

## Phase Locked Oscillators

### FEATURES:

- ❖ Several Stability Options
- ❖ High Power Models Available
- ❖ Several Spectral Purity Options
- ❖ Available from 2 to 140.0 GHz
- ❖ Miniaturized Lightweight Assembly

### APPLICATIONS:

- ❖ Frequency Synthesizers
- ❖ Frequency Upconverters
- ❖ Local oscillators for mixers



**CPO Series**

### DESCRIPTION:

Cernex's CPO series miniature phase-locked source provides a high stability, spectrally pure millimeter wave signal. To ensure high performance, a low noise, high-Q varactor-tuned oscillator is phase-locked to a precision crystal reference. Through the use of state-of-the-art millimeter wave component integration and beam-lead diode technology, the RF portion has been drastically reduced in size over conventional waveguide methods. The sophisticated millimeter wave components of the source, coupled with the advanced electronic design of the loop system, enable high performance to be achieved with miniaturized packaging. A variety of options are possible in the selection of the crystal reference. Crystals are available that offer low noise, superior aging, and improved temperature stability. Cernex will assist in the selection of the appropriate crystal. When an output frequency in excess of approximately 50 GHz is required, an additional stage is used for this series. This stage consists of a doubler or tripler for output frequencies in the 60 to 140 GHz range. In addition, the multiplier stage may have to be followed with an injection-locked Gunn oscillator depending on the power level required at these frequencies. Cernex will provide any additional stages necessary to produce the specified output frequency and power level.

### SPECIFICATIONS:

Operating Specifications	
Operating Frequency	4.0 - 14 GHz
Mechanical Tuning Range	2-3% Typ.
Output Power	+14 dBm Min.
Output Power Variation: Over 0 to 60° C	±0.6dB Max.
Output Power Variation: Over -30 to +70° C	+1.0/-1.3dB Max.
Load VSWR (Max.)	3:1
Phase Noise @10GHz	-110 dBc/Hz @100 kHz
Reference Input Frequency	10,40-130MHz
Reference Input Power	0±4dBm
2 <sup>nd</sup> Harmonic	-20dBc
Spurious	-80dBc
Bias	+15±1 or +12±1 VDC, 100 mA Typ.

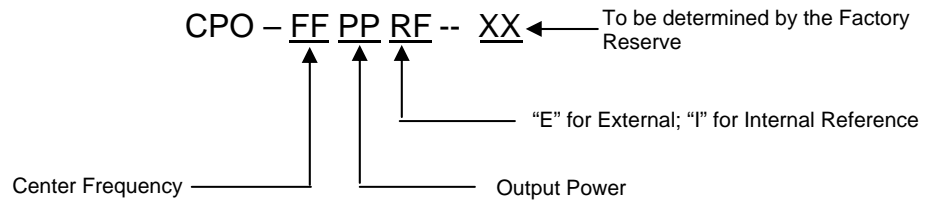
OTHER FREQUENCIES ARE ALSO AVAILABLE.

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Waveguide Band	X	Ku	K	Ka	Q	U	V	E	W	F
Waveguide Size	WR-90	WR-62	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8
Frequency Range (GHz)	8.2 to 12.4	12.4 to 18	18 to 26.5	26.5 to 40	33 to 50	40 to 60	50 to 75	60 to 90	75 to 110	90 to 140
Power Output (mW)	10	10	10	10	10	10	10	10	10	5
	50	50	50	50	50	50	25	25	25	10
	100	100	100	100	100	100	50	50	40	
	500	500	200	200						

### HOW TO ORDER:

Specify Model Number



**Example:** To order a 22Ghz PLO with output power of 15dbm in external reference, specify CPO2215E-XX

CERNEX RESERVE THE RIGHT TO CHANGE THE SPECIFICATIONS WITHOUT NOTICE