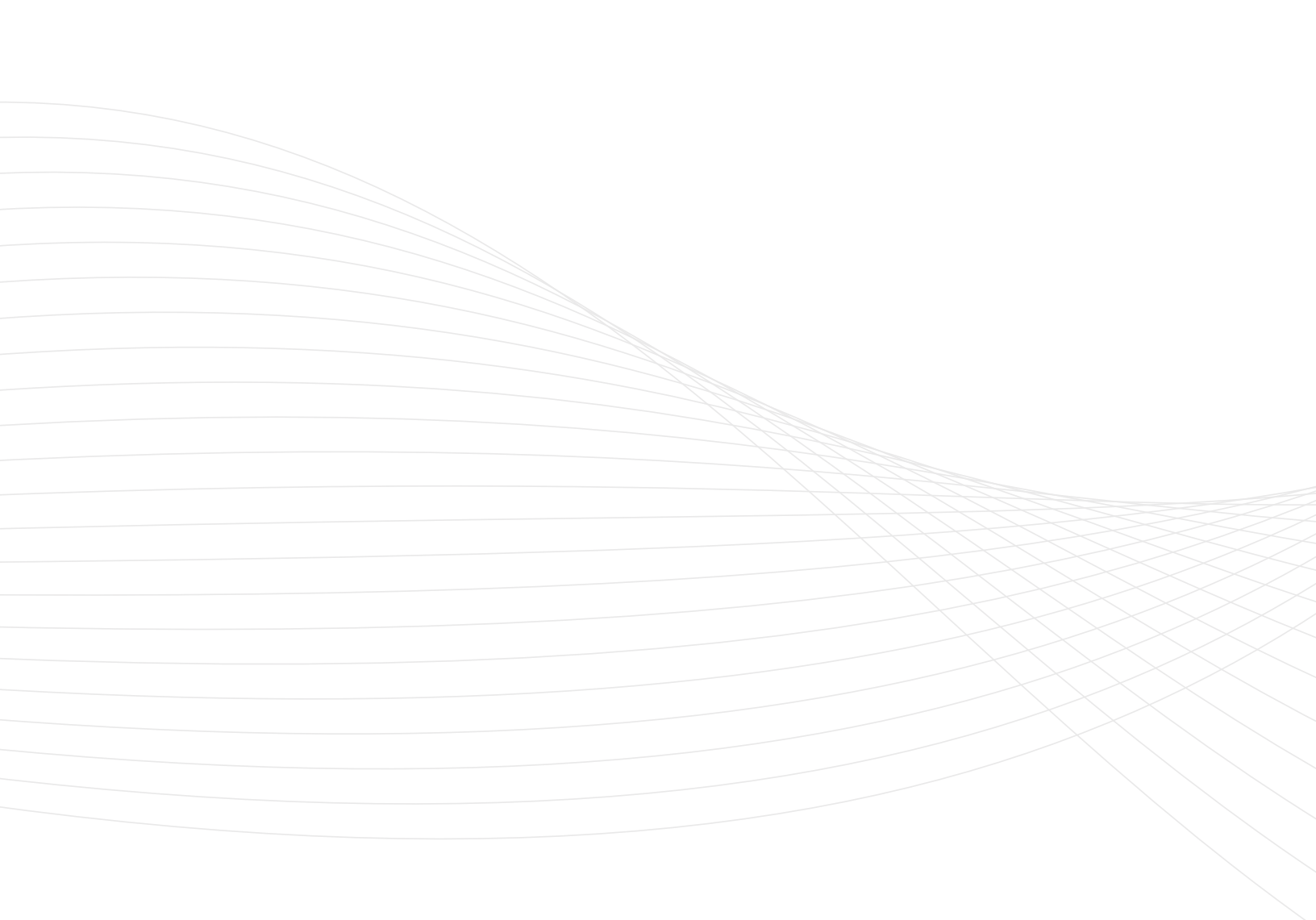




# *Pulsed Eddy Current (PEC) Probe Catalog*

December 2016





## *Disclaimer*

The information in this document is accurate as of its publication. Actual products may differ from those presented herein.

© 2016 Eddyfi. Eddyfi, Lyft, SmartPULSE, and their associated logos are trademarks or registered trademarks of Eddyfi NDT, Inc. in the United States and/or other countries. Eddyfi reserves the right to change product offerings and specifications without notice.

