# LED Down Light SMD — 8W to 36W

## High-Efficiency Recessed Architectural & Commercial Downlights

Optimal Light LED Indoor SMD Down Lights are engineered to deliver uniform, glare-free illumination with extended operational reliability. Constructed with a pure die-cast aluminum housing, integrated heat-dissipating radiator fins, and a non-yellowing optical-grade PMMA diffuser, each luminaire utilizes branded high-efficiency Epistar LED chips with 99.99% gold-wire bonding and an isolated fire-resistant driver (UL 94-V0).



Die-cast aluminum heatsink body with spring clips & anti-glare PMMA diffuser.

## KEY FEATURES & ENGINEERING HIGHLIGHTS

- **Optical Performance:** Anti-glare optical design with high-grade PMMA Light Guide Plate (LGP) for uniform light diffusion without dark spots or yellowing over time.
- **LED Source & Encapsulation:** Branded Epistar SMD LED chips featuring 99.99% pure gold-wire welding and high-refractive-index silica gel encapsulation; zero harmful UV irradiation.
- **Thermal Management:** Pure die-cast aluminum body with integrated vertical radiator fins ensures superior heat dissipation and corrosion-free durability.
- **Isolated Fire-Resistant Driver:** Flicker-free (no stroboscopic effect) isolated driver built with 94-V0 fire-resistant materials, passing high-voltage, EMC, over-current, and over-temperature protection tests.
- **Energy Efficiency:** Saves up to 85% energy compared to conventional halogen lamps while providing standard ceiling cut-out sizes for effortless retrofit replacement.
- **Applications:** Showrooms, hospitals, schools, corporate offices, hotels, residential interiors, and general indoor illumination.

## GENERAL TECHNICAL SPECIFICATIONS

| PARAMETER | SPECIFICATION |
|---|---|
| **Power Range** | 8W / 12W / 24W (20W option) / 36W (32W option) |
| **Input Voltage & Frequency** | AC 100–277V (90–277V AC operating range), 50/60 Hz |
| **Power Factor (PF)** | > 0.90 (4″, 5″/6″, 8″ models) \| > 0.50 (3″ 8W model); Lamp displacement factor > 0.90 |

| PARAMETER | SPECIFICATION |
|---|---|
| **Color Temperature (CCT)** | 3000K (Warm White) \| 4000K (Nature / Cool White) \| 6500K (Daylight / Cold White) |
| **Color Rendering Index (CRI)** | Ra > 80 (Standard) / CRI 90 High-Color-Rendering Option |
| **Beam Angle** | 120° Wide Uniform Distribution |
| **Housing & Diffuser Material** | Die-Cast Aluminum Body & High-Transmittance PMMA Diffuser |
| **Ingress Protection & Temp.** | IP20 Indoor Rated \| Operating Temperature: −20°C to +45°C |
| **Rated Lifetime & Warranty** | 50,000 Hours (L70) \| 5-Year Manufacturer Warranty |
| **Control & Emergency Options** | Standard ON/OFF (Non-Dimmable) \| Optional: 0–10V Dimming, DALI, TRIAC, 3-Hour Emergency Kit |
| **Certifications & Compliance** | SASO, IECEE, CE, CB, EMC, RoHS, EAC, TÜV Certified |



## MODEL LINEUP & ORDERING SPECIFICATIONS

| MODEL CODE | DESCRIPTION | POWER | INPUT VOLTAGE | LUMINOUS FLUX | CCT | CUT-OUT SIZE | PF | LIFETIME |
|---|---|---|---|---|---|---|---|---|
| **OPT-S033** | LED Panel 3″ | 8W | 100–277V | 520 lm | 3000K | 75 mm | 0.5 | 50,000 hrs |
| **OPT-S034** | LED Panel 3″ | 8W | 100–277V | 520 lm | 4000K | 75 mm | 0.5 | 50,000 hrs |
| **OPT-S036** | LED Panel 3″ | 8W | 100–277V | 520 lm | 6500K | 75 mm | 0.5 | 50,000 hrs |
| **OPT-S043** | LED Panel 4″ | 12W | 100–277V | 1,080 lm | 3000K | 105 mm | 0.9 | 50,000 hrs |
| **OPT-S044** | LED Panel 4″ | 12W | 100–277V | 1,080 lm | 4000K | 105 mm | 0.9 | 50,000 hrs |
| **OPT-S046** | LED Panel 4″ | 12W | 100–277V | 1,080 lm | 6500K | 105 mm | 0.9 | 50,000 hrs |
| **OPT-S063** | LED Panel 5″/6″ | 24W | 100–277V | 2,160 lm | 3000K | 140 mm | 0.9 | 50,000 hrs |
| **OPT-S064** | LED Panel 5″/6″ | 24W | 100–277V | 2,160 lm | 4000K | 140 mm | 0.9 | 50,000 hrs |

