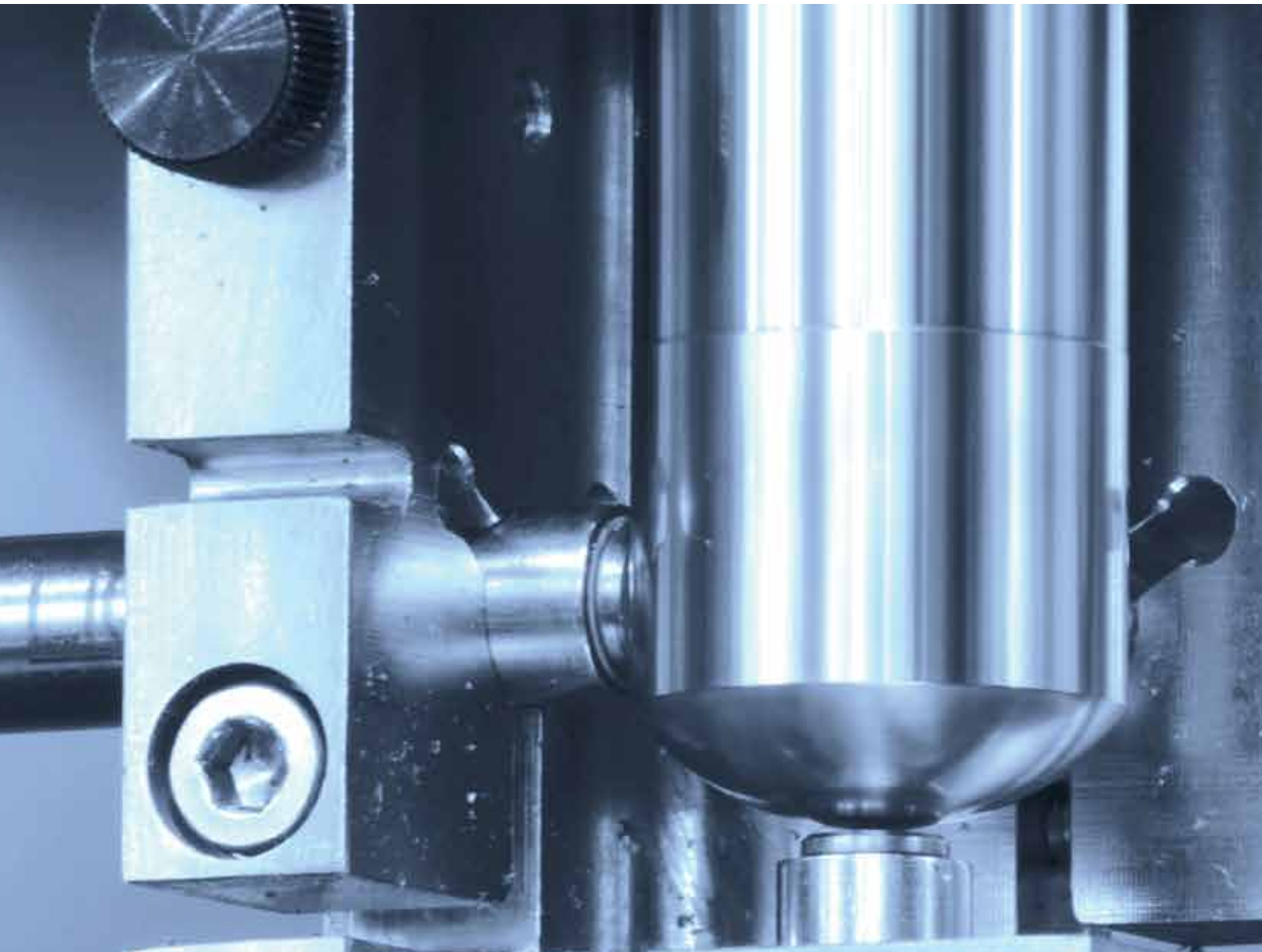


# CAPACITIVE SENSORS

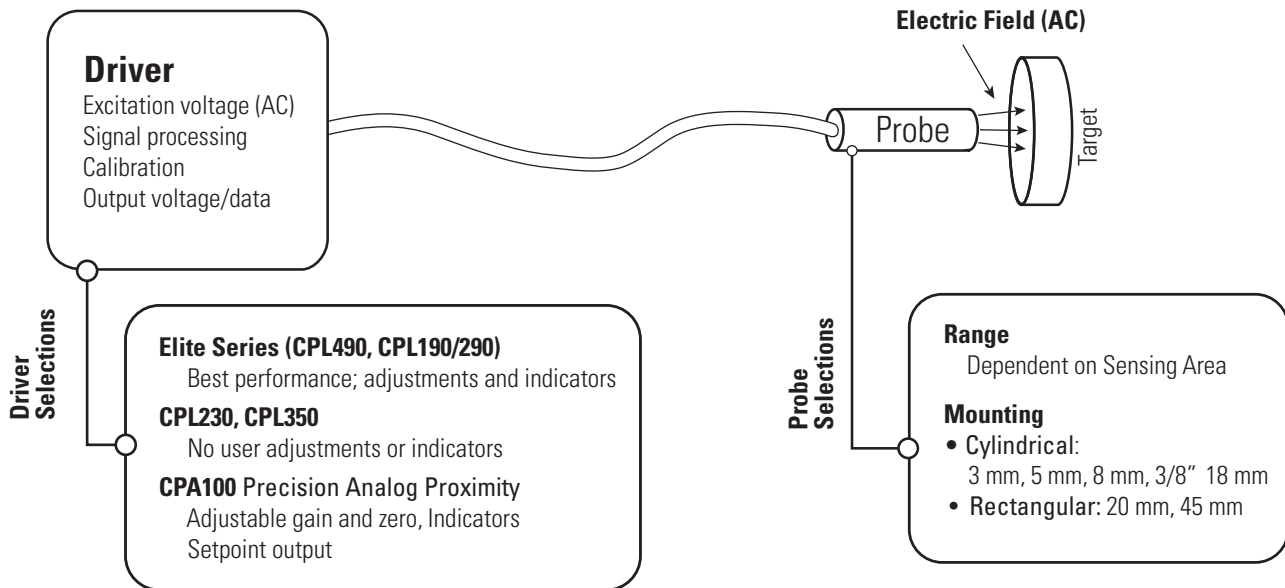
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## HIGH PRECISION NONCONTACT SENSORS

