

**PRECISE  
POWERFUL  
EASY TO USE**  
**Piezo Stages**

**LLS4545**  
**LINEAR PRECISION**  
**OEM STAGE SYSTEM**

# LLS4545

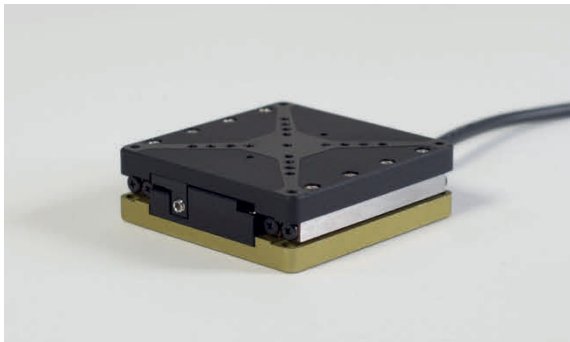
## LINEAR PRECISION OEM STAGE SYSTEM

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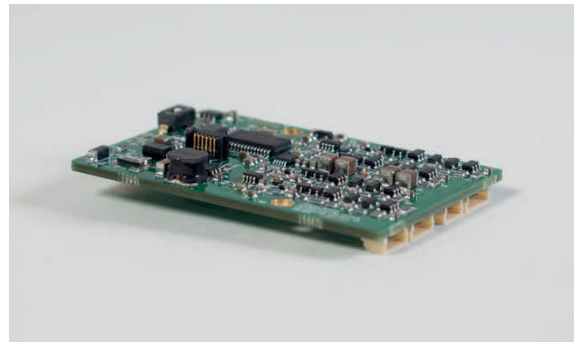
The PRECIBEO LLS4545 Linear Precision OEM Stage System is designed for delivering the precision, load capacity and ease of use needed for fast and simple integration into compact OEM solutions.

PRECIBEO's high precision piezomotorized linear stages are having an integrated position sensor and easily moves your object with nanometer precision over centimeter distances under high load.

- 5 N Push / Pull Force
- Lifts up to 0,5 kg at >5 mm/s
- 2 nm Minimum Incremental Motion
- Smooth Continuous Motion
- Fast Step & Settling Times
- Self-Locking at Rest



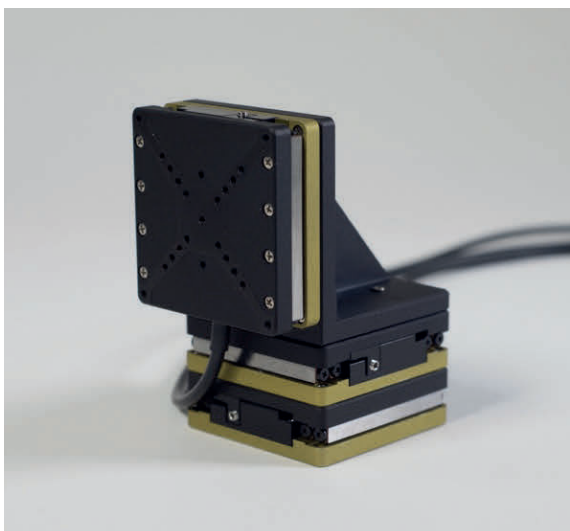
*The LLS4545 Stage (45x45x14 mm).*



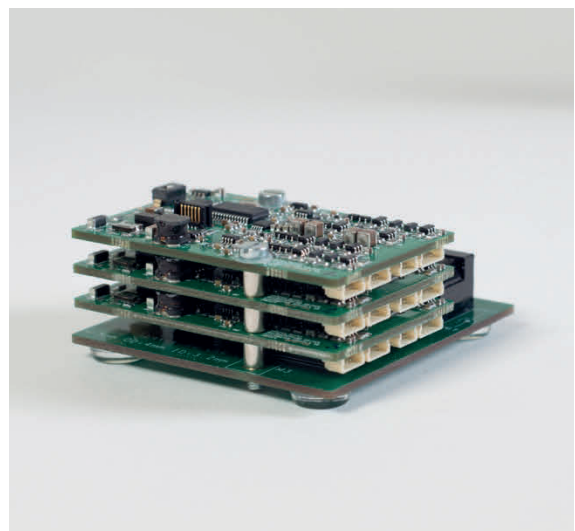
*The D1E Mini Driver Board (39x59mm).*

Integrate one or more stages into your product and control the stages simultaneously with easy to use commands through the compact and stackable D1E Mini Driver Boards.