2016-12-14

# Contents

We Are Eddyfi.....	4
Numbering Nomenclatures.....	5
Selecting the Right PEC Probe.....	6
Standard PEC Probes.....	6
Splash Zone PEC Probe.....	8
Tank Floor PEC Probe.....	9
Accessories.....	10

# We Are Eddyfi

Non-destructive testing (NDT) of critical components is a vital part of asset integrity management and safety in many industries such as the oil and gas and power generation industries. Corrosion under insulation (CUI) is one of the (petro)chemical processing industries' worse problems, the cost associated to mitigating it astronomical. Current methods for measuring wall thickness over insulation, coatings, and cladding without stripping all have severe limitations.

To offer a truly powerful and modern solution to address the CUI challenge, Eddyfi has spared no effort to develop Lyft™, which completely reinvents pulsed eddy current (PEC) technology. The patent-pending solution features a portable, state-of-the-art instrument with real-time C-scan imaging, fast data acquisition, as well as grid-mapping and dynamic scanning modes. The solution is designed to scan metals up to 64 mm (2.5 in) thick, non-conductive insulation up to 203 mm (8 in) thick, and through aluminum, stainless steel and galvanized steel weather jackets. It is possible to scan through thicker pipe walls and insulation — inquire for details.

The Lyft software is packed with automation and advanced algorithms that remove operator-specific dependence, thanks to the power of the SmartPULSE™ technology. It automatically optimizes pulser and receiver parameters (gain, duration, time gates, filters, etc.). SmartPULSE also optimizes wall thickness (WT) measurements, which ensures optimum performance and repeatability, while limiting the need for advanced knowledge of pulsed eddy current.

Eddyfi is dedicated to PEC technology. This is why we wanted to offer the best selection of pulsed eddy current probes to match all application needs.

Eddyfi is headquartered in beautiful Québec, Canada, at the heart of the city's advanced NDT cluster. We are the most dynamic company in the field of advanced NDT equipment — we've made it our mission to push the limits of electromagnetic testing to new heights, which we're proving again with Lyft.

If, for some reason, the probes herein do not fit your specific needs, Eddyfi has all the necessary capabilities to develop custom solutions to tackle the most challenging applications.

For more information, visit [www.eddyfi.com](http://www.eddyfi.com) or contact us at [probes@eddyfi.com](mailto:probes@eddyfi.com).





# Numbering Nomenclatures

## Probe Numbering Nomenclature

Probe numbers are located on the probe cable, near its Fischer connector.

**PEC** - **I52** - **ENC** - **H05S**  
Technology      Model size      Encoder      Cable type      Cable exit position  
Cable length

**PEC** - **SZ** - **089** - **H20S**  
Technology      Model      Model size      Cable type      Cable exit position  
Cable length

**PEC** - **TF** - **400** - **H05S**  
Technology      Model      Blade length      Cable type      Cable exit position  
Cable length

### Model (application specific)

- SZ: Splash zone
- TF: Tank floor

### Model size

- 025: Small
- 089: Medium
- 152: Large

### Blade length (application specific)

- 400: 400 mm (15.75 in)

### Cable type

- H: Heavy-duty poly

### Cable length

- 05: 5 m (16.4 ft)
- 20: 20 m (65.6 ft)

### Cable exit position

- S: Side exit



# Selecting the Right PEC Probe

Reference the chart to choose a probe (Lyft 1.1).

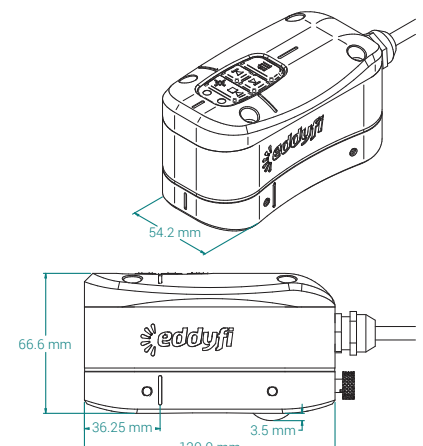
			Insulation / Coating Thickness (Liftoff)																
	mm		0.00	6.40	12.70	19.10	25.40	38.10	50.80	63.50	76.20	88.90	101.60	127.00	152.40	177.80	203.20		
		in	0.000	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	5.000	6.000	7.000	8.000		
Wall Thickness	3.18	0.125	PEC-025					PEC-089 / PEC-SZ-089											
	6.35	0.250																	
	9.53	0.375																	
	12.70	0.500	PEC-089 / PEC-SZ-089					PEC-152					Under development						
	15.88	0.625																	
	19.05	0.750																	
	25.40	1.000																	
	31.75	1.250																	
	38.10	1.500																	
	50.80	2.000																	
	63.50	2.500																	

