ADASKY
DRIVEN TO SAVE LIVES

A GLOBAL LEADER
OF INNOVATIVE
THERMAL IMAGING
SAFETY SOLUTIONS

January 2021

VIPER

SHARP VISION

VIPER-R

The Challenges ADASKY is capable to solve-
To Create a world without harsh weather and night related accidents

Dramatic increase in pedestrian deaths at night

NHTSA **GHSA** **FHWA**

- 67% increase in the last 10 years
- 75% of Pedestrian fatalities occur at night
- Last year- 6,590 Pedestrian deaths
- 22% of all accidents are weather related

Current ADAS/AEB Systems DO NOT work at night (& insufficient in daytime)

AAA

- AAA **research shows current systems are inadequate (October 2019)**
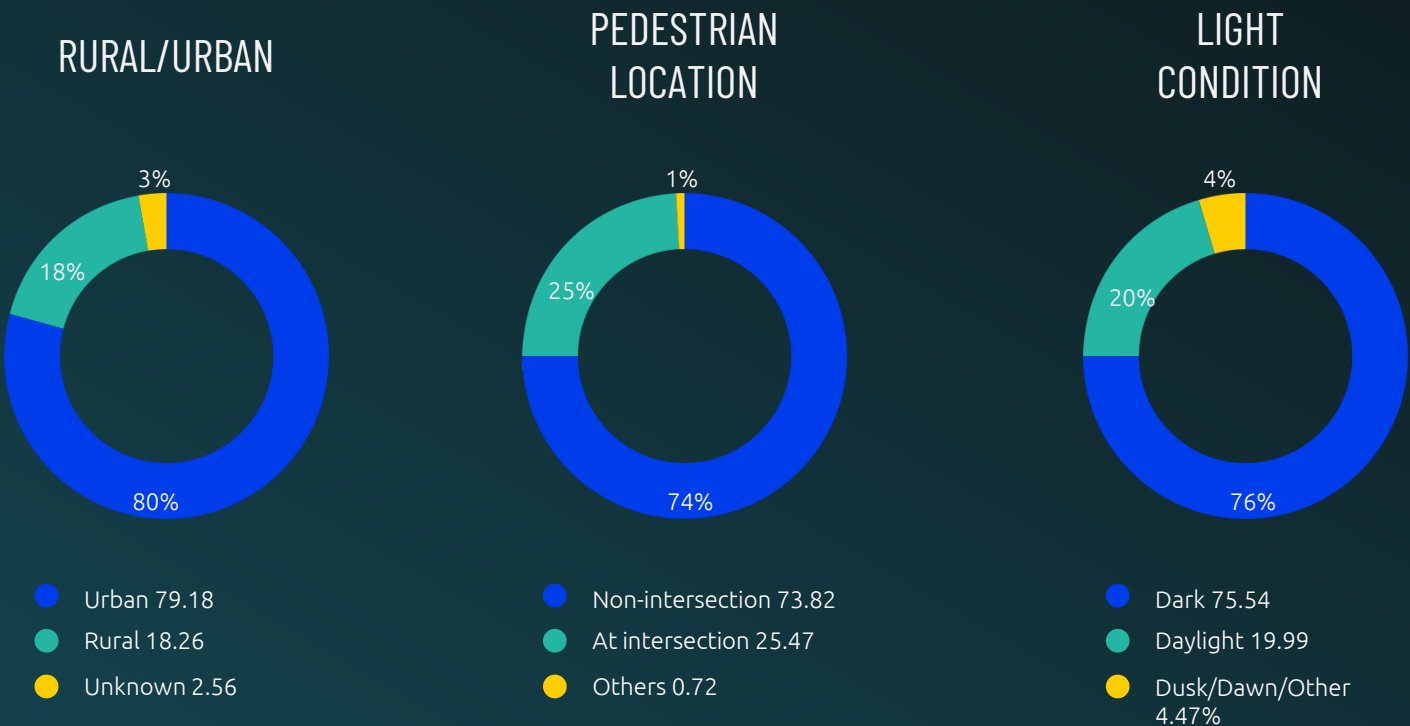- Industrial reports: 100% failure rate of current AEB at night, 60% failure during the day

