

**HBLED Demo**  
 User's Manual  
 V2.0

**Technology Showcase**

Nu Horizons presents a high-brightness LED (HBLED) demo, showcasing world-class components from suppliers committed to lighting applications.

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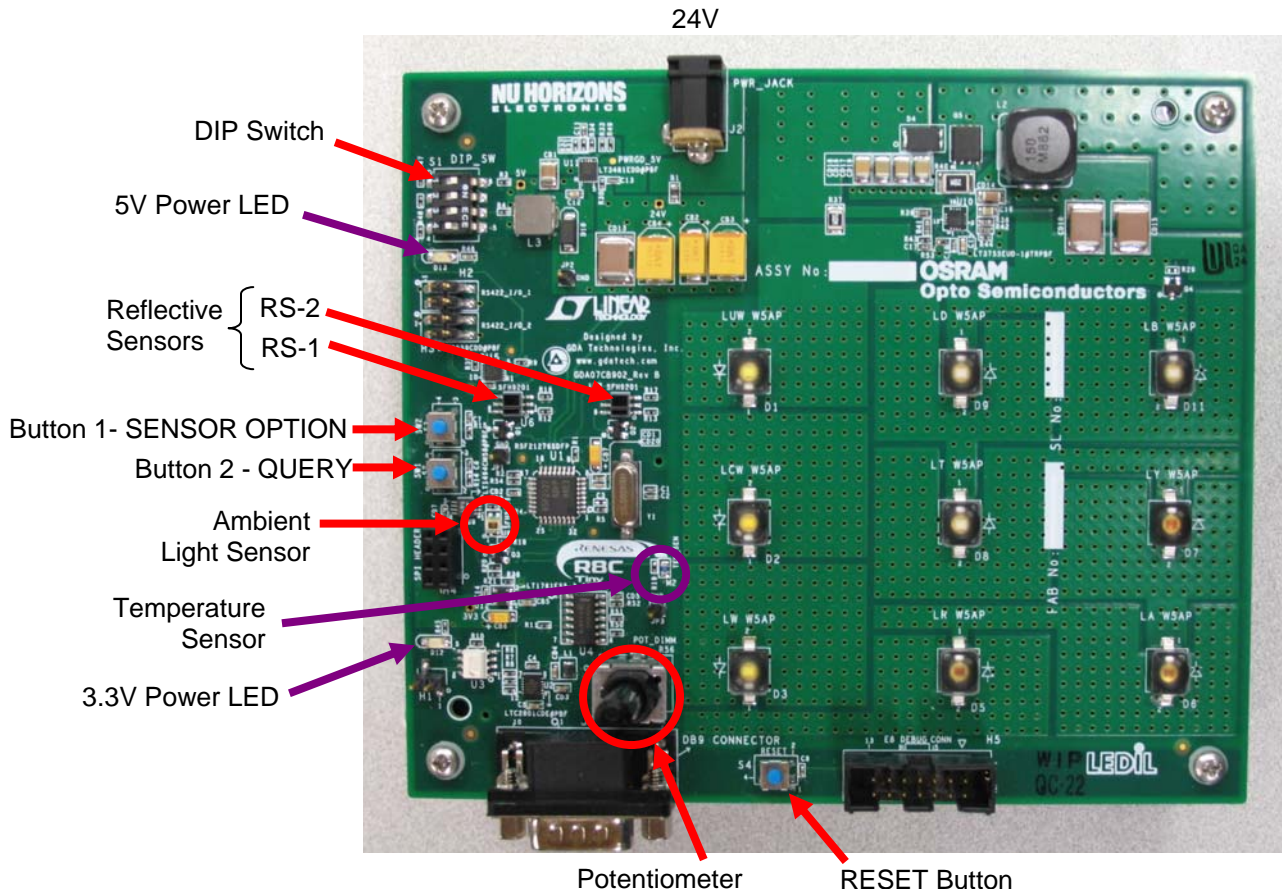


**Linear Technology**  
 LED Drivers and Power Management

**OSRAM – Opto**  
 HB-LEDs and Sensors

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**Board Instructions for Conducting a Demonstration**



1. Power  
 Apply 24V using the provided DC power supply. Power to the board is indicated by the 2 LEDs (labeled 5V Power LED and 3.3V Power LED). If one of these LEDs is OFF, then a component is damaged and the unit should not be used.
2. RESET  
 This button shuts down the HB-LEDs and should be used for any emergency.

### 3. Button 1 – SENSOR OPTION

Pushing this button cycles through the sensor control options {0→1→2→3→0}.

Mode	Activated Sensor	Sensor Control of Brightness
0	Turn-off HB-LED	OFF {DEFAULT}
1	Potentiometer	Turn the dial. LEFT - Minimum, RIGHT - Maximum
2	Reflective Sensors	RS-1: Each touch with your finger changes the brightness level ~20%, both brighter and darker. When minimum or maximum brightness level is reached, the dimming direction reverses. RS-2: Touch to activate automatic DEMO mode (a sequence of gradual dimming and brightening).
3	Light Sensor	Auto-adjustment to ambient light

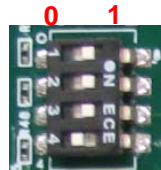
### 4. Button 2 - QUERY

Press this button to query the status of the system. The status is indicated by a flashing sequence on the HB-LEDs: the HB-LEDs will go dark for 1 second, then display the status (flashing sequence) using minimum brightness, go dark for 1 second, then return to the previously selected operating mode.

Flashing Sequence	Type	Status
1 blink	Error	Board temperature exceeds HB-LED rating. This status is remembered until a RESET.
2 blinks	Caution	Board temperature within 20C of limit. A “System OK” flashing sequence will follow.
1 dash	System OK	Mode 0 is active
1 dash - 1 blink	System OK	Mode 1 is active
1 dash - 2 blink	System OK	Mode 2 is active
1 dash - 3 blink	System OK	Mode 3 is active

### 5. DIP Switch Settings:

- Position 1: No function {default = 1} →
- Position 2: No function {default = 1} →
- Position 3: No function {default = 1} →
- Position 4: Temperature Reading →



When set to 1: Normal demo operation is active {See section 3}.

When set to 0: Temperature reading mode is active.

The temperature reading is measured at the temperature sensor indicated on the board diagram. The HB-LEDs will display the temperature using a flashing sequence (described below) with minimum brightness. This sequence will repeat continuously until the DIP setting is put back to “1”.

Temperature Flashing Sequence			
Preamble	Temp (10s digit)	Digit Delimiter	Temp (1s digit)
2 sec dash	M blinks	1 sec dash	N blinks

Example: 74°C at the temperature sensor sets M=7, N=4

### 6. Safety Features:

- Auto Timeout:

The unit shuts down after 15 minutes without user intervention.

- Thermal Shutdown:

The HB-LEDs turn-off automatically if temperature sensor reads 50C. Please note that board temperature close to the HB-LEDs may be much hotter. Please let the unit cool if this occurs.