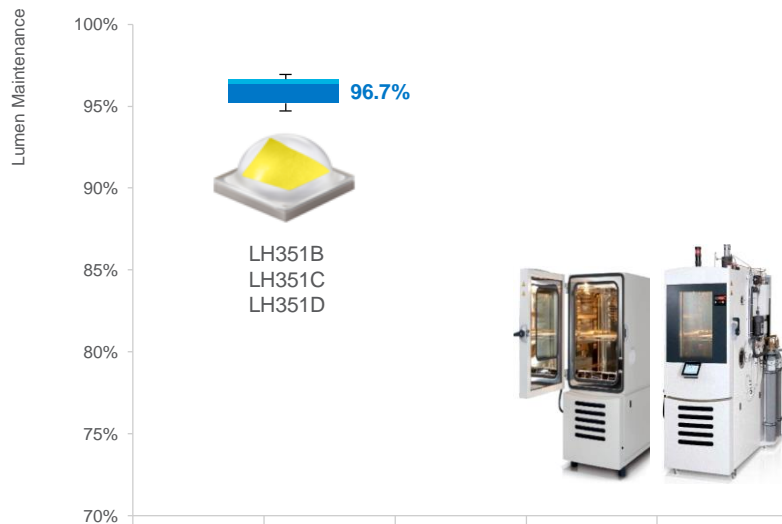
Supporting various color bins
(Quarter, MacAdam 3 & 5 step)

Ceramic 3535 LED

Samsung Ceramic 3535 LED has superior H₂S and NH₃ resistance

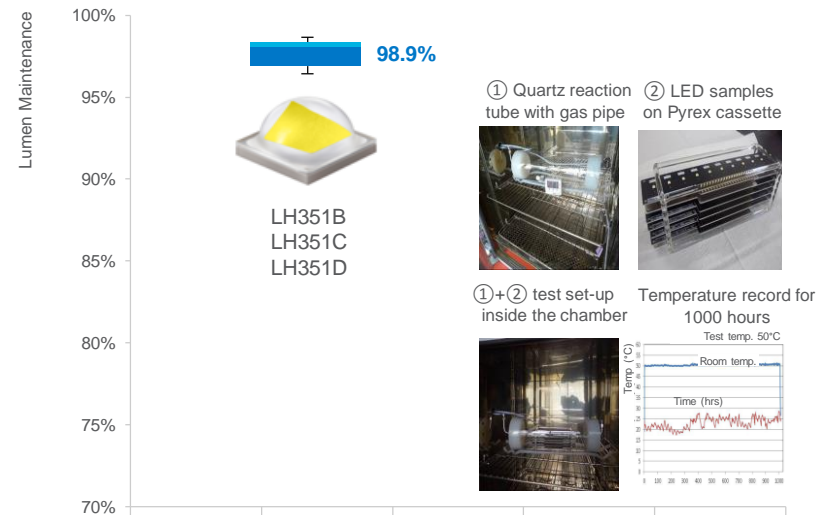
H₂S Resistance

I_{max}*80% Operation @ H₂S 15 ppm, 25°C, 75% RH, 504 Hours



NH₃ Resistance

Storage @ NH₃ 40 ppm, 50°C, 1,000 Hours



Ceramic 3535 LED

Ceramic 3535 LED series delivers industry leading efficacy and lumen output

Specifications

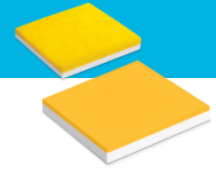
	LH351B (350 mA)	LH351C (700 mA)	LH351D (1050 mA)
Max Current	1,500 mA	2,000 mA	3,000 mA
Operating Voltage	2.70 V	2.85 V	2.75 V
Luminous Flux (Typ.)	177 lm	350 lm	505 lm
Luminous Efficacy	188 lm/W	176 lm/W	169 lm/W
Substrate	Al ₂ O ₃	ALN	ALN

@ CRI 70+, 4000K, 85°C



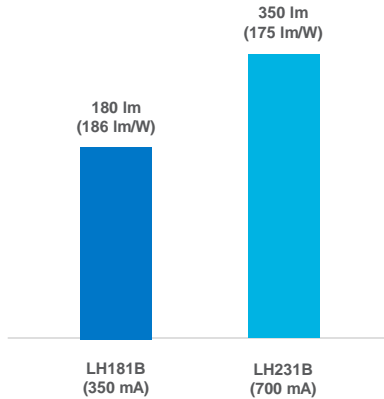
Same Footprint: 3.50 mm x 3.50 mm

CSP LED



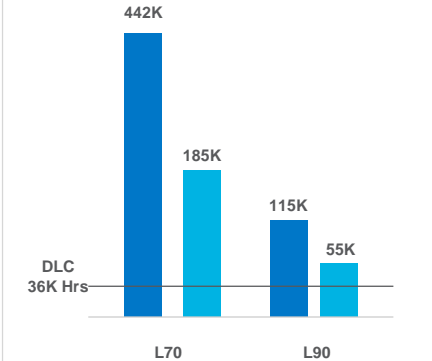
CSP offers compact lighting design solution with unrivalled performance

