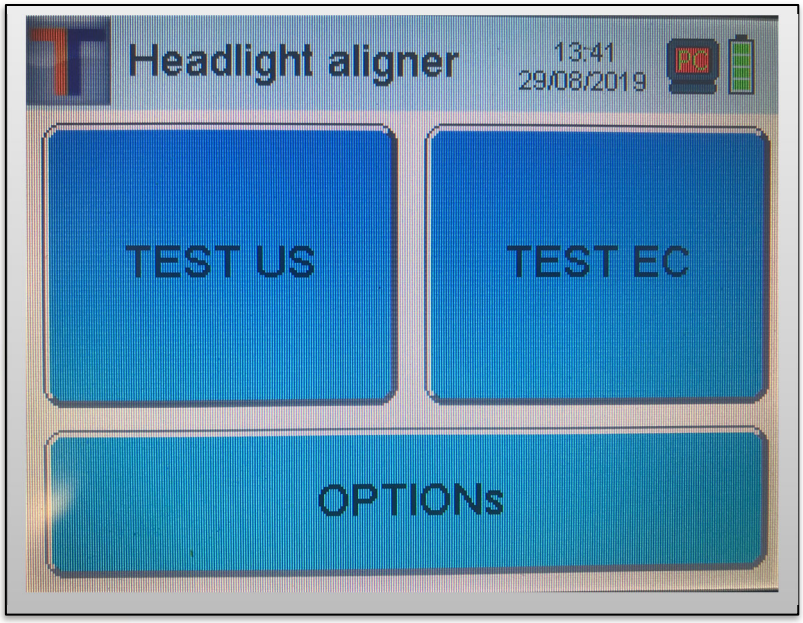
FASEP MADE IN ITALY

QUALCUNO DI CUI TI PUOI FIDARE

Art. F22799 LX

Camera on board unit



TECHNICAL DATA SHEET

CAMERA ON BOARD HBT – LASER ALIGNMENT

TECHNICAL SPECS

Display Board

Display Touchscreen TFT a colori: display 5,7” 320x240

Camera Board

CMOS Camera 640x480 VGA - PIXEL 6.0 x 6.0µm

environmental conditions

operations

Property	**Value/Range**
Working temperature	+5°C - +45°C
Humidity	20 % – 80 %

Storage and transportation

Property	**Value/Range**
Temperature	-25 °C – 45 °C/-13 °F – 113 °F
Humidity	30 % – 60 %

Dimensions and weight

Property	**Value/Range**
Dimensions (W x D x H)	660 x 695 x 1780 mm
Weight 35	kg (66 lb)

Measuring range

Property	**Value/Range**
Top and bottom alignment	0 – +/- 600 mm / 10 m (0; +/-6 %)
Right and left alignment:	0 – 1000 mm / 10 m (0; +/- 10 %)
Luminosity	0 - 240 lx (0 - 150.000 cd)
Illuminance	0– 150.000 lx
Height of optical center point from ground level	240 - 1450 mm
Power supply (internal battery)	12 V
Input voltage of battery charger	100 – 240 V, 50/60 Hz

Measurement accuracy

Property	**Value/Range**
Intensity	+/- 5% end of scale
Vertical axis deviation	+/- 0,1%
Horizontal axis deviation	+/- 0,2%