## Standard PEC Probes

Standard PEC probes are specifically designed to detect corrosion under insulation (CUI), corrosion under fireproofing (CUF), and flow-accelerated corrosion (FAC) in pipes, vessels, sphere legs, and more. They are available in three different sizes for the right balance between wall thickness and liftoff. They offer enough flexibility to support metal thicknesses up to 64 mm (2.5 in), insulation up to 203 mm (8 in) (fiber glass, plastic wrap, concrete, and any non-ferrous material), as well as stainless steel, aluminum, or galvanized steel weather jackets. The probes can also inspect hard-to-reach areas of various geometries.

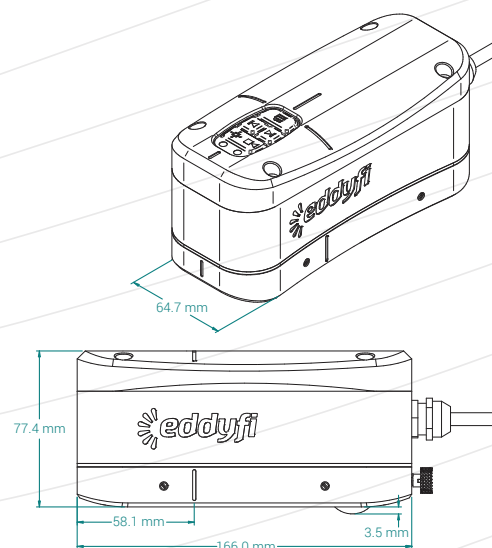
### PEC-025-ENC-H05S

<b>Body</b>	Standard
<b>Casing</b>	Small
<b>Wall thickness</b>	Up to 19 mm (0.75 in)
<b>Insulation/Coating thickness (Liftoff)</b>	0–25 mm (0–1 in)
<b>Footprint at zero liftoff</b>	35 mm (1.38 in)
<b>Encoder</b>	25.66 counts/mm (651.76 counts/in)
<b>Cable</b>	5 m (16.4 ft)
<b>Maximum surface temperature</b>	Direct contact operation: 70 °C (158 °F) Direct contact with probe shoe: 120 °C (248 °F)



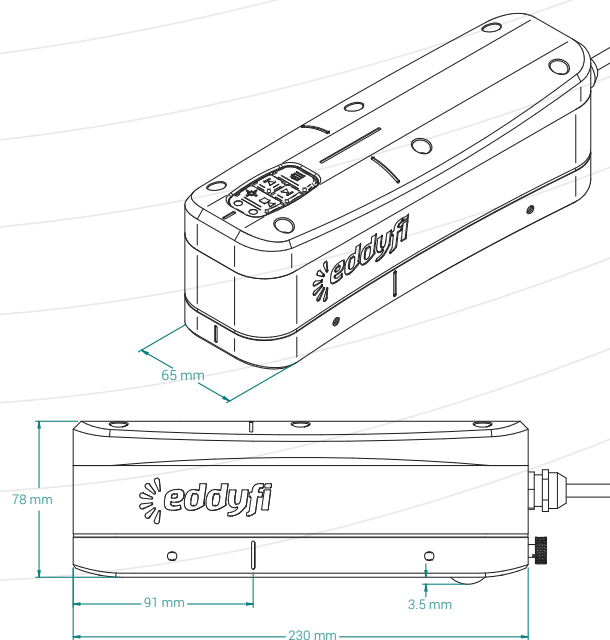
## PEC-089-ENC-H05S

<b>Body</b>	Standard
<b>Casing</b>	Medium
<b>Wall thickness</b>	Up to 64 mm (2.5 in)
<b>Insulation/Coating thickness (Liftoff)</b>	0–152 mm (0–6 in)
<b>Footprint at zero liftoff</b>	62 mm (2.44 in)
<b>Encoder</b>	25.66 counts/mm (651.76 counts/in)
<b>Cable</b>	5 m (16.4 ft)
<b>Maximum surface temperature</b>	Direct contact operation: 70 °C (158 °F) Direct contact with probe shoe: 120 °C (248 °F)



