Valeo

SMART TECHNOLOGY
FOR SMARTER CARS

Augmented
Visibility

HD Lighting 高清照明系统

From Glare Free High Beam to Roadmarking 从防眩目远光到路面标识

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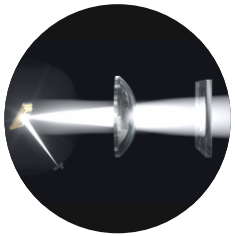
PIXEL ROADMAP 像素大灯发展之路

2014	2016	2018	2022
1 Pixel	3 to 30 Pixels	30 to 100 Pixels	1 000 to 1 000 000 Pixels
ADB one dark tunnel	Digital ADB several dark tunnels	Digital ADB, Digital Bending Light	High resolution 2D ADB & Road writing Digital Bending Light
GLARE-FREE HIGH BEAM	MATRIX BEAM	PIXEL LIGHTING	PICTUREBEAM®



MONOLITHIC CHIP
DMD CHIP
SCANNING
...

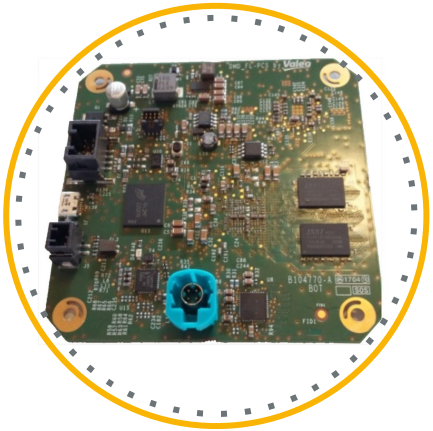