Standard Configuration

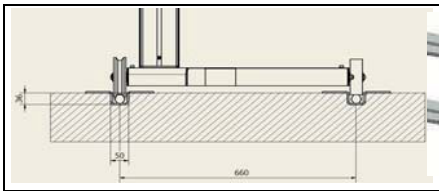
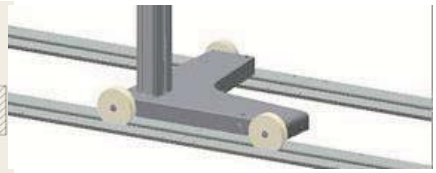
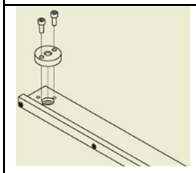
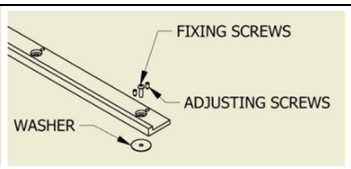
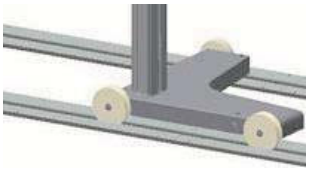
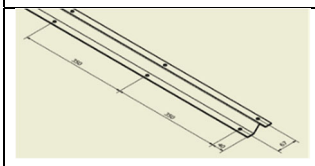
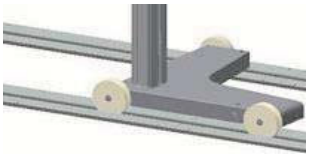
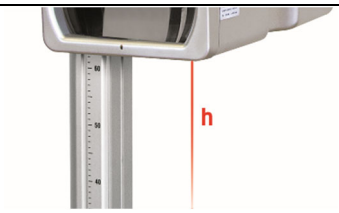
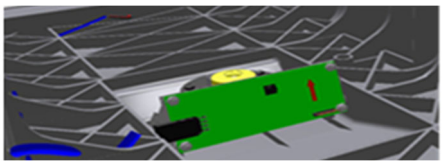
Visor = green laser

Column = extruded aluminum

Optical box = Injection molded box complete with color TFT 5.7” touchscreen Display complete with internal level and cross reference laser, Fresnel lens

Base = 3 wheels base complete with levelling adjustment

AVAILABLE OPTIONS

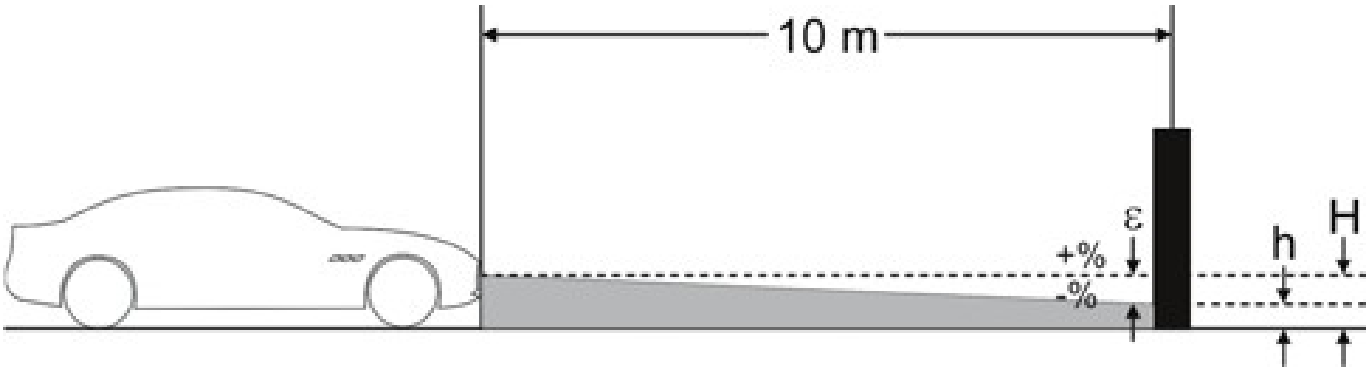
 	**R2 – RAIL PROFILE "HGV "** High precision recessed rail – pass through- Length 3500 mm Adjusting range 1mm/m
  	**R3 – PROFILE "L"** Over floor high precision rail – no pass through - Length 3000 mm Adjusting range 1mm/m
 	**R1 – PROFILE "V"** Over floor rail guide – no pass through - Length 3000 mm
	**HS – HEIGHT SENSOR** Electronic sensor for automatic detection of the operating height of the optical box and relative reading on the display
	**Thermal printer**
	**INC – INCLINOMETER/ELECTRONIC BUBBLE** Electronic board is equipped with a microchip accelerometer recording the 0 position. Once HBT is placed on the working area, microchip is detecting floor slope and sending data to the main electronic board. Such a correction is recorded and calculated before test results will be displayed. **Accelerometer reference axis: X, Y, Z** **Accellerometer accuracy: 0.057° (1 cm/10 meters)**
	**BT – BLUETOOTH MODULE MASTER&SLAVE** Bluetooth 2 modules - master and slave **B – BLUETOOTH MODULE SINGLE MASTER** Bluetooth single Slave (HBT side)
Headlight PC SW	Software windows based to be installed on PC to create test archive and test report printing out

Measurement: notes and explanations

The following Sections explain the most important measurement quantities required for headlamp adjustment.