Position  
Displacement  
High Speed  
High Resolution  
Customizable Solutions  
Off the Shelf



## Capacitive Sensor Diagram



## Custom Sensor Design

We are glad to work with you on custom probes and electronics for your specific application. Over half of our orders are customized, this includes:

- Custom Probe Shapes And Designs
- Custom Cable Lengths And Connectors
- Vacuum Compatible Probes
- Custom Ranges
- Custom Electronics



[lionprecision.com](http://lionprecision.com)

Our Lion Precision Technical Library provides a high level of technical detail about all of our products 9aCv technologies including all manuals and drawings of the probes.

Our Capacitive Sensing Theory of Operation TechNote is viewed thousands of times a month.

# Product Selection Guide

## Elite Series

Selecting the Right Technology



Product Selection Guide		CPL591/592	CPL490	CPL190/290	CPL230	CPL350	CPA100
STANDARD TECHNICAL SPECIFICATIONS	Typical Resolution* (% F.S. rms) @ 15 kHz	0.004%	0.0007%	0.003%	0.004%	0.004%	0.03% @ Midrange
	Nonlinearity*	0.1%	0.2%	0.2%	0.5%	0.2%	0.2%
	Dual Range (Sensitivity)	✓		CPL290			
	User Adjustments	✓	✓	✓			✓
	Adjustable Gain						✓
	Adjustable Offset	✓	✓	✓			✓
	Range Indicator	✓	✓	✓			✓
	Setpoint/ Switched Output						✓
	Channels Per Package	1 - 8	1 - 3	1 - 8	1 - 6	1	1
	Selectable Bandwidth (Internal Dip-Switch)	0.1, 1, 10, 15 kHz	1, 10, 15, 50 kHz	0.1, 1, 10, 15 kHz	0.1, 1, 10, 15 kHz	0.1, 1, 10, 15 kHz	
	Maximum Bandwidth	15 kHz	50 kHz	15 kHz	15 kHz	15 kHz	15 kHz
	Customization Available	✓	✓	✓	✓	✓	✓
	Digital Output	✓					

\* Typical Specifications dependent on probe and range

\* Specifications listed on the following pages are for probes with standard 2 meter cables. Listed specifications do not apply when customization is included. Performance of customized product will depend on specific options.  
 Probe Vacuum Compatibility (to  $10^{-6}$  Torr)  
 Probe High-Vacuum Compatibility (below  $10^{-6}$  Torr)

Options requiring custom calibration and deviation from listed specifications:  
 Custom Ranges

Nonflat or Undersized Target Shape

Custom Cable Length

Probe Extension Cables (2m, 3m, 4m; must be calibrated and used with extension cable)

**-NEW-**



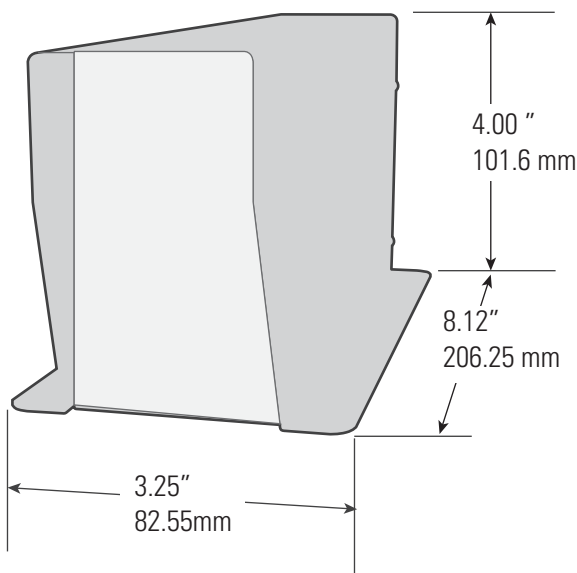
## CPL590 Capacitive Driver

**Digital Outputs**  
**USB, SPI and EtherCAT**  
**Small 2U Size**  
**Up to 4 Ranges for 1 Probe**  
**Best Linearity**  
**Higher Stability**  
**Digital Adjustment**

### Specifications

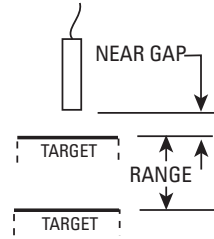
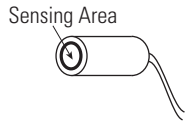
Resolution <sup>1</sup> :	0.0005% @100 Hz 0.003% @ 15 kHz
Selectable Bandwidth:	100 Hz, 1, 10, 15kHz
Linearity <sup>2</sup> :	<0.1 % F.S. typical
Max Drift:	0.04% F.S./°C
Operating Temp:	4-50°C
Front-Panel BNC:	±10V, 0Ω, 10mA max
Rear-Panel:	SPI, EtherCAT

<sup>1</sup> Dependent on probe, range, and bandwidth. See next page for details.  
<sup>2</sup> Dependent on probe and range. See next page for details.



