

## Matrix LED headlights (PR No.: 8IY + 8G4 + 8VP or 8JT + 8G4 + 8VP)

8IY = LED headlights with lens

8JT = LED headlights with lens and darkened screen (only available on the launch edition at the time of writing this SSP)

8G4 = Matrix beam

8VP = LED tail lights with dynamic turn signals and animated (specially presented) light functions

The illustration shows the left headlight in the ECE<sup>1)</sup> version.



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### Lighting functions

- > Dynamic marker light/daytime running light **1**
- > Dynamic turn signal **5**
- > Dipped beam headlight **2**
- > Matrix main beam **3**
- > All-weather light **4**
- > Dipped beam **4**, one-side
- > Intersection light **4**
- > Motorway light **2**, raised via headlight range control
- > Dynamic cornering light **3**, maximum brightness is shifted to centre of corner
- > Manoeuvring light (**2 + 4**), when reverse gear is selected and it is dark
- > Side marker light **6** (not illustrated, SAE only<sup>2)</sup>)

<sup>1)</sup> ECE = for European market

<sup>2)</sup> SAE = for North American market

## Equipment

The matrix LED headlights on the Audi A3 are equipped with a headlight washer system.

### Special features of the lighting functions

All light functions are performed by LEDs. On the LED headlights, the daytime running lights are deactivated when the turn signals are active, both in the ECE<sup>1)</sup> and the SAE<sup>2)</sup> version.

The turning light is active at speeds between 0 km/h and 40 km/h when the turn signals are active.

The manoeuvring light is activated when reverse gear is selected.

The static cornering light is controlled via the steering angle and is active at speeds between 0 km/h and 70 km/h.

The matrix main beam on the Audi A3 (type 8Y) is in a single row.

### Entry/exit lighting (coming home/leaving home)

The entry/exit lighting illuminates the area around the vehicle when the driver unlocks the vehicle and after the ignition has been switched off and the driver's door has been opened. The entry/exit lighting only takes effect when the light switch is in the AUTO position. When it is dark, the function activates the dipped beams, the marker lights and the tail lights. On the SAE<sup>2)</sup> version, the side marker lights are also activated.

When it is light, only the daytime running lights in the headlights are activated when the vehicle is unlocked (entry lighting). At the time this self-study programme was written, no function for activating the rear lights had been implemented. Exit lighting when it is light is not planned.

### Headlight range control

The LED headlights on the Audi A3 are equipped with automatic dynamic headlight range control. The vehicle level is calculated via one sender on the front axle and one on the rear axle.

The headlight range control motors can be replaced.

### Light for driving on the right/left side of the road

The headlights are designed for driving on the right or left side of the road and do not have to be converted for driving in other countries.

### Activation/service

The LEDs in the LED headlights are activated by the output modules A27 and A31. The two output modules receive commands regarding the individual lighting functions and the headlight range control from the headlight range control unit J431. The information is exchanged via a sub-bus system (also referred to as a private CAN or an AFS CAN).

The output modules fitted on the outside of the headlight housings can be replaced in the event of a fault. It is not possible to replace individual lights. In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housing.

### Light classes/BCI code

What are light classes?

LEDs of the same type may have production tolerances in their power/brightness characteristic curve. Some batches of LED require slightly more power to achieve the same brightness, others slightly less. To be able to take this into account, the LEDs are usually divided into up to four light classes. To be able to set the correct current value, the control unit needs to know which light classes the LEDs in the headlights have, which can vary by headlight. The information on the light class (the BCI code) is located on a sticker fitted either on the headlight housing or the control units. BCI stands for brightness class information. If a control unit or an LED module is renewed, the control unit must be informed of the BCI code. This is done in the ODIS test program. As the sticker may be obscured by the lock carrier or other vehicle components when the headlight is installed, we recommend noting the BCI code (which will be required later) before you install the headlight.

<sup>1)</sup> ECE = for European market

<sup>2)</sup> SAE = for North American market