TechPart 1 – Reflection foil & Sensor selection

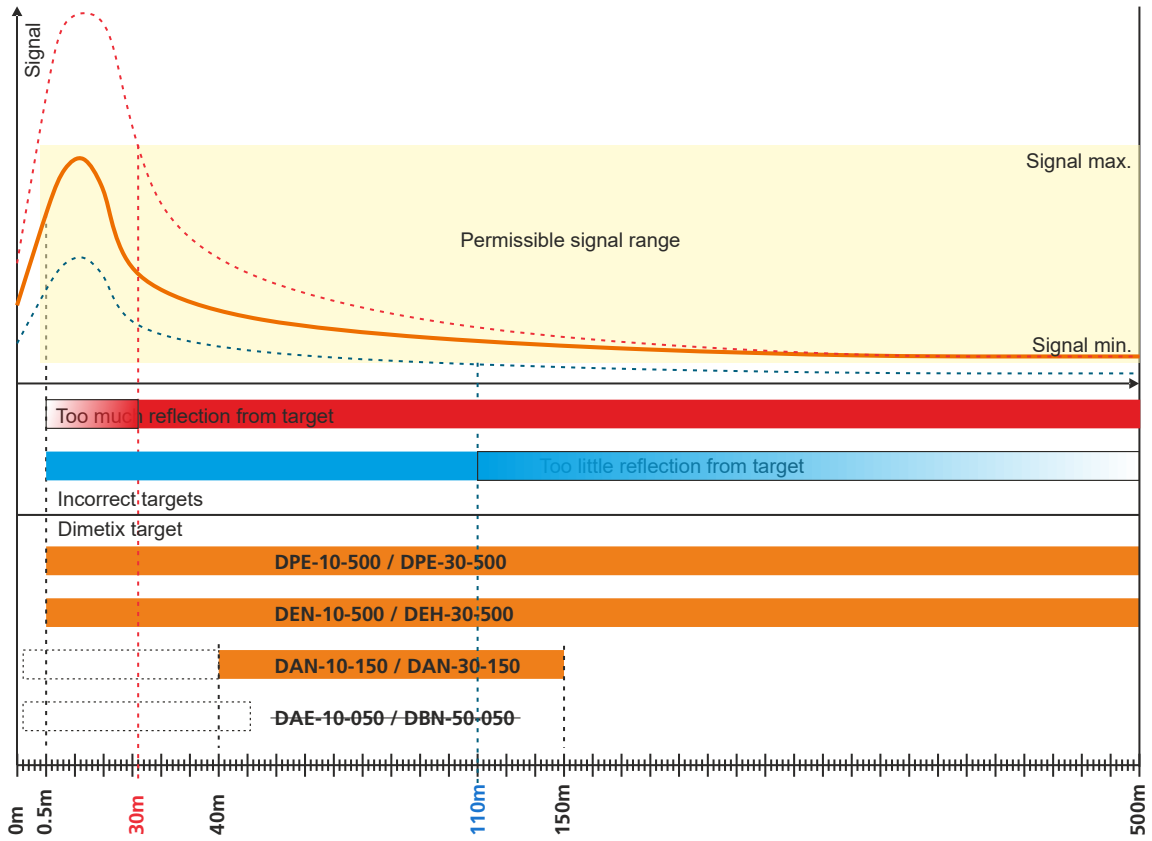
1 Reflective target

The reflective Target Plate is one of the most frequent customer support requests. We would therefore like to explain here why only the original Dimetix target plate or target foil may be used. It's important that only our original target foil may be recommended by distribution partners like you.

1.1 Original Dimetix targets

We go to great lengths to supply you with perfect and very stable targets that fit our sensors exactly. We have been working very closely with our supplier for 18 years and have developed our own, technically very stable foil with him. This foil is manufactured with very tight tolerances and is very uniform over the entire roll.

Ability to measure on Dimetix orange reflective foil / target

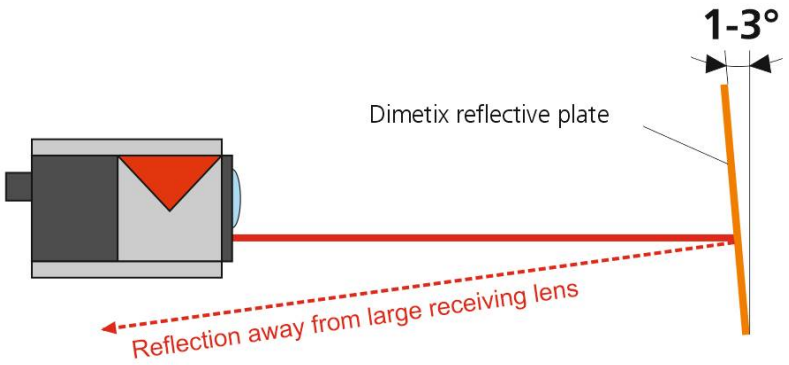


1.2 Other reflective targets (from other manufacturers)

- Other reflective target films from other manufacturers are usually not homogeneous enough and reflect the light to very different degrees depending on the position on the film.
- In addition, they are either too reflective or too weak in their reflective strength. As a result, it is not possible to measure at close range or at distances over 100 m for example, it is not possible to measure reliably.
- Another problem is the aging of the target plate. With many films, a different reflective strength can be seen after just a few months of exposure to sunlight. This means that an application may work for a few months or years and then cause problems.