### Export License

Because of high resolutions, export of the CPL590 to some countries require an export license.



### CPL590 Probe Measurement Ranges and Resolutions

### C5S

**Shape**  
 C = Cylindrical  
 R = Rectangular

**Size in mm**  
 C: Diameter  
 R: Longest Side

**Body Style**  
 Blank = Long  
 S = Short  
 R = Right Angle

Sensing Area Diameter mm	Measurement Range			Resolution <sup>1</sup> @ Bandwidth				Available Body Sizes	
	Range Type	Range $\mu\text{m}$ mils	Near Gap $\mu\text{m}$ mils	1kHz nm $\mu\text{in}$	10kHz nm $\mu\text{in}$	15kHz nm $\mu\text{in}$	Linearity	Models	Body Styles
0.5	Fine	10 0.4	20 0.8	0.14 0.006	0.56 0.022	0.70 0.028	1.0	C3S C3R C5S C5R C5	
	Standard	50 2.0	50 2.0	0.70 0.028	4.2 0.17	5.6 0.22	0.50		
	Extended	80 3.0	60 2.4	1.4 0.056	7.0 0.28	—	0.50		
0.8	Fine	25 1.0	75 3.0	0.70 0.028	1.7 0.070	2.1 0.084	0.50	C3S C3R C5S C5R C5	
	Standard	100 4.0	100 4.0	1.4 0.056	4.9 0.20	7.0 0.28	0.50		
2.0	Ultrafine	10 0.4	20 0.8	0.11 0.004	0.21 0.008	0.35 0.014	1.0	C5S C5R C5 C8S C8R C8	
	Fine	50 2.0	75 3.0	0.42 0.017	0.84 0.034	1.4 0.056	0.30		
	Standard	250 10.0	125 5.0	0.56 0.060	5.6 0.22	7.0 0.28	0.30		
	Extended	500 20.0	125 5.0	4.2 0.17	11 0.44	14 0.56	0.30		
3.2	Fine	50 2.0	125 5.0	0.56 0.022	1.4 0.056	2.2 0.073	0.30	C8S C8R C8	
	Standard	500 20.0	250 10	4.2 0.17	8.4 0.37	14 0.56	0.30		
	Extended	1250 50.0	250 10	21 0.84	28 1.1	42 1.7	0.30		
5.6	Fine	50 2.0	225 9.0	0.56 0.022	1.1 0.44	1.8 0.072	0.30	C9.5S C9.5R C9.5 R20	
	Standard	500 20.0	500 20	4.2 0.17	9.8 0.39	14 0.56	0.30		
	Extended	2000 80.0	250 10	14 0.56	28 1.1	42 1.7	0.30		
13	Fine	2000 80	2000 80	42 1.7	49 2.0	56 2.2	0.50	C18	
	Standard	3200 125	2000 80	56 2.2	70 2.8	84 3.4	0.50		
	Extended	5000 200	3000 120	140 5.6	180 7.3	210 8.4	0.50		
19	Standard	2500 100	5000 200	100 3.9	100 5.0	140 5.6	0.50	R45	
	Extended	6000 250	3000 120	170 6.7	100 9.0	250 10	1.0		
21	Standard	8000 300	5000 200	140 5.6	180 7.3	210 8.4	0.50	C25	
	Extended	12500 500	5000 200	250 10	320 13	350 14	0.50		

Resolution values are RMS. Peak-to-peak values are typically 8-10 times greater than the RMS values. In high EMI conditions (10 V/m) output DC level may shift and noise may rise to 0.2 VRMS (1.3% resolution).



## CPL490

Elite Series

**Highest resolution**  
**Widest bandwidth (50)**  
**Five-element range indicator**  
**Zero adjust**  
**Front-panel BNC analog output**  
**Differential output to National Instruments 68-pin connector**  
**Uses 2nd Generation Probes**

### Specifications

Resolution <sup>1</sup> :	0.0004% @1 kHz 0.0007% @ 15 kHz 0.002% @ 50 kHz
Selectable Bandwidth:	1, 10, 15, 50 kHz
Linearity <sup>2</sup> :	<0.2% F.S. typical
Max Drift:	0.02-0.04% F.S./°C
Operating Temp:	15-40 °C
Front-Panel BNC:	±10 V, 0 Ω, 10mA max
Rear-Panel National Inst.:	±10 V, 0 Ω, Differential
Multiple Sensors:	Up to 3 (Contact Lion Precision for more than 3)

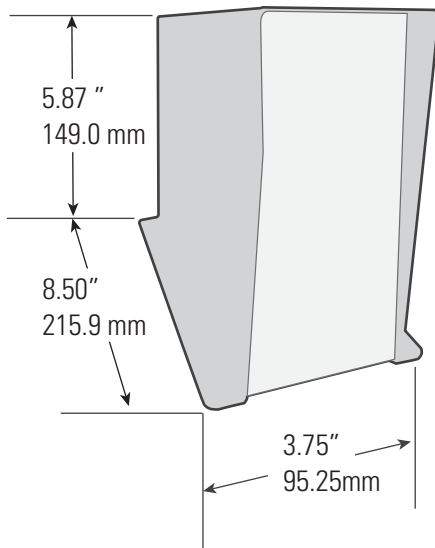
1 Dependent on probe, range, and bandwidth. See next page for details.  
2 Dependent on probe and range. See next page for details.