RISE OF DIGITAL ADAPTIVE DRIVING BEAM

PIXEL LIGHT DIGITAL ADB and DIGITAL BENDING LIGHT
电控式防眩目和静态随动转向大灯

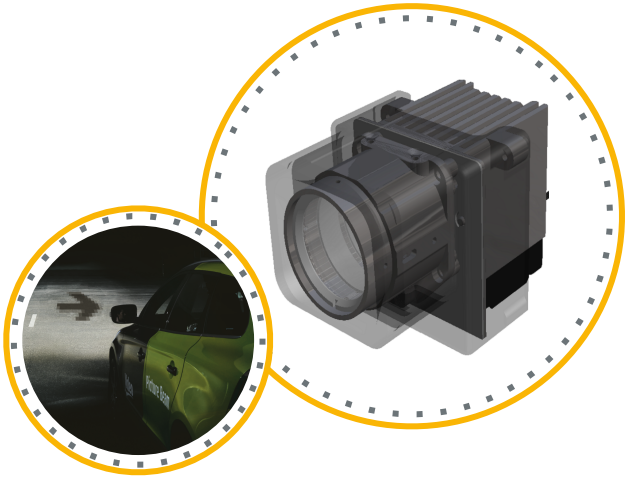
HIGH DEFINITION LIGHTING
高清大灯照明系统

Matrix of micro mirrors : DMD

1.2 Mpixels



High density LED Matrix: Monolithic



From 1,000 to 4,000 pixels