E.g. to Go To (GT) the position  $x=1000\ \mu\text{m}$ ,  $y=100\ \mu\text{m}$  and  $z=0,010\ \mu\text{m}$  and hold that position in a system with three stages, send the command "GT x1000 y100 z0.01".



*Three LLS4545 with the L-Bracket in XYZ configuration.*



*Three D1E Mini Driver Boards on the Breakout Board.*

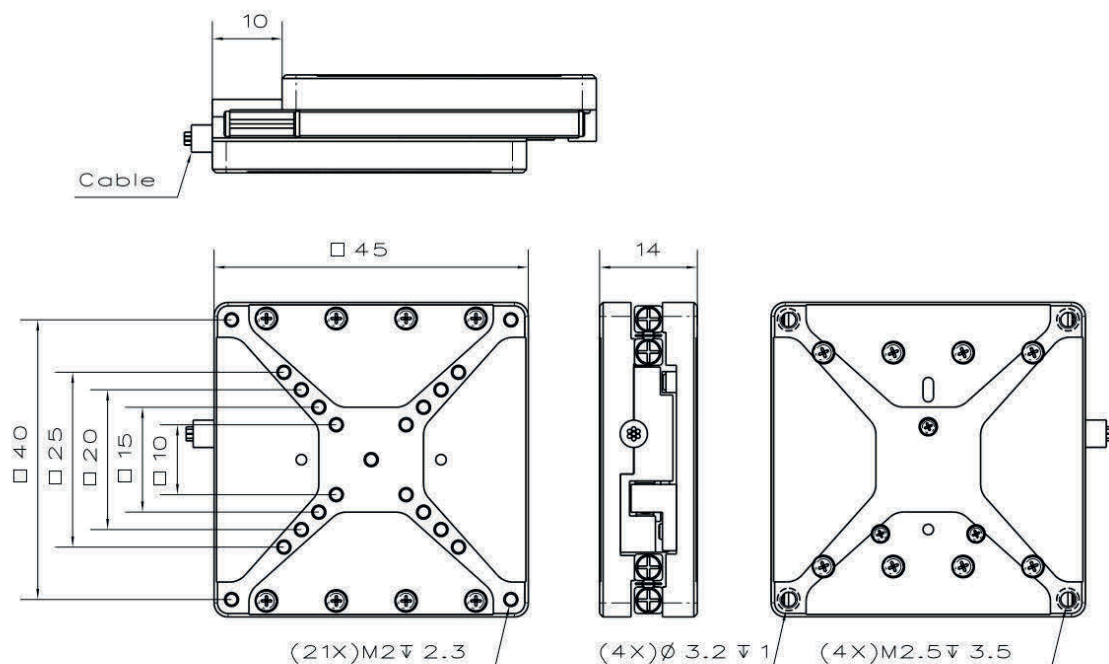
# TECHNICAL SPECIFICATIONS

MODEL	LLS4545 LINEAR PRECISION STAGE
<b>POSITIONING</b>	
Travel	20 mm
Position Sensor	Integrated Optical Encoder
Sensor Resolution	2 nm
Min Incremental Motion	2 nm
Unidirectional Repeatability	+/- 20 nm (typ.)
Bidirectional Repeatability	+ 30 nm (typ.)
<b>MOTION</b>	
Max Operating Force (Push / Pull)	5 N (min.)
Holding Force (When Power Is Off)	6 N (min.)
Max Speed (No Load)	8 mm/s (min.)
Speed at Max Operating Force	5 mm/s (min.)
<b>DRIVE TYPE</b>	
Motor Type	Piezo LEGS Walking Drive
<b>CONNECTIONS</b>	
Cable	2 m cable
Motor Drive Connector	5-pole, JST SM05B-SRSS-TB
Sensor Communication Connector	5-pole, JST SM06B-SURS-TF
Driver	D1E Mini Driver Board
<b>MISCELLANEOUS</b>	
Operating Temperature	0-50 °C
Dimensions	45x45x14 mm
Material	Aluminum
Weight	75 g