Listed specifications assume a two meter probe cable;  
Flat measurement area diameter at least 1.3 times larger than  
the Sensing Area diameter with no customizations.

The CPL490 uses 2nd Generation Probes.

### Export License

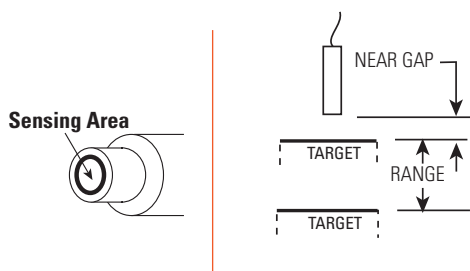
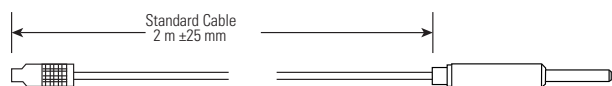
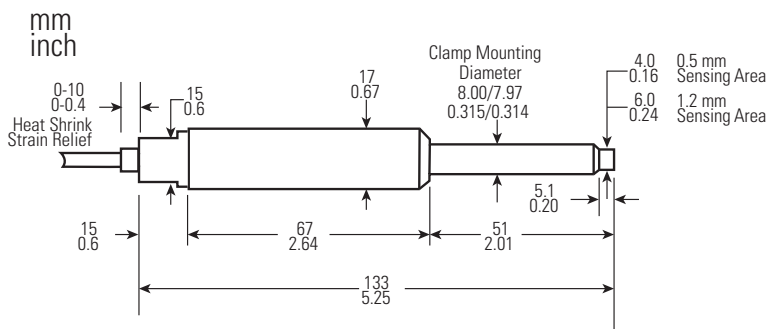
Because of high resolutions, export of the Elite Series to some  
countries require an export license.



## 2nd Generation Probes

The CPL490 uses 2nd Generation Capacitive Probes which include electronics in the probe housing. The probes are mounted by the 8mm diameter probe body extending from the larger housing. Two models are available differing only in the sensing area diameter and associated measurement ranges.

2G-C8-0.5: 0.5 mm sensing area  
 2G-C8-1.2: 1.2 mm sensing area



### CPL490 Probe Measurement Ranges and Resolutions

Sensing Area Diameter mm (Probe Model)	Range Type	Range µm mils	Near Gap µm mils	1 kHz nm µin	10 kHz nm µin	15 kHz nm µin	50 kHz nm µin	Probe Maximum Drift % FS/°C
0.5 (2G-C8-0.5)	Fine	10 0.4	20 0.8	0.05 0.002	0.07 0.003	0.09 0.004	0.26 0.010	0.04
	Standard	50 2.0	25 1.0	0.17 0.007	0.27 0.011	0.35 0.014	1.0 0.040	0.02
	Extended	100 4.0	50 2.0	0.38 0.015	0.80 0.031	1.0 0.039	3.3 0.14	0.03
1.2 (2G-C8-1.2)	Fine	50 2.0	25 1.0	0.15 0.006	0.20 0.008	0.22 0.009	0.63 0.025	0.02
	Standard	100 4.0	50 2.0	0.33 0.013	0.40 0.016	0.52 0.021	1.7 0.065	0.02
	Extended	200 8.0	100 4.0	0.68 0.027	1.0 0.040	1.3 0.050	3.8 0.15	0.02

Range is determined by the sensing area diameter. The larger the diameter, the larger the range. Flat target surface must be 1.3 times larger than the sensing area diameter.

# CPL190/CPL290

Elite Series



- High resolution five-element range indication**
- Zero adjust**
- Disable and coarse/fine zero adjust**
- Front-panel BNC analog output**
- Differential output to National Instruments 68-pin connector**

## Specifications

Resolution <sup>1</sup> :	0.0005% @100 Hz
	0.003% @ 15 kHz
Selectable Bandwidth:	100 Hz, 1, 10, 15kHz
Linearity <sup>2</sup> :	<0.2% F.S. typical
Max Drift:	0.04% F.S./°C
Operating Temp:	4-50 °C

Front-Panel BNC: ±10V, 0Ω, 10mA max

Rear-Panel National Inst.: ±10V, 0Ω, Differential

1 Dependent on probe, range, and bandwidth. See next page for details.  
2 Dependent on probe and range. See next page for details.

Listed specifications assume a two meter probe cable;  
Flat measurement area diameter at least 1.3 times larger than  
the Sensing Area diameter with no customizations.

Different probe body styles/sizes are available for each  
Sensing Area.

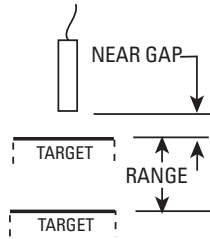


## Export License

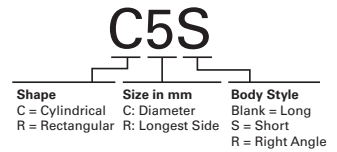
Because of high resolutions, export of the Elite Series to some countries require an export license.





