■RAIN SENSING FUNCTION

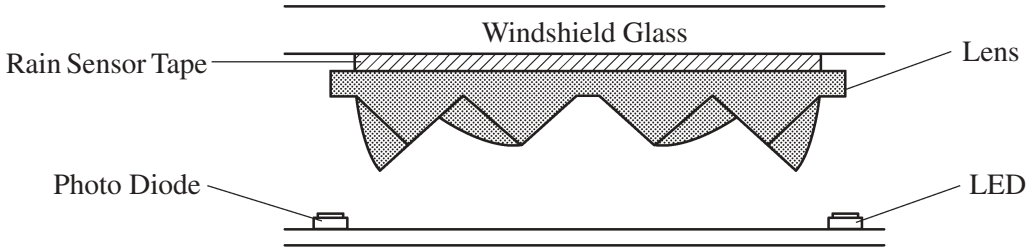
1. General

- The rain sensing function controls the wiping interval and speed in accordance with the amount of rain that strikes the windshield when the wiper switch is in the AUTO position.
- The wiper ECU controls the wiper operation by calculating the optimal wiping interval and speed in accordance with the following information:
  – Rainfall data transmitted by the rain sensor
  – Taillight status signals transmitted by the main body ECU (whether it is day or night)
  – Vehicle speed signals transmitted by the combination meter
  – Set values regarding the system sensitivity transmitted by the automatic control adjuster

2. Rain Sensor

General

The rain sensor consists of two LEDs (Light Emitting Diodes) that emit infrared rays, a photo diode that can receive those rays, a lens and rain sensor tape.



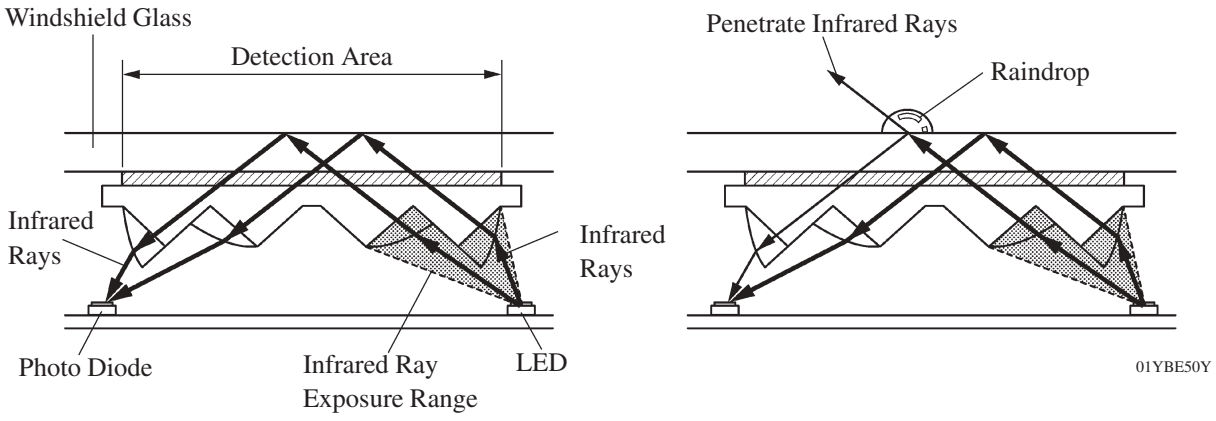
Rain Sensor Cross-section Image 01YBE49Y

Service Tip

If the rain sensor tape has been peeled off during a windshield glass replacement, be sure to affix new rain sensor tape. Failure to do so will lead to a system malfunction.

Operation

- If no rain is present in the detection area, the infrared rays emitted by the LED are all reflected by the outer surface of the windshield glass and are received by the photo diode.
- If rain is present in the detection area, a portion of the emitted infrared rays passes through the windshield glass due to the change in the difference between the refractive indexes of the glass and the area outside the windshield (the refractive difference between air and water). The ability of the windshield glass to reflect light back inside is reduced by the presence of the rain. This change in the internal reflection due to the presence of the water reduces the proportion of the infrared rays that are received by the photo diode. The extent of this reduction is used to determine the amount of rain falling on the windshield.



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