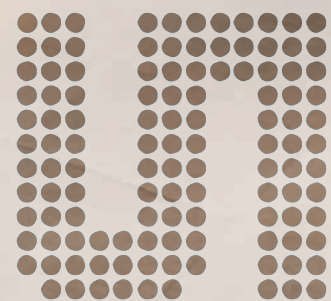# IoT Smart Daylighting Manager
www.ams.com/AS7211

AS7211 IoT Smart Lighting Manager: World's first IoT connected chip-scale daylighting management solution

- Accurate light measurements enabling daylight responsive systems
- Photopic ambient light sensing following human eye's response
- Automatic lumen maintenance over temperature and time
- Directly interfaces to 0-10V type current ballasts or PWM to LED drivers
- Serial UART for simple interface to standard network clients

We provide innovative analog solutions to the most challenging applications in sensor and sensor interfaces, power management, and wireless.

General Description

The AS7211 is a complete networking-enabled IoT Smart Daylighting Manager employing integrated nano-optics for precise ambient light sensing (ALS) and embedded luminaire control. The AS7211 allows simplified single-device integration delivering closed-loop and automatic adjustment of the brightness of LED and florescent luminaires and replacement lamps to maintain constant lux in response to available daylight. The photopic response of the AS7211's ALS, combined with an embedded infra-red (IR) blocking filter, allows an accurate approximation of the human eye response to visible light. This results in highly accurate lux readings even in the presence of high-IR sources such as sunlight or nearby incandescent fixtures.

For streamlined system integration, luminaire management is provided via a standard serial UART for network connections, and by direct connection to standard 0-10V dimmers, with control outputs that include direct PWM to LED drivers or analog 0-10V to standard dimming ballasts. Access to the simple text-based Smart Lighting Command Set is enabled by inclusion of a serial UART interface, which allows easy integration to standard network clients and protocols such as Bluetooth, ZigBee, WiFi, Dali, KNX and RS-485. IoT sensor hub expansion in smart homes and smart buildings is accomplished via a digital I^2C interface.
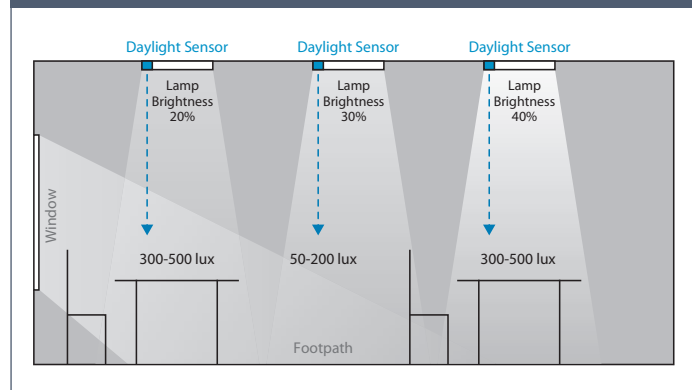
Applications

- IoT-connected smart home and smart building lighting systems
- General lighting including LED commercial and industrial lighting
- LED and fluorescent troffers, replacement lamps (bulbs)
- High bay and connected street lights
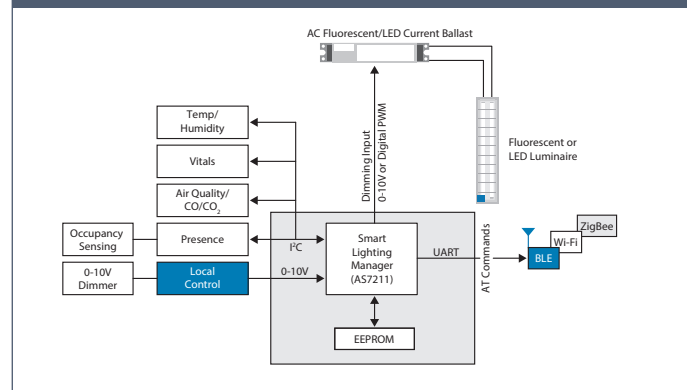- LED and florescent retrofit control systems

Features

- Energy saving during daylight (Daylight harvesting)
- Precise illumination level control
- Lumen maintenance
- Instant California Title 24 daylighting compliance
- IoT sensor hub expansion

Daylight harvesting

Daylight Sensor | Daylight Sensor | Daylight Sensor

Lamp Brightness 20% | Lamp Brightness 30% | Lamp Brightness 40%

Window

300-500 lux | 50-200 lux | 300-500 lux

Footpath

Architecture

AC Fluorescent/LED Current Ballast

Temp/ Humidity
Vitals
Air Quality/ CO/CO_2
Occupancy Sensing | Presence
0-10V Dimmer | Local Control

I^2C
0-10V

Dimming Input 0-10V or Digital PWM

Fluorescent or LED Luminaire

Smart Lighting Manager (AS7211)

UART

AT Commands

ZigBee
Wi-Fi
BLE

EEPROM