## PEC-152-ENC-H05S

<b>Body</b>	Standard
<b>Casing</b>	Large
<b>Wall thickness</b>	Up to 64 mm (2.5 in)
<b>Insulation/Coating thickness (Liftoff)</b>	0–203 mm (0–8 in)
<b>Footprint at zero liftoff</b>	100 mm (3.94 in)
<b>Encoder</b>	25.66 counts/mm (651.76 counts/in)
<b>Cable</b>	5 m (16.4 ft)
<b>Maximum surface temperature</b>	Direct contact operation: 70 °C (158 °F) Direct contact with probe shoe: 120 °C (248 °F)



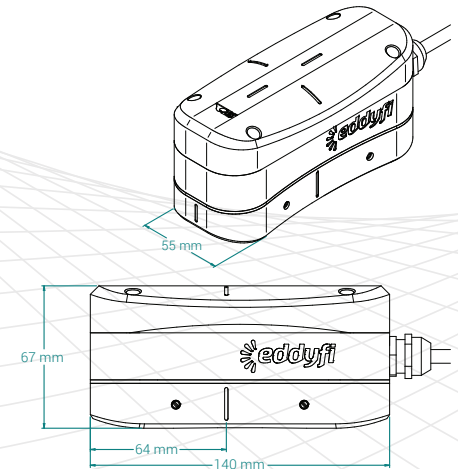


# Splash Zone PEC Probe

The splash zone PEC probe is specifically designed to detect corrosion under insulation (CUI) in the area immediately above and below the mean water level in such carbon steel structures as offshore oil and gas platform legs and risers. The probe can tackle offshore applications thanks to its rugged design, watertightness to 10 m (32.8 ft) in grid-mapping mode, and 20 m (65.6 ft) heavy-duty cable. The probe is also flexible enough to support metal thicknesses up to 64 mm (2.5 in) and insulation or marine growth up to 152 mm (6 in).

## PEC-SZ-089-H20S

<b>Body</b>	Splash zone
<b>Casing</b>	Medium
<b>Wall thickness</b>	Up to 64 mm (2.5 in)
<b>Insulation/Coating thickness (Liftoff)</b>	0–152 mm (0–6 in)
<b>Footprint at zero liftoff</b>	62 mm (2.44 in)
<b>Encoder</b>	None (add-on only)
<b>Watertightness</b>	10 m (32.8 ft)
<b>Cable</b>	20 m (65.6 ft)
<b>Maximum surface temperature</b>	Direct contact operation: 70 °C (158 °F) Direct contact with probe shoe: 120 °C (248 °F)



