

National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation



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CALIBRATION LABORATORIES

NVLAP LAB CODE 105016-0

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

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NVLAP Code: 20/A01

ANSI/NCSL Z540-1-1994; Part 1

Compliant

NVLAP Code: 20/E01

AC/DC Difference for Low Frequency Voltage using 792A

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| Range | Level | 10 | 20 | 40 | 100 | 1 k | 10 k | 20 k | 50 k | 100 k | 300 k | 500 k | 800 k | 1 M |
|--------|--------|-----|-----|-----|-----|-----|------|------|------|-------|-------|-------|-------|------|
| 22 mV | 2 mV | 330 | 870 | 810 | 850 | 320 | 830 | 830 | 340 | 1000 | 1220 | 2080 | 2410 | 2410 |
| 22 mV | 6 mV | 320 | 290 | 260 | 170 | 260 | 250 | 240 | 330 | 530 | 760 | 900 | 580 | 600 |
| 22 mV | 10 mV | 100 | 160 | 85 | 170 | 180 | 160 | 160 | 200 | 290 | 230 | 630 | 370 | 400 |
| 22 mV | 20 mV | 75 | 65 | 60 | 60 | 60 | 60 | 60 | 125 | 200 | 300 | 450 | 330 | 370 |
| 220 mV | 20 mV | 135 | 120 | 85 | 75 | 65 | 65 | 70 | 135 | 240 | 360 | 550 | 650 | 720 |
| 220 mV | 60 mV | 100 | 65 | 50 | 45 | 35 | 45 | 50 | 70 | 135 | 270 | 350 | 410 | 410 |
| 220 mV | 100 mV | 32 | 34 | 21 | 31 | 29 | 29 | 30 | 40 | 75 | 155 | 200 | 270 | 190 |
| 220 mV | 200 mV | 33 | 21 | 21 | 16 | 16 | 16 | 15 | 40 | 80 | 130 | 110 | 250 | 190 |

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| | | | | | | | | | | | | | | |
|--------|--------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 700 mV | 200 mV | 36 | 43 | 23 | 22 | 24 | 18 | 28 | 40 | 75 | 120 | 160 | 225 | 175 |
| 700 mV | 600 mV | 25 | 35 | 16 | 10 | 11 | 10 | 10 | 21 | 10 | 95 | 75 | 80 | 80 |
| 2.2 V | 0.6 V | 25 | 35 | 27 | 16 | 15 | 16 | 10 | 21 | 10 | 90 | 95 | 100 | 100 |
| 2.2 V | 1 V | 85 | 33 | 17 | 7 | 9 | 10 | 7 | 17 | 10 | 70 | 90 | 95 | 75 |
| 2.2 V | 2 V | 25 | 20 | 18 | 7 | 5 | 5 | 5 | 13 | 10 | 90 | 90 | 75 | 75 |
| 7 V | 2 V | 25 | 36 | 25 | 16 | 14 | 14 | 14 | 27 | 11 | 90 | 95 | 100 | 100 |
| 7 V | 6 V | 25 | 20 | 17 | 8 | 6 | 7 | 6 | 20 | 10 | 90 | 90 | 75 | 75 |
| 22 V | 6 V | 85 | 36 | 27 | 8 | 13 | 14 | 15 | 23 | 15 | 75 | 75 | 100 | 100 |
| 22 V | 10 V | 20 | 32 | 18 | 9 | 8 | 8 | 9 | 10 | 11 | 70 | 95 | 95 | 100 |
| 22 V | 20 V | 25 | 20 | 19 | 8 | 8 | 8 | 9 | 10 | 15 | 85 | 90 | 75 | 75 |
| 70 V | 20 V | 25 | 37 | 25 | 14 | 14 | 15 | 18 | 30 | 35 | 95 | | | |
| 70 V | 60 V | 25 | 21 | 19 | 10 | 10 | 12 | 10 | 30 | 15 | 70 | | | |
| 220 V | 60 V | 85 | 40 | 22 | 21 | 19 | 22 | 24 | 35 | 40 | 100 | | | |
| 220 V | 100 V | 85 | 35 | 19 | 14 | 14 | 14 | 10 | 30 | 15 | | | | |
| 220 V | 200 V | 36 | 22 | 19 | 17 | 11 | 11 | 12 | 15 | 20 | | | | |
| 1000 V | 200 V | 90 | 50 | 36 | 29 | 16 | 27 | 22 | 22 | 35 | | | | |
| 1000 V | 600 V | 95 | 45 | 27 | 22 | 15 | 15 | 16 | 35 | 50 | | | | |
| 1000 V | 1000 V | 50 | 21 | 21 | 21 | 17 | 17 | 18 | 40 | 50 | | | | |

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AC/DC Difference using 5790A, Best Measurement Capability $\mu\text{V}/\text{V}$

Frequency in Hz

| <i>Range</i> | <i>Applied</i> | <i>10</i> | <i>20</i> | <i>100</i> | <i>1k</i> | <i>10k</i> | <i>20k</i> | <i>50k</i> |
|--------------|----------------|-----------|-----------|------------|-----------|------------|------------|------------|
| 220 mV | 200 mV | 35 | 22 | 17 | 17 | 17 | 17 | 40 |
| 700 mV | 600 mV | 30 | 36 | 10 | 12 | 8 | 8 | 22 |
| 2.2 V | 600 mV | 30 | 36 | 10 | 11 | 8 | 8 | 22 |
| 2.2 V | 1 V | 85 | 34 | 8 | 10 | 11 | 9 | 18 |
| 2.2 V | 2 V | 25 | 20 | 8 | 6 | 6 | 6 | 14 |
| 7 V | 2 V | 25 | 20 | 8 | 6 | 6 | 6 | 14 |
| 7 V | 6 V | 25 | 20 | 9 | 7 | 8 | 7 | 20 |
| 22 V | 20 V | 25 | 20 | 9 | 9 | 9 | 10 | 10 |
| 70 V | 60 V | 25 | 22 | 10 | 10 | 12 | 10 | 28 |
| 220 V | 200 V | 40 | 24 | 18 | 12 | 12 | 13 | 15 |
| 700 V | 600 V | | | 23 | 15 | 16 | 18 | |
| 1000 V | 1000 V | | | 22 | 18 | 18 | 19 | |

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AC/DC Difference for High Frequency Thermal Converters

*Best Uncertainty (\pm) in Percent^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>2 M</i> | <i>10 M</i> | <i>20 M</i> | <i>30 M</i> | <i>50 M</i> | <i>100 M</i> |
|--------------|------------|-------------|-------------|-------------|-------------|--------------|
| 0.5 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 1 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 2 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |
| 3 V | 0.08 | 0.1 | 0.16 | 0.2 | 0.5 | 1.0 |
| 5 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 10 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 20 V | | 0.1 | 0.15 | 0.2 | 0.5 | 1.0 |
| 30 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |
| 50 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |

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AC/DC Difference for Low Frequency Current Shunts using 792A as Detector

| <i>Current</i> | <i>Best Uncertainty (±) in $\mu A/A$ Frequency (Hz)^{note 12}</i> | | | | | | | |
|----------------|--|--------------|-----------------|------------|------------|-------------|-------------|-------------|
| | <i>10</i> | <i>20,30</i> | <i>40 - 1 k</i> | <i>3 k</i> | <i>5 k</i> | <i>10 k</i> | <i>20 k</i> | <i>30 k</i> |
| 10 μA | 250 | 250 | 250 | | | | | |
| 20 μA | 100 | 80 | 70 | 110 | 120 | 150 | | |
| 30 μA | 150 | 135 | 85 | 85 | 90 | 100 | 120 | 190 |
| 100 μA | 50 | 55 | 50 | 55 | 65 | 75 | 95 | 120 |
| 200 μA | 50 | 35 | 30 | 50 | 60 | 70 | 95 | 120 |
| 300 μA | 50 | 60 | 40 | 40 | 40 | 40 | 50 | 70 |
| 1 mA | 30 | 20 | 20 | 20 | 20 | 20 | 25 | 30 |
| 2 mA | 30 | 20 | 20 | 20 | 20 | 20 | 25 | 30 |
| 3 mA | 30 | 20 | 20 | 20 | 20 | 20 | 25 | 30 |

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AC/DC Difference for Low Frequency Detectors and Shunts