Enhanced AEB and ADAS must include thermal sensors

- Industry testing confirms the addition of thermal cameras will save lives
- Thermal cameras are the only sensor that identifies living beings and works at long distances
- AAA report: "Thermal imaging remains effective in adverse weather such as rain, snow and fog"

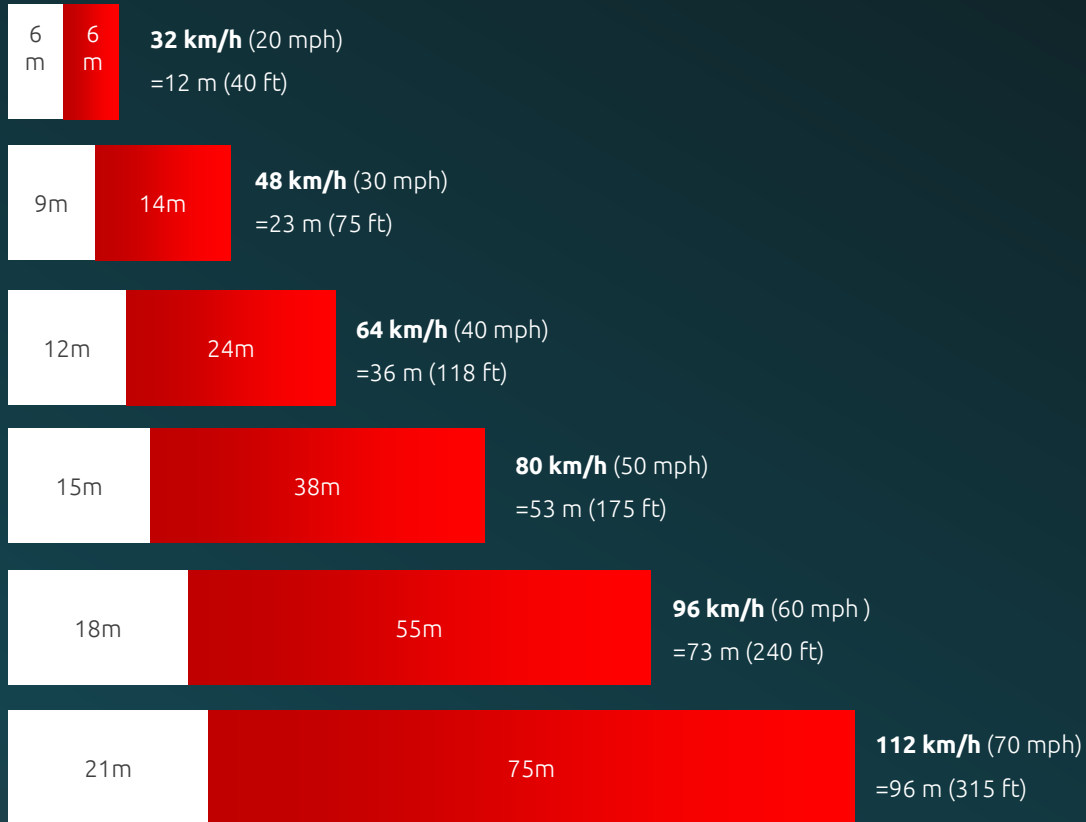**ADASKY**™

Pedestrian fatalities – the numbers

Pedestrian fatalities are on the rise with 75% of 6,000 deaths occurring at night, in urban areas, away from designated walkways
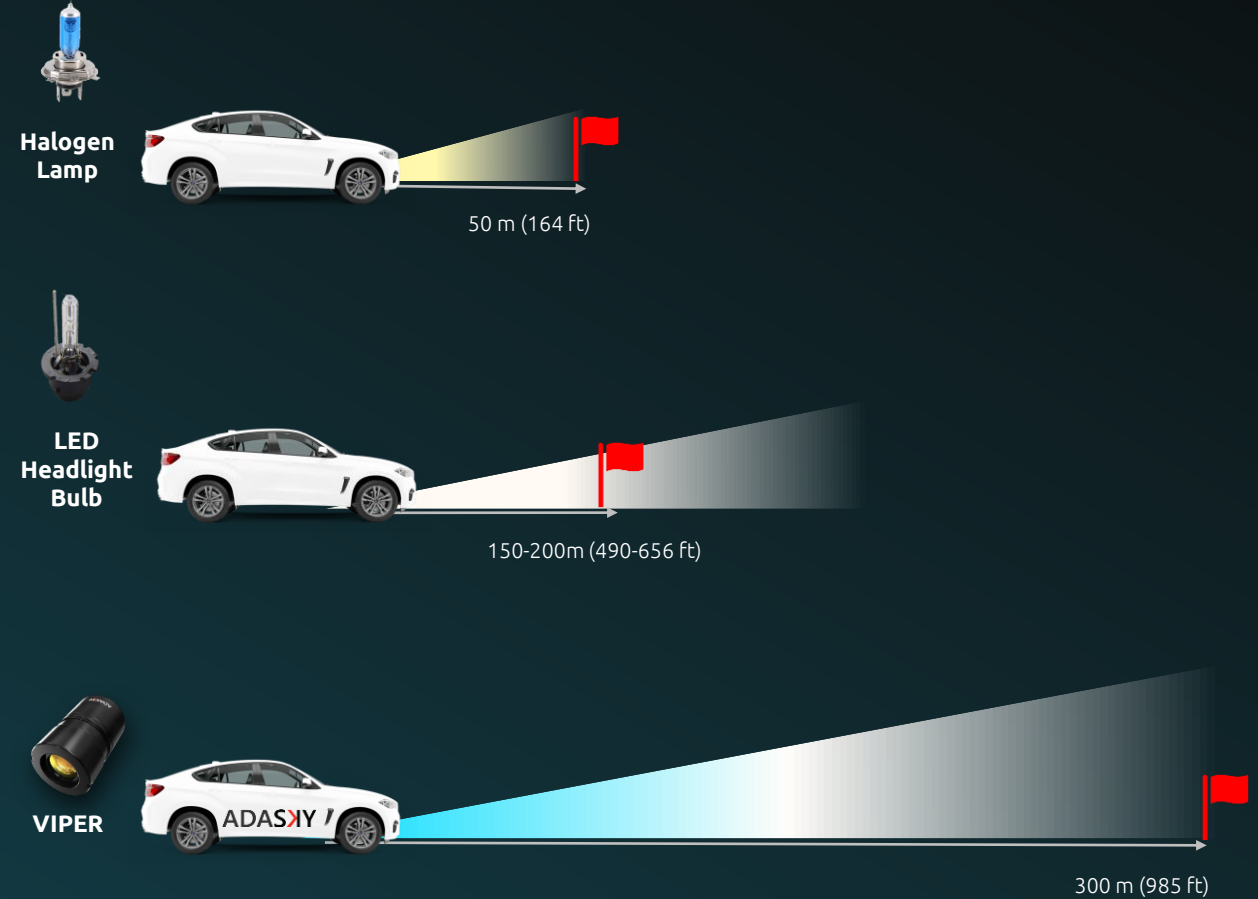
LWIR cameras can fix this

RURAL/URBAN

3%
18%
80%

- Urban 79.18
- Rural 18.26
- Unknown 2.56

PEDESTRIAN LOCATION

1%
25%
74%

- Non-intersection 73.82
- At intersection 25.47
- Others 0.72

LIGHT CONDITION

4%
20%
76%

- Dark 75.54
- Daylight 19.99
- Dusk/Dawn/Other 4.47%

Pedestrian fatalities overview in the United States, 2018 - NHTSA

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LWIR > Headlights

Speed	Reaction Distance	Braking Distance	Total
32 km/h (20 mph)	6 m	6 m	=12 m (40 ft)
48 km/h (30 mph)	9m	14m	=23 m (75 ft)
64 km/h (40 mph)	12m	24m	=36 m (118 ft)
80 km/h (50 mph)	15m	38m	=53 m (175 ft)
96 km/h (60 mph)	18m	55m	=73 m (240 ft)
112 km/h (70 mph)	21m	75m	=96 m (315 ft)

