

Agilent 81680A and Agilent 81640A

| | Agilent 81680A Output 1 (Low SSE) | Agilent 81680A Output 2 (High Power) | Agilent 81640A Output 1 (Low SSE) | Agilent 81640A Output 2 (High Power) |
|--|---|--|--|--|
| Wavelength range | 1460 nm to 1580 nm | | 1510 nm to 1640 nm | |
| Wavelength resolution | 0.1 pm, 12.5 MHz at 1550 nm | | | |
| Mode hop free tuning range | 1460 nm to 1580 nm | | 1510 nm to 1640 nm | |
| Absolute wavelength accuracy^{1,2} | ± 0.01 nm | | ± 0.015 nm | |
| Relative wavelength accuracy^{1,2} | ± 5 pm, typ. ± 2 pm | | ± 7 pm, typ. ± 3 pm | |
| Wavelength repeatability² | ± 1 pm, typ. ± 0.5 pm | | | |
| Wavelength stability (typ., 24 hours at constant temperature)² | ≤± 1 pm | | | |
| Tuning speed (typ. for a 1/10/100 nm step) | 400 ms/600 ms/2.8 s | | | |
| Linewidth (typ.), coherence control off. | 100 kHz | | | |
| Effective Linewidth (typ.), coherence control on | >50 MHz (1480 to 1580 nm, at maximum flat output power) | | >50 MHz (1520 to 1620 nm, at maximum flat output power) | |
| Output power³ (continuous power during tuning) | ≥ -4 dBm peak typ. ≥ -6 dBm (1520-1570 nm) ≥ -10 dBm (1480-1580 nm) ≥ -13 dBm (1460-1580 nm) | ≥ 6 dBm peak typ. ≥ 5 dBm (1520-1570 nm) ≥ 1 dBm (1480-1580 nm) ≥ -3 dBm (1460-1580 nm) | ≥ -5 dBm peak typ. ≥ -7 dBm (1530-1610 nm) ≥ -9 dBm (1520-1620 nm) ≥ -13 dBm (1510-1640 nm) | ≥ 4 dBm peak typ. ≥ 2 dBm (1530-1610 nm) ≥ 0 dBm (1520-1620 nm) ≥ -5 dBm (1510-1640 nm) |
| Minimum output power³ | -13 dBm | -3 dBm (-60 dBm in attenuation mode) | -13 dBm | -5 dBm (-60 dBm in attenuation mode) |
| Power stability³ | ± 0.01 dB, 1 hour. typ. ± 0.03 dB, 24 hours | | | |
| Power repeatability (typ.)³ | ± 0.01 dB | | | |
| Power linearity³ | ± 0.1 dB | ± 0.3 dB | ± 0.1 dB | ± 0.3 dB |
| Power flatness versus wavelength³ | ± 0.2 dB, typ. ± 0.1 dB | ± 0.3 dB, typ. ± 0.15 dB | ± 0.2 dB, typ. ± 0.1 dB | ± 0.3 dB, typ. ± 0.15 dB |
| Side-mode Suppression ratio (typ.)^{4,8} | ≥ 40 dBc (1480-1580 nm) | | ≥ 40 dBc (1530-1610 nm) | |

| | Agilent 81680A Output 1 (Low SSE) | Agilent 81680A Output 2 (High Power) | Agilent 81640A Output 1 (Low SSE) | Agilent 81640A Output 2 (High Power) |
|---|---|--|---|--|
| Signal-to-Source Spontaneous Emission Ratio ^{5,8} | ≥ 63 dB/nm ⁷ (1520-1570 nm) ≥ 58 dB/nm ⁷ (typ., 1480-1580 nm) ≥ 53 dB/nm ⁷ (typ., 1460-1580 nm) | ≥ 45 dB/nm (1520-1570 nm) ≥ 40 dB/nm (1480-1580 nm) ≥ 35 dB/nm (1460-1580 nm) | ≥ 60 dB/nm ⁷ (1530-1610 nm) ≥ 55 dB/nm ⁷ (typ., 1520-1620 nm) ≥ 50 dB/nm ⁷ (typ., 1510-1640 nm) | ≥ 45 dB/nm (1530-1610 nm) ≥ 40 dB/nm (1520-1620 nm) ≥ 35 dB/nm (1510-1640 nm) |
| Signal-to-Total-Source Spontaneous Emission Ratio ^{6,8} | ≥ 60 dB ⁷ (1520-1570 nm) ≥ 50 dB ⁷ (typ., 1480-1580 nm) | ≥ 30 dB (typ., 1520-1570 nm) | ≥ 55 dB ⁷ (1530-1610 nm) ≥ 45 dB ⁷ (typ., 1510-1640 nm) | ≥ 27 dB (typ., 1530-1610 nm) |
| Relative Intensity noise (RIN, typ.) ⁸ | – 145 dB/Hz (1480-1580 nm) | | – 145 dB/Hz (1530-1610 nm) | |
| <p>1. Valid for one month and within a ±5 K temperature range after wavelength zeroing.</p> <p>2. At CW operation. Measured with wavelength meter based on wavelength in vacuum.</p> <p>3. Applies to the selected output.</p> <p>4. Measured by heterodyning method.</p> <p>5. Measured with optical spectrum analyzer at 1 nm resolution bandwidth.</p> <p>6. Measured with optical spectrum analyzer.</p> <p>7. Measured with Fiber Bragg Grating to suppress the signal.</p> <p>8. Output power as specified per wavelength range and output port.</p> <p>9. Warm up time: 1 hour</p> | | | | |