Industry-leading Efficacy



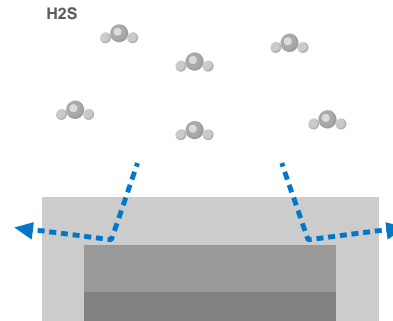
@ CRI 70+, 4000K, 85°C

Long Lifetime



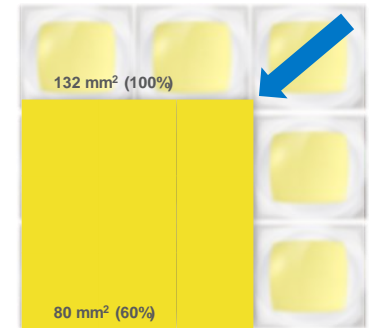
■ LH181B (700 mA) ■ LH231B (1050 mA)

Superior Sulfur Resistance



No Ag plating material

Design Flexibility



3535 vs. CSP

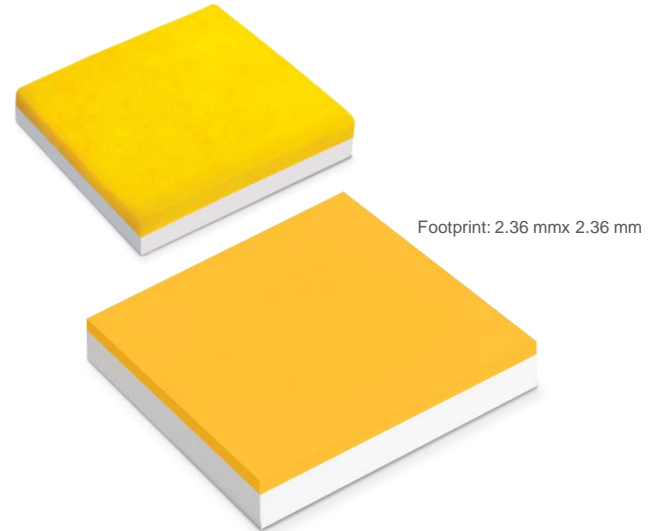
CSP LED

Samsung CSP comes with superior performance in small foot print

Specifications

	LH181B (350 mA)	LH231B (700 mA)
Max Current	1,400 mA	2,000 mA
Operating Voltage	2.75 V	2.85 V
Luminous Flux (Typ.)	180 lm	350 lm
Luminous Efficacy	186 lm/W	175 lm/W

@ CRI 70+, 4000K, 85°C

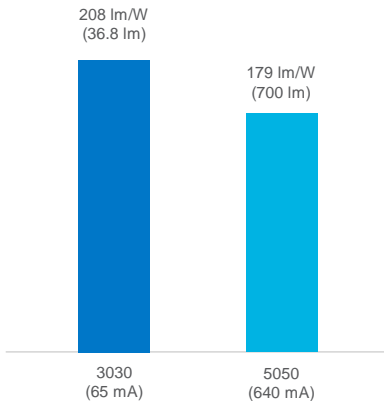


EMC LED



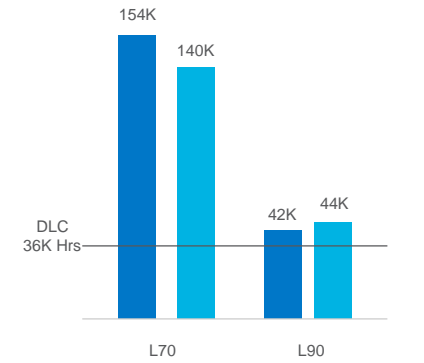
EMC LED is the best lm/\$ solution for outdoor applications

Industry-leading Efficacy



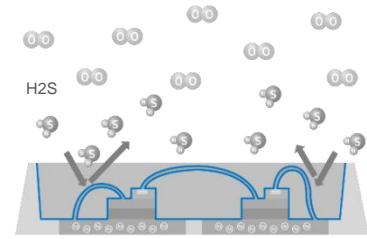
@ CRI 70+, 4000K, 25°C

Long Lifetime



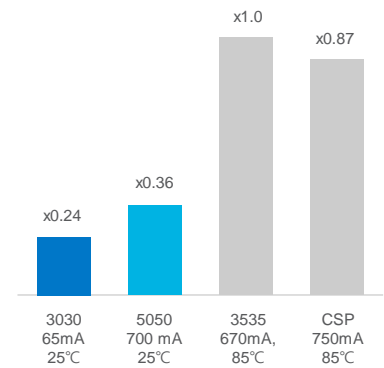
■ LM301D (200 mA) ■ LH508C (400 mA)

Superior Sulfur Resistance



■ Protection Coating

Cost Competitiveness



@ 2500 lm, 170 lm/W Module

EMC 5050 LED

EMC 5050 LED provides superior efficacy and lumen output at a low cost

Specifications

	LH502C (640 mA)	LH508C (160 mA)
Max Current	880 mA	220 mA
Operating Voltage	6.1 V	24.4 V
Luminous Flux (Typ.)	700 lm	700 lm
Luminous Efficacy	179 lm/W	179 lm/W

@ CRI 70+, 4000K, 25°C



Footprint: 5.0 mm x 5.0 mm

EMC 3030 LED

Samsung offers industry's highest efficacy 3030 LEDs

Specifications

	LM301D (65 mA)
Max Current	400 mA
Operating Voltage	2.72 V
Luminous Flux (Typ.)	36.8 lm
Luminous Efficacy	208 lm/W

@ CRI 80+, 4000K, 25°C



Footprint: 3.0 mm x 3.0 mm

Thank you