Pitch angle

The definition of the pitch angle is illustrated in the following.

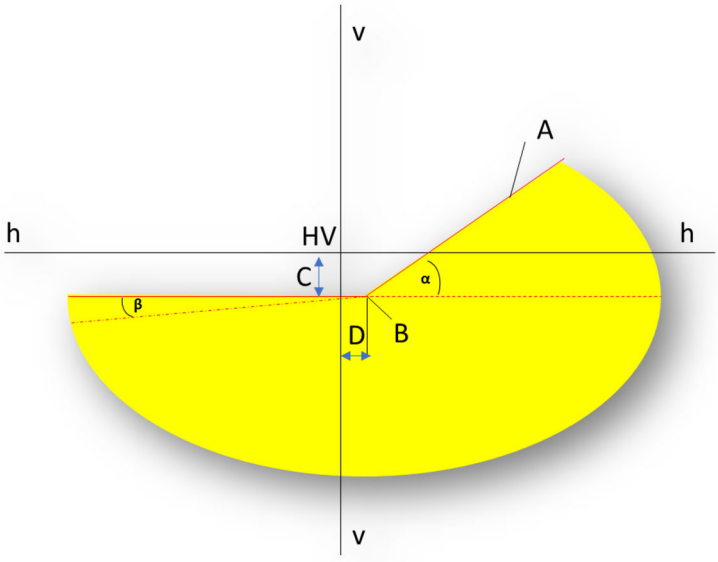


Definition of pitch angle
"H": Height of centre of headlamp measured from the ground
"h": Height of image projected by headlamp at a distance of 10 m, measured from the ground
"ε": Pitch angle, calculated with the following formula: $\varepsilon = [(H-h) / 1000] \times 100$

ECE – European Standards

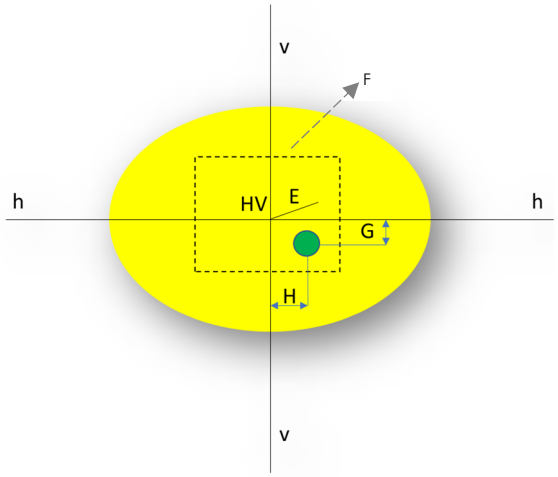
LOW BEAM = The following illustration shows the most important low beam measurement quantities.

Measuring = Vertical Deviation – Horizontal Deviation - Yaw angle – rolling angle



"A": bright-dim border, made up of two sections:
Horizontal section, rising straight line, also referred to as "shoulder". The bright-dim border must be within the tolerance range stipulated in the guideline.
"B": break point with asymmetrical light; center point with symmetrical light.
"C": deviation of the break point in vertical direction (also known as pitch angle). The value is always shown as an absolute value. Possible units: %, cm / 10 m, degrees
"D": deviation of the break point in horizontal direction. The value is always shown as an absolute value. Possible units: %, cm / 10 m, degrees
"α": angle between the "shoulder" and the horizontal section of the bright-dim border (also referred to as yaw angle with asymmetrical low beam).
"β": angle between the left portion of the bright-dim border and the horizontal (also referred to as roll angle, usually 0°).

