Singlemode fiber switches are needed to provide homogeneous light input for measurements with our high-end instruments WS6-200, WS7 and WS8 to ensure the excellent accuracy.

The ranges of single mode fibers are limited to a few 100 nm which makes quasi-simultaneous measurements of lasers separated by more than that impossible. Our photonic-crystal-fiber (PCF) switches solve this problem. Using endlessly single mode PCF allows us to produce a switch that offers single mode operation for all wavelengths. The PCF switch enables to switch between light-sources at any wavelength within the instrument's measurement range and maintain the full accuracy.

Combining the PCF switch with other options such as PID control opens new possibilities. Sold exclusively with all WS6-200, WS7 and WS8 instruments except for the UV-II range the PCF switches are available in two-channel, four-channel, and eight-channel configurations.

		Unit	WS5	WS6-600	WS6-200	WS7-60	WS7-30	WS8-10 | WS8-10 (NG) [21]	WS8-2 | WS8-2 (NG) [21]
Measurement range	UV-II (192 – 800 nm)		■	■	■	■	▢	▢	▢
	UV-I (248 – 1180 nm)		■	■	■	■	■	■	▢
	Standard (330 – 1180 nm)		■	■	■	■	■	■	■
	VIS / IR-I (330 – 1750 nm) [15]		■	■	■	▢	▢	▢	▢
	IR-I (630 – 1750 nm)		▢	▢	▢	■ [18]	■	■	▢
	VIS / IR-II (500 – 2250 nm) [15]		■	■	■	▢	▢	▢	▢
	IR-II (1000 – 2250 nm)		▢	▢	▢	■	■ [17]	▢	▢
Absolute accuracy [1]	192 – 330 nm [2]	pm	3	0.6	0.3	0.2	0.1	0.1 [19]	–
	330 – 375 nm	MHz	3000	900	300	100	50	20 [3]	10 [4]
	375 – 800 nm		3000	600	200	60	30	10 [3]	2 [4]
	800 – 1180 nm		2000	500	150	50	25	8 [3]	2 [4]
	1180 – 2250 nm		2000	400	120	40	20	8 [20]	–
Quick coupling accuracy (with multi mode fiber)			3000	600	600	150	100	100	100
Wavelength deviation sensitivity/Measurement resolution [5]			500	20	4	2	1	0.4 | 0.2	0.1
Linewidth option [10]	Estimation accuracy [6]		2000	500	400	200	200	100	100
Measurement speed		Hz	950 (IR: 1500)	950 (IR: 1500) [7]	500 (IR: 1500) [7]	500	500	500 | 1000	500 | 1000
Minimum required input energy and power [8]	Standard (VIS)	µJ (or µW)	0.02 – 15	0.02 – 15	0.02 – 15	0.02 – 15	0.08 – 60	0.08 – 60	0.08 – 60
	UV-I		0.02 – 10	0.02 – 10	0.02 – 10	0.02 – 10	0.08 – 40	–	–
	UV-II		0.02 – 200	0.02 – 200	0.02 – 200	0.04 – 400	–	–	–
	IR-I		2 – 200	2 – 200	2 – 200	2 – 200	8 – 800	8 – 800	–
	IR-II [9]		2 – 80	2 – 80	2 – 80	2 – 80	8 – 800	–	–
FSR of the Fizeau interferometers (Fine/wide mode) [10]		GHz	100	16/100 [11]	16/100 [12]	8/32	4/32	2/20	2/20
Calibration [16]			Built-in calibration			Built-in calibration [13]	Stabilized HeNe laser or any other well known laser source Δv < 5 MHz	SLR-780 or any other well known laser source Δv < 2 MHz	SLR-780 or any other well known laser source Δv < 1 MHz
Recommended calibration period			≤ 1 month			≤ 14 days	≤ 10 hours	≤ 1 hour	≤ 2 minutes
Warm-up time			No warm-up time under constant ambient conditions [14]					> 30 minutes	
Dimensions L × W × H		mm	360 × 120 × 120	360 × 120 × 120	360 × 200 × 120	360 × 200 × 120	360 × 200 × 120	360×200×120 | 340×252×106	360×200×120 | 340×252×106
Weight		kg	2.8	2.8	5.5 [16]	5.9	6.1	6.4	6.4
Interface			USB 2.0 connection					USB 2.0 | USB 3.0	USB 2.0 | USB 3.0
Power supply			UV-II, UV-I, Standard,Vis/IR-I: < 2.5 W next generation: < 4.5 W IR-I: < 10 W, external power supply included IR-II: < 30 W, external power supply included						

1) According to 3σ criterion, but never better than 20 % of the laser linewidth.
2) With multi mode fiber.
3) ± 200 nm around calibration wavelength; outside of this range the accuracy as WS7-30.
4) ± 2 nm around calibration wavelength; outside of this range the accuracy as WS8-10; note 3 also applies.
5) Standard deviation within 1 minute. WS6-200 and higher models require singlemode or photonic crystal fibers to reach this resolution.
6) Not better than 20 % of the linewidth.
7) Depending on PC hardware and settings. Ultra-fast models up to 76 kHz available.
8) The CW power interpretation in [µW] compares to an exposure of 1s (generally the energy needs to be divided by the exposure time to obtain the required power).
9) µJ interpretation for pulsed lasers. CW signals need more power in [µW] since the exposure is limited at IR-II instruments.
10) Each instrument in each mode can measure lasers with a linewidth up to 30 % of the correspondig FSR. This option is not available for next generation wavemeters.
11) For IR instruments: 32/32.
12) For IR-I and IR-II instruments: 16/16.
13) IR and UV-II instruments: external calibration source needed, e. g. LFR-1532 or stabilized HeNe.
14) IR-II: > 30 min. warm-up, or until ambient equilibrium.
15) These instruments have a decreased power sensitivity by a factor of 4, compared to the Standard and IR ranges in the required input fields, respectively.
16) 2.8 for IR-I and IR-II.
17) Photonic crystal switches can be used up to 2000 nm. Please contact HighFinesse if you want to measure over 2000 nm.
18) Measurement range WS7-60 IR-I: 520 – 1750 nm
19) Range is limited from 248 to 330 nm.
20) Range is limited up to 1750 nm.
21) Next Generation wavemeter (NG) avialable to order starting from June 2024.

Wavelength Meter Overview 4-2024

Scan or browse to **www.highfinesse.com/en/specs.html** to download more specs and brochures for our products.