Electronic interface : Picture Control Module (PCM) 图像控制单元

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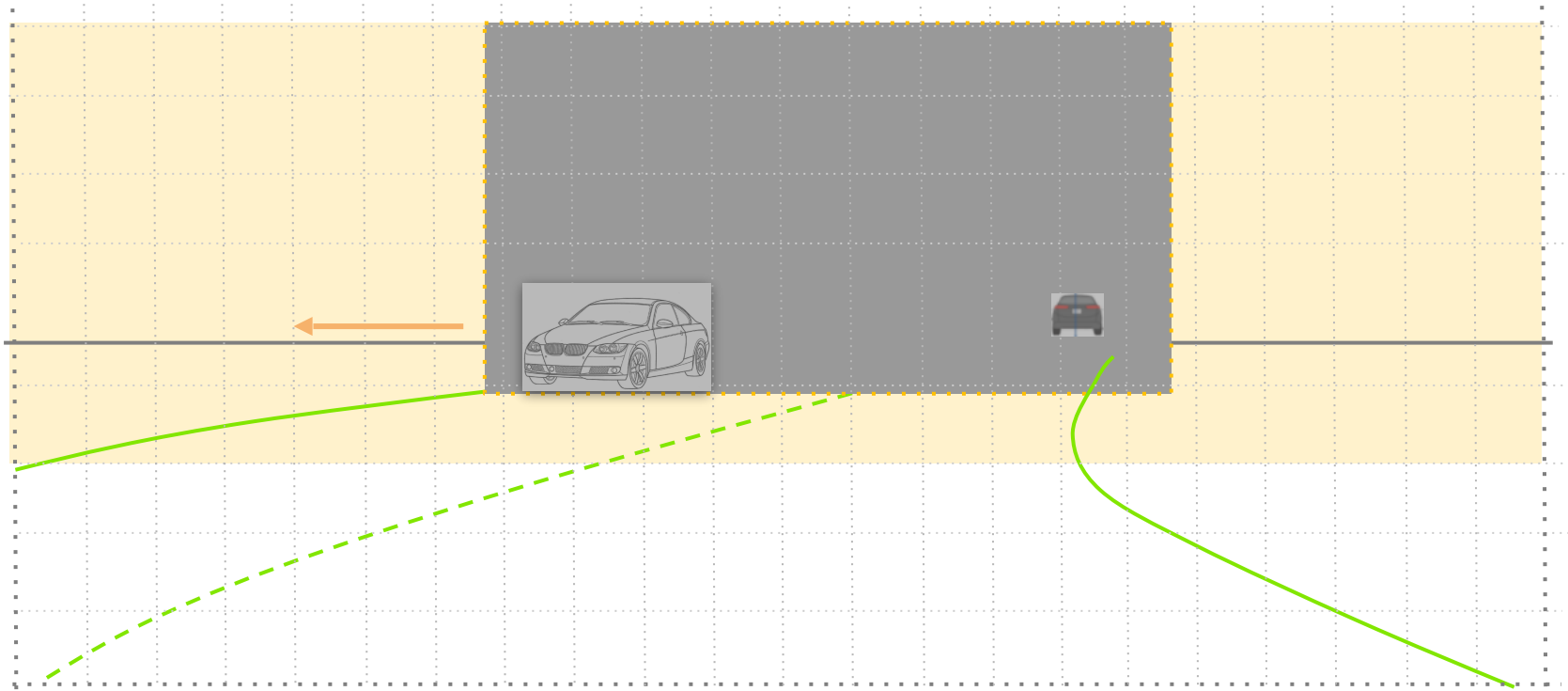
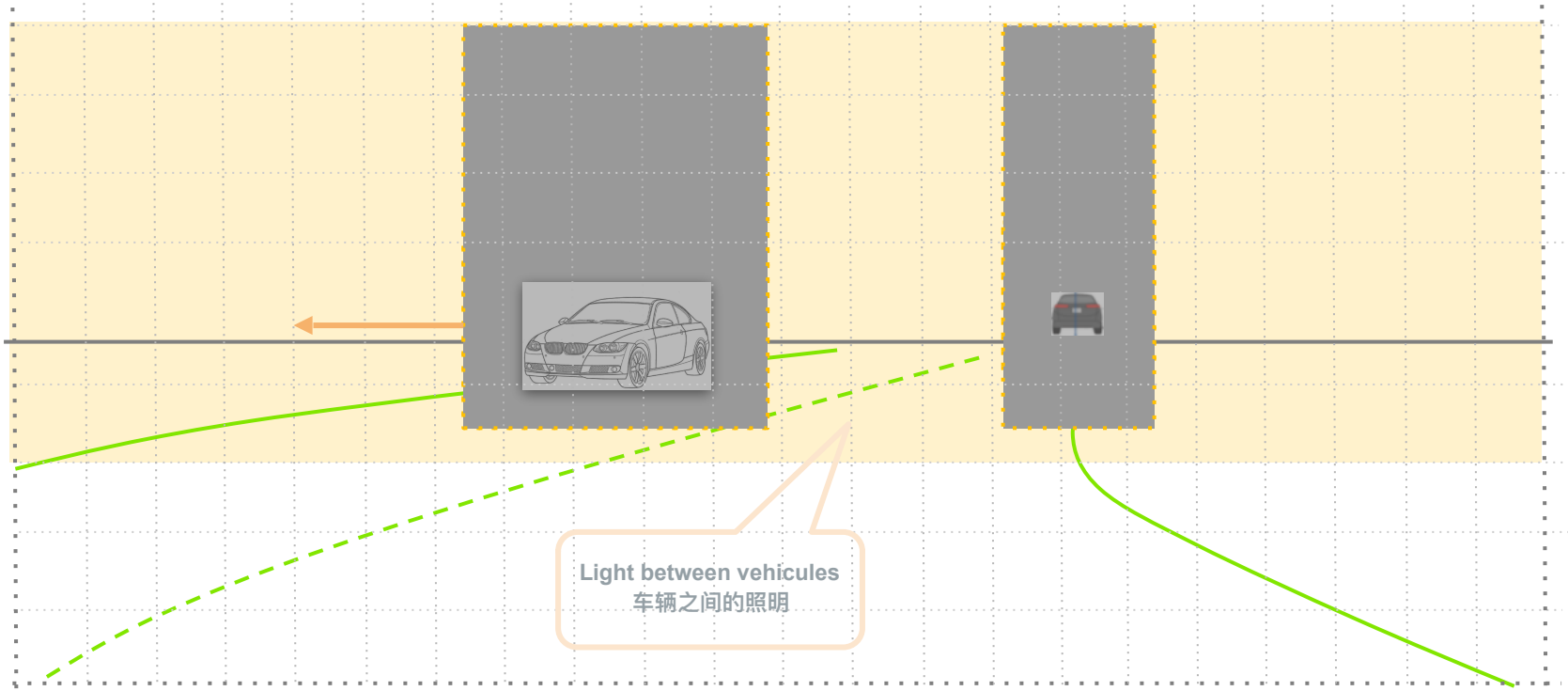
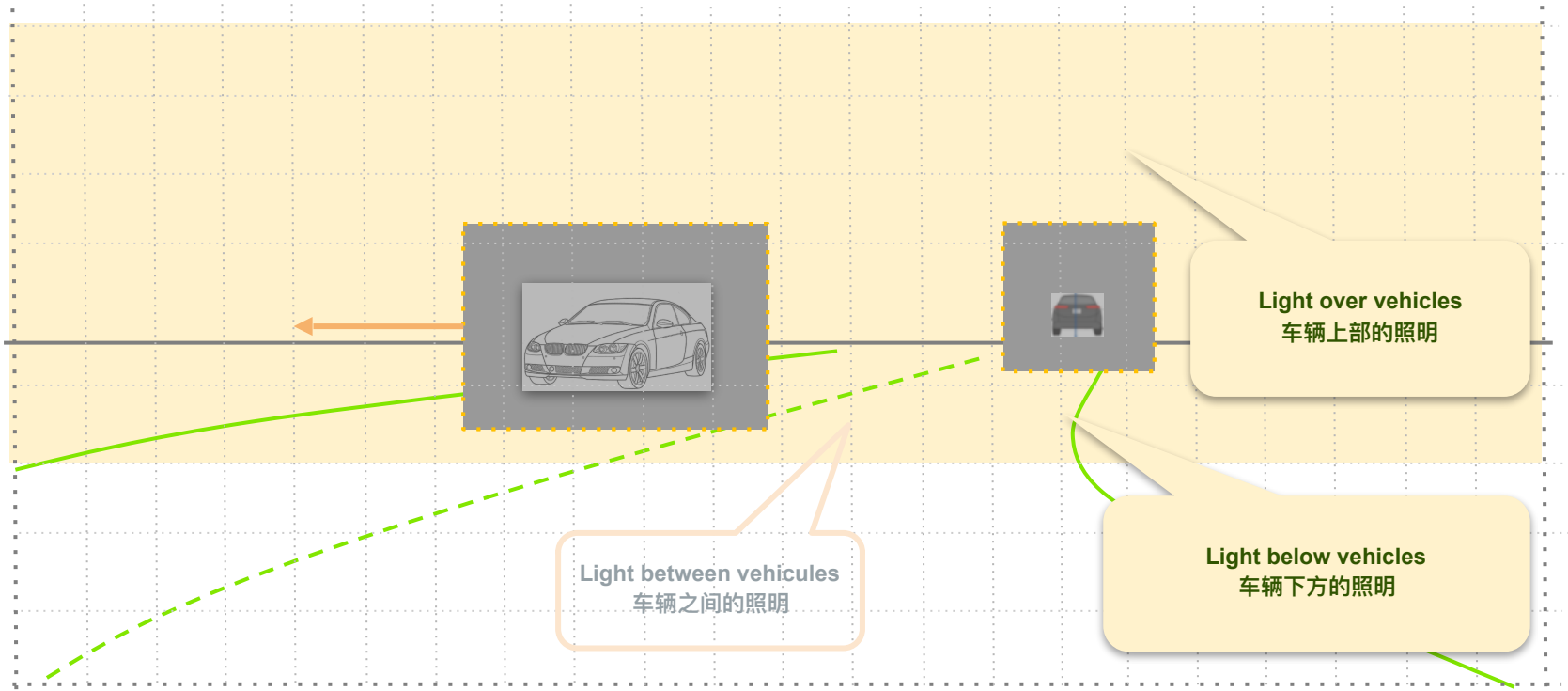
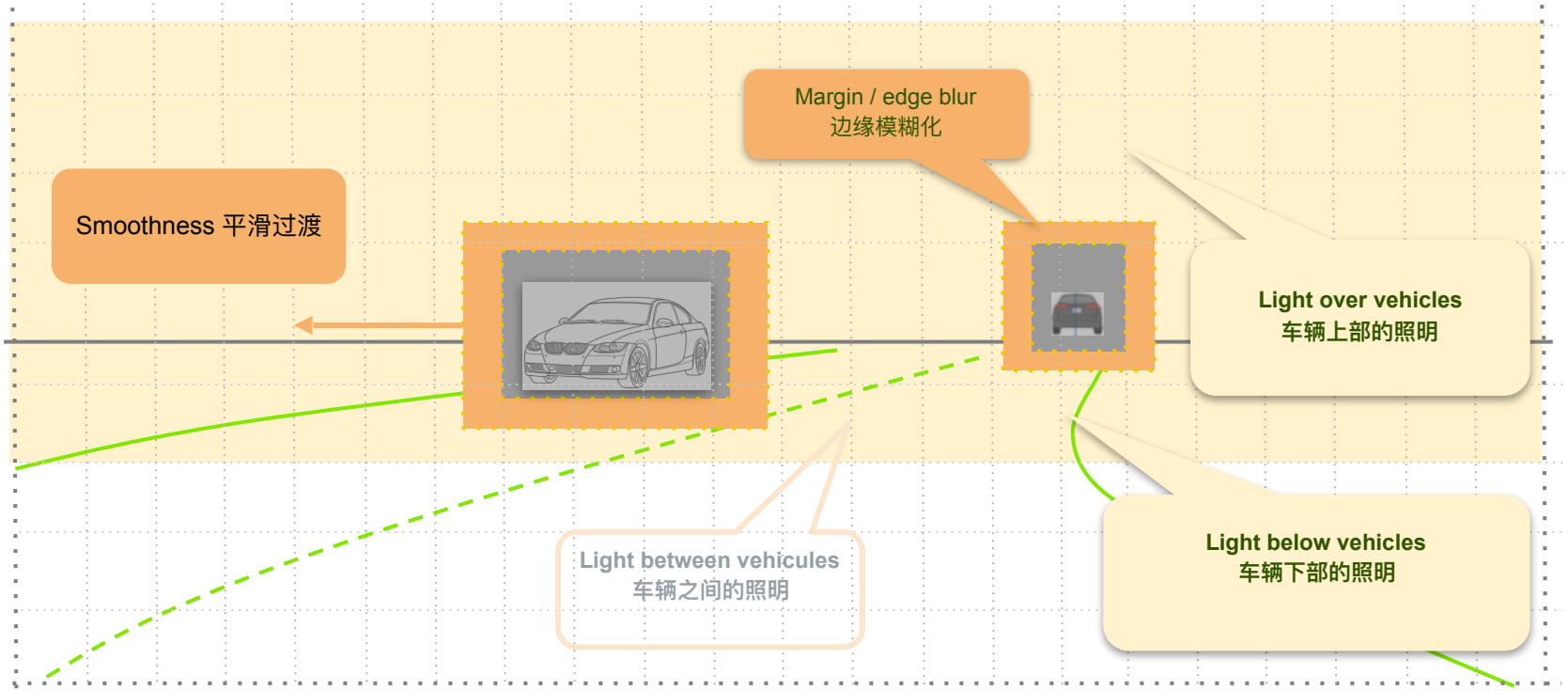
From Matrix to High Definition Glare Free High Beam




