

Fisheye lens with overhead angle



# 360° Cameras for Cars

TSP-DLC012U

## Proposal

Ver.20230214

Patent Pending Imaging device, imaging system, and fisheye lens Patent Application 2022-193152  
Image Generating Apparatus and Method for Generating Images Patent Application 2023-015387

**TOTAL SOLUTION PARTNERS**  
株式会社 TSP



# Product Overview

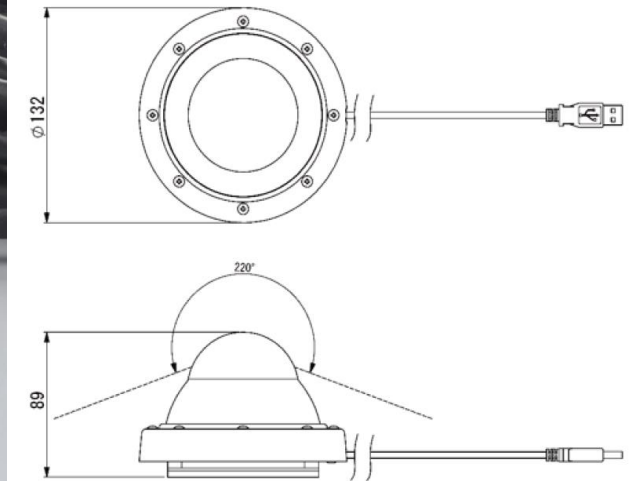
【 Product name 】  
**360°Cameras for  
Cars**

【 Model name 】  
**TSP-DLC012U**  
( model number : PLC220-12M)

【 Features 】  
**12 MP Fisheye lens with  
overhead angle**

**With the world's first  
technology (patent  
pending)360° of the camera's  
side. High image quality  
recording is possible**

**Realization of lower  
cost(Depends on installation  
method)**



# Product Features

point  
1

The world's first technology (patent pending) enables the camera to capture a large, clear image of the entire 360° side of the camera. Distortion around the lens periphery is minimized and high image quality can be recorded.

point  
2

Compared to shooting with multiple cameras, no time is required for the compositing process. There are no joints in the images, making them more valuable as photographic evidence.

point  
3

Complies with IP66 dustproof and waterproof standard and IK10 shockproof standard. Since it is mainly intended for installation in vehicles, it has excellent resistance to vibration and shock.  
(JIS D 1601 compliant for in-vehicle use)

Wide angle 220°

point  
4

Compact and stylish design.  
It does not spoil the appearance of the product.

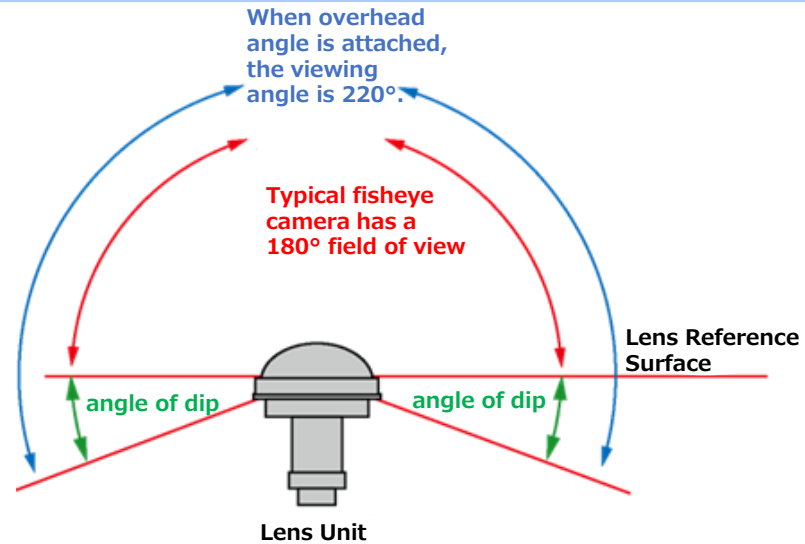
point  
5

Low cost can be achieved by the installation method. This model is ideal for new or updated camera and security systems.

360° perimeter



# Camera Capabilities



## ◆ Fisheye lens with overhead angle

Mounting locations and uses differ from those of a typical 360° camera

## ◆ JIS D1601 compliant for in-vehicle standard

Since it is mainly intended for installation in vehicles, it has excellent resistance to vibration and shock.

