

	CAVILUX HF	CAVILUX Smart	CAVILUX HF UHS	CAVILUX Smart UHS
	Components and camera synchronization	Components and camera synchronization	Components and camera synchronization	Components and camera synchronization
System content	Laser unit, control unit, illumination optics	Laser unit, control unit, illumination optics	Laser unit, control unit, illumination optics	Laser unit, control unit, illumination optics
Software interface	CAVILUX Control Software	CAVILUX Control Software	No software	No software
Laser units	1 to 4	1 to 4	1	1
Sync signal	5 V TTL	5 V TTL	5 V TTL	5 V TTL
	Laser unit	Laser unit	Laser unit	Laser unit
Wavelength options	640 nm (visible), 810 nm (invisible)	640 nm (visible), 810 nm (invisible)	640 nm (visible), 810 nm (invisible)	640 nm (visible), 810 nm (invisible)
Power options	280 W @ 640 nm, 500 W @ 810 nm	200/400 W @ 640 nm, 300/500 W @ 810 nm	280 W @ 640 nm, 500 W @ 810 nm	200/400 W @ 640 nm, 300/500 W @ 810 nm
Laser class	Laser class 4	Laser class 3B or 4 (based on power and wavelength)	Laser class 4	Laser class 3B or 4 (based on power and wavelength)
Min pulse duration (limited power)	50 ns	10 ns	50 ns	10 ns
Min pulse duration (full power)	100 ns	30 ns	100 ns	30 ns
Pulses per frame	up to 5	up to 5	1	1
Continuous duty cycle	0.03%	0.03%	0.03%	0.03%
High-speed duty cycle	2%	0.1%	100%	100%
Max high-speed duration	10 seconds (optional 30 seconds for 810 nm)	10 seconds	30 μ s total laser time	30 μ s total laser time
	Versatility (changeable fiber optics)	Versatility (changeable fiber optics)	Versatility (changeable fiber optics)	Versatility (changeable fiber optics)
Fiber-coupled	Yes	Yes	Yes	Yes
Adjustable illumination	Yes	Yes	Yes	Yes
Light sheet illumination	Yes	Yes	Yes	Yes
	Pulse duration / frequency examples	Pulse duration / frequency examples	Pulse duration / frequency examples	Pulse duration / frequency examples
10 ns	Not applicable	100,000 Hz (@ 0.1% DC)	Not applicable	50,000,000 Hz (1500 pulses)
50 ns	400,000 Hz (@ 2% DC)	20,000 Hz (@ 0.1% DC)	12,000,000 Hz (500 pulses)	16,000,000 Hz (500 pulses)
100 ns	200,000 Hz (@ 2% DC)	10,000 Hz (@ 0.1% DC)	7,500,000 Hz (230 pulses)	90,000,000 Hz (270 pulses)
1 μ s	20,000 Hz (@ 2% DC)	1,000 Hz (@ 0.1% DC)	100,000 Hz (30 pulses)	990,000 Hz (30 pulses)
10 μ s	2,000 Hz (@ 2% DC)	100 Hz (@ 0.1% DC)	10,000 Hz (3 pulses)	10,000,000 Hz (3 pulses)
	Example applications	Example applications	Example applications	Example applications
	Welding	Welding	Shockwaves	Shockwaves
	Flows/droplets/sprays/jets	Shockwaves	Schlieren imaging	Schlieren / Shadowgraphy
	Additive manufacturing	Schlieren / Shadowgraphy	Flows/droplets/sprays/jets	Flows/droplets/sprays/jets
	Materials testing	Flows/droplets/sprays/jets	Materials testing	Materials testing
	Ballistics/explosions	Industrial webs	Ballistics/explosions	Ballistics/explosions