MODEL	D1E MINI DRIVER BOARD
<b>OPERATION</b>	
Axes	1 board controls one axis
Command Set	PRECIBEO ASCII Rapid
Communication Interface	RS485 (ASCII Commands, 115.2 kbps)
<b>CONNECTIONS</b>	
Board to Board Power & RS485 Connector*	6-pole, ERNI MicroStac 114711
Cable to Board Power Connector*	2-pole, JST SM02B-SRSS-TB
Cable to Board RS485 Connector*	3-pole, JST SM03B-SRSS-TB
<b>MISCELLANEOUS</b>	
Operating Temperature	0-50 °C
Overheat Protection	Motion Stopped at 75 °C
Power Supply	48 VDC, 5W (48 VDC +5%)
Dimensions	39x59x10 mm

\* The Power and RS485 can either be connected jointly through the Board to Board Stacking Connector or separately through the Cable to Board Power and RS485 Connectors.

# TECHNICAL DRAWINGS



## GET STARTED

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A Development Kit where the D1E Mini Driver Board is stacked on a Breakout Board with Power Supply and RS485/USB Converter Cable is available. Just plug the Power Supply into the wall and the RS485/USB cable into your computer to get started.

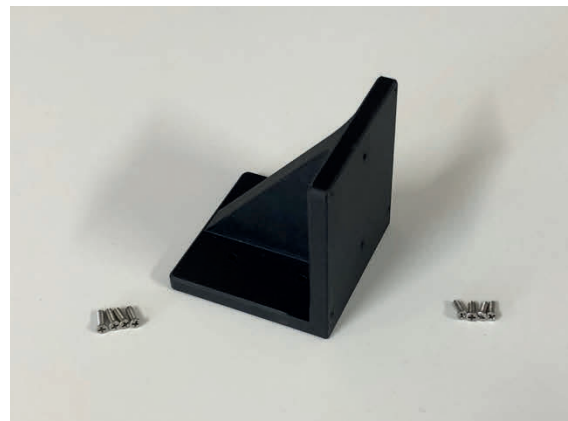


*DK-LLS4545 Development Kit.*

An Additional Stage Kit and a Vertical Mount Kit is also available. Just connect the additional D1E Mini Driver Board to the previous through the vertical board to board connector to create multi axis systems.



*AS-LLS4545 Additional Stage Kit.*



*VM-LLS4545 Vertical Mount Kit*

## ORDER INFORMATION

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Please contact us by phone (+46 18 700 13 40) or email ([sales@precibeo.com](mailto:sales@precibeo.com)) for any enquiries.

PRODUCT	DESCRIPTION
<b>DK-LLS4545</b>	Development Kit including: <ul style="list-style-type: none"><li>• One LLS4545 Linear Precision Stage with Cable</li><li>• One Breakout Board with Power Supply and RS485/USB Cable</li><li>• One stackable D1E Mini Driver Board mounted on the Breakout Board</li></ul>
<b>AS-LLS4545</b>	Additional Stage Kit including: <ul style="list-style-type: none"><li>• One LLS4545 Linear Precision Stage with Cable</li><li>• One stackable D1E Mini Driver Board with Screws</li><li>• Screws for mounting two Stages together (e.g. XY-configuration)</li></ul>
<b>VM-LLS4545</b>	Vertical Mounting Kit including: <ul style="list-style-type: none"><li>• L-Bracket for vertical mounting of the Stage.</li><li>• Screws for mounting two Stages to the L-Bracket (e.g. YZ-configuration)</li></ul>

Disclaimer: Specifications of the product do not constitute a warranty of the properties. They are intended for information purposes only and are subject to change.

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