*Best Uncertainty (±) in $\mu A/A$ ^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>10</i> | <i>20</i> | <i>40</i> | <i>400</i> | <i>1 k</i> | <i>5 k</i> | <i>10 k</i> | <i>20 k</i> | <i>50 k</i> | <i>100 k</i> |
|--------------|-----------|-----------|-----------|------------|------------|------------|-------------|-------------|-------------|--------------|
| 10 mA | 30 | 30 | 20 | 20 | 20 | 20 | 25 | 25 | 45 | 60 |
| 20 mA | 30 | 30 | 20 | 20 | 20 | 20 | 25 | 25 | 50 | 65 |
| 30 mA | 30 | 30 | 20 | 20 | 20 | 20 | 25 | 25 | 50 | 65 |
| 50 mA | 30 | 30 | 20 | 20 | 20 | 20 | 25 | 25 | 50 | 70 |
| 100 mA | 35 | 30 | 20 | 20 | 20 | 20 | 25 | 30 | 55 | 75 |
| 200 mA | 35 | 30 | 21 | 21 | 21 | 21 | 25 | 30 | 55 | 80 |
| 300 mA | 35 | 30 | 25 | 25 | 25 | 25 | 25 | 30 | 60 | 80 |
| 500 mA | 40 | 35 | 25 | 25 | 25 | 25 | 25 | 30 | 60 | 90 |
| 1 A | 40 | 40 | 25 | 25 | 25 | 25 | 30 | 45 | 100 | 190 |
| 2 A | 50 | 45 | 30 | 30 | 30 | 30 | 30 | 45 | 100 | 190 |
| 3 A | 60 | 50 | 35 | 35 | 35 | 35 | 40 | 55 | 110 | 190 |
| 5 A | 70 | 60 | 40 | 40 | 40 | 40 | 40 | 65 | 160 | 300 |
| 10 A | 80 | 70 | 45 | 45 | 45 | 45 | 45 | 75 | 120 | |

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20 A 120 100 65 65 65 65 65 100 140

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AC Current

For Calibrators or DMMs

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| Current | 10 | 20 | 40 | 400 | 1 k | 5 k | 10 k |
|----------------|-----------|-----------|-----------|------------|------------|------------|-------------|
| 19 μA | 150 | 100 | 100 | 100 | 100 | 150 | 200 |
| 100 μA | 100 | 80 | 55 | 55 | 55 | 135 | 200 |
| 190 μA | 100 | 60 | 50 | 50 | 50 | 135 | 200 |
| 1 mA | 100 | 80 | 45 | 45 | 45 | 70 | 100 |
| 1.9 mA | 100 | 80 | 40 | 40 | 40 | 70 | 100 |
| 10 mA | 125 | 75 | 65 | 65 | 65 | 65 | 65 |
| 19 mA | 125 | 65 | 45 | 45 | 45 | 65 | 65 |
| 100 mA | 125 | 75 | 65 | 65 | 65 | 65 | 65 |
| 190 mA | 125 | 65 | 45 | 45 | 45 | 65 | 65 |
| 1.0 A | | | 65 | 65 | 65 | 70 | 125 |

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| | | | | | |
|-------|----|----|----|-----|-----|
| 1.9 A | 65 | 65 | 65 | 70 | 125 |
| 10 A | 80 | 80 | 80 | 130 | 160 |

NVLAP Code: 20/E02

AC Current

AC/DC Difference of Y5020 Shunt

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| <i>Current</i> | <i>50</i> | <i>100</i> | <i>300</i> | <i>1 k</i> | <i>3 k</i> | <i>4 k</i> | <i>5 k</i> |
|----------------|-----------|------------|------------|------------|------------|------------|------------|
| 10 A | 70 | 70 | 70 | 70 | 150 | 150 | 150 |

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AC Current

5500A Console

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>10</i> | <i>45</i> | <i>65</i> | <i>500</i> | <i>1 k</i> | <i>5 k</i> | <i>10k</i> |
|--------------|-----------|-----------|-----------|------------|------------|------------|------------|
| 33 μ A | | | | | 180 | | 600 |
| 190 μ A | | 70 | | | 80 | | 470 |
| 329 μ A | 80 | 60 | | | 80 | 150 | 330 |
| 330 μ A | | | | | 160 | 180 | |
| 1.9 mA | | | | | 60 | | 100 |
| 3.29 mA | 80 | 60 | | | 60 | 80 | 90 |
| 3.3 mA | | | | | 140 | 150 | |
| 19 mA | | | | | 60 | | 90 |
| 32.9 mA | 130 | 65 | | | 65 | 80 | 90 |
| 33 mA | | | | | 85 | 90 | |
| 190 mA | | | | | 60 | | 90 |
| 329 mA | 130 | 65 | | | 65 | 80 | 90 |

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| | | | | | | |
|--------|-----|----|----|-----|-----|-----|
| 330 mA | | | | | 85 | 100 |
| 2.19 A | 130 | 70 | | | 70 | 100 |
| 2.2 A | | | | 100 | 100 | |
| 11 A | | 80 | 80 | 80 | 80 | |

NVLAP Code: 20/E02

AC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>40</i> | <i>1 k</i> | <i>10 k</i> |
|--------------|-----------|------------|-------------|
| 19 μA | | 210 | 1050 |
| 190 μA | 53 | 53 | 260 |
| 1.9 mA | | 46 | 260 |
| 19 mA | | 53 | 260 |
| 190 mA | 43 | 53 | 260 |
| 1.9 A | 90 | 90 | 1000 |

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AC Current

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>10</i> | <i>45</i> | <i>65</i> | <i>500</i> | <i>1 k</i> | <i>5 k</i> | <i>10k</i> |
|--------------|-----------|-----------|-----------|------------|------------|------------|------------|
| 33 μ A | | | | | 1400 | | 2200 |
| 190 μ A | | 270 | | | 360 | | 1600 |
| 329 μ A | 380 | 220 | | | 270 | 560 | 1600 |
| 330 μ A | | | | | 270 | 390 | |
| 1.9 mA | | | | | 170 | | 750 |
| 3.29 mA | 320 | 140 | | | 140 | 260 | 730 |
| 3.3 mA | | | | | 260 | 390 | |
| 19 mA | | | | | 150 | | 750 |
| 32.9 mA | 350 | 140 | | | 140 | 260 | 740 |
| 33 mA | | | | | 260 | 390 | |
| 190 mA | | | | | 170 | | 750 |
| 329 mA | 350 | 140 | | | 140 | 250 | 740 |

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| | | | | | | | |
|--------|-----|-----|-----|-----|-----|--|------|
| 330 mA | | | | | 270 | | 1300 |
| 2.19 A | 410 | 150 | | | 210 | | 1200 |
| 2.2 A | | | | 300 | 550 | | |
| 11 A | 110 | | 120 | 160 | 430 | | |

NVLAP Code: 20/E02

AC Current

5520A Console

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>10</i> | <i>45</i> | <i>65</i> | <i>500</i> | <i>1 k</i> | <i>5 k</i> | <i>10 k</i> | <i>30 k</i> |
|--------------|-----------|-----------|-----------|------------|------------|------------|-------------|-------------|
| 33 μ A | | | | | 130 | | 220 | 400 |
| 190 μ A | | 60 | | | 60 | | 160 | 350 |
| 329 μ A | 80 | 60 | | | 60 | 100 | 120 | 250 |
| 330 μ A | | | | | 90 | 150 | | 300 |
| 1.9 mA | | | | | 50 | | 85 | 140 |
| 3.29 mA | 70 | 55 | | | 55 | 75 | 85 | 140 |
| 3.3 mA | | | | | 70 | 100 | | 150 |

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| | | | | | | | |
|---------|-----|-----|-----|-----|------|----|-----|
| 19 mA | | | | 55 | | 70 | 150 |
| 32.9 mA | 115 | 62 | | 62 | 65 | 70 | 150 |
| 33 mA | | | | 85 | 90 | | 175 |
| 190 mA | | | | 55 | | 70 | 150 |
| 329 mA | 125 | 62 | | 62 | 65 | 70 | 150 |
| 330 mA | | | | 90 | 100 | | 150 |
| 1.09 A | 125 | 73 | | 73 | 150 | | 500 |
| 2.99 A | 125 | 72 | | 72 | 150 | | 500 |
| 3.3 A | | | 150 | 150 | 1100 | | |
| 11 A | | 80 | 80 | 80 | 80 | | 200 |
| 20 A | | 100 | 100 | 100 | 130 | | 200 |

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AC Current Factory Annex 5520A Test Console

| Range | Frequency in Hertz | | | | | | | |
|-------------|--------------------|-----|----|-----|-----|-----|------|------|
| | 10 | 45 | 65 | 500 | 1 k | 5 k | 10 k | 30 k |
| 33 μ A | | | | | 300 | | 700 | 1300 |
| 190 μ A | | 200 | | | 200 | | 600 | 800 |
| 329 μ A | 200 | 140 | | | 140 | 200 | 400 | 700 |
| 330 μ A | | | | | 180 | 300 | | 600 |
| 1.9 mA | | | | | 180 | | 300 | 300 |
| 3.29 mA | 200 | 140 | | | 140 | 200 | 200 | 300 |
| 3.3 mA | | | | | 180 | 200 | | 400 |
| 19 mA | | | | | 150 | | 200 | 300 |
| 32.9 mA | 200 | 130 | | | 130 | 140 | 140 | 200 |
| 33 mA | | | | | 200 | 200 | | 300 |
| 190 mA | | | | | 160 | | 200 | 300 |
| 329 mA | 200 | 140 | | | 140 | 140 | 140 | 300 |
| 330 mA | | | | | 180 | 500 | 1400 | |
| 1.09 A | 140 | 100 | | | 100 | 200 | 1000 | |

