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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:**
  Upto 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)	1.16 A @12 V
Peak Power (W)	27.6 W
RMS Power (W)	14.5 W

Periodic Wake-Up Mode Power Consumption**

Peak Current (A)	1.6 A @ 12 V
RMS Current (A)	0.7 A @ 12 V
Peak Power (W)	19.2 W
RMS Power (W)	8.4 W

Shutdown Mode Power Consumption

Current (A)	8 mA @ 12 V
Power (W)	96 mV
Average Power Consumption***	30.32 mAh

Battery & Battery Consumption

Power Backup	Integrated super-capacitor for low power wakeup
3 Minutes for Every 360 Minutes	13.72 mAh
6 Minutes for Every 180 Minutes	30.32 mAh

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)

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

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)
CAN Protocol Supported	OBDII/J1939

FCC Compliance: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
2.1 OPERATING REQUIREMENTS AND CONDITIONS The design of Netradyne DriverI/DCM complies with U.S. Federal Communications Commission (FCC) guidelines respecting safety levels of radio frequency (RF) exposure for Mobile devices.
2.2 RF Radiation Exposure Statement This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
2.3 FCC PART 15 STATEMENT § 15.105 (Class B digital device) This equipment has been tested andfound to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

REGULATORY INFORMATION
Model Name: DriverI
Contains FCC ID: 2AM8R-D450
FCC CAUTION STATEMENT FOR MODIFICATIONS CAUTION: Any changes or modifications not expressly approved by Netradyne could void the user s authority to operate the equipment.
IC Caution:
This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada s licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.
RF exposure statement:
The equipment complies with IC Radiation exposure limit set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.
5150-5250MHz is for indoor use only.
L”émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d”Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L”exploitation est autorisée aux deux conditions suivantes :
1. L”appareil ne doit pas produire de brouillage;
2. L”appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d”en compromettre le fonctionnement.
Déclaration d'exposition RF:
L”équipement est conforme à la limite d'exposition aux radiations de la IC établie pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

* 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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