☐ Reaction Distance   ■ Braking Distance

Halogen Lamp — 50 m (164 ft)

LED Headlight Bulb — 150-200m (490-656 ft)

VIPER — 300 m (985 ft)

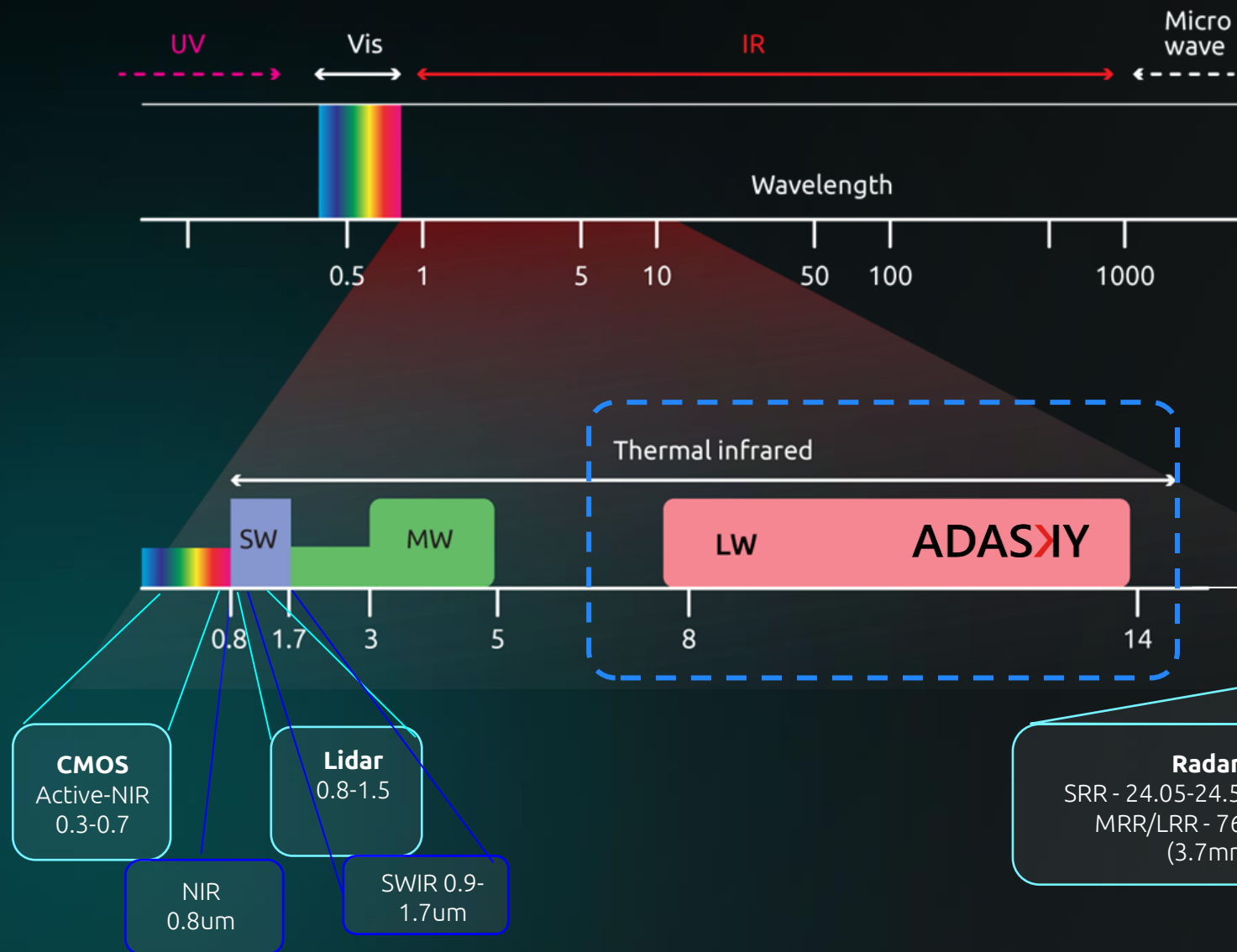**LWIR cameras makes it possible for a driver