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| | | | | | | |
|--------|-----|-----|-----|-----|------|-----|
| 2.99 A | 140 | 100 | | 100 | 220 | 900 |
| 3.3 A | | | 200 | 140 | 2700 | |
| 11 A | | 140 | 140 | 140 | 800 | |
| 20 A | | 140 | 140 | 140 | 200 | 800 |

NVLAP Code: 20/E02

AC Current

5725A Console

| <i>Range(±)</i> | <i>Frequency</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> |
|-----------------|------------------|---|
| 2.5 A | 100 Hz | 140 |
| 2.5 A | 1 kHz | 95 |
| 2.5 A | 5 kHz | 150 |
| 2.5 A | 10 kHz | 150 |
| 11 A | 100 Hz | 40 |
| 11 A | 1 kHz | 95 |
| 11 A | 5 kHz | 150 |
| 11 A | 10 kHz | 150 |

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Factory Annex, 5725A Console

| | | |
|-------|--------|-----|
| 2.5 A | 100 Hz | 150 |
| 2.5 A | 1 kHz | 140 |
| 2.5 A | 5 kHz | 270 |
| 2.5 A | 10 kHz | 400 |
| 11 A | 100 Hz | 150 |
| 11 A | 1 kHz | 140 |
| 11 A | 5 kHz | 270 |
| 11 A | 10 kHz | 400 |

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A handwritten signature in black ink, appearing to read 'W. R. Mohr'.

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DC Resistance

| <i>Range in ohms</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------------|--|---------------------------|
| 0.1 to <1.0 | 1.0 μ Ohm/Ohm | Resistance using MI 6010B |
| 1.0 | 0.17 μ Ohm/Ohm | Resistance using MI 6010B |
| > 1 to 130 | 0.2 μ Ohm/Ohm | Resistance using MI 6010B |
| > 130 to 1300 | 0.22 μ Ohm/Ohm | Resistance using MI 6010B |
| > 1300 to 13 k | 0.25 μ Ohm/Ohm | Resistance using MI 6010B |
| 10 k to 100 k | 0.2 μ Ohm/Ohm | Resistance using MI 6000B |
| > 100 k to 1 M | 0.25 μ Ohm/Ohm | Resistance using MI 6000B |
| > 1 M to 10 M | 1.0 μ Ohm/Ohm | Resistance using MI 6000B |
| > 10 M to 100 M | 5 μ Ohm/Ohm | Resistance using MI 6010B |
| 100 M to 1 G | 25 μ Ohm/Ohm | Resistance using MI 6010B |
| 0.001 | 26 | Low Ohm Method |
| 0.01 | 30 | Low Ohm Method |
| 1 to 10 k | 0.75 | Low Ohm Method |

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DC Resistance

| <i>Range in ohms</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------------|--|----------------|
| 1 | 12 | 5700A Console |
| 1.9 | 10 | 5700A Console |
| 10 | 5 | 5700A Console |
| 19 | 4 | 5700A Console |
| 100 | 3 | 5700A Console |
| 190 | 2 | 5700A Console |
| 1 k | 2 | 5700A Console |
| 1.9 k | 2 | 5700A Console |
| 10 k | 0.5 | 5700A Console |
| 19 k | 1 | 5700A Console |
| 100 k | 2 | 5700A Console |
| 190 k | 2.5 | 5700A Console |
| 1 M | 3 | 5700A Console |
| 1.9 M | 3.5 | 5700A Console |
| 3 M | 4 | 5700A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|-------|-----|---------------|
| 10 M | 4.5 | 5700A Console |
| 19 M | 6 | 5700A Console |
| 30 M | 15 | 5700A Console |
| 100 M | 25 | 5700A Console |
| 300 M | 60 | 5700A Console |

NVLAP Code: 20/E05
DC Resistance

| <i>Range in ohms</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------------|--|----------------|
| 0 | 100 | 5500A Console |
| 2.0 | 55 | 5500A Console |
| 10.9 | 25 | 5500A Console |
| 11.9 | 25 | 5500A Console |
| 19 | 70 | 5500A Console |
| 30 | 70 | 5500A Console |
| 33 | 40 | 5500A Console |
| 109 | 21 | 5500A Console |
| 119 | 17 | 5500A Console |

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| | | |
|--------|----|---------------|
| 190 | 13 | 5500A Console |
| 300 | 12 | 5500A Console |
| 330 | 11 | 5500A Console |
| 1.09 k | 10 | 5500A Console |
| 1.19 k | 10 | 5500A Console |
| 1.9 k | 13 | 5500A Console |
| 3 k | 12 | 5500A Console |
| 3.3 k | 11 | 5500A Console |
| 10.9 k | 10 | 5500A Console |
| 11.9 k | 10 | 5500A Console |
| 19 k | 12 | 5500A Console |
| 30 k | 12 | 5500A Console |
| 33 k | 11 | 5500A Console |
| 109 k | 10 | 5500A Console |
| 119 k | 10 | 5500A Console |
| 190 k | 24 | 5500A Console |
| 300 k | 20 | 5500A Console |

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| | | |
|--------|-----|---------------|
| 330 k | 20 | 5500A Console |
| 1.09 M | 16 | 5500A Console |
| 1.19 M | 15 | 5500A Console |
| 1.9 M | 8 | 5500A Console |
| 3 M | 8 | 5500A Console |
| 3.3 M | 85 | 5500A Console |
| 10.9 M | 62 | 5500A Console |
| 11.9 M | 61 | 5500A Console |
| 19 M | 30 | 5500A Console |
| 30 M | 30 | 5500A Console |
| 33 M | 550 | 5500A Console |
| 109 M | 525 | 5500A Console |
| 119 M | 525 | 5500A Console |
| 290 M | 100 | 5500A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

NVLAP Code: 20/E05

DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| <i>Range in ohms</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------------|--|----------------|
| 1 | 24.0 | 5720A Console |
| 1.9 | 20.0 | 5720A Console |
| 10 | 10.0 | 5720A Console |
| 19 | 8.4 | 5720A Console |
| 100 | 3.2 | 5720A Console |
| 190 | 2.6 | 5720A Console |
| 1 k | 3.0 | 5720A Console |
| 1.9 k | 2.5 | 5720A Console |
| 10 k | 2.0 | 5720A Console |
| 19 k | 2.2 | 5720A Console |
| 100 k | 2.2 | 5720A Console |
| 190 k | 2.4 | 5720A Console |
| 1 M | 4.0 | 5720A Console |
| 1.9 M | 4.7 | 5720A Console |

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| | | |
|-------|------|---------------|
| 10 M | 8.0 | 5720A Console |
| 19 M | 10.5 | 5720A Console |
| 100 M | 35.5 | 5720A Console |

NVLAP Code: 20/E05
DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| Range in ohms | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|----------------------|--|----------------|
| 2 | 100 | 5500A Console |
| 10.9 | 40 | 5500A Console |
| 11.9 | 40 | 5500A Console |
| 19 | 90 | 5500A Console |
| 30 | 90 | 5500A Console |
| 33 | 50 | 5500A Console |
| 109 | 40 | 5500A Console |
| 119 | 20 | 5500A Console |
| 190 | 20 | 5500A Console |
| 300 | 20 | 5500A Console |

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| | | |
|--------|----|---------------|
| 330 | 15 | 5500A Console |
| 1.1 k | 15 | 5500A Console |
| 1.2 k | 15 | 5500A Console |
| 1.9 k | 15 | 5500A Console |
| 3 k | 15 | 5500A Console |
| 3.3 k | 15 | 5500A Console |
| 10.9 k | 15 | 5500A Console |
| 11.9 k | 15 | 5500A Console |
| 19 k | 15 | 5500A Console |
| 30 k | 15 | 5500A Console |
| 33 k | 15 | 5500A Console |
| 109 k | 15 | 5500A Console |
| 119 k | 15 | 5500A Console |
| 190 k | 25 | 5500A Console |
| 300 k | 25 | 5500A Console |
| 330 k | 25 | 5500A Console |
| 1.1 M | 25 | 5500A Console |

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| | | |
|--------|-----|---------------|
| 1.2 M | 25 | 5500A Console |
| 1.9 M | 25 | 5500A Console |
| 3.0 M | 25 | 5500A Console |
| 3.3 M | 100 | 5500A Console |
| 10.9 M | 100 | 5500A Console |
| 11.9 M | 100 | 5500A Console |
| 19 M | 100 | 5500A Console |
| 30 M | 100 | 5500A Console |
| 33 M | 800 | 5500A Console |
| 109 M | 800 | 5500A Console |
| 119 M | 800 | 5500A Console |
| 290 M | 800 | 5500A Console |