(Dustproof and waterproof IP66 and shockproof IK10 compliant)

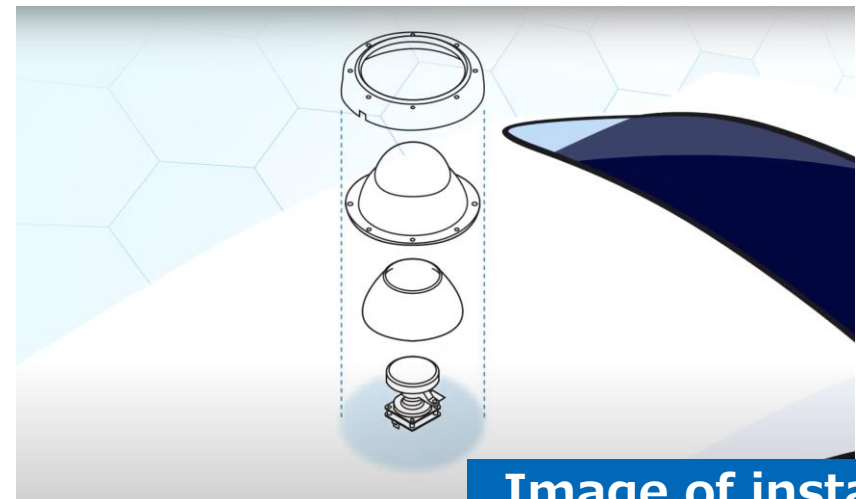


Image of installation on a car



# Camera Features and Technology①

**Images are not destroyed even at the periphery of the lens**  
**High image quality recording**

The range of beautiful images is limited to the center of the lens because of the reduced image quality (see the figure on the right) with a typical fisheye lens.

Our products enable high quality recording around the lens. When the camera is set up facing the sky, it can capture a 360° view of the camera's entire circumference.

Fisheye lens developed by us



The one from other companies

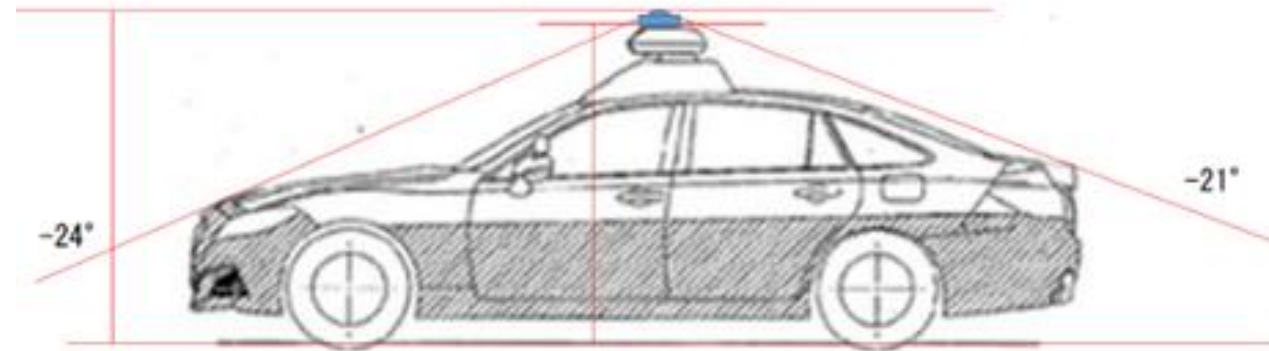
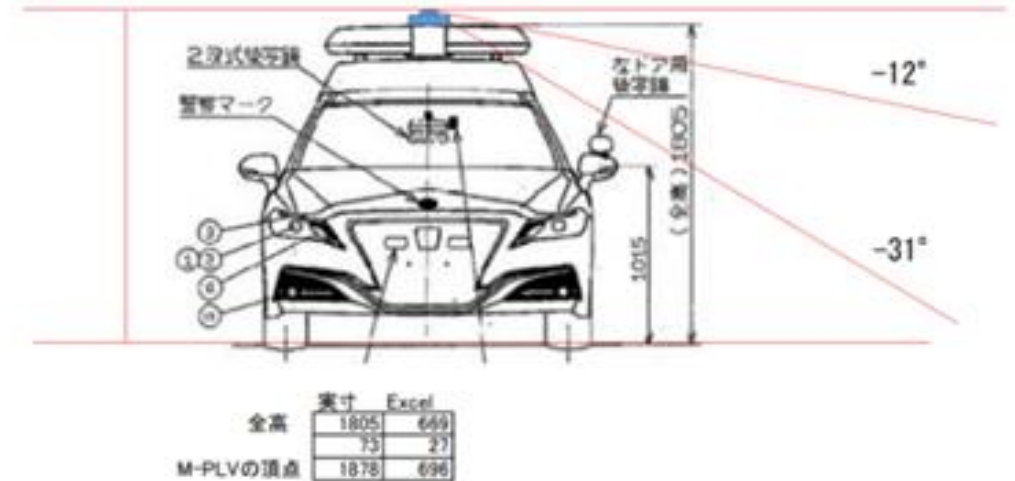


# Camera Features and Technology②

The overhead angle of a fisheye lens includes the area below the reference plane of the lens.