to prevent a collision from any speed, under the worst visibility conditions**
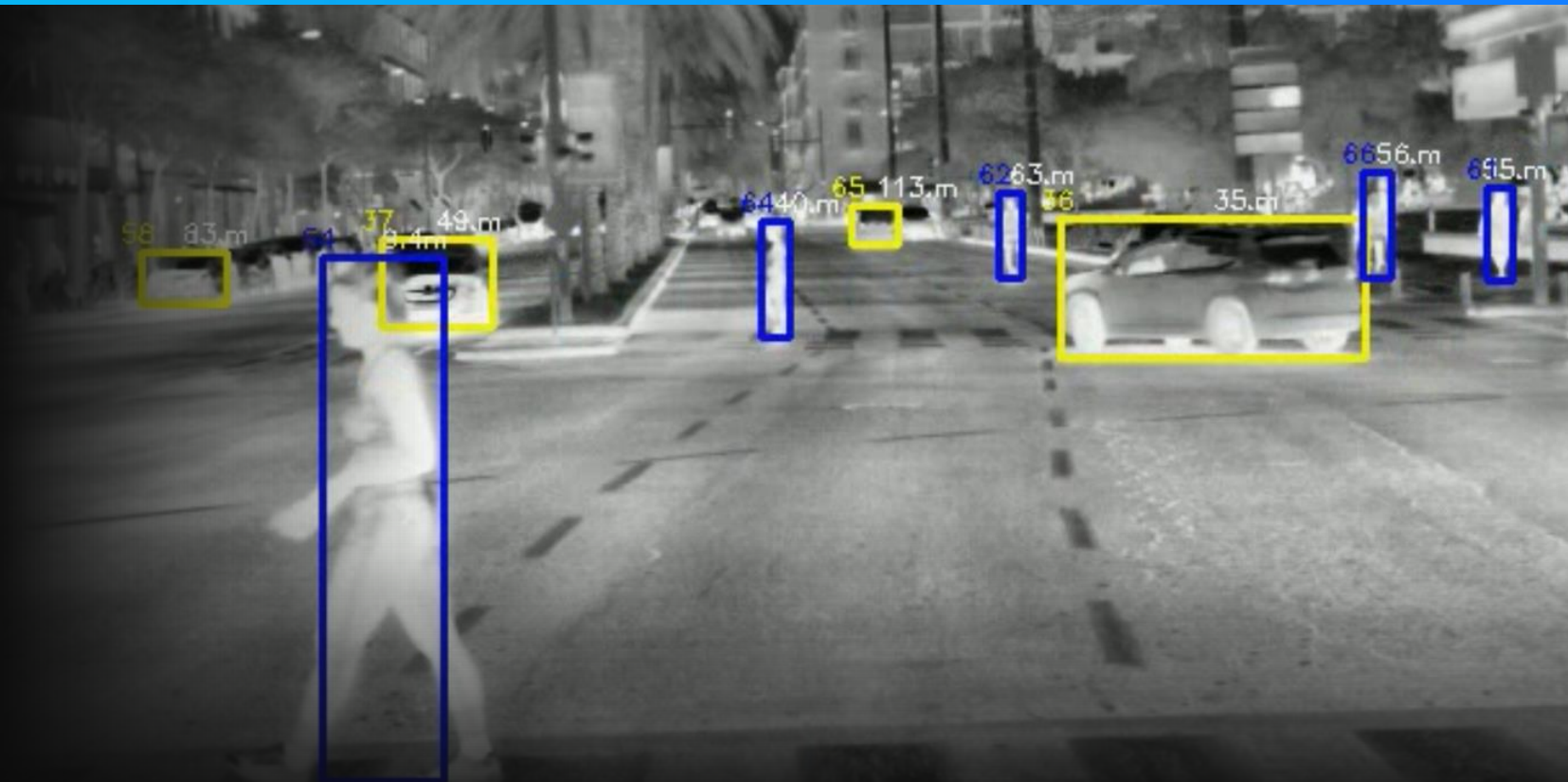
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THERMAL SENSING - BEYOND THE VISIBLE SPECTRUM

