

# CAPACITIVE DRIVER

## CPL190/CPL290

### Elite Series

- High resolution five-element range indication
- Coarse/Fine zero adjust with disable
- Front-panel BNC analog output
- Differential output to National Instruments 68-pin connector

### Specifications

Resolution <sup>1</sup> :	0.0005% @ 100 kHz
	0.003% @ 15 kHz
Selectable Bandwidth:	100 Hz, 1, 10, 15 kHz
Linearity <sup>2</sup> :	<0.2% F.S. typical
Max Drift:	0.04% F.S./°C
Operating Temp:	-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 with no customizations.

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



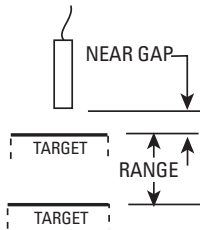
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# CPL190/CPL290

## Probes and Ranges

Sensing Area



### CPL190/290

#### Probe Measurement Ranges and Resolutions

## C5S

Shape Size in mm Body Style  
 C = Cylindrical C: Diameter Blank = Long  
 R = Rectangular R: Longest Side 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	100 Hz nm $\mu\text{in}$	1 kHz nm $\mu\text{in}$	10 kHz nm $\mu\text{in}$	15 kHz nm $\mu\text{in}$	Linearity % F.S.	Models	Body Sizes
0.5	Fine	10 0.4	20 0.8	0.06 0.003	0.14 0.006	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 0.02	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		

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).