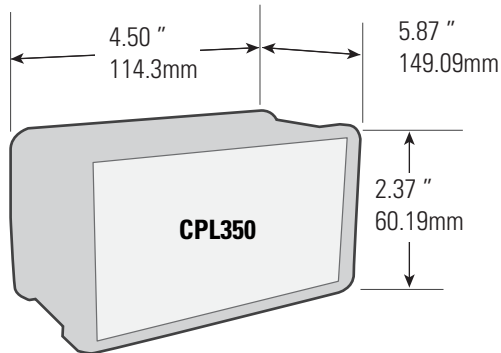
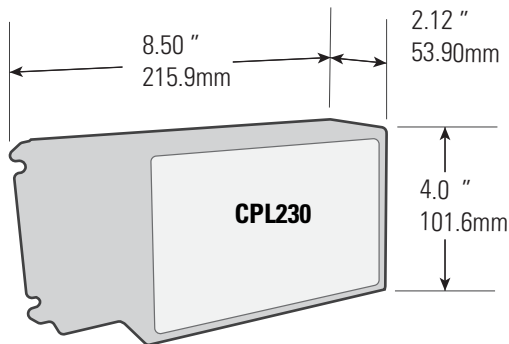


### CPL190/290 Probe Measurement Ranges and Resolutions



Sensing Area Diameter mm	Measurement Range			Resolution <sup>1</sup> @ Bandwidth				Linearity % F.S.	Available Body Sizes	
	Range Type	Range $\mu\text{m}$ mils	Near Gap $\mu\text{m}$ mils	100 Hz nm pin	1 kHz nm pin	10 kHz nm pin	15 kHz nm pin		Models	Body Styles
0.5	Fine	10 0.4	20 0.8	0.06 0.003	0.10 0.004	0.40 0.016	0.50 0.020	0.25	C3S C3R C5S C5R C5	
	Standard	50 2.0	50 2.0	0.30 0.012	0.50 0.020	3.0 0.12	4.0 0.16	0.25		
	Extended	80 3.0	60 2.4	0.50 0.020	1.0 0.040	5.0 0.20	—	0.25		
0.8	Fine	25 1.0	75 3.0	0.20 0.008	0.50 0.020	1.2 0.050	1.5 0.060	0.15	C3S C3R C5S C5R C5	
	Standard	100 4.0	100 4.0	0.50 0.020	1.0 0.040	3.5 0.14	5.0 0.20	0.15		
2.0	Ultrafine	10 0.4	20 0.8	0.05 0.002	0.08 0.003	0.15 0.006	0.25 0.010	0.15	C5S C5R C5 C8S C8R C8	
	Fine	50 2.0	75 3.0	0.20 0.008	0.30 0.012	0.60 0.024	1.0 0.040	0.15		
	Standard	250 10.0	125 5.0	0.8 0.032	1.0 0.040	4.0 0.16	5.0 0.20	0.10		
	Extended	500 20.0	125 5.0	1.5 0.060	3.0 0.12	8.0 0.32	10 0.40	0.15		
3.2	Fine	50 2.0	125 5.0	0.25 0.010	0.4 0.016	1.0 0.042	1.6 0.048	0.20	C8S C8R C8	
	Standard	500 20.0	250 10	2.0 0.08	3.0 0.12	6.0 0.24	10 0.40	0.15		
	Extended	1250 50.0	250 10	10 0.40	15 0.60	20 0.80	30 1.2	0.20		
5.6	Fine	50 2.0	225 9.0	0.3 0.012	0.4 0.016	0.8 0.032	1.3 0.052	0.20	C9.5S C9.5R C9.5 R20	
	Standard	500 20.0	500 20	2.5 0.100	3.0 0.12	7.0 0.28	10 0.40	0.15		
	Extended	2000 80.0	250 10	7.0 0.28	10 0.40	20 0.80	30 1.2	0.20		
13	Fine	2000 80	2000 80	20 0.80	30 1.2	35 1.4	40 1.6	0.50	C18	
	Standard	3200 125	2000 80	30 1.2	40 1.6	50 2.0	60 2.4	0.50		
	Extended	5000 200	3000 120	75 3.0	100 4.0	130 5.2	150 6.0	0.50		
19	Standard	2500 100	5000 200	50 2.0	70 2.8	90 3.6	100 4.0	0.30	R45	
	Extended	6000 250	3000 120	90 3.6	120 4.8	160 6.4	180 7.2	1.0		
21	Standard	8000 300	5000 200	75 3.0	100 4.0	130 5.2	150 6.0	0.50	C25	
	Extended	12500 500	5000 200	130 5.2	180 7.2	230 9.2	250 10	0.50		

<sup>1</sup>Resolution values are RMS. Peak-to-peak values are typically 8-10 times greater than the RMS values. In high EMI conditions (10 V/m) output DC level may shift and noise may rise to 0.2 VRMS (1% resolution).