| MODEL CODE | DESCRIPTION | POWER | INPUT VOLTAGE | LUMINOUS FLUX | CCT | CUT-OUT SIZE | PF | LIFETIME |
|---|---|---|---|---|---|---|---|---|
| **OPT-S066** | LED Panel 5″/6″ | 24W | 100–277V | 2,160 lm | 6500K | 140 mm | 0.9 | 50,000 hrs |
| **OPT-S083** | LED Panel 8″ | 36W | 100–277V | 3,240 lm | 3000K | 200 mm | 0.9 | 50,000 hrs |
| **OPT-S084** | LED Panel 8″ | 36W | 100–277V | 3,240 lm | 4000K | 200 mm | 0.9 | 50,000 hrs |
| **OPT-S086** | LED Panel 8″ | 36W | 100–277V | 3,240 lm | 6500K | 200 mm | 0.9 | 50,000 hrs |

## MECHANICAL DIMENSIONS & CEILING CUT-OUT GUIDE

| FIXTURE SIZE & WATTAGE | OUTER DIAMETER | FIXTURE HEIGHT | DIAGRAM CUT-OUT (Ø) | TABLE CUT-OUT SIZE |
|---|---|---|---|---|
| **3″ — 8W** | 90 mm | 30 mm | Ø 80 mm | 75 mm |
| **4″ — 12W** | 120 mm | 30 mm | Ø 105 mm | 105 mm |
| **5″ / 6″ — 20W / 24W** | 170 mm | 30 mm | Ø 140 mm | 140 mm |
| **8″ — 36W** | 230 mm | 30 mm | Ø 200 mm | 200 mm |

## IES PHOTOMETRIC CONE ILLUMINANCE DATA (120° BEAM ANGLE)

| MOUNTING HEIGHT H (M) | 8W (120°) | | 12W (120°) | | 18W (120°) | | 20W (120°) | | 32W (120°) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | D (M) | E (LX) | D (M) | E (LX) | D (M) | E (LX) | D (M) | E (LX) | D (M) | E (LX) |
| **1 m** | 2.73 | 81.15 | 2.74 | 110.20 | 2.94 | 179.20 | 2.79 | 200.00 | 2.76 | 440.00 |
| **2 m** | 5.47 | 20.29 | 5.49 | 27.56 | 5.88 | 44.81 | 5.58 | 49.99 | 5.48 | 110.20 |
| **3 m** | 8.20 | 9.01 | 8.24 | 12.25 | 8.83 | 19.91 | 8.38 | 22.22 | 8.33 | 45.45 |
| **4 m** | 10.94 | 5.07 | 10.98 | 6.88 | 11.77 | 11.20 | 11.17 | 12.50 | 11.07 | 25.05 |
| **5 m** | 13.67 | 3.24 | 13.73 | 4.04 | 14.71 | 7.16 | 13.96 | 7.99 | 13.86 | 17.14 |

## COLOR TEMPERATURE (CCT) ILLUMINATION COMPARISON




Visual comparison of 3000K (Warm White), 4000K (Nature White), and 6500K (Cold White / Daylight) illumination in modern interiors.

**Electrical & Customization Note:** While the product housing label is marked 220–240V AC, the internal isolated driver operates across a universal **100–277V AC (50/60 Hz)** input range. Custom project configurations are available with **3-Hour Emergency Backup**, **0–10V Dimming**, **DALI**, or **TRIAC Dimming** upon request.