1.3 Installation of the target

To achieve the best possible interference immunity, there is a trick for mounting the target plate. The target plate should not be mounted at a right angle to the laser beam but inclined by 1...3°. It must be ensured that the reflected laser beam is reflected away from the large receiving lens.



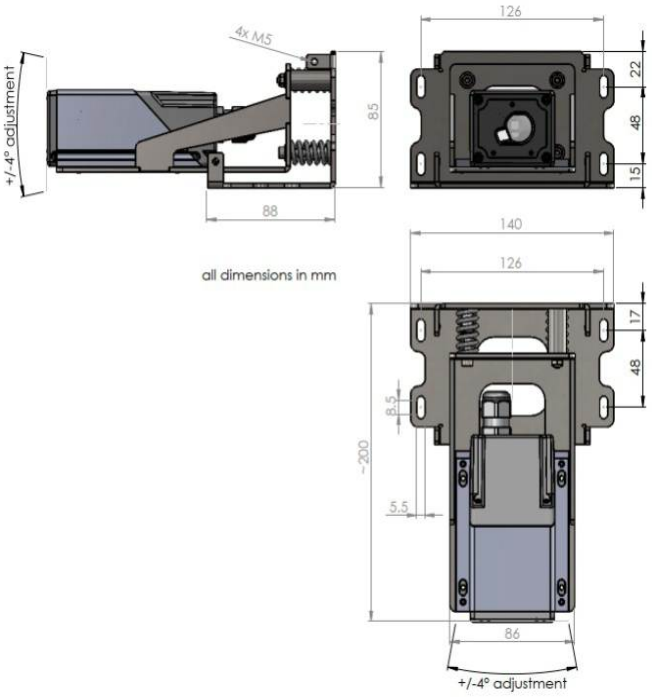
2 Laser adjustment

2.1 Integrated screws, short range adjustment (up to about 20…30 m)

This Procedure is described by a movie on our Knowledge Base: KB033,
https://dimetix.com/wp-content/uploads/2021/02/MB010_How-to-use-the-adjustment-aid.mp4

2.2 Long range adjustment (more than 30 m), Alignment Unit

For distances over 20...30m we recommend our accessory, 500308 the D-Series Alignment Unit. This unit can be mounted as wall or base plate mounting. This allows the sensor to be aligned very precisely in vertical and horizontal directions up to ±4°.
As an other additional Accessory we supply the 500309 Protective Cover for Alignment unit.



3 Sensor selection

Choosing the right sensor is not always easy. Therefore, here is a brief explanation of the main distinguishing features. One problem is usually that the customer wants to have all options but wants to pay less. You have to solve the price problem in your market, but I can help you with the technical selection of the right sensors.

Comparison help on our website: https://dimetix.com/en/products/comparison/ and **sensor selection aid** (KB038) in our Knowledge Base: https://dimetix.com/en/services/knowledge-base/#kb038-what-do-you-need-to-consider-when-choosing-a-sensor.

Dimetix AG ▸ Products ▸ Comparison

Comparison

Link to the Sensor selection aid

Product Comparison D-Series PDF

Sensor selection aid (Knowledge Base)

Main specification filter criteria

Accuracy | Max range | Temperature | 100 Hz

Product type	DPE-10-500	DPE-30-500	DEN-10-500	DEH-30-500	DAN-10-150	DAN-30-150	DAE-10-050
Part No.	500630	500636	500637	500638	500632	500634	500633
Specifications							
Measuring range on reflective foil	~0.5...500 m	~0.5...500 m	~0.5...500 m	~0.5...500 m	~40...150 m	~40...150 m	~40...50 m
Measuring range on natural surfaces	0.05...~100 m	0.05...~100 m	0.05...~100 m	0.05...~100 m	0.05...~100 m	0.05...~100 m	0.05...~50 m
Typical accuracy @ 2σ	± 1 mm	± 3 mm	± 1 mm	± 3 mm	± 1 mm	± 3 mm	± 1 mm
Typical repeatability @ 2σ	± 0.3 mm	± 0.7 mm	± 0.3 mm	± 0.7 mm	± 0.3 mm	± 0.7 mm	± 0.3 mm
Max measuring rate	250 Hz	250 Hz	100 Hz	100 Hz	100 Hz	100 Hz	100 Hz
Operating temperature	-40...+60 °C	-40...+60 °C	-10...+50 °C	-10...+60 °C	-10...+50 °C	-10...+50 °C	-40...+60 °C
Degree of Protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Power supply	12...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC
Laser red, visible	✓	✓	✓	✓	✓	✓	✓
Diameter laser dot at 10m	7x3 mm	7x3 mm	7x3 mm	7x3 mm	7x3 mm	7x3 mm	7x3 mm
Diameter laser dot at 50m	28x13 mm	28x13 mm	28x13 mm	28x13 mm	28x13 mm	28x13 mm	28x13 mm
Diameter laser dot at 100m	55x30 mm	55x30 mm	55x30 mm	55x30 mm	55x30 mm	55x30 mm	55x30 mm

Selection by sensor type description:
The significance of the sensor type also indicates the main sensor performance. In each character is an information.

What means DPE, DEN, DEH, DAE, DAN, DBN?