## CPL230 Compact, Multi-Channel Sensor

Up to six channels  
Separate power and signal connectors  
OEM and embedded application  
Small Size, high-density package  
No user adjustments  
±5V single-ended output, ±10V differential output

## CPL350 Compact, Single-Channel Sensor

OEM and embedded applications  
±10V single-ended  
BNC output  
±10 V differential D-Sub output  
no user adjustments  
small size  
high-density package

### Specifications

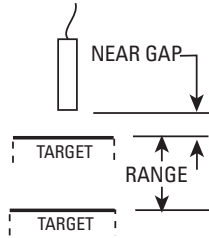
Resolution :	0.0007% @ 100 kHz 0.004% @ 15 kHz
Selectable Bandwidth:	Hz, 1, 10, 15, 100 kHz
Linearity :	<0.5% F.S. typical
Probe Drift:	0.04% F.S./°C
Operating Temp:	4-50°C
Output:	±10 V Differential ±5 V Single-Ended
Input Power <sup>3</sup> :	±15 VDC, 500mA max

1. Dependent on probe, range, and bandwidth. See next page for details.
2. Dependent on probe and range. See next page for details.
3. External power supply included. See next page for details.

Listed specifications assume a two meter probe cable;  
Flat measurement area diameter at least 1.3 times larger  
than the Sensing Area diameter with no customizations.

### Export License

Because of high resolutions, export of the CPL230/350 to some countries require an export license.



### CPL230/350 Probe Measurement Ranges and Resolutions

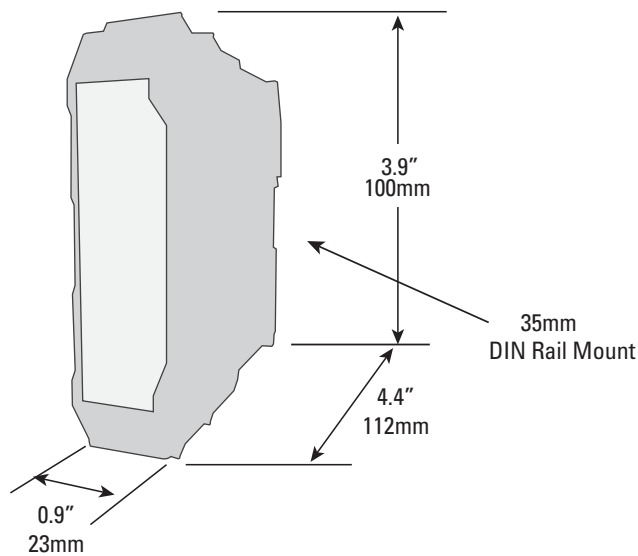
## C5S

Shape: C = Cylindrical, R = Rectangular  
 Size in mm: C = Diameter, R = Longest Side  
 Body Style: Blank = Long, S = Short, R = Right Angle

Sensing Area Diameter mm	Measurement Range			Resolution <sup>1</sup> @ Bandwidth				Linearity	Available Body Sizes	
	Range Type	Range $\mu\text{m}$ mils	Near Gap $\mu\text{m}$ mils	100 Hz nm $\mu\text{in}$	1kHz nm $\mu\text{in}$	10kHz nm $\mu\text{in}$	15kHz nm $\mu\text{in}$		Models	Body Styles
0.5	Fine	10 0.4	20 0	0.08 0.003	0.14 0.006	0.56 0.022	0.70 0.028	1.0	C3S C3R C5S C5R C5	
	Standard	50 2.0	50 2.0	0.42 0.017	0.70 0.028	4.2 0.17	5.6 0.22	0.50		
	Extended	80 3.0	60 2.4	0.70 0.028	1.4 0.056	7.0 0.28	—	0.50		
0.8	Fine	25 1.0	75 3.0	0.28 0.011	0.70 0.028	1.7 0.070	2.1 0.084	0.50	C3S C3R C5S C5R C5	
	Standard	100 4.0	100 4.0	0.70 0.030	1.4 0.056	4.9 0.20	7.0 0.28	0.50		
2.0	Ultrafine	10 0.4	20 0.8	0.07 0.003	0.11 0.004	0.21 0.008	0.35 0.014	1.0	C5S C5R C5 C8S C8R C8	
	Fine	50 2.0	75 3.0	0.28 0.011	0.42 0.017	0.84 0.034	1.4 0.056	0.30		
	Standard	250 10.0	125 5.0	1.1 0.04	0.56 0.060	5.6 0.22	7.0 0.28	0.30		
	Extended	500 20.0	125 5.0	2.1 0.084	4.2 0.17	11 0.44	14 0.56	0.30		
3.2	Fine	50 2.0	125 5.0	0.35 0.014	0.56 0.022	1.4 0.056	2.2 0.073	0.30	C8S C8R C8	
	Standard	500 20.0	250 10	2.8 0.11	4.2 0.17	8.4 0.37	14 0.56	0.30		
	Extended	1250 50.0	250 10	14 0.56	21 0.84	28 1.1	42 1.7	0.30		
5.6	Fine	50 2.0	225 9.0	0.42 0.017	0.56 0.022	1.1 0.44	1.8 0.072	0.30	C9.5S C9.5R C9.5 R20	
	Standard	500 20.0	500 20	3.5 0.14	4.2 0.17	9.8 0.39	14 0.56	0.30		
	Extended	2000 80.0	250 10	9.8 0.39	14 0.56	28 1.1	42 1.7	0.30		
13	Fine	2000 80	2000 80	28 1.1	42 1.7	49 2.0	56 2.2	0.50	C18	
	Standard	3200 125	2000 80	42 1.7	56 2.2	70 2.8	84 3.4	0.50		
	Extended	5000 200	3000 120	100 4.0	140 5.6	180 7.3	210 8.4	0.50		
19	Standard	2500 100	5000 200	70 2.8	100 3.9	100 5.0	140 5.6	0.50	R45	
	Extended	6000 250	3000 120	130 5.2	170 6.7	100 9.0	250 10	1.0		
21	Standard	8000 300	5000 200	100 4.0	140 5.6	180 7.3	210 8.4	0.50	C25	
	Extended	12500 500	5000 200	180 7.3	250 10	320 13	350 14	0.50		

Resolution values are RMS. Peak-to-peak values are typically 8-10 times greater than the RMS values.  
 In high EMI conditions (10 V/m) output DC level may shift and noise may rise to 0.2 VRMS (1.3% resolution).

