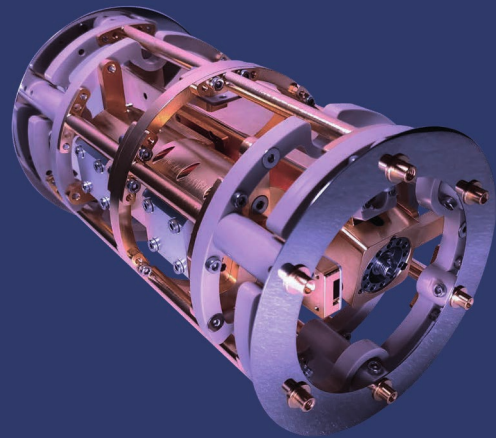


# TEMPO

## COMPACT RUBIDIUM OPTICAL CLOCK



### KEY FEATURES AND BENEFITS

TEMPO combines compact laser technology with our patented optical atomic interrogation technique to deliver high-stability microwave and optical signals in a compact, rugged form factor designed for demanding environments that require exceptional timing performance.

Achieved through innovative engineering design and leveraging the inherent advantages of optical interrogation over traditional microwave techniques, TEMPO combines the short-term performance of hydrogen masers with the long-term performance of caesium beam frequency references.

#### TEMPO PILOT

*Available now.*



#### On-board timing solution for mobile assets

Ensures accurate synchronisation in dynamic environments where reliable timing is critical for navigation, communication, and operational coordination.

#### Position, Navigation and Timing (PNT) in GPS-denied environments

Offers high-precision timekeeping for accurate location and navigation even when satellite signals are unavailable or compromised.

#### TEMPO V1.0

*Available to order now. Delivery in 2027*



#### Power and communication infrastructure

Precise time synchronisation across networks, critical for maintaining stability, efficiency, and coordination in grid operations and data transmission.

#### Precision reference for timing network

Provides unparalleled stability needed to synchronise all connected systems and devices, ensuring reliable and consistent performance across the entire network.

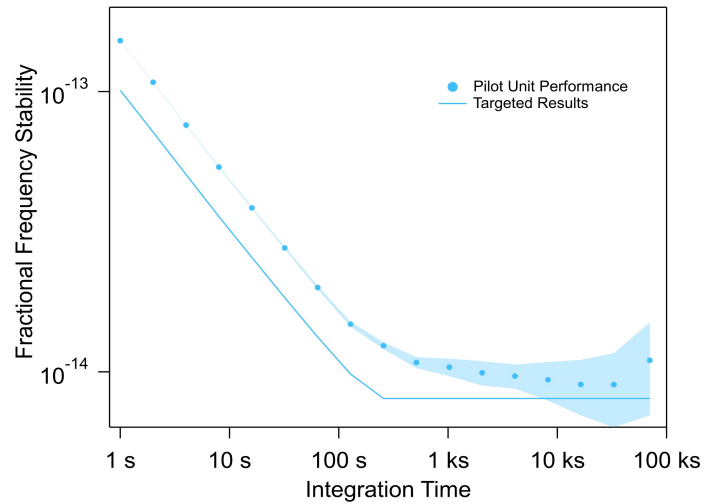
# TEMPO

## COMPACT RUBIDIUM OPTICAL CLOCK

### TEMPO V1.0\*

\*All specifications below are design targets for TEMPO V1.0

Fractional Frequency Stability (Allan Deviation)	
Averaging Time(s)	Target
1	$1 \times 10^{-13}$
10	$3 \times 10^{-14}$
100	$1 \times 10^{-14}$
1,000	$8 \times 10^{-15}$
10,000	$8 \times 10^{-15}$
100,000	$8 \times 10^{-15}$



Environmental Sensitivities	
Temperature	$< 10^{-14}$ / °C
Magnetic	$< 10^{-14}$ / Gauss
Tilt	$< 10^{-15}$ / degree

SWaP	
Size	3U 19" rack mountable
Weight	$< 30$ kg
Power Consumption	$< 100$ W, 110-250VAC

Operating Characteristics	
Temperature range	15°C to 40°C
Warm-up time	30 min
Retrace	$< 10^{-13}$

Outputs	
RF Outputs (can be phase synchronised to external input)	SMA: 10 MHz, 100 MHz, 1PPS LVPECL
Fractional Frequency Tuning	$10^{-10}$ range, $10^{-16}$ steps
Optical Outputs (optional)	FC/APC: comb output centred at 1560 nm