Driver•i D-450 Four Camera Video Telematics Device

Technical Specifications

Overview

The Netradyne Driver•i® D-450 is the core component of our AI-powered fleet safety ecosystem. It's designed to enhance driver performance, reduce accidents, and promote a culture of safety. The D-450 boasts the industry's only four-camera configuration integrated into a single windshield-mounted unit. This unique design minimizes potential points of failure and simplifies installation compared to multi-component systems.

The D-450 analyzes 100% of driving time with up to 99% AI alert accuracy. This means risky behaviors like speeding, tailgating, and distracted driving are identified in real-time, allowing for immediate in-cab feedback and coaching. The system processes data rapidly at the edge, empowering drivers to make safer decisions in the moment. Unlike legacy event recorders, the D-450 also recognizes and reinforces positive driving behaviors, fostering a culture of safety and encouraging driver improvement.

Key Features

- **Front Camera:**
  1080p at 30 frames per second with 120dB HDR
- **Driver Camera:**
  1080p at 30 frames per second with IR LED for night vision
- **Side Cameras:**
  (2) 720p at 30 frames per second
- **Indicators:**
  2 LEDs to represent device status
- **Record Button:**
  Driver initiated alert button
- **Audio:**
  Integrated microphone and speaker
- **Storage Hours:**
  100-hour and 200-hour options

Sensors:
Inertial Measurement Unit (IMU) with 3-axis accelerometer, 3-axis gyroscope, and ambient light sensor sensor

Safety Features

Advanced Driver Assistance System (ADAS)

Forward Collision Warning (FCW)
Pedestrian Collision Warning (PCW)
Lane Departure Warning (LDW)
Following Distance Alert
Posted Speed Limit Alert
Traffic Light Alert
Stop Sign Alert
Low Bridge Alert
Roadside Parking Alert
Railroad Crossing Alert
Collision Warning

Driver Management System (DMS)

Distracted Driving – Looking at phone
Drowsiness Alerts
Excessive Yawn Alert
Seatbelt Compliance Alert
Camera Obstruction Alert
Smoking Alert
Driver initiated alerts
Camera Obstruction
Advanced fatigue and drowsy detection via optional DMS sensor

Inertial Measurement Unit (IMU)

On-Device Speeding Alerts
Harsh Braking Alert
Harsh Acceleration Alert
Harsh Turning Alert
Weaving & Swerving
U-Turn
Low Impact
Potential Collision
Excessive Backing Alert

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Advanced Compound Alerts

These exclusive alerts trigger when two or more alerts occur closely together. This provides a better picture of severity and risk.

Driver Distraction + Traffic Light
Driver Distraction + Stop Sign
Speeding + Traffic Light
Traffic Light + Hard Turn
Driver Distracted + Following Distance
Driver Distracted + Hard Brake
Driver Distracted + Hard Turn
Speeding + Hard Brake
Speeding + Hard Turn
Following Distance + Hard Brake
Driver Distracted + Speeding
Driver Distracted + Weaving
Speeding + Following Distance
Speeding + Weaving
Hard Turn + Hard Brake

Enclosure & Mounting

Dimensions	126.6 x 78.6x 85.6 mm (4.98 x 3.09 x 3.37 in)
Color	Black
Case Material	Polycarbonate (PC)
Power/Data Connections	Compatible with a wide range of industry-standard connections, including J1708, J1939, RP1226, OBDII, and other common protocols.
Additional Connectivity	Optional Vehicle Data Adapter to retrieve ECM data. Up to 4 auxiliary cameras and 1 in-cab monitor through a Wi-Fi-connected Hub-X unit. Expandability through both GPIO (General Purpose Input/Output) and USB connections. This means you can connect a variety of compatible devices and sensors to enhance the system's functionality and tailor it to your specific needs.
Power Cable Length	3.3 meters
Power Cable Thickness	5.5 mm (0.216 in)
Mounting	Mounts to windshield via industrial-grade adhesive tape (included)
Warranty	Limited Lifetime*