## CPA100 Precision Analog Proximity Switch



**Lower Cost**  
**0-10 V nonlinear analog output**  
**Setpoint/Switched output**  
**Adjustable gain and zero**  
**Five-element range indicator**  
**Remote gain and zero adjustment connections**  
**DIN rail case**  
**Multiple channel sync**

### Specifications

Resolution <sup>1</sup> :	CPA100: 0.03% RMS @ 15kHz CPA100e: 0.3µm RMS or higher @ 15kHz
Bandwidth:	15kHz
Linearity:	Nonlinear
Maximum Drift:	Driver: 0.2% F.S./°C Probe: 0.05% F.S./°C
Analog Output:	0-10V, 0 Ω, 15mA max.
Setpoint:	Fixed at 5 V (mid-range)
Setpoint Output:	Solid state switch closure 30 VAC/60 VDC max
On state:	2.5Ω, 100mA max
Off state leakage:	10µA max
Operating Temp.:	4-50 °C
Input Power <sup>2</sup> :	15-24 VDC, 2.5 W

<sup>1</sup> Typical at midpoint. Dependent on probe, range, and bandwidth  
(See next page for details)

<sup>2</sup> External power supply not included – available as accessory (p.3)

Listed specifications assume a two meter probe cable;  
Flat measurement area diameter at least 1.3 times larger than  
the Sensing Area diameter with no customizations.

Different probe body styles/sizes are available for each sensing area.

### Export License

Because of high resolutions, some countries require an export license.  
CPA100e does not require an export licence.



Sensing Area Diameter mm	Measurement Range			Midpoint Resolution <sup>1</sup> @ 15kHz		Available Body Sizes	
	Range Type	Range $\mu\text{m}$ mils	Near Gap $\mu\text{m}$ mils	CPA100 $\mu\text{m}$ mils	CPA100e $\mu\text{m}$ mils	Models	Body Styles
0.5	Standard	50 2.0	50 2.0	55 2.2	400 16	C3S C3R	C5S C5R C5
	Extended	80 3.0	60 2.4	100 4.0	400 16		
0.8	Standard	100 4.0	100 4.0	55 2.2	400 16	C3S C3R	C5S C5R C5
2.0	Standard	250 10.0	125 5.0	40 1.6	400 16	C5S C5R C5	C8S C8R C8
	Extended	500 20.0	125 5.0	55 2.2	400 16		
3.2	Standard	500 20.0	250 10	85 3.4	400 16	C8S C8R C8	C9.5S C9.5R C9.5 R20
	Extended	1250 50.0	250 10	130 5.2	400 16		
5.6	Standard	500 20.0	500 20	140 5.5	400 16	C9.5S C9.5R C9.5 R20	C18
	Extended	2000 90.0	250 10	170 6.7	800 32		
13	Standard	3200 125	2000 80	1000 40	1000 40	C18	C25
	Extended	5000 200	3000 120	1600 63	1600 63		
19	Standard	2500 100	5000 200	800 32	800 32	R45	C25
	Extended	6000 250	3000 120	1100 44	1100 44		
21	Standard	8000 300	5000 200	1200 47	1200 47	C25	C25
	Extended	12500 500	5000 200	1600 63	1600 63		

The CPA100e does NOT require an export licence.

## Probe Model Numbers

Probe model numbers are a combination of the Body Model number and Sensing Area Diameter in mm (e.g. C5S-0.8 or R45-19).  
CAD files available at [www.lionprecision.com/technical-library](http://www.lionprecision.com/technical-library)

## C5S

**Shape**  
C = Cylindrical  
R = Rectangular

**Size in mm**  
C: Diameter  
R: Longest Side

**Body Style**  
Blank = Long  
S = Short  
R = Right Angle

Size/Shape	Body Model	Mechanical	Sensing Area	Sensing Area Diameter (mm)	Measurement Ranges (by Driver Model)	
					CPL190, CPL290 CPL230, CPL350 µm mils	CPA100 µm mils
3mm Cylindrical	C3S			0.5	10, 50, 80 0.4, 2.0, 3.0	50, 80 2.0, 3.0
				0.8	25, 100 1.0, 4.0	100 4.0
	C3R			0.5	10, 50, 80 0.4, 2.0, 3.0	50, 80 2.0, 3.0
				0.8	25, 100 1.0, 4.0	100 4.0
5mm Cylindrical	C5			0.5	10, 50, 80 0.4, 2.0, 3.0	50, 80 2.0, 3.0
				0.8	25, 100 1.0, 4.0	100 4.0
				2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0
	C5S			0.5	10, 50, 80 0.4, 2.0, 3.0	50, 80 2.0, 3.0
				0.8	25, 100 1.0, 4.0	100 4.0
				2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0
C5R			0.5	10, 50, 80 0.4, 2.0, 3.0	50, 80 2.0, 3.0	
			0.8	25, 100 1.0, 4.0	100 4.0	
			2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0	
20mm Rectangle	R20			5.6	50, 500, 2000 2.0, 20.0, 80.0	500, 2000 20.0, 80.0

Standard cable length: 2 meters. Operating and storage temperature range: 4-50 °C. Available as vacuum compatible.