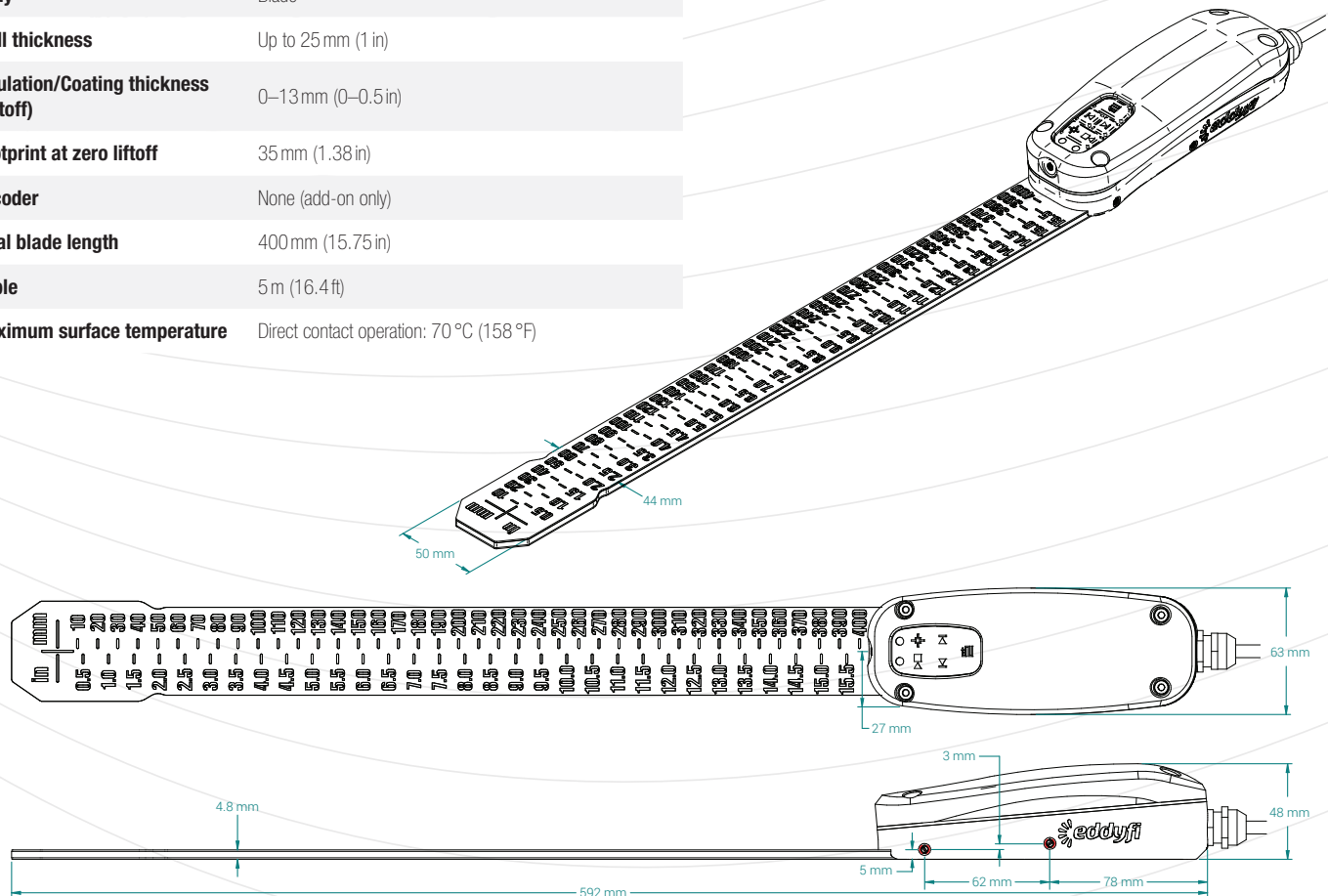


# Tank Floor PEC Probe

The tank floor probe enables the in-service inspection of storage tank annular rings. With its super thin 4.8 mm (0.2 in) titanium blade, the probe can slide up to 400 mm (16 in) under tank floor edges, assessing remaining wall thickness of this critical region exposed to corrosion. The embedded remote controls and status LEDs are also perfect for one-person operation.

## PEC-TF-400-H05S

<b>Body</b>	Blade
<b>Wall thickness</b>	Up to 25 mm (1 in)
<b>Insulation/Coating thickness (Liftoff)</b>	0–13 mm (0–0.5 in)
<b>Footprint at zero liftoff</b>	35 mm (1.38 in)
<b>Encoder</b>	None (add-on only)
<b>Total blade length</b>	400 mm (15.75 in)
<b>Cable</b>	5 m (16.4 ft)
<b>Maximum surface temperature</b>	Direct contact operation: 70 °C (158 °F)



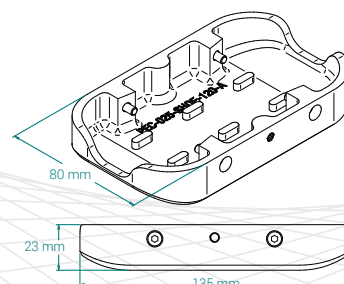
# Accessories

## Probe Shoes

Probe shoes are designed to enable direct operation on surfaces up to 120 °C (248 °F) and to attenuate the vibration from galvanized steel weather jackets. The probe shoes are completely compatible with the optional telescopic extension pole (see page 11).

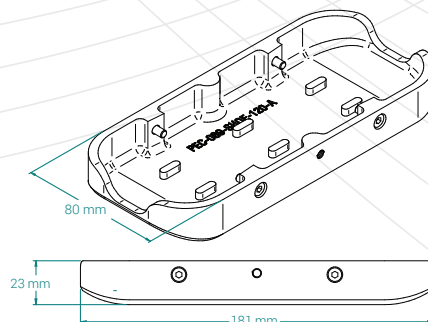
### PEC-025-SHOE-120

<b>Body</b>	Standard probe shoe
<b>Casing</b>	Small
<b>Maximum surface temperature</b>	120 °C (248 °F)
<b>Compatibility</b>	PEC-025-ENC-H05S