Light between vehicules
车辆之间的照明

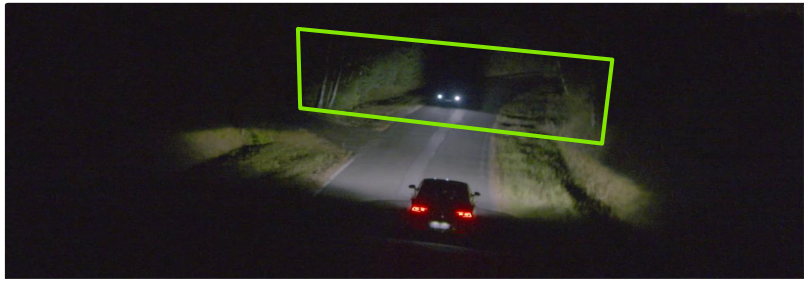

Light over vehicles
车辆上部的照明
Light between vehicules
车辆之间的照明
Light below vehicles
车辆下方的照明


Margin / edge blur
边缘模糊化
Smoothness 平滑过渡
Light over vehicles
车辆上部的照明
Light between vehicules
车辆之间的照明
Light below vehicles
车辆下部的照明

High Definition Glare Free High Beam

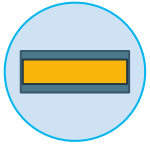
Low Definition ADB
Optical resolution: 1,2°

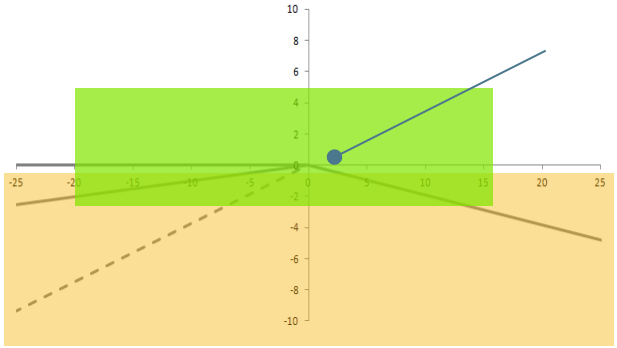
High Definition ADB
Optical resolution <0.3°



Monolithic Module:
单片式高清单元

- 1 source up to 4000 pixels for full High Beam





Flat beam module:平光单元

- Standard module (thin lens, compact module, reflector)

