

# Industry-Leading Light Sensor Solutions

Intersil's award-winning light sensor technology has caught some attention, most notably the winner of analogZONE's **Product of the Year Award** and an **EDN Innovation Award** finalist.

Digital Output

## ISL29015

Best-performing integrated light sensor + proximity sensor.



Proximity Detectors



Backlight Control

## ISL29020

Low power, high sensitivity with near-human eye response in a tiny package.



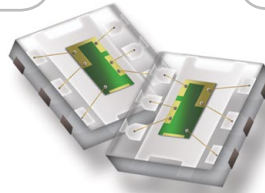
Mobile Devices



LCD-TVs



Computing



Analog Output

## ISL29009

Low power light sensor combines photodiode and current amplifier in one tiny package.



Digital Photo Frames



Mobile Devices



Medical Devices

## ISL29102

Best spectral response and most desirable feature set.



Digital Cameras



Mobile Devices



Computing

## Key Light Sensor Applications

- **Display and keyboard backlight control**
  - Maximize battery power (backlight accounts for 30%-40% total platform power)
  - Optimize viewing quality
- **Plasma, CRT, LCD, rear-projection TVs**
  - Ambient light sensing adjusts picture brightness
- **Aviation and in-cabin automotive**
  - Infotainment
  - Cluster gauge backlight control
  - Rear view mirror sensor for automatic dimming
- **Proximity sensor applications**
  - Mobile devices
  - Touch-button applications
- **Sensor applications in scientific and industrial industries**
  - Smoke detectors
  - Chemical detectors
  - Intrusion detectors
  - Industrial sensors

# Light Sensor Product Portfolio

## Light-to-Current Sensors

| Device   | Peak Spectral Sensitivity (nm) | V <sub>S</sub> (Min) (V) | V <sub>S</sub> (Max) (V) | Supply Current @ E <sub>v</sub> = 100Lux (μA) | Lux Range (Max) (Lux) | Output Current @ E <sub>v</sub> = 100Lux (μA) | Dark Current @ E <sub>v</sub> = 0Lux (nA) | Rise Time (μs) | Fall Time (μs) | Delay Time, Rising Edge (μs) | Delay Time, Falling Edge (μs) | Pb-Free? | Enable Pin? | Package Dimensions (mm) | Package   |
|----------|--------------------------------|--------------------------|--------------------------|---|-----------------------|---|---|----------------|----------------|------------------------------|-------------------------------|----------|-------------|-------------------------|-----------|
| EL7900   | 550                            | 2.7                      | 5.5                      | 62  | 8000                  | 62.5  | 0.01                                      | 105 @ 300Lux   | 170 @ 300Lux   | 165 @ 300Lux                 | 65 @ 300Lux                   | Y        | Y           | 2.1 x 2.0 x 0.70        | 5 Ld ODFN |
| ISL29000 | 550                            | 2.5                      | 5.5                      | 7.4   | 10000                 | 6.5   | 60  | 27 @ 1000Lux   | 78 @ 1000Lux   | 80 @ 1000Lux                 | 35 @ 1000Lux                  | Y        | Y           | 2.1 x 2.0 x 0.70        | 5 Ld DFN  |
| ISL29006 | 550                            | 1.8                      | 3.6                      | 3.5   | 10000                 | 1.65  | 0.22                                      | 27 @ 1000Lux   | 233 @ 1000Lux  | 209 @ 1000Lux                | 30 @ 1000Lux                  | Y        | Y           | 2.0 x 2.1 x 0.75        | 6 Ld ODFN |
| ISL29007 | 550                            | 1.8                      | 3.6                      | 3.5   | 10000                 | 1.65  | 0.22                                      | 27 @ 1000Lux   | 233 @ 1000Lux  | 209 @ 1000Lux                | 30 @ 1000Lux                  | Y        | Y           | 2.0 x 2.1 x 0.75        | 6 Ld ODFN |
| ISL29008 | 550                            | 1.8                      | 3.6                      | 3.5   | 10000                 | 1.65  | 0.22                                      | 27 @ 1000Lux   | 233 @ 1000Lux  | 209 @ 1000Lux                | 30 @ 1000Lux                  | Y        | N           | 2.0 x 2.1 x 0.75        | 6 Ld ODFN |
| ISL29009 | 550                            | 1.8                      | 3.6                      | 3   | 10000                 | 1.8   | 2   | 20 @ 1000Lux   | 1290 @ 1000Lux | 280 @ 1000Lux                | 5 @ 1000Lux                   | Y        | Y           | 2.0 x 2.1 x 0.75        | 6 Ld ODFN |