Cameras

	Outward	**Inward**	**Right and Left**
Pixel Size	2.8 µm OmniBSI-2 pixel	3 µm x 3 µm	3 µm x 3 µm
Dynamic Range	>90 dB dual capture; >120dB HDR	72 db (not true HDR)	72 db (not true HDR)
Responsivity	~5 V/lux sec	3.3 V/lux sec	3.3 V/lux sec
Lens Size	1 / 2.7”	1 / 4”	1 / 4”
Aperture (f/)	1.6	2.0	2.0
Field of View	74° (H) 57° (V) 90° (D)	148° (H) 80° (V) 168° (D)	124° (H) 82° (V) 143° (D)
Resolution	1080p Full HD (1920 x 1080 pixels)	1080p Full HD (1920 x 1080 pixels)	720p HD (1280 x 720 pixels)
Frame Rate	30 frames per second (fps)	30 frames per second (fps)	30 frames per second (fps)
Video Encoding	H.265 (HEVC - High Efficiency Video Coding)	H.265 (HEVC - High Efficiency Video Coding)	H.265 (HEVC - High Efficiency Video Coding)
File Format	MP4 container	MP4 container	MP4 container
Construction	6G – Visible	6G + 1R Filter - Dual Band Pass	6G + 1R Filter - Dual Band Pass

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Processor & Electrical

GPU	NVIDIA Pascal™ architecture
CPU	NVIDIA Denver 2 64-bit CPU
Input Voltage	7V-32 V
Input Current (full operation)	12V / 3 A
Max Power Consumption	30 W
Signal Input – High Voltage (Pos)	+32 V
Signal Input – Low Voltage (Neg)	+0 V

Active Mode Power Consumption

Peak Current (A)	2.3 A @ 12 V
RMS Current (A)	1.12 A @12 V
Peak Power (W)	27.6 W
RMS Power (W)	13.5 W

Periodic Wake-Up Mode Power Consumption**

Peak Current (A)	1.6 A @ 12 V
RMS Current (A)	0.78 A @ 12 V
Peak Power (W)	19.2 W
RMS Power (W)	9.4 W

Shutdown Mode Power Consumption

Current (A)	14 mA @ 12 V
Power (W)	168 mV
Average Power Consumption***	38.7 mAh

Battery & Battery Consumption

Power Backup	Integrated super-capacitor for low power wakeup
3 Minutes for Every 360 Minutes	20.4 mA
6 Minutes for Every 180 Minutes	38.7 mAhh

Connectivity

LTE Connectivity	External 4G-LTE Module - Bands 2, 4, 12, 66, 71
SIM Connector	No, embedded SIM
Wi-Fi	Wi-Fi (802.11 b/g/n/ac)
Bluetooth	Bluetooth v4.0
GPS Receiver Antenna	True GPS Antenna
Connectors	USB (with OTG support), power jack, micro-SD card slot
Data Security	Robust encryption technologies protect sensitive data during transmission and storage.

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Environmental

Operating Temperature:	-15° C to 55° C
Vibrations	ISO 16750-3-2007E
Acceleration	7.9 m/s2 (5.79g)

Mechanical Shock

8Pulse Type	Half sinusoidal
Accelerator	50 gm
Pulse Duration	6 ms
Number of Shocks Per Axis	20 (10 positive and 10 negative)

Vehicle Data Reader Specifications

Max power consumption wake/sleep	70mA / 9mA
Operating temp	-40° to +100° C (-40° to +212° F)
Dimensions	25.8 x 46.6 x 29.5 mm (1.01 x 1.83 x 1.16 in)

Optional Accessories

DMS Sensor - Detects drowsiness in real-time using scientific measurements – PERCLOS, Blink Rates, Eyelid Velocities
Driver•i Hub-X- Provides support for up to four additional auxiliary cameras for increased driver and manager visibility

Dual HD Camera
Front:
HDR / 1080p / 30fps/120dB HDR
Inward:
HD / 1080P /30FPS
Side:
HD/720P

Driver Alerts
Driver initiated alerts

Audio Notifications
Speeding / Following Distance / Distracted / Seatbelt / Drowsy

Enhanced Edge Computing
Nvidia TX2 - Double efficiency, double computing power for better machine learning, minutes/mile analysis

Storage
Up to 200 hours of real-time searchable video stored on device

Connectivity
4G LTE, Wi-Fi and Bluetooth

Vehicle Data
J1939 / OBDII
Data integrity
API / data integration

Internal Sensors
9 Axis accelerometer best-in-class low-light performance image sensor designed for a wide range of automotive imaging

* When purchasing via software as a service (SaaS) model
** Power Consumption (Low power wakeup for 6 min every 3 hours after vehicle shutdown)
*** As per default Periodic wake-up Mode defined in ** with ignition off

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