When installed vertically above the vehicle or above the warning light (※), the road surface can be photographed from 2 to 3 m left and right, in front of and behind the vehicle, as shown in the figure on the right. (The area directly next to the vehicle body is a blind spot.)

※Assuming overall length of 490 cm (size of a typical police car) and height from the ground 180 cm above the warning light





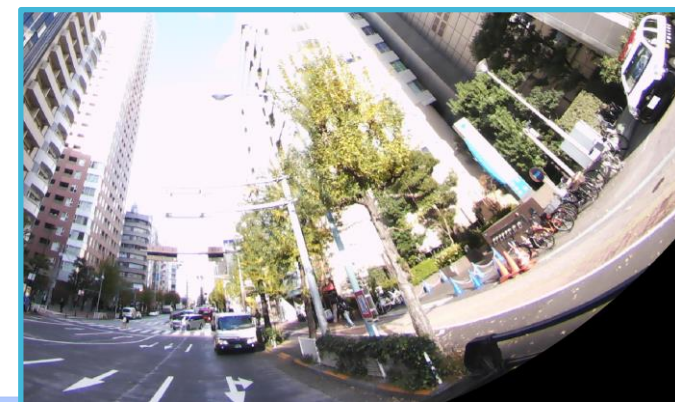
# Long Life & Weather Resistance

## Product life: approx. 70,000 hours

The life of a 360° camera for on-board use is approximately 70,000 hours. The lack of moving parts for focusing improves durability and provides an unparalleled longevity.

In addition, the use of a glass lens provides good weather resistance and long-term high-resolution recording.

※The product life of a typical surveillance camera is approximately 5,000 hours. (1/14 of our product)



# Variety of visual development

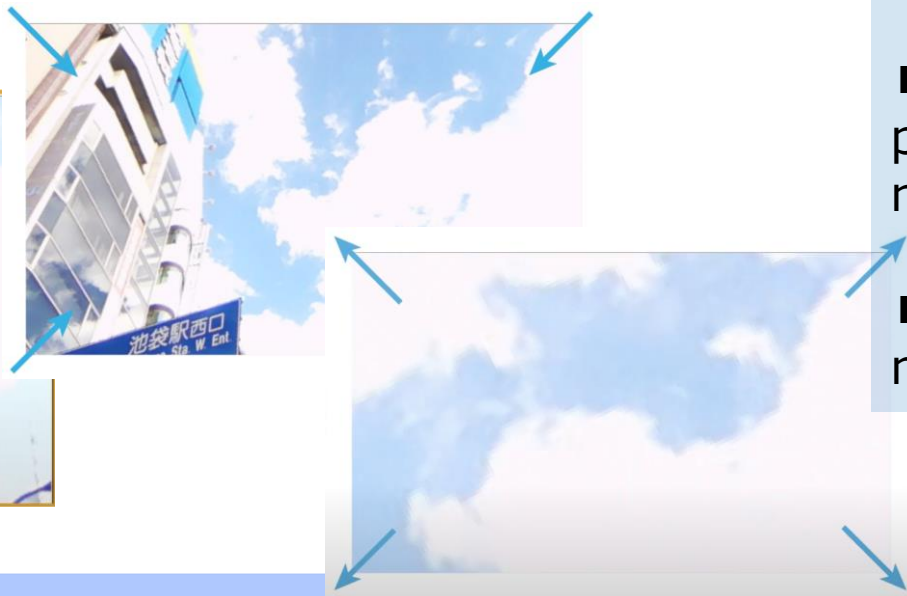


- 360° omni-directional image, so you can freely zoom in on any location, expand to a flat surface, etc.

- Various variations such as circular image, zoom image, 2 split images, 220° vertical panorama, 360° panorama cutout, etc.

- Equivalent development display is possible regardless of whether live or recorded video is played back.

- Pan, tilt, zoom (PTZ) operation with mouse (using dedicated app)





# Users who expect results from their purchases

Police Organization	Patrols, live video recording at crime scenes →Crime prevention, video analysis, and crime scene cleanup
Firefighting Forces	Patrols, live video recording at fire and disaster sites →Video analysis and site organization
Security Firm	Patrols, live video recording at crime scenes →Crime prevention, video analysis, and crime scene cleanup
Road Maintenance Company (NEXCO, etc.)	Road management (maintenance and upkeep), including tunnels
Power Company	Patrol management of power plants, power grids, and adjacent facilities
Government and Municipal Offices	Live Video Shooting for Community Patrols Ex: Patrols of unattended house areas in areas affected by the Fukushima nuclear power plant disaster and video confirmation of the current status of unattended houses (many requests)

# Video Mapping Software Vmap-III

Dedicated software for 360° car camera (GPS linked)

