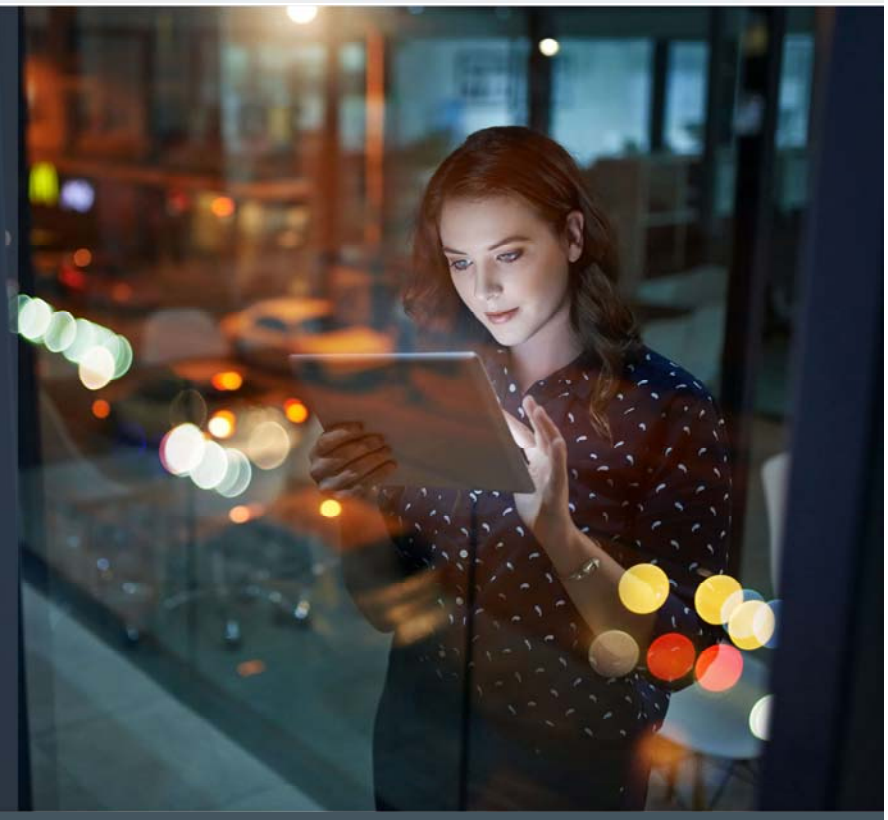
PRODUCTS / **LIGHT SENSORS**

Light Sensor



ams provides the industry's broadest portfolio of high-performance and high-sensitivity digital discrete and integrated module optical sensors. The portfolio includes ambient **light sensors**, proximity sensors, RGB and XYZ color sensors, gesture sensors, Light-to-Frequency (LTF) sensors, Light-to-Voltage (LTV) sensors and Linear Arrays.

ams OSRAM Sensing is Life

Visit our dedicated website

Our vision is to create the uncontested leader in optical solutions through bold investments in disruptive innovation and
continuous transformation delivering best-in-class profitability and growth.

Ambient Light Sensors

The Ambient Light Sensor (ALS) products from ams provide measurements of ambient light intensity which match the human eye's response to light under a variety of lighting conditions. Each device has a specific operating range of performance, from very low light up to bright sunlight. High sensitivity coupled with wide dynamic range make these ALS products ideal for operation behind dark inked glass. They enable consumer electronics device manufacturers to implement display dimming and brightness control functions, helping to reduce power consumption and extend battery run-time.

Featured products

Ambient Light Sensors & Proximity Detection

ams supplies a family of products which combine an Ambient Light Sensor (ALS) and proximity detection in a single device. The ALS provides measurements of ambient light intensity which match the human eye's response to light under a variety of lighting conditions, and through a variety of attenuation materials. The proximity detection feature allows a large dynamic range of operation for use over short distances and behind dark glass. These devices are intended for use in mobile phones, and over longer distances for presence detection in computer displays and monitors.

Featured products

Product	Datasheet	Demo

Product		Datasheet	Demobc
TSL2521	Hightly sensitive ambient light sensor with selective flicker detection		
TSL2540	Light-to-Digital Converter with I²C interface		
TSL25911	Light-to-digital converter with Vdd I2C interface		

See all products

Product		Datasheet	Demobc
TMD2712	Industry's smallest integrated solution		
TMD2725	3-in-1 small aperture ambient light sensor, proximity sensor and IR LED in an optical module 1.8V I2C		
TMD3719	Ambient light and color (RGB) sensing, flicker and proximity detection		

See all products

Color Sensor

The color sensor product family includes both RGB (Red, Green, Blue) and high-accuracy XYZ light sensors for precise color measurement, determination, and discrimination. XYZ sensors are capable of providing xy chromaticity co-ordinates in accordance with the CIE 1931 color map. The ams color sensors include filters to block unwanted IR light in the visible spectral range, enabling highly accurate color measurement. Their high sensitivity coupled with their wide dynamic range make them well suited to continuous color temperature measurement of ambient light in display management systems, and automatic-white-balance assistance in camera applications. Some products have additional IR channels to assist with IR light source identification.