## Light-to-Digital Sensors

| Device    | Peak Sensitivity (nm) | V <sub>S</sub> (Min) (V) | V <sub>S</sub> (Max) (V) | Supply Current (μA) | Resolution (Bits) | Lux Range (Max) (Lux) | Counts per Lux (Max) (Counts) | Dark ADC Code @ E <sub>v</sub> = 0Lux (Max) (Count) | Range (or Gain) Selection? | Output Interface | Address Selection Pins? | Enable Pin?      | Package Dimensions (mm) | Package   |
|-----------|-----------------------|--------------------------|--------------------------|---------------------|-------------------|-----------------------|-------------------------------|---|----------------------------|------------------|-------------------------|------------------|-------------------------|-----------|
| ISL29001  | 550                   | 2.25                     | 3.63                     | 280                 | 15                | 10000                 | 15                            | 1   | N                          | I <sup>2</sup> C | N                       | Y                | 2.0 x 2.1 x 0.70        | 6 Ld DFN  |
| ISL29002  | 550                   | 2.25                     | 3.63                     | 300                 | 15                | 100000                | 1.65                          | 1   | N                          | I <sup>2</sup> C | Y                       | N                | 3.0 x 3.0 x 0.70        | 8 Ld DFN  |
| ISL29003  | 550                   | 2.25                     | 3.63                     | 290                 | 16                | 64000                 | 65                            | 1   | Y                          | I <sup>2</sup> C | N                       | Software Enabled | 2.0 x 2.1 x 0.70        | 6 Ld ODFN |
| ISL29004  | 550                   | 2.25                     | 3.63                     | 300                 | 16                | 64000                 | 65                            | 1   | Y                          | I <sup>2</sup> C | Y                       | Software Enabled | 3.0 x 3.0 x 0.70        | 8 Ld ODFN |
| ISL29010  | 540                   | 2.5                      | 3.3                      | 250                 | 15                | 128000                | 20                            | 0   | Y                          | I <sup>2</sup> C | Y                       | Software Enabled | 2.1 x 2.0 x 0.75        | 6 Ld ODFN |
| ISL29013  | 550                   | 2.5                      | 3.3                      | 250                 | 15                | 128000                | 20                            | 0   | Y                          | I <sup>2</sup> C | N                       | Software Enabled | 2.1 x 2.0 x 0.75        | 6 Ld ODFN |
| ISL29020* | 540                   | 2.5                      | 3.3                      | 55                  | 16                | 64000                 | 65                            | 5   | Y                          | I <sup>2</sup> C | Y                       | N                | 2.0 x 2.1 x 0.70        | 6 Ld ODFN |

\* Coming Soon

## Proximity Sensor

| Device    | Peak Sensitivity (nm) | V <sub>S</sub> (Min) (V) | V <sub>S</sub> (Max) (V) | Supply Current (μA) | Resolution (Bits) | Lux Range (Max) (Lux) | Counts per Lux (Max) (Counts) | Dark ADC Code @ E <sub>v</sub> = 0Lux (Max) (Count) | Range (or Gain) Selection? | Output Interface | Address Selection Pins? | Enable Pin? | Package Dimensions (mm) | Package   |
|-----------|-----------------------|--------------------------|--------------------------|---------------------|-------------------|-----------------------|-------------------------------|---|----------------------------|------------------|-------------------------|-------------|-------------------------|-----------|
| ISL29015* | 540                   | 2.5                      | 3.3                      | 55                  | 16                | 64000                 | 65                            | 5   | Y                          | I <sup>2</sup> C | N                       | N           | 2.0 x 2.1 x 0.70        | 6 Ld ODFN |

\* Coming Soon

## Light-to-Voltage Sensors

| Device   | Peak Spectral Sensitivity (nm) | V <sub>S</sub> (Min) (V) | V <sub>S</sub> (Max) (V) | Supply Current @ E <sub>v</sub> = 100Lux (μA) | Lux Range (Max) (Lux) | Output Voltage @ E <sub>v</sub> = 100Lux (V) | Dark Voltage @ E <sub>v</sub> = 0Lux (mV) | Rise Time (μs) | Fall Time (μs) | Delay Time, Rising Edge (μs) | Delay Time, Falling Edge (μs) | Pb-Free? | Enable Pin? | Package Dimensions (mm) | Package   |
|----------|--------------------------------|--------------------------|--------------------------|---|-----------------------|--|---|----------------|----------------|------------------------------|-------------------------------|----------|-------------|-------------------------|-----------|
| ISL29101 | 550                            | 1.8                      | 3.6                      | 23  | 10000                 | 1.65   | 1   | 27             | 233            | 209                          | 18                            | Y        | N           | 2.0 x 2.1 x 0.70        | 6 Ld ODFN |
| ISL29102 | 550                            | 1.8                      | 3.6                      | 10  | 10000                 | 0.58   | 20  | 68             | 970            | 145                          | 22                            | Y        | N           | 2.0 x 2.1 x 0.70        | 6 Ld ODFN |

For the most current specifications, please refer to the datasheets at [www.intersil.com](http://www.intersil.com)



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