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NVLAP Code: 20/E05

DC Resistance

| <i>Range in Ohms</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------------|---|----------------|
| 0 | 20 μohms | 5520A Console |
| 2 | 8.5 | 5520A Console |
| 10.9 | 2.5 | 5520A Console |
| 11.9 | 2.5 | 5520A Console |
| 19 | 2.5 | 5520A Console |
| 30 | 2.8 | 5520A Console |
| 33 | 2.5 | 5520A Console |
| 109 | 2 | 5520A Console |
| 119 | 2 | 5520A Console |
| 190 | 2 | 5520A Console |
| 300 | 2.5 | 5520A Console |
| 330 | 2.5 | 5520A Console |
| 1.09 k | 2 | 5520A Console |
| 1.19 k | 2 | 5520A Console |
| 1.9 k | 2 | 5520A Console |

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| | | |
|--------|-----|---------------|
| 3 k | 2.5 | 5520A Console |
| 3.3 k | 3.0 | 5520A Console |
| 10.9 k | 2.5 | 5520A Console |
| 11.9 k | 2.5 | 5520A Console |
| 19 k | 2.5 | 5520A Console |
| 30 k | 3 | 5520A Console |
| 33 k | 3 | 5520A Console |
| 109 k | 3 | 5520A Console |
| 119 k | 3 | 5520A Console |
| 190 k | 3 | 5520A Console |
| 300 k | 3.5 | 5520A Console |
| 330 k | 3.5 | 5520A Console |
| 1.09 M | 4.5 | 5520A Console |
| 1.19 M | 4.5 | 5520A Console |
| 1.9 M | 5 | 5520A Console |
| 3 M | 6 | 5520A Console |
| 3.3 M | 6 | 5520A Console |

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| | | |
|-----------------|------|------------------------------|
| 10.9 M | 8 | 5520A Console |
| 11.9 M | 8 | 5520A Console |
| 19 M | 20 | 5520A Console |
| 30 M | 30 | 5520A Console |
| 33 M | 30 | 5520A Console |
| 109 M | 70 | 5520A Console |
| 119 M | 70 | 5520A Console |
| 290 M | 200 | 5520A Console |
| 400 M | 200 | 5520A Console |
| 640 M | 600 | 5520A Console |
| 1.09 G | 1000 | 5520A Console |
| 2 to 30 | 25 | Factory Annex, 5520A Console |
| 33 to 109 | 12 | Factory Annex, 5520A Console |
| 119 to 1.19 M | 7 | Factory Annex, 5520A Console |
| 1.9 M to 11.9 M | 12 | Factory Annex, 5520A Console |
| 19 M | 25 | Factory Annex, 5520A Console |

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| | | |
|--------|------|------------------------------|
| 30 M | 75 | Factory Annex, 5520A Console |
| 33 M | 75 | Factory Annex, 5520A Console |
| 109 M | 120 | Factory Annex, 5520A Console |
| 119 M | 150 | Factory Annex, 5520A Console |
| 290 M | 550 | Factory Annex, 5520A Console |
| 400 M | 800 | Factory Annex, 5520A Console |
| 640 M | 1500 | Factory Annex, 5520A Console |
| 1090 M | 2500 | Factory Annex, 5520A Console |

NVLAP Code: 20/E05
DC Current

| Range (\pm) | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|---------------------------------|--|---------------------|
| to 19 μ A | 10 | Calibrators or DMMs |
| 100 μ A to 190 μ A | 4 | Calibrators or DMMs |
| 1.0 mA to 1.9 mA | 4 | Calibrators or DMMs |
| 10 | 5 | Calibrators or DMMs |
| 19 mA | 9 | Calibrators or DMMs |

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| | | |
|--------|----|---------------------|
| 100 mA | 5 | Calibrators or DMMs |
| 190 mA | 10 | Calibrators or DMMs |
| 1.0 A | 7 | Calibrators or DMMs |
| 1.9 A | 10 | Calibrators or DMMs |
| 10 A | 22 | Calibrators or DMMs |

NVLAP Code: 20/E05
DC Current

| Range (\pm) in Amperes | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|--|--|----------------|
| 0 | 3 (nA) | 5500A Console |
| 190 μ | 8 | 5500A Console |
| 1.9 m | 7 | 5500A Console |
| 3.29 m | 7 | 5500A Console |
| 19 m | 7 | 5500A Console |
| 32.9 m | 7 | 5500A Console |
| 190 m | 8 | 5500A Console |
| 329 m | 8 | 5500A Console |
| 2.19 m | 14 | 5500A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

11 30 5500A Console

NVLAP Code: 20/E05

DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| <i>Range</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|--------------|---|----------------|
| 19 μ A | 100 | 5720A Console |
| 190 μ A | 28 | 5720A Console |
| -190 μ A | 16 | 5720A Console |
| \pm 1.9 mA | 8 | 5720A Console |
| \pm 19 mA | 12 | 5720A Console |
| 100 mA | 12 | 5720A Console |
| \pm 190 mA | 12 | 5720A Console |
| 1 A | 19 | 5720A Console |
| \pm 1.9 A | 16 | 5720A Console |

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NVLAP Code: 20/E05

DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| <i>Range (±) Amperes</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|--------------------------|---|----------------|
| 190 μ | 58 | 5500A Console |
| 1.9 m | 32 | 5500A Console |
| 3.3 m | 29 | 5500A Console |
| 19 m | 21 | 5500A Console |
| 32.9 m | 20 | 5500A Console |
| 190 m | 42 | 5500A Console |
| 329 m | 40 | 5500A Console |
| 2.29 | 40 | 5500A Console |
| 11 | 65 | 5500A Console |

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DC Current

| <i>Range (±) Amperes</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|--------------------------|---|------------------------------|
| 0 | 100 (pA) | 5520A Console |
| 190 μ | 10 | 5520A Console |
| 329 μ | 10 | 5520A Console |
| 1.9 m | 9 | 5520A Console |
| 3.29 m | 8 | 5520A Console |
| 19 m | 9 | 5520A Console |
| 32.9 m | 8 | 5520A Console |
| 190 m | 9 | 5520A Console |
| 329 m | 8 | 5520A Console |
| 1.09 | 19 | 5520A Console |
| 2.99 | 18 | 5520A Console |
| 11 | 30 | 5520A Console |
| 20 | 65 | 5520A Console |
| 190 μ to 329 μ | 25 | Factory Annex, 5520A Console |
| 1.9 m to 3.29 m | 17 | Factory Annex, 5520A Console |

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| | | |
|----------------|----|------------------------------|
| 19 m to 32.9 m | 18 | Factory Annex, 5520A Console |
| 190 m to 329 m | 34 | Factory Annex, 5520A Console |
| 1.09 | 35 | Factory Annex, 5520A Console |
| 2.99 | 55 | Factory Annex, 5520A Console |
| 11 to 20 | 90 | Factory Annex, 5520A Console |

NVLAP Code: 20/E05
DC Current

| Range (\pm) | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|---------------------------------|--|------------------------------|
| 0.0 | 100 μ A | 5725A Console |
| 190 mA | 18 | 5725A Console |
| 1 A | 60 | 5725A Console |
| 2.5 A | 60 | 5725A Console |
| 11 A | 60 | 5725A Console |
| 0.0 | 120 μ A | Factory Annex, 5725A Console |
| 190 mA | 20 | Factory Annex, 5725A Console |
| 1 A | 100 | Factory Annex, 5725A Console |
| 11 A | 70 | Factory Annex, 5725A Console |

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NVLAP Code: 20/E06

DC Voltage

| <i>Range</i> | <i>Best Uncertainty (±)^{note 1}</i> | <i>Remarks</i> |
|---------------------|--|-------------------------------------|
| Reference Standards | | |
| 10.00 V | 0.02 ppm ^{note 2} | Direct Comparison - in lab |
| 10.00 V | 0.06 ppm ^{note 2,11} | Direct Comparison - remote location |

Well Isolated DC Sources or Voltmeters

| <i>Range (±)</i> | <i>Best Uncertainty (±)^{note 1}</i> | <i>Remarks</i> |
|------------------|---|------------------------|
| 200 μV to 10 V | (0.02 + 0.1E ^{0.2}) μV ^{note 2, 3} | Direct against J Array |

Calibrators or Digital Voltmeters

| <i>Range (±)</i> | <i>Best Uncertainty (±)^{note 1}</i> | <i>Remarks</i> |
|------------------|--|-----------------|
| 0 to <0.1 | 4 μV/V of reading + 0.7 μV | Transfer Method |
| 0.1 V | 2.0 ppm | Transfer Method |
| 1.0 V | 1.0 ppm | Transfer Method |
| 10.0 V | 0.6 ppm | Transfer Method |
| 100.0 V | 0.7 ppm | Transfer Method |
| 1000.0 V | 0.9 ppm | Transfer Method |