UV

Vis

IR

Micro wave

Wavelength

0.5   1   5   10   50   100   1000

Thermal infrared

SW

MW

LW   ADASKY

0.8   1.7   3   5   8   14

CMOS
Active-NIR
0.3-0.7

NIR
0.8um

Lidar
0.8-1.5

SWIR 0.9-
1.7um

Radar:
SRR - 24.05-24.5 GHz (1cm)
MRR/LRR - 76-77 GHz
(3.7mm)

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ADASKY's solution:

VIPER

When our eyes and other sensors are not enough, "VIPER", our LWIR thermal sensor, helps to enhance the current sensor suite to become 100% effective in ALL challenging use cases

Advanced WDR 720p Cam   AdaSky's VIPER FIR Solution

Night time Recognition

Advanced Full HD dashcam   AdaSky's VIPER FIR solution

Glare Recognition

Wxga cmos dashcam   AdaSky's VIPER FIR solution

Harsh weather (Fog) Recognition

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The VIPER demonstrates superior performances

Shutterless camera - No moving parts

Built for Automotive - ISO 26262 ASIL-B ready

The smallest camera in the market (size & weight)

Robust passive sensing system
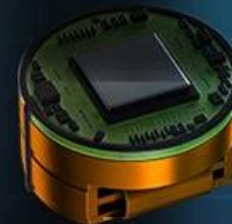
The lowest power consumption

The lowest latency

Dedicated ISP for superior image quality (ADA1)

Scalable & cost effective

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VIPER: Vehicle Integration

Functional esthetics is everything!
Viper can easily and discreetly be placed in many parts of the car to address any use-case

> VIPER's small form factor provides an aesthetic solution for OEMs

> Installation alternatives include:
> * Inside headlights
> * Inside grill
> * Inside mirrors
> * Roof
> * Windshield edges

> VIPER integrated into Magneti Marelli Award-winning Smart Corner™ presented at CES 2019

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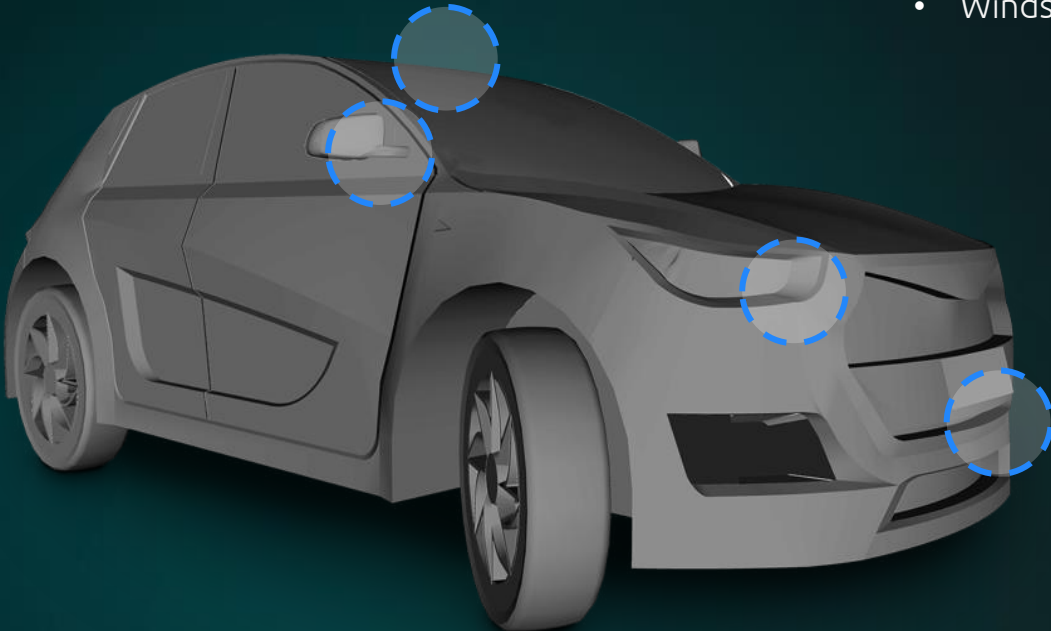
VIPER: PRODUCT PORTFOLIO