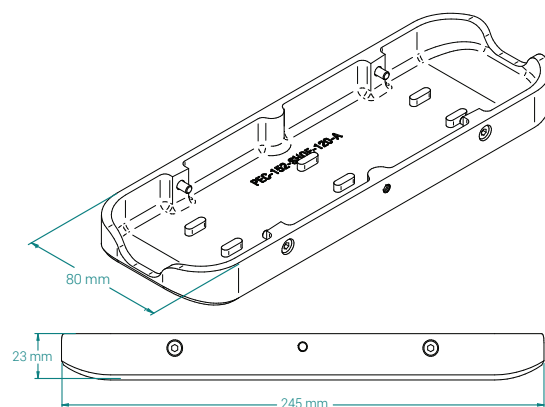
### PEC-089-SHOE-120

<b>Body</b>	Standard probe shoe
<b>Casing</b>	Medium
<b>Maximum surface temperature</b>	120 °C (248 °F)
<b>Compatibility</b>	PEC-089-ENC-H05S and PEC-SZ-089-H20S



### PEC-152-SHOE-120

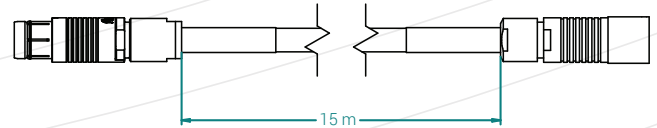
<b>Body</b>	Standard probe shoe
<b>Casing</b>	Large
<b>Maximum surface temperature</b>	120 °C (248 °F)
<b>Compatibility</b>	PEC-152-ENC-H05S



## Extension Cables—PEC-CBL-XH15 and PEC-CBL-XH30

Extension cable allows using PEC probes at a greater distance from the Lyft™ instrument. Our extension cables are available in lengths of 15 m (50 ft) and 30 m (100 ft). The maximum length of cable between a probe and the Lyft™ instrument is 35 m (115 ft).

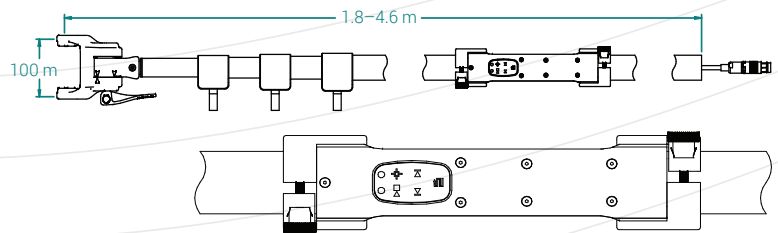
<b>Material</b>	Heavy-duty poly
<b>Lengths</b>	15 m (50 ft) or 30 m (100 ft)



## Extension Pole—PEC-POLE-XH05

This extension pole comes with an adjustable remote control keypad and can extend up to 4.6 m (15 ft). The adjustable fork enables performing inspections at any angle (wall or roof).

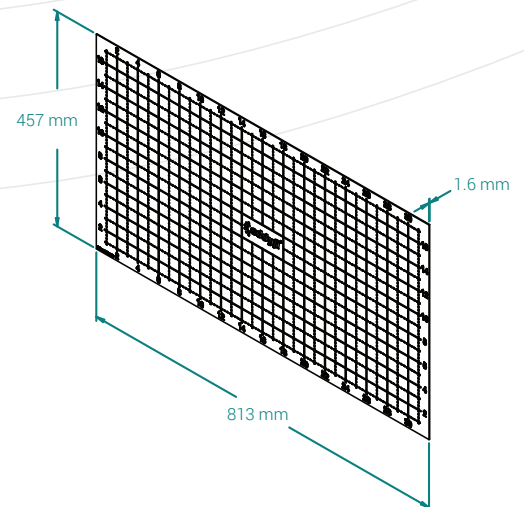
<b>Maximum length</b>	4.6 m (15 ft)
<b>Retracted length</b>	1.8 m (6 ft)
<b>Material (pole)</b>	Fiberglass
<b>Material (fork and remote)</b>	Nylon 11



## Scan Grid Mat—PEC-MAT-025-70

The mat features a 25 mm (1 in) resolution grid and enables easier dynamic scans of irregular surfaces and component marking during the inspection setup. The mat is suitable for in-contact operation up to 70 °C (160 °F).

<b>Dimensions (W×H×D)</b>	813 × 457 × 1.6 mm (32×18×0.06 in)
<b>Grid resolution</b>	25 mm (1 in)
<b>Maximum surface temperature</b>	70 °C (160 °F)





*[www.eddyfi.com](http://www.eddyfi.com)*