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NVLAP Code: 20/E06

DC Voltage

| <i>Range (±) in Volts</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|---------------------------|---|----------------|
| 0 | 0.5 | 5500A Console |
| 0.329 | 7.0 | 5500A Console |
| 3.29 | 5.5 | 5500A Console |
| 32.9 | 8.0 | 5500A Console |
| 50 | 8.0 | 5500A Console |
| 329 | 8.0 | 5500A Console |
| 334 | 8.5 | 5500A Console |
| 900 | 7.0 | 5500A Console |
| 1020 | 7.0 | 5500A Console |

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DC Voltage

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| <i>Range</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|----------------|--|----------------|
| 100 mV | 5.0 | 5720A Console |
| -100 mV | 6.5 | 5720A Console |
| ± 1.0 V | 1.2 | 5720A Console |
| ± 10.0 V | 0.7 | 5720A Console |
| ± 100.0 V | 1.0 | 5720A Console |
| ± 1000.0 V | 1.4 | 5720A Console |

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NVLAP Code: 20/E06

DC Voltage

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| <i>Range (\pm) in Volts</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|--|--|----------------|
| 0.329 | 8 | 5500A Console |
| 3.29 | 7 | 5500A Console |
| 32.9 | 10 | 5500A Console |
| 50 | 9 | 5500A Console |
| 329 | 9 | 5500A Console |
| 334 | 10 | 5500A Console |
| 900 | 9 | 5500A Console |
| 1020 | 9 | 5500A Console |

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NVLAP Code: 20/E06

DC Voltage

| Range (\pm) in Volts | Best Uncertainty (\pm) in ppm ^{note 1} | Remarks |
|--------------------------|---|------------------------------|
| 0 | 0.15 μ V | 5520A Console |
| 0.329 | 2 | 5520A Console |
| 1 | 1.5 | 5520A Console |
| 3.29 | 16 | 5520A Console |
| 7 | 6 | 5520A Console |
| 10 | 1 | 5520A Console |
| 32.9 | 1.2 | 5520A Console |
| 50 | 2 | 5520A Console |
| 329 | 2.2 | 5520A Console |
| 334 | 2.2 | 5520A Console |
| 900 | 2.5 | 5520A Console |
| 1020 | 2.2 | 5520A Console |
| 0 to 32.9 | 2.5 | Factory Annex, 5520A Console |
| 33 to 1020 | 4.5 | Factory Annex, 5520A Console |

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NVLAP Code: 20/E09
LF AC Voltage using 792A

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| Range | 10 | 20 | 40 | 100 | 1k | 10k | 20k | 50k | 100k | 300k | 500k | 800k | 1 M |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| 2 mV | 500 | 950 | 890 | 930 | 500 | 910 | 920 | 510 | 1070 | 1280 | 2120 | 2440 | 2440 |
| 6 mV | 350 | 320 | 290 | 220 | 290 | 290 | 280 | 360 | 550 | 770 | 910 | 590 | 610 |
| 10 mV | 130 | 180 | 120 | 190 | 200 | 180 | 180 | 220 | 300 | 250 | 640 | 380 | 410 |
| 20 mV | 90 | 80 | 75 | 75 | 75 | 75 | 75 | 135 | 200 | 310 | 450 | 330 | 370 |
| 60 mV | 100 | 70 | 50 | 50 | 40 | 50 | 55 | 70 | 135 | 270 | 350 | 410 | 410 |
| 100 mV | 35 | 37 | 25 | 34 | 33 | 32 | 34 | 40 | 80 | 155 | 200 | 270 | 185 |
| 200 mV | 35 | 23 | 24 | 20 | 19 | 19 | 19 | 45 | 80 | 130 | 110 | 250 | 190 |
| 600 mV | 26 | 36 | 18 | 11 | 14 | 10 | 11 | 25 | 15 | 95 | 75 | 80 | 80 |
| 1 V | 85 | 34 | 18 | 10 | 12 | 13 | 10 | 20 | 10 | 70 | 90 | 95 | 75 |
| 2 V | 23 | 20 | 20 | 9 | 9 | 8 | 8 | 14 | 11 | 90 | 90 | 75 | 75 |
| 6 V | 24 | 20 | 18 | 10 | 8 | 9 | 8 | 19 | 11 | 90 | 90 | 75 | 75 |
| 10 V | 17 | 33 | 18 | 11 | 10 | 10 | 11 | 11 | 13 | 70 | 95 | 95 | 100 |
| 20 V | 23 | 21 | 20 | 10 | 10 | 10 | 11 | 11 | 13 | 85 | 90 | 75 | 75 |

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| | | | | | | | | | | |
|--------|----|----|----|----|----|----|----|----|----|----|
| 60 V | 24 | 22 | 20 | 12 | 12 | 14 | 11 | 27 | 15 | 75 |
| 100 V | 85 | 35 | 20 | 15 | 16 | 15 | 12 | 30 | 16 | |
| 200 V | 36 | 23 | 20 | 18 | 13 | 13 | 13 | 15 | 20 | |
| 600 V | 95 | 45 | 28 | 24 | 17 | 18 | 18 | 35 | 50 | |
| 1000 V | 47 | 23 | 23 | 23 | 19 | 19 | 20 | 40 | 55 | |

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Absolute AC Voltage, Best Measurement Capability $\mu\text{V}/\text{V}$

| Range | Applied | Frequency (Hz) | | | | | | | | | | |
|--------|---------|----------------|-----|-----|-----|-----|-----|-----|------|------|------|------|
| | | 10 | 20 | 100 | 1k | 10k | 20k | 50k | 100k | 300k | 500k | 1M |
| 2.2 mV | 2 mV | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 250 | 350 | 1300 |
| 7 mV | 6 mV | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 90 | 210 | 260 | 550 |
| 22 mV | 20 mV | 60 | 60 | 40 | 40 | 40 | 40 | 50 | 85 | 200 | 250 | 350 |
| 70 mV | 60 mV | 100 | 65 | 45 | 35 | 45 | 50 | 70 | 135 | 270 | 350 | 430 |
| 220 mV | 200 mV | 40 | 22 | 18 | 18 | 18 | 18 | 40 | 80 | 135 | 120 | 225 |
| 700 mV | 600 mV | 30 | 36 | 10 | 12 | 10 | 10 | 22 | 15 | 95 | 80 | 150 |
| 2.2 V | 600 mV | 30 | 35 | 10 | 12 | 8 | 8 | 22 | 15 | 95 | 80 | 150 |

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|--------|--------|----|----|----|----|----|----|----|----|----|----|-----|
| 2.2 V | 1 V | 85 | 35 | 10 | 10 | 11 | 10 | 18 | 15 | 75 | 90 | 250 |
| 2.2 V | 2 V | 25 | 20 | 8 | 8 | 8 | 8 | 15 | 15 | 90 | 95 | 250 |
| 7 V | 2 V | 25 | 20 | 8 | 6 | 6 | 6 | 14 | 12 | 90 | 95 | 250 |
| 7 V | 6 V | 25 | 20 | 9 | 9 | 9 | 9 | 20 | 12 | 90 | 95 | 260 |
| 22 V | 20 V | 25 | 22 | 9 | 9 | 9 | 10 | 10 | 14 | 85 | 95 | 250 |
| 70 V | 60 V | 25 | 22 | 10 | 10 | 12 | 10 | 28 | 20 | 75 | | |
| 220 V | 200 V | 40 | 24 | 18 | 12 | 12 | 14 | 16 | 24 | | | |
| 700 V | 600 V | | | 23 | 15 | 17 | 20 | 40 | 70 | | | |
| 1000 V | 1000 V | | | 22 | 18 | 18 | 20 | | | | | |
| 1000 V | 600 V | | | | | | | 45 | 70 | | | |

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AC Voltage

Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| <i>Range in Volts</i> | <i>9.5</i> | <i>10</i> | <i>45</i> | <i>1 k</i> | <i>5k</i> | <i>8 k</i> | <i>10 k</i> | <i>18 k</i> | <i>20 k</i> | <i>50 k</i> | <i>90 k</i> | <i>100 k</i> | <i>450 k</i> | <i>500 k</i> |
|---------------------------|------------|-----------|-----------|------------|-----------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| 0.01 | | | 430 | 430 | 430 | | 430 | | | | | | | |
| 0.03 | 1000 | 120 | 70 | 65 | | | 65 | | 65 | 150 | | 260 | 470 | |
| 0.3 | 1000 | 50 | 30 | 30 | 35 | | 25 | | 25 | 35 | | 70 | | 180 |
| 3.0 | 1000 | 30 | 25 | 20 | 25 | | 20 | | 20 | 35 | | 35 | 130 | |
| 30 | 1000 | 35 | 27 | 20 | | | 20 | | 25 | 45 | 65 | | | |
| 300 | | | 36 | 25 | | | 25 | 25 | | | | | | |
| 1000 | | | 35 | 35 | 35 | 35 | | | | | | | | |

