puracy.

Spectral purity and absolute accuracy



DFC PURACY

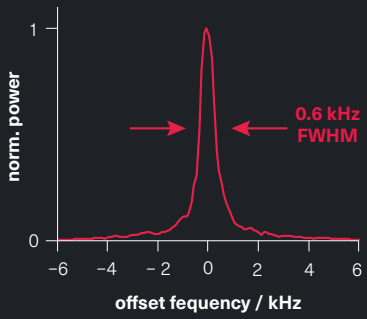
Difference Frequency Comb with sub-kHz linewidth and long-term stability

- Cost-efficient upgrade to TOPTICA's frequency comb DFC
- Absolute frequencies traceable back to the SI second
- Save time on daily laser calibration
- Automated simultaneous lock to optical and RF reference

Precision spectroscopy

Infrastructural comb systems

Photonic microwave & THz generation



learn more...

TOPTICA

www.toptica.com/puracy

DFC PURACY

WARNING – VISIBLE AND INVISIBLE LASER RADIATION, AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT,
EN60825-1:2014
IEC 60825-1:2014

Specifications

Wavelength [nm]	2000	1550	1162	1000	778	689	532	420
Optical linewidth [kHz]*	0.3	0.6	1.3	2	5	7	9	13

* Integration from 100 Hz to beta separation line

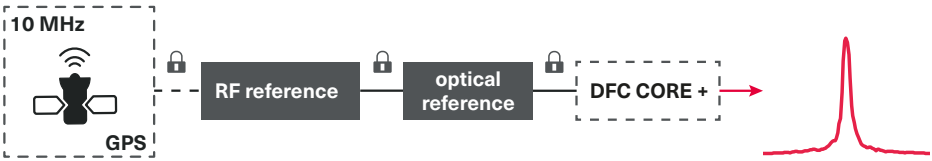
Averaging time [s]	100	1,000	10,000
Fractional frequency stability*	3e–15	5e–16	2e–16

* contribution of DFC PURACY (final value depends on RF reference)

Offset frequency [Hz]	1	10	100	1,000	10,000
Phase noise (dBc/Hz)*	23	11	–18	–38	–58

* typ. contribution of DFC PURACY at 1550 nm (final value depends on RF reference)

Enabled by patented, automated simultaneous lock to optical and RF reference
Patents: DE102017131244B3, US10,931,078B2



Content of Delivery

- low-noise optical reference, < 1 kHz linewidth
- locking electronics for optical lock and RF lock (2x FALC pro, 1x PFD pro)
- beat detection unit (DFC BCF, DFC MD)
- patented control principle (DE102017131244B3, US10,931,078B2)
- establishing of full lock solution during installation

Full TOPTICA solution with: 1x (M)DFC CORE 200 +, 1x DFC RF, 1x DFC GPS