

**Product Line Discontinued, but  
may be available to special order**

- ◆ Noise Free Operation
- ◆ Adjustment Locking
- ◆ Beryllium Copper Contacts  
for Long Life
- ◆ 100 W Average Power Rating
- ◆ N-male/female Connectors



| Model Number N (m-f) | Frequency Range MHz | Stretcher Travel in. (mm) | Stub Travel in. (mm) | Length nom. in. (mm) | Minimum Height in. (mm) |
|----------------------|---------------------|---------------------------|----------------------|----------------------|-------------------------|
| SL-03N               | 300 - 6000          | 36.9 (937)                | 18.0 (457)           | 2.9 (74)             | 20.0 (508)              |
| SL-10N               | 1000 - 6000         | 11.9 (302)                | 5.5 (140)            | 2.9 (74)             | 7.5 (191)               |

Microlab Model SL series of Stub Stretchers are compact tuners capable of matching any terminal impedance within their frequency range. They consist of an adjustable short circuit stub in series with a series line stretcher. The line stretcher is capable of half a wavelength of travel at the lowest specified frequency, but is only a quarter wavelength long because of its folded construction. The stub travel is accomplished within the same quarter wavelength.

Locking caps are provided to adjust sliding tension and to lock desired settings. Beryllium copper contacts springs assure long life and noise free operation. Internal stops prevent damage to the contacts and prevent accidental disassembly. The unit is asymmetrical in that the stretcher must be located between the stub and the load.

When compared to the standard Stub Tuner, S1-S3 series, the Stub Stretcher is often less restricted electrically and mechanically when tuning a coaxial line. Sensitivity is affected because the stub tuner requires the introduction of very large stub susceptances to match relatively low standing wave ratios, especially when the stub spacing is a quarter wavelength. Such high stub susceptances require critical stub tuning, increase the possibility of voltage breakdown and increase the effective resistive loss within the tuner. The stub stretcher requires a susceptance equal to the effective susceptance component of the load and thus is less critical to tune, has less probability of voltage breakdown and lower resistive loss.

The stub tuner requires at least two stubs, each of which must be a half wavelength long, while stub stretchers have only one stub a quarter wavelength long, so they are considerably smaller and lighter than the equivalent double stub tuner. The double stub tuner will only match a limited range of admittances, depending upon the length of the connecting line. The stub stretcher can match all admittances and thus is a much more versatile instrument. The convergence (or number of tuning adjustments) of the stub tuner is a function of the length of the connecting line. It is theoretically impossible for the stub tuner to converge for certain stub spacings.

The stub stretchers converge rapidly for all frequencies. (8/11)

|                 |                       |                     |                         |                             |
|-----------------|-----------------------|---------------------|-------------------------|-----------------------------|
| Insertion Loss: | 0.2 dB max.           | <b>Connector</b>    | <b>Model No. Suffix</b> | <b>Typical Model Number</b> |
| Impedance:      | 50Ω nominal           | N type              | N                       | SF-10N                      |
| Power Rating:   | 100 W avg., 5 kW peak | SMA (special order) | F                       | SF-10F                      |
| Temperature:    | -55°C to +150°C       |                     |                         |                             |
| Finish:         | Silver or tri-plate   |                     |                         |                             |