Probes are not electrically damaged by contact with the sensing tip.

Range is determined by the probe Sensing Area diameter — the larger the diameter, the larger the range.

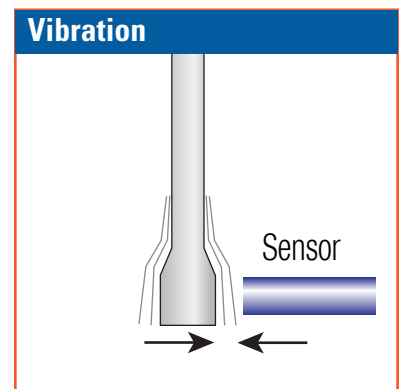
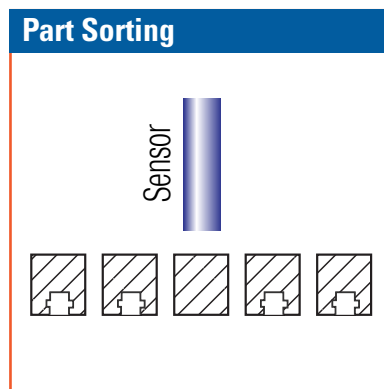
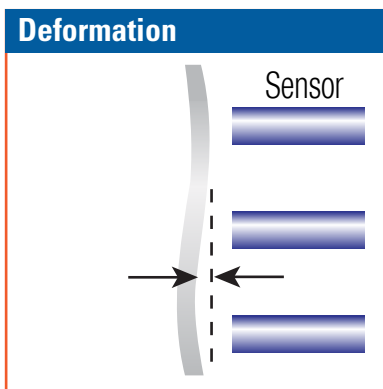
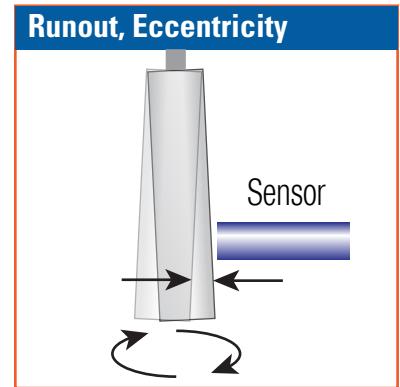
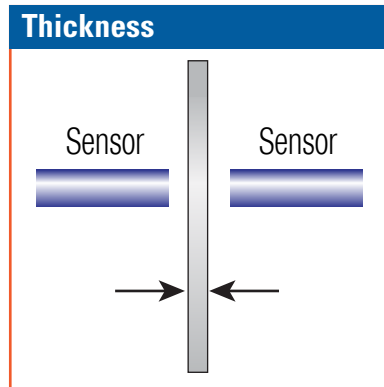
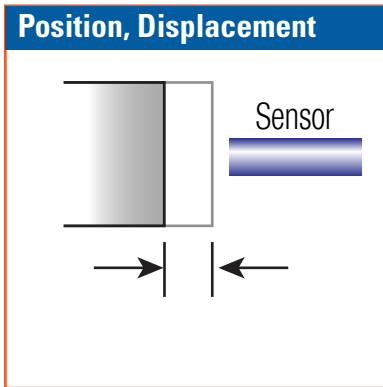
To hold specifications, flat target surface diameter must be 1.3 times larger than sensing area diameter.

Different probe body styles/sizes are available for each sensing area diameter.

Measurement Ranges and other performance specifications are dependent on the selected driver model.

Size/Shape	Body Model	Mechanical	Sensing Area Diameter (mm)	Measurement Ranges (by Driver Model)		
				CPL190, CPL290 CPL230, CPL350 $\mu\text{m}$ mils	CPA100 $\mu\text{m}$ mils	
8mm Cylindrical	C8			2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0
				3.2	50, 500, 1250 2.0, 20.0, 50.0	500, 1250 20.0, 50.0
	C8S			2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0
				3.2	50, 500, 1250 2.0, 20.0, 50.0	500, 1250 20.0, 50.0
	C8R			2.0	10, 50, 250, 500 0.4, 2.0, 10.0, 20.0	250, 500 10.0, 20.0
				3.2	50, 500, 1250 2.0, 20.0, 50.0	500, 1250 20.0, 50.0
9.5mm (3/8") Cylindrical	C9.5			5.6	50, 500, 2000 2.0, 20.0, 80.0	500, 2000 20.0, 80.0
	C9.5S			5.6	50, 500, 2000 2.0, 20.0, 80.0	500, 2000 20.0, 80.0
	C9.5R			5.6	50, 500, 2000 2.0, 20.0, 80.0	500, 2000 20.0, 80.0
18mm Cylindrical	C18			13	2000, 3200, 5000 80, 125, 200	3200, 5000 125, 200
25mm Cylindrical	C25			21	8000, 12500 300, 500	8000, 12500 300, 500
45mm (1.75) Rectangular	R45			19	2500, 6000 100, 250	2500, 6000 100, 250

## Typical Applications



## Our Commitment To Service

Lion Precision's commitment to service is unsurpassed in the industry. We partner with our customers to ensure their success by providing optimized sensing solutions.

Contact us today and let us solve your difficult measurement problems.