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AC Voltage

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>40</i> | <i>50</i> | <i>1 k</i> | <i>20 k</i> | <i>100 k</i> | <i>300 k</i> | <i>500 k</i> | <i>1 M</i> |
|--------------|-----------|-----------|------------|-------------|--------------|--------------|--------------|------------|
| 1.9 mV | | | 740 | 840 | | | | |
| 19 mV | 90 | | 90 | 90 | 270 | 420 | | 1100 |
| 190 mV | 30 | | 60 | 80 | 130 | 240 | | 740 |
| 600 mV | 30 | | 20 | 20 | 50 | 130 | | 500 |
| 1 V | 20 | | 10 | 10 | 50 | 100 | | 400 |
| 2 V | | | 20 | 20 | | | | 400 |
| 3 V | 30 | | 20 | 20 | 50 | 180 | | 670 |
| 10 V | 20 | | 10 | 10 | 40 | 140 | | 400 |
| 20 V | | | 10 | 10 | | | | 400 |
| 30 V | 30 | | 20 | 20 | 60 | 330 | 1700 | |
| 100 V | 20 | | 20 | 20 | 50 | | | |
| 200 V | 25 | | 20 | | 60 | | | |

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| | | |
|--------|----|----|
| 500 V | 30 | 20 |
| 1100 V | 25 | 30 |

NVLAP Code: 20/E09

AC Voltage

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>10</i> | <i>45</i> | <i>1 k</i> | <i>5 k</i> | <i>10 k</i> | <i>20 k</i> | <i>50 k</i> | <i>100 k</i> | <i>500 k</i> |
|--------------|-----------|-----------|------------|------------|----------------------|-------------|-------------|--------------|--------------|
| 0.03 V | 300 | 180 | 180 | | 180 | 180 | 250 | 350 | 900 |
| 0.3 V | 180 | 27 | 27 | | 27 | 27 | 50 | 75 | 380 |
| 3.0 V | 180 | 27 | 27 | | 27 | 27 | 50 | 75 | 380 |
| 30 V | 160 | 30 | 30 | | 30 | 30 | 55 | 100 | |
| 300 V | | 50 | 40 | | 40 | 60 | | | |
| 1000 V | | 50 | 50 | 50 | 50 ^{note 4} | | | | |

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AC Voltage

5520A Console

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| Range | 9.5 | 10 | 45 | 1 k | 5 k | 10 k | 18 k | 20 k | 30 k | 50 k | 90 k | 100 k | 450 k | 500 k |
|-------|------|-----|-----|-----|-----|----------------------|------|------|------|------|------|-------|-------|-------|
| 0.003 | | | 250 | | | 250 | | | | | | | | |
| 0.01 | | | 350 | 350 | 350 | 500 | | | 1050 | | | | | |
| 0.03 | 1000 | 110 | 64 | 60 | | 60 | | 60 | | 140 | | 250 | 450 | |
| 0.3 | 1000 | 45 | 25 | 29 | | 21 | | 25 | | 31 | | 70 | | 150 |
| 3.0 | 1000 | 30 | 25 | 16 | | 16 | | 16 | | 30 | | 35 | 120 | |
| 5.0 | 1000 | 60 | 50 | 40 | 40 | 40 | | | | | | | | |
| 30 | 1000 | 35 | 26 | 18 | | 18 | | 20 | | 40 | 60 | | | |
| 200 | | | | | | | | | | | | | 110 | |
| 300 | | | 36 | 22 | | 21 | 23 | | | 40 | | | | |
| 1000 | | | 30 | 30 | 30 | 30 ^{note 4} | | | | | | | | |

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AC Voltage

Factory Annex 5520A Test Console

*Best Uncertainty (±) in ppm^{note 1}
Frequency in Hertz*

| <i>Voltage</i> | <i>9.5</i> | <i>10</i> | <i>45</i> | <i>1 k</i> | <i>10 k^{note 8}</i> | <i>20 k^{note 7}</i> | <i>50 k</i> | <i>100 k^{note 6}</i> | <i>450 k^{note 5}</i> |
|--------------------|------------|-----------|-----------|------------|------------------------------|------------------------------|-------------|-------------------------------|-------------------------------|
| <i>Alternating</i> | | | | | | | | | |
| 0.003 V | | | 400 | | 400 | | | | |
| 0.03 V | 1100 | 120 | 70 | 70 | 70 | 70 | 150 | 300 | 600 |
| 0.033 V | | | 120 | | 120 | | | | |
| 0.3 V | 1100 | 50 | 35 | 32 | 32 | 32 | 50 | 90 | 250 |
| 0.33 V | | | 80 | | 80 | | | | |
| 3 V | 1100 | 50 | 30 | 30 | 30 | 30 | 50 | 50 | 200 |
| 3.3 V | | | 85 | | 85 | | | | |
| 30 V | 1100 | 50 | 30 | 30 | 30 | 30 | 50 | 100 | |
| 33 V | | | 70 | | 80 | | | | |
| 300 V | | | 40 | 30 | 30 | 40 | 50 | 300 | |
| 330 V | | | 50 | | 40 | | | | |

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| | | | | |
|--------|----|----|----|----|
| 1000 V | 40 | 40 | 40 | 40 |
| 1020 V | 40 | | 40 | |

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AC Voltage

5725A Console

*Best Uncertainty (\pm) in ppm^{note 1}
Frequency in Hertz*

| Range | 40 | 1 k | 20 k | 50 k | 100 k |
|--------------|-----------|------------|-------------|-------------|--------------|
| 300 V | 38 | 21 | 30 | 61 | 170 |
| 600 V | 32 | 21 | 30 | 61 | 170 |
| 1000 V | 23 | 21 | 30 | | |

Factory Annex, 5725A Console

| | | | | | |
|--------|----|----|----|----|-----|
| 300 V | 39 | 25 | 33 | 70 | 200 |
| 600 V | 32 | 25 | 33 | 70 | 200 |
| 1000 V | 23 | 25 | 42 | | |

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Capacitance

Three Wire

*Best Uncertainty (\pm)^{note 1}
Frequency in Hertz*

| <i>Range</i> | <i>1 k</i> | <i>10 k</i> |
|-------------------------------|---|---|
| 1.0 pF to 1.1111 μ F | 0.01% + (0.002% * C μ F) f ² kHz | 0.01% + (0.002% * C μ F) f ² kHz |
| 1.0 pF to 0.001 μ F | 0.01% | 0.01% |
| 0.001 μ F to 0.01 μ F | 0.01% | 0.012% |
| 0.01 μ F to 0.05 μ F | 0.01% | 0.02% |
| 0.05 μ F to 0.1 μ F | 0.01% | 0.03% |
| 0.1 μ F to 0.5 μ F | 0.011% | 0.11% |
| 0.5 μ F to 1.11 μ F | 0.012% | 0.21% |
| Two Wire | | |
| 10 pF to 1.1111 μ F | $0.01 + (0.002 * C \mu\text{F})f^2 \text{ kHz} + \frac{5 * 10^{-17}}{C \mu\text{F}} \%$ | $0.01 + (0.002 * C \mu\text{F})f^2 \text{ kHz} + \frac{5 * 10^{-17}}{C \mu\text{F}} \%$ |
| 10 pF | 5% | 5% |

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| | | |
|--------------------------|--------|--------|
| 100 pF | 0.5% | 0.5% |
| 1000 pF | 0.06% | 0.06% |
| 0.01 μ F | 0.015% | 0.017% |
| 0.1 μ F to 1 μ F | 0.015% | 0.017% |

NVLAP Code: 20/E10
Capacitance

| Range | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|-------------------|--|----------------|
| 350 pF @ 1000 Hz | 2500 | 5500A Console |
| 480 pF @ 1000 Hz | 2100 | 5500A Console |
| 600 pF @ 1000 Hz | 1300 | 5500A Console |
| 1 nF @ 1000 Hz | 1000 | 5500A Console |
| 2 nF @ 1000 Hz | 800 | 5500A Console |
| 7 nF @ 1000 Hz | 710 | 5500A Console |
| 10.9 nF @ 1000 Hz | 700 | 5500A Console |
| 20 nF @ 1000 Hz | 700 | 5500A Console |
| 70 nF @ 1000 Hz | 690 | 5500A Console |
| 200 nF @ 1000 Hz | 690 | 5500A Console |

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| | | |
|-----------------------|------|---------------|
| 300 nF @ 1000 Hz | 680 | 5500A Console |
| 700 nF @ 100 Hz | 680 | 5500A Console |
| 2 μ F @ 100 Hz | 690 | 5500A Console |
| 3 μ F @ 100 Hz | 690 | 5500A Console |
| 7 μ F @ 100 Hz | 690 | 5500A Console |
| 10.9 μ F @ 100 Hz | 690 | 5500A Console |
| 20 μ F @ 100 Hz | 700 | 5500A Console |
| 30 μ F @ 100 Hz | 710 | 5500A Console |
| 70 μ F @ 100 Hz | 740 | 5500A Console |
| 200 μ F @ 100 Hz | 1400 | 5500A Console |
| 300 μ F @ 100 Hz | 1500 | 5500A Console |
| 330 μ F @ 50 Hz | 1600 | 5500A Console |
| 1.1 mF @ 50 Hz | 2400 | 5500A Console |

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A handwritten signature in black ink, appearing to read 'William R. Miller'.