HIGH BEAM = The following illustration shows the most important high beam measurement quantities



"E": zero point of beam setter (centre of headlamp). This point is the basis for the measured values. Deviations are measured from this point.
"F": tolerance range. The high beam hot spot should be within this range.
"G": Vertical distance of hot spot from centre point. Possible units: %, cm / 10 m, degrees
"H": horizontal distance of hot spot from centre point. Possible units: %, cm / 10 m, degrees

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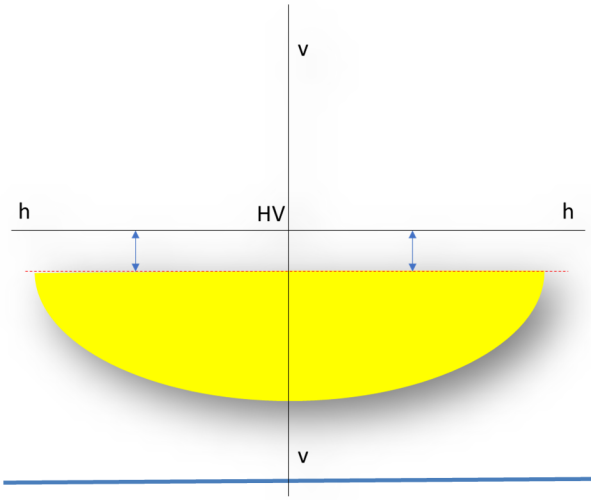

FOG BEAM

The fog lamp is measured in a similar manner to the low beam, the difference being that the bright-dim does not have a break point but takes the form of a continuous horizontal line

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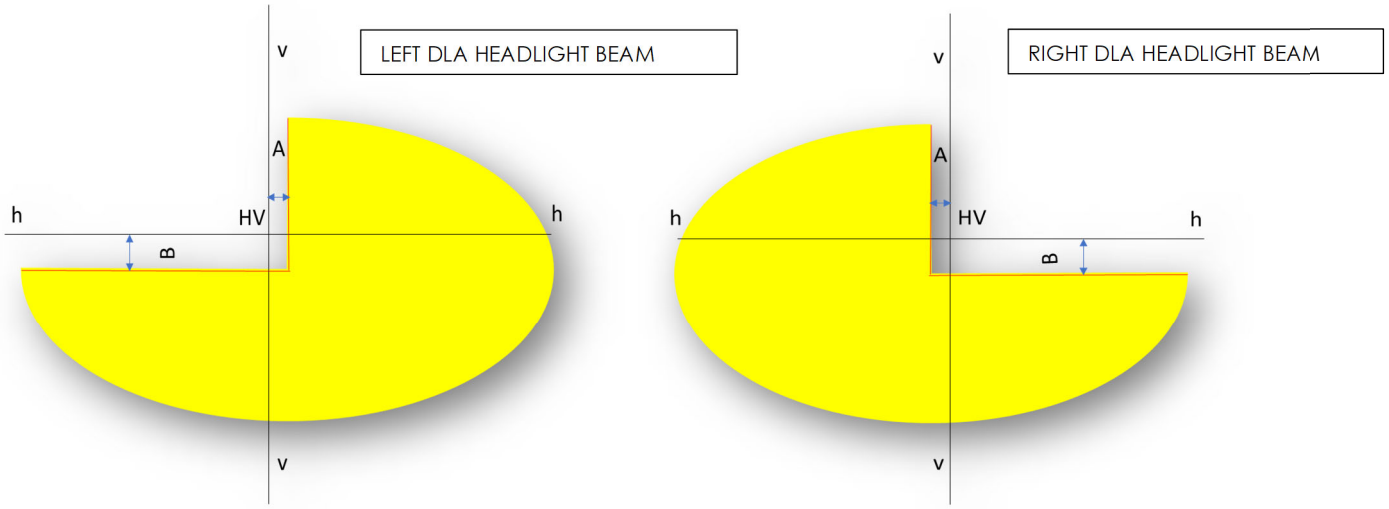
INTELLIGENT BEAM SYSTEMS:

the introduction of intelligent headlamp systems, the accuracy of the headlamp configuration plays an increasingly important role. In order to be able to accurately set these headlamps, the vehicle manufacturers have provided a special configuration screen for these headlamps. This must be selected with a diagnostics device

Headlamps with Dynamic Light Assist (DLA)

The following illustration shows the most important measurement dimensions for headlamps with Dynamic Light Assist (DLA).