HAZARD MARKING 危险标记

Marking the objects or other users that needs to be highlighted to avoid danger

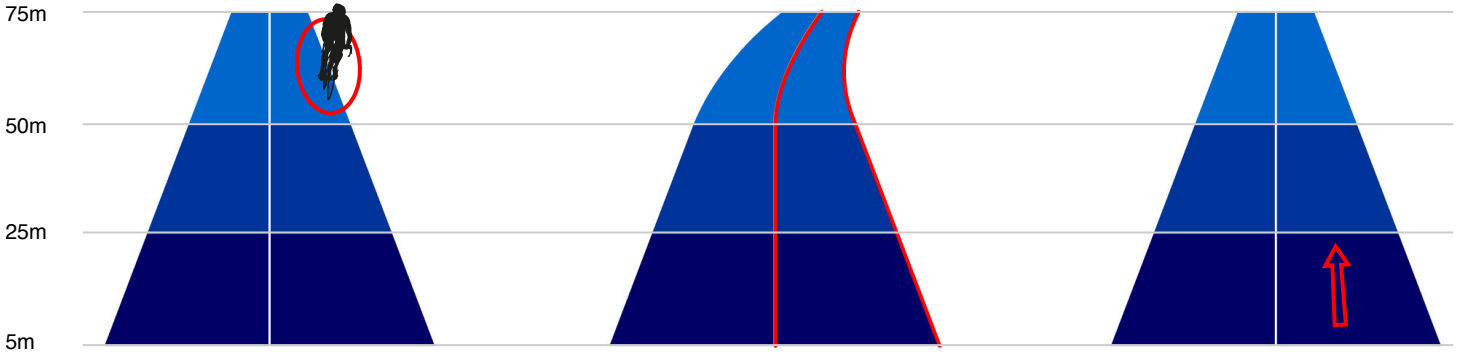
ROAD MARKING 路标

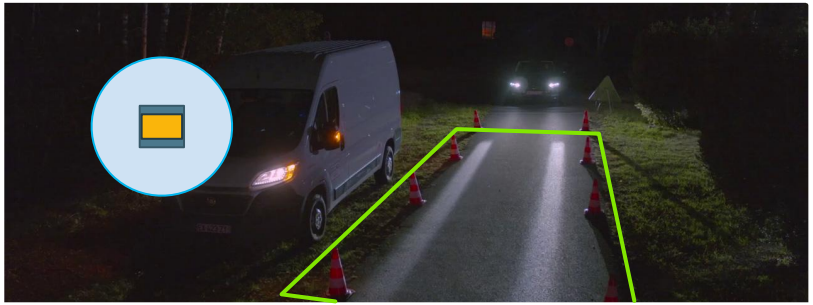
Tracing lanes for driving guidance and trajectory management

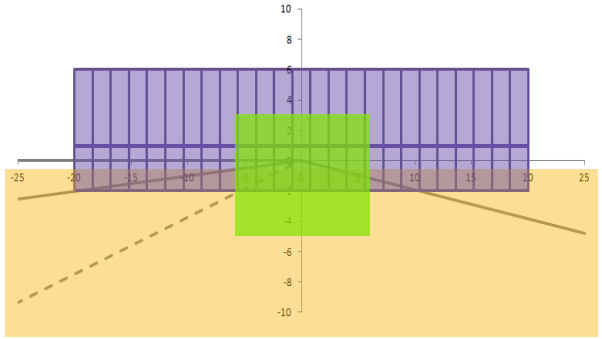
ROAD WRITING 路面图示

Writing picto on the road to communicate with other users

0.3° resolution real case

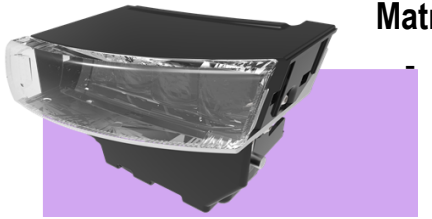






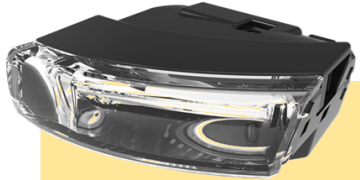
Monolithic Module:
单片式投影单元

- Starting from 1000 pixels



Matrix beam module 矩阵单元

- Standard module (thin lens, compact module, reflector)



Flat beam module: 平光单元

- Standard module (thin lens, compact module, reflector)

All in all, Valeo offers 法雷奥集成式方案

A mastering of the full system (CAM to HL)
一套成熟开发的系统式方案

A scalable source to fit OEM specifications
一个灵活可变的单片式光源

A complete system approach “From Photon to Photon”
一套从光子探测到光子输出的完整系统

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