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Capacitance

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| <i>Range</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|-------------------|---|----------------|
| 350 pF @ 1000 Hz | 3200 | 5500A Console |
| 480 pF @ 1000 Hz | 3000 | 5500A Console |
| 600 pF @ 1000 Hz | 1600 | 5500A Console |
| 1 nF @ 1000 Hz | 1600 | 5500A Console |
| 2 nF @ 1000 Hz | 1200 | 5500A Console |
| 7 nF @ 1000 Hz | 1200 | 5500A Console |
| 10.9 nF @ 1000 Hz | 1000 | 5500A Console |
| 20 nF @ 1000 Hz | 1000 | 5500A Console |
| 70 nF @ 1000 Hz | 820 | 5500A Console |
| 200 nF @ 1000 Hz | 820 | 5500A Console |
| 300 nF @ 1000 Hz | 820 | 5500A Console |
| 700 nF @ 100 Hz | 820 | 5500A Console |
| 2 μF @ 100 Hz | 850 | 5500A Console |
| 3 μF @ 100 Hz | 850 | 5500A Console |

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| | | |
|-----------------------|------|---------------|
| 7 μ F @ 100 Hz | 850 | 5500A Console |
| 10.9 μ F @ 100 Hz | 850 | 5500A Console |
| 20 μ F @ 100 Hz | 850 | 5500A Console |
| 30 μ F @ 100 Hz | 860 | 5500A Console |
| 70 μ F @ 100 Hz | 900 | 5500A Console |
| 200 μ F @ 100 Hz | 1500 | 5500A Console |
| 300 μ F @ 100 Hz | 1550 | 5500A Console |
| 330 μ F @ 50 Hz | 1700 | 5500A Console |
| 1.1 mF @ 50 Hz | 2400 | 5500A Console |

NVLAP Code: 20/E10
Capacitance

| Range | Best Uncertainty (\pm) in ppm^{note 1} | Remarks |
|------------------|--|----------------|
| 190 pF @ 5000 Hz | 2000 | 5520A Console |
| 350 pF @ 1000 Hz | 1800 | 5520A Console |
| 480 pF @ 1000 Hz | 1650 | 5520A Console |
| 600 pF @ 1000 Hz | 1000 | 5520A Console |

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| | | |
|-----------------------|-----|---------------|
| 1 nF @ 1000 Hz | 900 | 5520A Console |
| 2 nF @ 1000 Hz | 770 | 5520A Console |
| 7 nF @ 1000 Hz | 700 | 5520A Console |
| 10.9 nF @ 1000 Hz | 690 | 5520A Console |
| 20 nF @ 1000 Hz | 685 | 5520A Console |
| 70 nF @ 1000 Hz | 680 | 5520A Console |
| 109 nF @ 1000 Hz | 680 | 5520A Console |
| 200 nF @ 1000 Hz | 680 | 5520A Console |
| 300 nF @ 1000 Hz | 680 | 5520A Console |
| 700 nF @ 100 Hz | 680 | 5520A Console |
| 1.09 μ F @ 100 Hz | 680 | 5520A Console |
| 2 μ F @ 100 Hz | 680 | 5520A Console |
| 3 μ F @ 100 Hz | 680 | 5520A Console |
| 7 μ F @ 100 Hz | 680 | 5520A Console |
| 10.9 μ F @ 100 Hz | 685 | 5520A Console |
| 20 μ F @ 100 Hz | 700 | 5520A Console |
| 30 μ F @ 100 Hz | 700 | 5520A Console |

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| | | |
|---------------------------|------|---------------|
| 70 μF @ 50 Hz | 1280 | 5520A Console |
| 109 μF @ 50 Hz | 1320 | 5520A Console |

| Range | 10 Second Charge Current | Best Uncertainty (\pm) in ppm ^{note 1} | Remarks |
|-------------------|--------------------------|---|---------------|
| 200 μF | 60 μA | 250 | 5520A Console |
| 300 μF | 90 μA | 250 | 5520A Console |
| 330 μF | 100 μA | 250 | 5520A Console |
| 700 μF | 200 μA | 250 | 5520A Console |
| 1.09 mF | 300 μA | 250 | 5520A Console |
| 1.1 mF | 300 μA | 250 | 5520A Console |
| 2 mF | 600 μA | 250 | 5520A Console |
| 3 mF | 900 μA | 250 | 5520A Console |
| 3.3 mF | 1 mA | 250 | 5520A Console |
| 10.9 mF | 3 mA | 250 | 5520A Console |
| 20 mF | 6 mA | 250 | 5520A Console |
| 30 mF | 9 mA | 250 | 5520A Console |
| 33 mF | 10 mA | 250 | 5520A Console |
| 110 mF | 30 mA | 250 | 5520A Console |

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| <i>Range</i> | <i>Best Uncertainty (±) in ppm^{note 1}</i> | <i>Remarks</i> |
|------------------------------------|---|------------------------------|
| 190 pF @ 5 kHz | 15000 | Factory Annex, 5520A Console |
| 350 pF @ 1 kHz | 7800 | Factory Annex, 5520A Console |
| 480 pF @ 1 kHz | 4200 | Factory Annex, 5520A Console |
| 600 pF @ 1 kHz | 3200 | Factory Annex, 5520A Console |
| 1000 pF @ 1 kHz | 2000 | Factory Annex, 5520A Console |
| 2000 pF @ 1 kHz | 1000 | Factory Annex, 5520A Console |
| 7000 pF @ 1 kHz | 700 | Factory Annex, 5520A Console |
| .7 μF to 30 μF @ 100 Hz | 700 | Factory Annex, 5520A Console |
| 70 μF to 109 μF @ 50 Hz | 1300 | Factory Annex, 5520A Console |
| 200 μF to 110 mF ^{note 9} | 300 | Factory Annex, 5520A Console |

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Phase Standard

Best Measurement Capability Millidegrees

| <i>Voltage Ratio</i> | <i>1 kHz, 5 kHz</i> | <i>50 kHz</i> | <i>100 kHz</i> |
|----------------------|---------------------|---------------|----------------|
| 1:1 | 2.1 | 2.6 | 2.6 |
| 10:1 | 2.2 | 3.2 | 9 |
| 100:1 | 5.1 | 5.6 | 10 |

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Phase Meter at Fixed Points

| <i>Voltage Volts</i> | <i>Frequency Hz</i> | <i>Phase Degrees</i> | <i>Best Measurement Capability Degrees</i> |
|----------------------|---------------------|----------------------|--|
| 0.05 - 50 | 60 - 1k | 0,60,90 | 0.013 |
| 3 | 5 k | 0,60,90 | 0.015 |
| 3 | 10 k | 0,60,90 | 0.019 |
| 0.05, 3 | 30 k | 0,60,90 | 0.019 |

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Phase

5500A Console

*Best Uncertainty (\pm) in degrees^{note 1}
Frequency in Hertz*

| <i>Range Phase (degrees)</i> | <i>60</i> | <i>65</i> | <i>400</i> | <i>1 k</i> | <i>5 k</i> | <i>10 k</i> | <i>Mode</i> |
|----------------------------------|-----------|-----------|------------|------------|------------|-------------|-------------|
| 0 | | 0.02 | 0.02 | | | | ACV/ACC |
| 0 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 60 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 90 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |

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NVLAP Code: 20/E15

Phase

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| <i>Range in degrees</i> | <i>Frequency in Hz</i> | <i>Best Uncertainty (±) in degrees^{note 1}</i> |
|-------------------------|------------------------|---|
| 0 | 60 to 65 | 0.025 |
| 0 | 400 to 10 k | 0.075 |
| 60 | 60 | 0.025 |
| 60 | 400 to 10 k | 0.075 |
| 90 | 60 | 0.025 |
| 90 | 400 to 10 k | 0.075 |

5520 A Console

| <i>Range Phase (degrees)</i> | <i>Reference Volts</i> | <i>Signal Amps</i> | <i>Frequency Hz</i> | <i>Best Uncertainty (±) in degrees^{note 1}</i> | <i>Remarks</i> |
|------------------------------|------------------------|--------------------|---------------------|---|----------------|
| 0 | 0.03 | 0.3 | 65 | 0.015 | ACV/ACC |
| 0 | 0.03 | 0.3 | 1 k | 0.025 | ACV/ACC |
| 0 | 0.03 | 0.3 | 30 k | 0.5 | ACV/ACC |
| 0 | 0.2 | 2 | 65 | 0.015 | ACV/ACC |