"A": deviation of the bright-dim border in horizontal direction from the median. The value is always shown as an absolute value. Possible units: %, cm / 10 m, degrees

"B": deviation of the bright-dim border in vertical direction from the median. The value is always shown as an absolute value. Possible units: %, cm / 10 m, degrees

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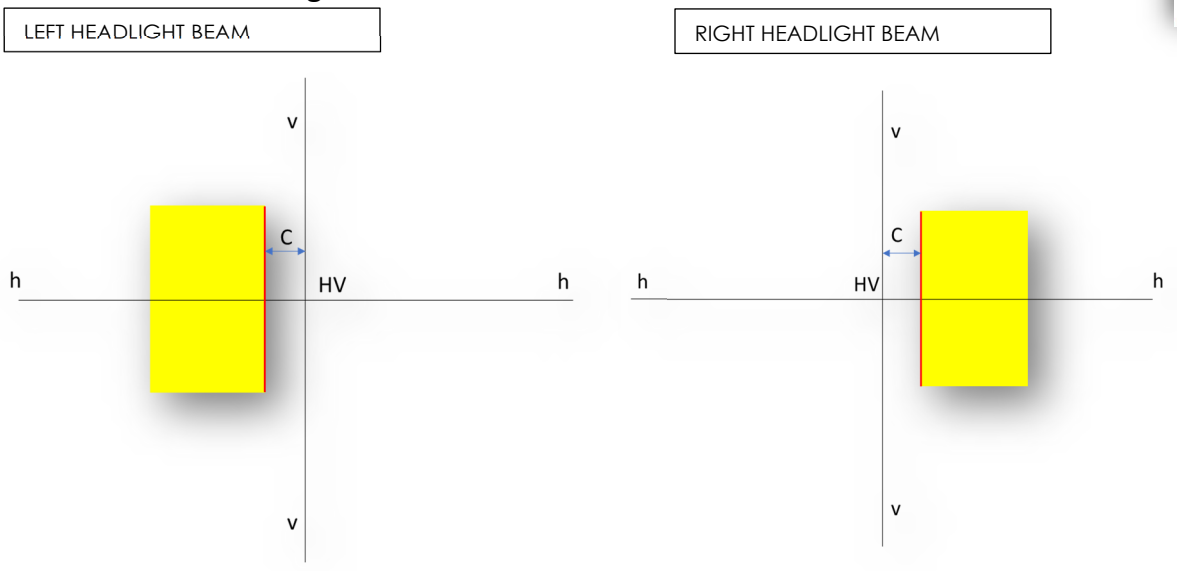
Matrix activated headlight beam

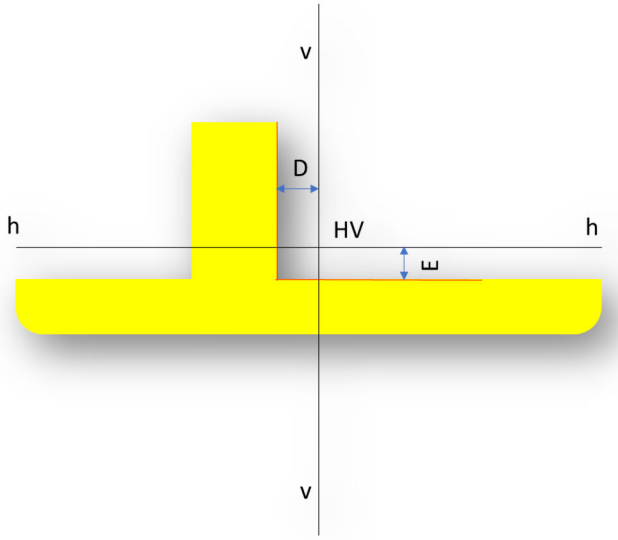


"C": deviation of the bright-dim border in horizontal direction from the median. The value is always shown as an absolute value in angle minutes

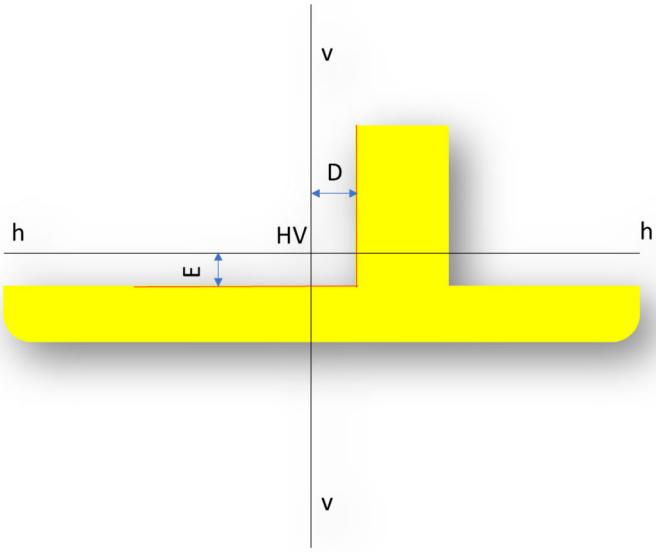
Matrix activated headlight beam (HD matrix)