Field of View Variants

VIPER FOV 30°

- ‣ Front facing
- ‣ Road-user detection
- ‣ Environmental segmentation
- ‣ Smallest form factor
- ‣ Ø26mm x 44.2mm

VIPER Long Range FOV 18°

- ‣ Front facing
- ‣ Long range detection
- ‣ >200m range pedestrian detection
- ‣ Ø26mm x 65mm

VIPER wide FOV 60°

- ‣ Front facing and side view
- ‣ Mapping and localization
- ‣ Blind spot detection
- ‣ Ø26mm x 61.2mm

VIPER wide FOV 90°

- ‣ Mapping and localization
- ‣ 360° environment camera
- ‣ Rear view for backing up
- ‣ Ø26mm x 62.7mm

VIPER: COMPUTER VISION ALGORITHMS & SOFTWARE

> State-of-the-art Multi-class detection for all road users

VIPER Type	FOV (HFOV x VFOV)	Detection & Classification Range (typical maximum in meters)			
VIPER Long Range FOV 18°	**18° x 13.5°**	**215m**	Pedestrians & 2-wheelers	**230m**	cars & large vehicles
VIPER FOV 30°	**30° x 22°**	**120m**	Pedestrians & 2-wheelers	**130m**	cars & large vehicles
VIPER wide FOV 60°	**60° x 46°**	**55m**	Pedestrians & 2-wheelers	**60m**	cars & large vehicles
VIPER wide FOV 90°	**90° x 70°**	**30**m	Pedestrians & 2-wheelers	**35m**	cars & large vehicles

> Mapping and localization research

> >5M objects annotated for LWIR machine learning

> Cross platform Computer Vision - ARM (DrivePX2/Jetson Xavier, x86 (Laptop/PC), target ECU per integration project

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ADASKY is expanding from automotive to additional segments

VIPER (AUTOMOTIVE)

High-resolution, shutterless, LWIR thermal camera, designed for enhanced vehicle safety
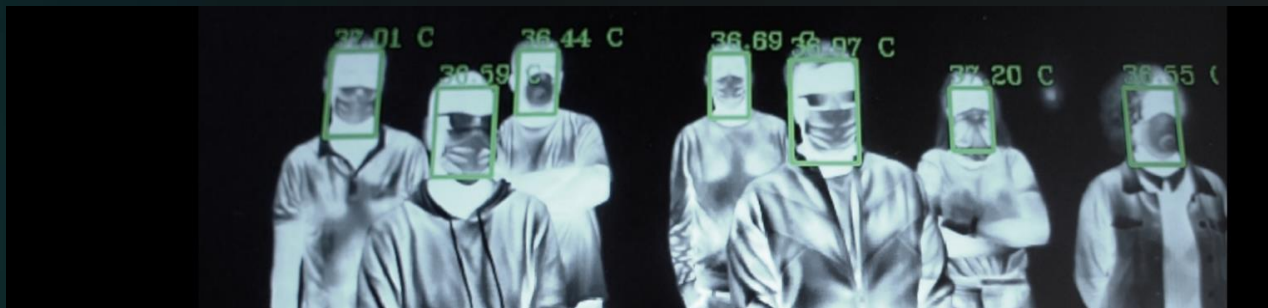
SHARP VISION (SMART CITIES)

Stationary thermal LWIR imaging system for roadway safety, "super-vision" for drivers and road users

VIPER-R (COVID-19)

Radiometric LWIR thermal camera for sensing elevated body temperature

ADASKY's solutions - Video links

Solutions

VIPER ▶

SHARP VISION ▶

VIPER-R ▶

All-weather recognition

Advanced Full HD dashcam   ADASKY's VIPER LWIR Solution
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Multi-classification recognition

