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Air Conditioning System with Matrix IR Sensor

DENSO Corporation has developed a new air conditioning system with the world's first matrix IR (infrared) sensor for vehicles. The new matrix IR sensor, installed on the Lexus LS460 launched in September 2006, enables the air conditioning system to provide more comfortably conditioned air for rear seat passengers.

The newly developed matrix IR sensor located in the center of the ceiling panel, detects the surface temperature for each rear seat passenger and converts it into electrical signals, which are sent to the air conditioning ECU (electronic control unit). The air conditioning ECU then calculates the appropriate air conditioning settings to adjust air temperature, airflow, and air outlet mode for each passenger.

The matrix IR sensor has multiple sensor elements that detect infrared rays radiated within the vehicle cabin and measure the surface temperature for each passenger. This provides air conditioning more suited to the temperature of each passenger, compared to a conventional system where air conditioning is adjusted according to the cabin's temperature.

For example, when a rear seat passenger enters the vehicle from a hot environment, the matrix IR sensor can provide cooler air conditioning to the entering passenger, while maintaining the air conditioning environment for the other passengers.

DENSO focuses on the development of technologies and products in the areas of environment, safety, comfort and convenience. The matrix IR sensor is an example of a DENSO product developed to provide a more comfortable environment for passengers. DENSO will continue to focus on these four areas to meet the needs of customers and to contribute to an advanced automotive society.