The following illustration shows the most important measurement dimensions for headlamps with an HD matrix function

LEFT HEADLIGHT BEAM



RIGHT HEADLIGHT BEAM

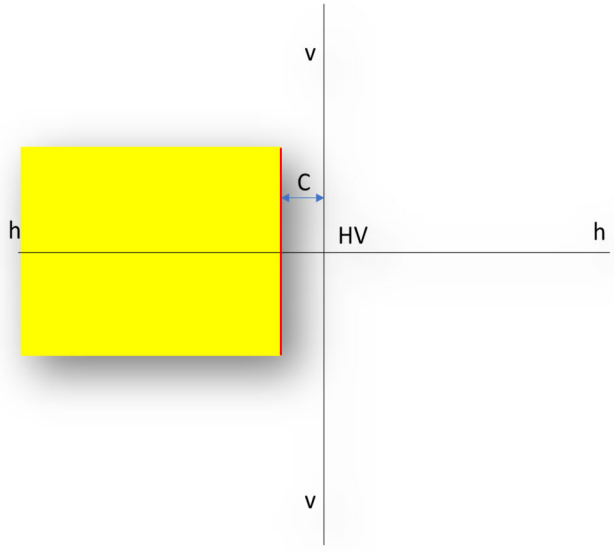


"D": Deviation of the cut-off line in horizontal
direction from the median. The value is always shown as an absolute value in angle minutes.
"E": Deviation of the cut-off line in horizontal direction from the median. The value is always shown as an absolute value in angle minutes.

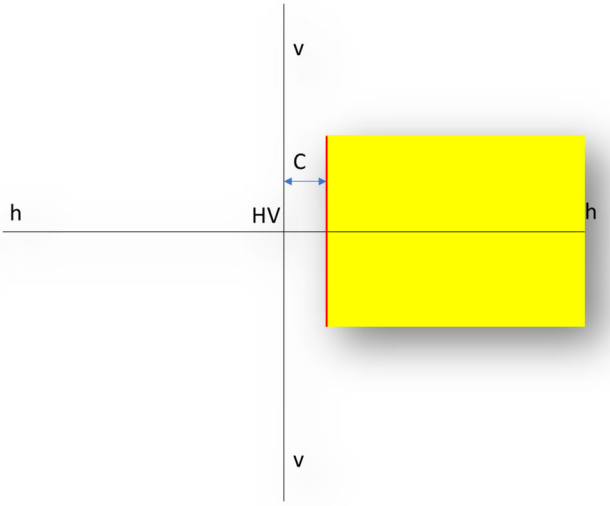
Ford LED headlamp with anti-glare high beam (ILS)

The following illustration shows the most important measurement dimensions for Ford LED headlamps with anti-glare high beam (ILS).

LEFT HEADLIGHT BEAM



RIGHT HEADLIGHT BEAM

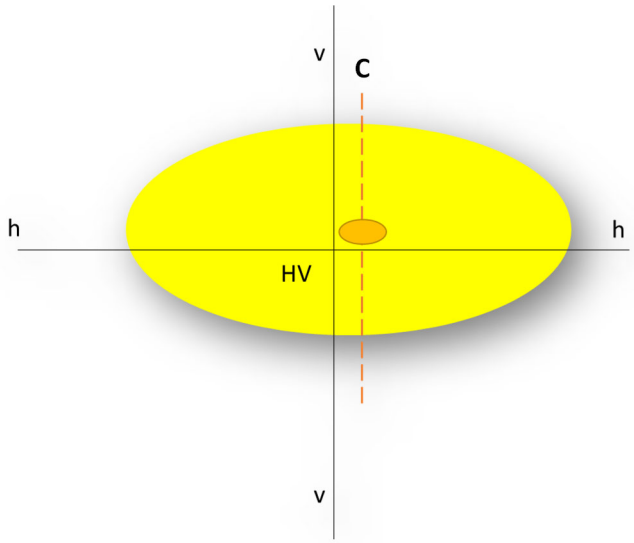


"C": Deviation of the cut-off line in horizontal direction from the median. The value is always shown as an absolute value; the following units are possible:
:%, cm / 10 m, degrees