Advanced Full HD dashcam   ADASKY's VIPER LWIR Solution

Free-Space road segmentation

Advanced Full HD dashcam   ADASKY's VIPER LWIR Solution

FCW and AEB Safety Features

Software capabilities

Advanced Full HD dashcam   ADASKY's VIPER LWIR Solution

Multi-classification recognition

Advanced Full HD dashcam   ADASKY's VIPER LWIR Solution
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Free-Space road segmentation

ADASKY's VIPER LWIR Solution

FCW and AEB Safety Features
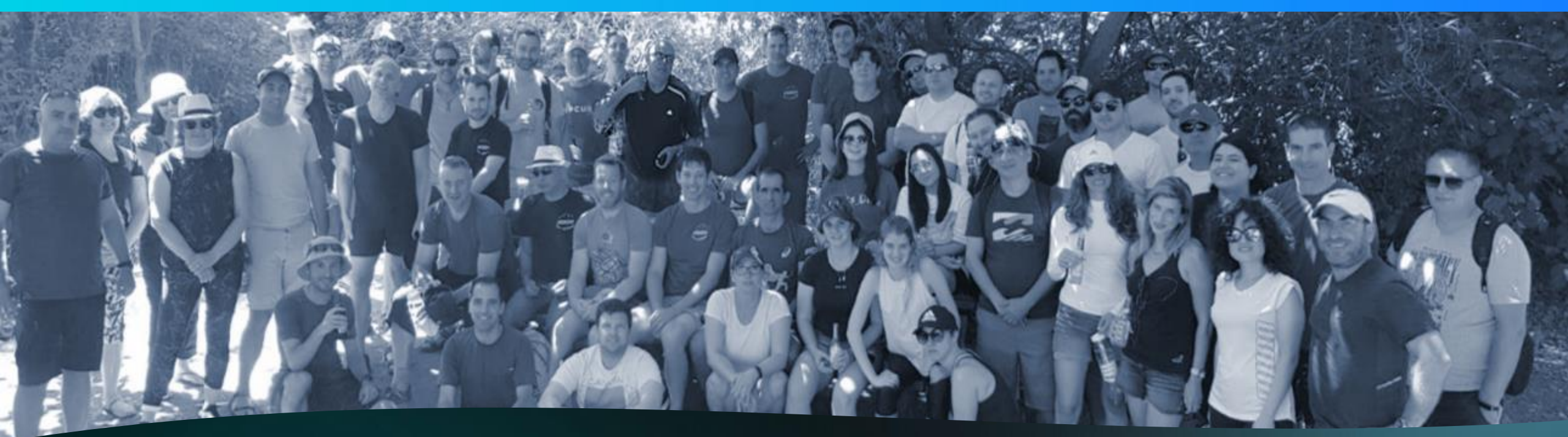
ADASKY™

OUR CORE IS OUR PEOPLE

It's all about teamwork!

~80 employees, ~55 multidisciplinary engineers	Family-style working environment	Agile approach, innovative thinking	Resilience & efficient teamwork	Committed to ADASKY's vision to save lives!

ADASKY™

ADASKY IS DRIVEN TO SAVE LIVES! ›

ADASKY develops a unique solution for critical challenges

ADASKY is experiencing significant growing demand from OEMs and T'1s

ADASKY is growing, and establishing a mass production manufacturing site

ADASKY has a strong financial backing initiated its Series B investment round. $15M has been already secured by its existing shareholders

ADASKY's Website   ADASKY's Youtube channel   ADASKY's linkedin page

Dec 1, 2020, 05:42am EST | 343 views

Adasky CEO Declares Thermal Cameras The New Airbags

Ed Garsten Senior Contributor ⓘ
Transportation

Forbes

ADASKY Awarded Strategic Contract with Autonomous Electric Vehicle OEM English ▾

Night vision for cars: Fighting the pedestrian safety crisis

Eric D. Lawrence Detroit Free Press
Published 8:48 a.m. ET Oct. 26, 2020 | Updated 4:12 p.m. ET Oct. 29, 2020

USA TODAY

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