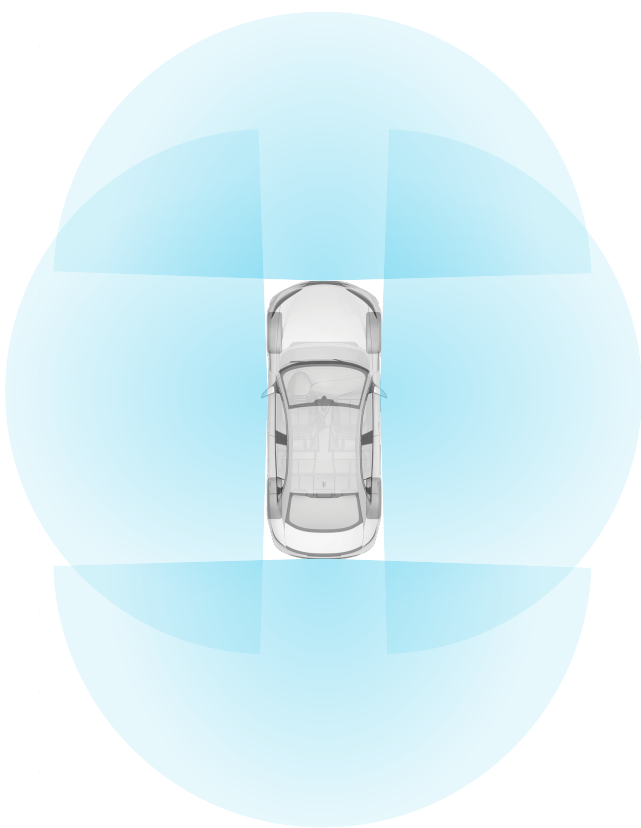


• APTIV •

# Aptiv PULSE | Perception Sensor

A UNIQUE, RELIABLE, COST-EFFECTIVE PERCEPTION SOLUTION FOR PARKING AND COMPLEX MANEUVERING

✓ POC Stage



## Product Overview

The Aptiv Parking, Urban, Localization and Surround Enhancement (PULSE) Sensor is innovative Aptiv IP solution that incorporates a bird's-eye-view camera and ultrashort range radar for reliable 360-degree sensing. It requires no additional installation space, reduces cost and lowers vehicle complexity. PULSE delivers high reliability for different road scenarios, with precise detection for the most accurate parking and complex maneuvering.

## Key Benefits

- A unique, **scalable and innovative perception solution** for parking and low-speed maneuvering with unmatched performance
- **Reduced manufacturing footprint that lowers vehicle complexity** by significantly decreasing the number of ultrasonic sensors and cables, at an optimized system cost
- **Flexible, aesthetic design** for any type of vehicle
- **Reliable and high-performing sensing** around the vehicle, supporting a wide range of parking scenarios and complex low-speed maneuvering

## Key Value Drivers

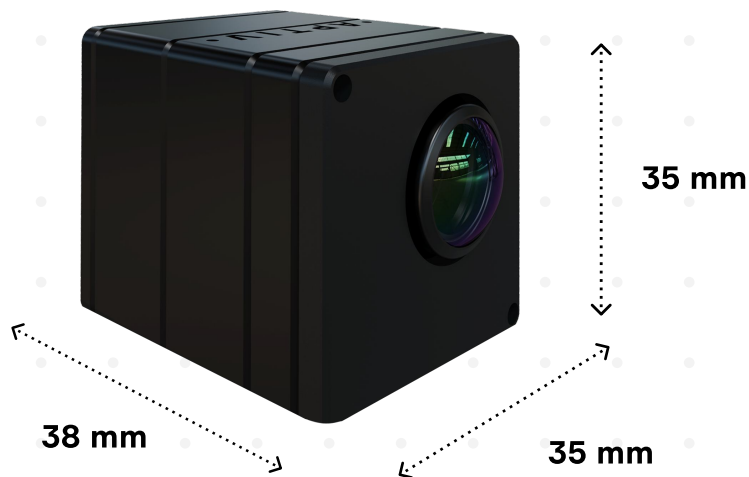
- **Surround view camera and ultrashort-range radar** contained in one device and using the same cable (Aptiv IP), reducing cost and cable complexity
- **Enhanced high-resolution and multi-mode functionality** for parking and low-speed maneuvers with a 360-degree view
- **Potential to replace 4 ultrasonic sensors** with one low-cost radar
- **Detection range at least 2x longer** than ultrasonic sensing, with **multi-target capability and elevation measurements**
- **True depth / distance information**, with **instant detection and low-level fusion with vision** for a wide range of weather and lighting conditions

• A P T I V •

# Aptiv PULSE

## Perception Sensor

### TECHNICAL DETAILS



Reliable sensing integrated with rear-view camera for pedestrian autobrake in all weather



See curbstones, ensure no-scratch for tires



Can be used for rear-view only or extended to all bird's-eye-view cameras for full 360° coverage

### Camera parameters (preliminary)

|               |              |
|---------------|--------------|
| RESOLUTION    | 3 Megapixels |
| PIXEL ARRAY   | 1920 x 1536  |
| SHUTTER       | Rolling      |
| COLOR FILTER  | RGGB         |
| FIELD OF VIEW | 200° x 180°  |
| F#            | 1.46         |
| IP RATING     | IP6K9K       |

|                                        |                                     |                     |
|----------------------------------------|-------------------------------------|---------------------|
| RANGE *                                | PEDESTRIAN (-10dBsm)                | 6 m                 |
|                                        | RESOLUTION (bin size)               | 5 cm                |
| SPEED                                  | RANGE                               | +14 m/s<br>-2.5 m/s |
|                                        | ACCURACY                            | ±0.158 m/s          |
| AZIMUTH ANGLE                          | COVERAGE                            | ±75°                |
|                                        | DISCRIMINATION                      | 10°                 |
| ELEVATION ANGLE                        | COVERAGE                            | ±60°                |
|                                        | DISCRIMINATION                      | 10°                 |
| ANGLE ACCURACY (Azimuth and Elevation) |                                     | ±2° @ ±10°          |
|                                        |                                     | ±4° @ ±30°          |
|                                        |                                     | ±8° @ ±55°          |
| PACKAGE SIZE (mm)                      |                                     | 35x35x38            |
| FREQUENCY BAND                         |                                     | 76–81 GHz           |
| INTERCONNECT                           | Std. BEV Coax (FPD-Link, GMSL, ASA) |                     |

\* Specifications, dimensions and performance data in this document are for general references only and are subject to change without notice. To verify product information, please contact an Aptiv representative.