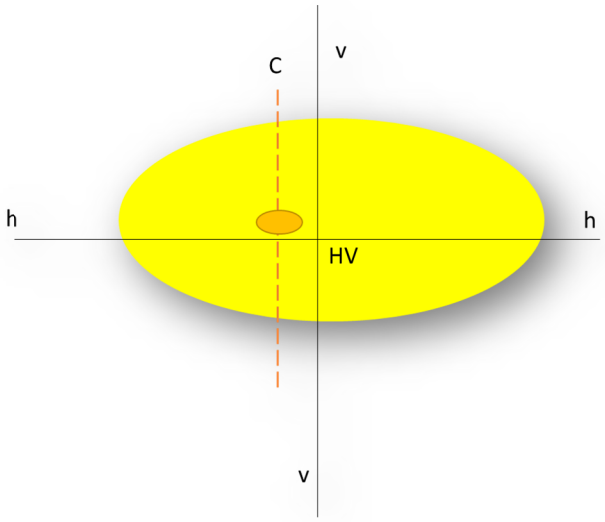
Ford LED matrix headlamp

The following illustration shows the most important measurement dimensions for Ford LED headlamps with anti-glare high beam (ILS).

LEFT HEADLIGHT BEAM



RIGHT HEADLIGHT BEAM



"C": ": Deviation of the calculated cut-off line based on light intensity screening in horizontal direction from the median. The value is shown as an absolute value in angle minutes

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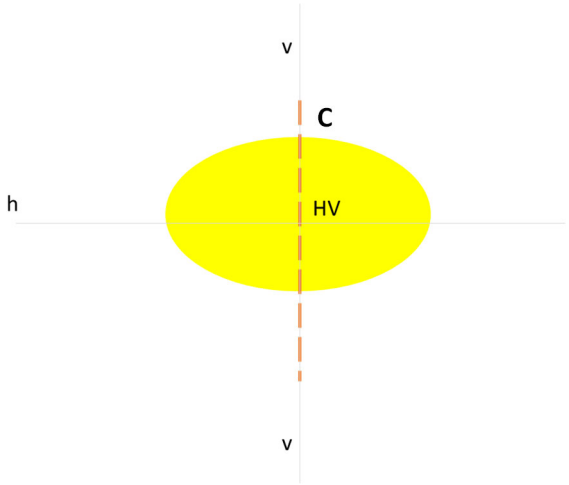
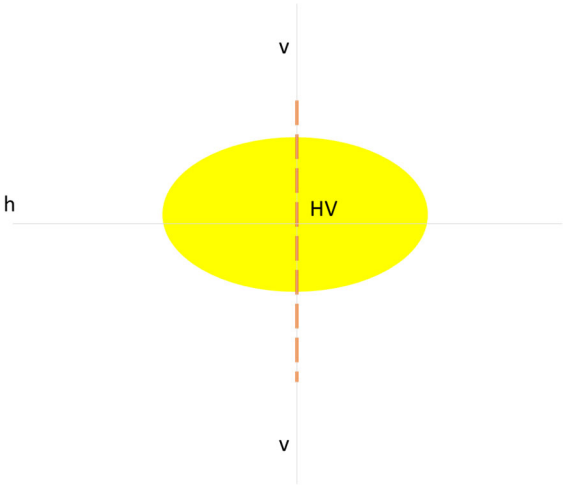
PSA LED matrix headlamp

The following illustration shows the most important measurement dimensions for PSA LED matrix headlamps.