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| | | | | | |
|----|------|-----|-----|-------|---------|
| 0 | 0.05 | 5 | 65 | 0.022 | ACV/ACC |
| 0 | 0.05 | 5 | 400 | 0.025 | ACV/ACC |
| 60 | 0.03 | 0.3 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 2 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 20 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 20 | 400 | 0.030 | ACV/ACC |
| 0 | 3.3 | 0.3 | 65 | 0.016 | ACV/ACC |
| 0 | 3.3 | 2 | 65 | 0.020 | ACV/ACC |
| 0 | 3.3 | 5 | 65 | 0.016 | ACV/ACC |
| 0 | 3.3 | 5 | 400 | 0.030 | ACV/ACC |
| 90 | 3.3 | 0.3 | 65 | 0.020 | ACV/ACC |
| 90 | 3.3 | 2 | 65 | 0.018 | ACV/ACC |
| 90 | 3.3 | 20 | 65 | 0.018 | ACV/ACC |
| 90 | 3.3 | 20 | 400 | 0.030 | ACV/ACC |
| 0 | 33 | 0.3 | 65 | 0.020 | ACV/ACC |
| 0 | 33 | 2 | 65 | 0.018 | ACV/ACC |
| 0 | 33 | 5 | 65 | 0.016 | ACV/ACC |

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| | | | | | |
|-----------|----|-----|------|-------|---------|
| 0 | 33 | 5 | 400 | 0.030 | ACV/ACC |
| 90 | 33 | 0.3 | 65 | 0.018 | ACV/ACC |
| 90 | 33 | 2 | 65 | 0.022 | ACV/ACC |
| 90 | 33 | 20 | 65 | 0.023 | ACV/ACC |
| 90 | 33 | 20 | 400 | 0.030 | ACV/ACC |
| 0, 60, 90 | 3 | 3 | 65 | 0.015 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 400 | 0.020 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 1 k | 0.020 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 5 k | 0.025 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 10 k | 0.025 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 30 k | 0.300 | ACV/ACV |
| 90 | 30 | 3 | 65 | 0.015 | ACV/ACV |
| 90 | 50 | 3 | 65 | 0.016 | ACV/ACV |

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Phase
Factory Annex, 5520A Console

| <i>Range in degrees</i> | <i>Frequency in Hz</i> | <i>Best Uncertainty (\pm) in degrees^{note 1}</i> |
|-------------------------|------------------------|--|
| 0 to 90 | 65 to 1 k | 0.025 |
| 0 to 90 | 5 k to 10 k | 0.1 |
| 0 to 90 | 30 k | 0.5 |

TIME AND FREQUENCY

NVLAP Code: 20/F01
Frequency

| <i>Range</i> | <i>Best Uncertainty (\pm)^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| 10 MHz | 1 mHz | GPS Console |
| <i>Range in Hz</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
| 119 to 120 | 1 | 5500A Console |
| 1000 | 1 | 5500A Console |
| 100000 | 1 | 5500A Console |

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NVLAP Code: 20/F01

Frequency

At Factory Annex Multiproduct Calibrators Similar to Fluke 5500A

| <i>Range in Hz</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| 119 | 5 | 5500A Console |
| 120 | 5 | 5500A Console |
| 1000 | 5 | 5500A Console |
| 100000 | 5 | 5500A Console |

Frequency

| <i>Range in Hz</i> | <i>Best Uncertainty (\pm) in ppm^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|------------------------------|
| 119 | 0.10 | 5520A Console |
| 120 | 0.10 | 5520A Console |
| 1000 | 0.10 | 5520A Console |
| 100000 | 0.10 | 5520A Console |
| 119 to 100000 k | 0.8 | Factory Annex, 5520A Console |

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THERMODYNAMICS

NVLAP Code: 20/T03
Temperature, SPRT

| <i>Range in °C</i> | <i>Best Uncertainty (±) in mK^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| -40 to -50, -196 | 11 | |
| -1 to -40 | 8 | |
| -1 to 1 | 5 | |
| 0.01 | 4.5 | |
| 1 to 150 | 10 | |
| 150 to 350 | 15 | |

NVLAP Code: 20/T08
Thermocouple Temperature

| <i>Range in °C</i> | <i>Best Uncertainty (±) in °C^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| -55 to -25 | 0.3 | |
| -25 to 100 | 0.2 | |
| 100 to 300 | 0.3 | |

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Simulated Thermocouple Temperature - UUT sourcing, 5500A Console measuring (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| <i>Range in mV</i> | <i>Best Uncertainty (\pm) in μV^{note 1}</i> | <i>Remarks</i> |
|--------------------|---|----------------|
| 0.0 | 0.3 | |
| 1.0 | 0.3 | |
| -1.0 | 0.3 | |
| 10 | 0.4 | |
| -10 | 0.4 | |
| 100 | 0.8 | |
| -100 | 0.8 | |

Simulated Thermocouple Temperature - UUT measuring, 5500A Console measuring (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| | |
|------|-----|
| 0 | 0.5 |
| 100 | 1.2 |
| -100 | 1.2 |
| 300 | 2.4 |
| -300 | 2.4 |

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Thermocouple temperature measurement: TYPE K

| <i>Range in °C</i> | <i>Best Uncertainty (±) in °C^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|-------------------------|
| 23 | 0.018 | 5500A and 5520A Console |

Simulated Thermocouple Temperature - UUT sourcing, 5520A Console measuring (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| <i>Range in mV</i> | <i>Best Uncertainty (±) in μV^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| 0.0 | 0.2 | |
| 1.0 | 0.2 | |
| -1.0 | 0.2 | |
| 10 | 0.25 | |
| -10 | 0.25 | |
| 100 | 0.7 | |
| -100 | 0.7 | |

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Simulated Thermocouple Temperature - UUT measuring, 5520A Console sourcing (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulator temperature^{note 10}

| | |
|------|-----|
| 0.0 | 0.2 |
| 100 | 1.2 |
| -100 | 1.2 |
| 300 | 2.4 |
| -300 | 2.4 |

At Factory Annex

Simulated Thermocouple Temperature - UUT sourcing, 5520A Console measuring (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| <i>Range in V</i> | <i>Best Uncertainty (\pm) in μV^{note 1}</i> | <i>Remarks</i> |
|-------------------|---|----------------|
| 0.0 | 0.6 | |
| 1.0 | 0.6 | |
| -1.0 | 0.6 | |
| 10 | 0.6 | |
| -10 | 0.6 | |
| 100 | 1.0 | |
| -100 | 1.0 | |

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Simulated Thermocouple Temperature - UUT measuring, 5520A Console sourcing ($10 \mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| | |
|------|-----|
| 0.0 | 0.4 |
| 100 | 1.5 |
| -100 | 1.5 |
| 300 | 2.5 |
| -300 | 2.5 |

Thermocouple Temperature Measurement: TYPE K

| <i>Range in °C</i> | <i>Best Uncertainty (±) in °C^{note 1}</i> | <i>Remarks</i> |
|--------------------|--|----------------|
| 23 | 0.04 | 5520A Console |

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A handwritten signature in black ink, appearing to read 'William R. Mohl'. The signature is written in a cursive style with a large, prominent 'W' and 'M'.

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At Factory Annex

Simulated Thermocouple Temperature - UUT sourcing, 5500A Console measuring (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| <i>Range in mV</i> | <i>Best Uncertainty (\pm) in μV^{note 1}</i> | <i>Remarks</i> |
|--------------------|---|----------------|
| 0.0 | 1.0 | |
| 1.0 | 1.0 | |
| -1.0 | 1.0 | |
| 10 | 1.0 | |
| -10 | 1.0 | |
| 100 | 1.6 | |
| -100 | 1.6 | |

Simulated Thermocouple Temperature - UUT measuring, 5500A Console sourcing (10 $\mu\text{V}/^\circ\text{C}$ linear mode), voltage simulates temperature^{note 10}

| | |
|------|-----|
| 0.0 | 1.0 |
| 100 | 2.0 |
| -100 | 2.0 |
| 300 | 4.0 |

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-300 4.0

Thermocouple Temperature Measurement: TYPE K

| Range in °C | Best Uncertainty (\pm) in $\mu V^{\text{note 1}}$ | Remarks |
|-------------|---|---------------|
| 23 | 0.05 | 5500A Console |

1. Represents an expanded uncertainty at a level of confidence of 99%; coverage factor k is determined by the test statistics.
2. Approximate value. Actual value determined by the test statistics.
3. E = Actual Voltage.
4. 1000 V Limit is 8 kHz.
5. 500 kHz @ 0.33 V
6. 90 kHz @ 30 V
7. 18 kHz @ 300 V, 8 kHz for voltage ≥ 1000 V
8. 5 kHz @ 1000 V
9. Above 200 μF the method of calibration is a charge technique with charge currents ranging from 60 μA at 200 μF to 30 mA at 110 mF.
10. The simulated thermocouple temperature capability of the calibrator is verified using the 10 $\mu V/^\circ C$ linear mode (which is not an actual thermocouple mode) and a measurement with a Type K thermocouple at 23°C. When the calibrator is used to simulate or measure a thermocouple the temperature range is limited to the range appropriate for the type of thermocouple selected.
11. Temperature range between 20 to 26°C.
12. Traceable through PTB.

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