Featured products

Product		Datasheet	Demoboa
TCS3400	Color light-to-digital converter with 5th IR channel Vdd I²C		
TCS3408	TCS3408 Color and 50/60 Hz Ambient light flicker detection sensor		
TCS3410	Universal ambient light RGB sensor for behind OLED displays or auxiliary to camera		

See all products

Color Sensor & Proximity Detection

The ams family of color and Ambient Light Sensing (ALS) sensors combined with proximity detection provides red, green, blue, and clear (RGBC) or green and clear (ALS) light sensing and proximity detection. These modules also contain an IR LED for the proximity function. Both the light and proximity sensing functions feature high sensitivity and a wide dynamic range, so these devices may be placed behind the dark bezels of smartphones, monitors, laptops and TVs.

Featured products

Product		Datasheet	Demobc
TCS37727	Color light-to-digital converter with proximity sensing, I2C = 1.8V interface		
TMD3725	3-in-1 small aperture color light sensor, proximity sensor and IR LED in an optical module 1.8V I²C		
TMD4903	Color, ALS, and proximity sensor module with mobeam™ and universal remote control		

See all products

Gesture, Color Sensors & Proximity Detection

The gesture product family performs advanced gesture detection, proximity detection, digital Ambient Light Sensing (ALS) and color sensing (red, green, blue and clear). It also implements optical pattern generation for barcode transmission and remote controls. The gesture sensor modules provide a highly integrated solution offering five essential functions to enable a touchless interface and to optimize the end user experience of communications and consumer electronics equipment. Gesture detection uses four directional photodiodes to sense IR energy emitted from the integrated LED, converting the measurements of reflected IR light into information about physical motion.

Featured products

Product		Datasheet	Dem

Light-to-Frequency

Light-to-Frequency (LTF) sensors convert measurements of light intensity to a digital form for direct interfacing to a microcontroller. The output of the device is a square wave or pulse stream the frequency of which is linearly proportional to the light intensity. LTF converters are designed for applications such as ambient light measurement, light absorption/reflection in products such as white goods, photographic equipment, colorimetry, chemical analyzers and display contrast controls. They may be used in any system that requires a wide dynamic range, and/or high resolution digital measurement of light intensity.

Featured products

Product		Datasheet	Demob
TSL235R	Converter sidelooker package		
TSL237	Sidelooker package		

Product		Datasheet	Demok
TMG39923	Gesture, color, ALS, and proximity sensor module with mobeam™ barcode emulation in 1.8V I²C interface		
TMG4903	3D Gesture, Color, ALS, and proximity sensor module		

See all products

Proximity

Proximity detection sensors measure reflected infrared (IR) energy to detect the presence of an object or person. The devices include an integrated LED driver and, in some devices, an integrated LED. The proximity detection devices provide four programmable LED drive currents and IR pulse repetitions. The proximity detection circuitry compensates for ambient light, allowing it to operate in environments ranging from bright sunlight to dark rooms. The wide dynamic range allows operation in short-distance detection applications behind dark glass, such as mobile phones. Proximity detection sensors can be used to replace a mechanical switch or to sense human gestures.

Featured products

Product		Datasheet	Demobc
TMD2635	2-in-1 ultra small proximity detection module 1.8V I²C		
TMF8801	Time-of-Flight sensor with 940nm integrated IR VCSEL in a 2.2mm x 3.6mm x 1.0mm optical module 1.8V I²C		
TMF8805	Time-of-Flight sensor with 940nm integrated IR VCSEL in a 2.2mm x 3.6mm x 1.0mm optical module 1.8V I²C		

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See all products

Linear Array

Linear array sensors consist of a linear array of integrating photosensing pixels which measure incident light over a user-defined exposure time and generate a voltage or digital output which represents the light exposure at each pixel. The sensors are available in a variety of lengths and pixel resolutions. The analog output may be directly interfaced to an ADC for digital processing or for comparing black/white thresholds. Applications include contact image sensing, optical character recognition, edge detection, and object measurement in products such as copiers, document scanners and spectroscopy.

Featured products

Product		Datasheet	Demo
TSL1401CCS	128 x 1, with hold 400 DPI		
TSL1401CL	128 x 1, with hold 400 DPI		
TSL3301	102 x 1, with ADC 300 DPI		

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Spectral Sensing

The ams multi-spectral sensing family includes a broad array of spectral sensing devices providing between 6 and 18 channels in the visible and near-infrared spectrum. All products feature CMOS interference filters and benefit from innovative factory calibration to deliver precise spectral characteristics over their lifetime. Most include direct LED drivers to synchronize and control light sources for efficient digital shutter operations.

Featured products

Product		Datasheet	Demoboa
AS7262	6-channel visible spectral_ID device with electronic shutter and smart interface		
AS7265x	Smart 18-Channel VIS+NIR Spectral_ID Sensor with Electronic Shutter		
AS7341	11-channel spectrometer for spectral identification and color matching applications		

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