LEFT HEADLIGHT BEAM



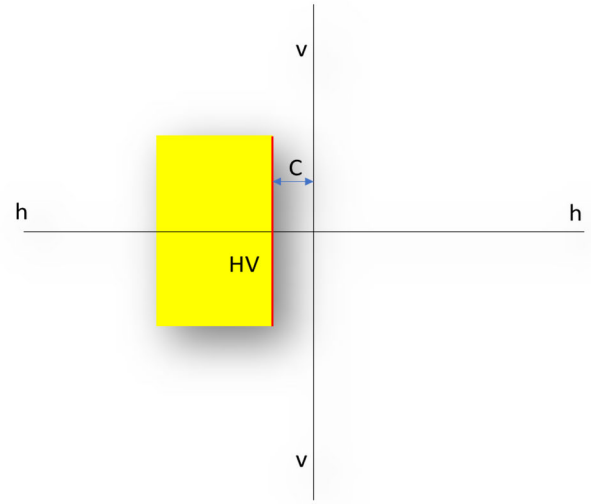
RIGHT HEADLIGHT BEAM



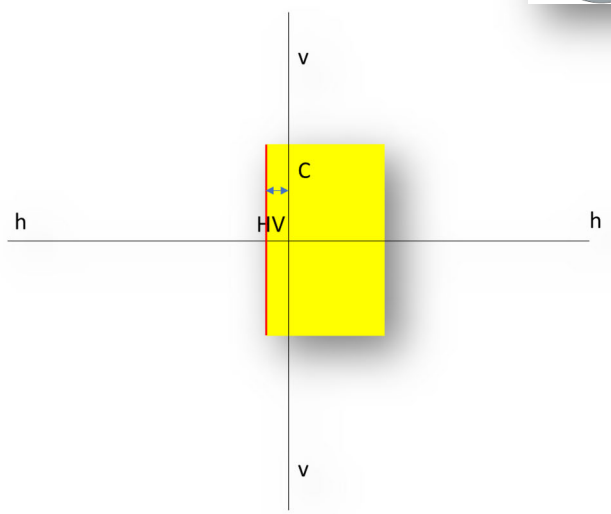
"C": ": Deviation of the calculated cut-off line based on light intensity screening in horizontal direction from the median. The value is shown as an absolute value in angle minutes

Matrix activated headlight beam

LEFT HEADLIGHT BEAM



RIGHT HEADLIGHT BEAM

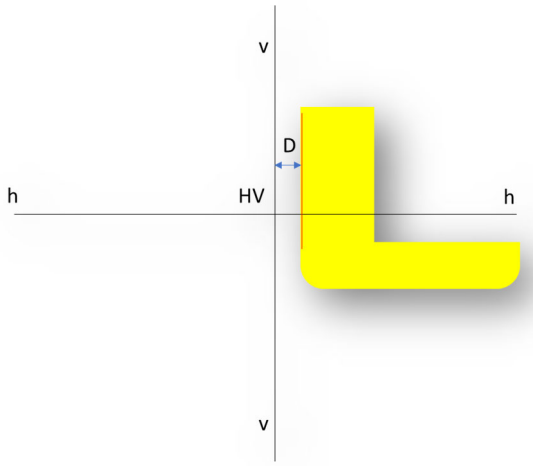


"C": deviation of the bright-dim border in horizontal direction from the median. The value is always shown as an absolute value in angle minutes

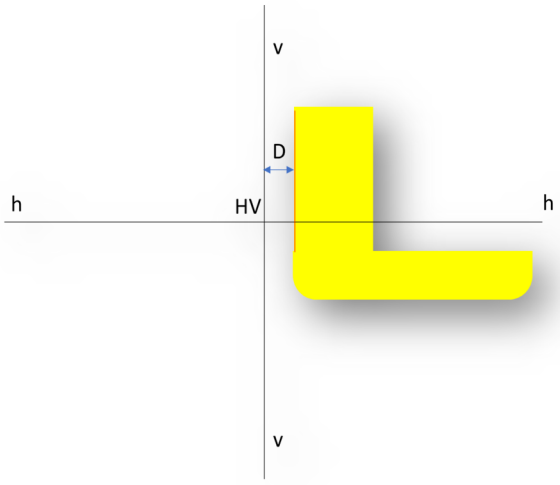
Matrix activated headlight beam (KINK)

The following illustration shows the most important measurement dimensions for headlamps with an kink matrix function

LEFT HEADLIGHT BEAM



RIGHT HEADLIGHT BEAM



"D": Deviation of the cut-off line in horizontal direction from the median. The value is always shown as an absolute value in angle minutes.. refernce values are settled by the OEM