

New PPLN Waveguide Mixers: **Record High Power -5W**

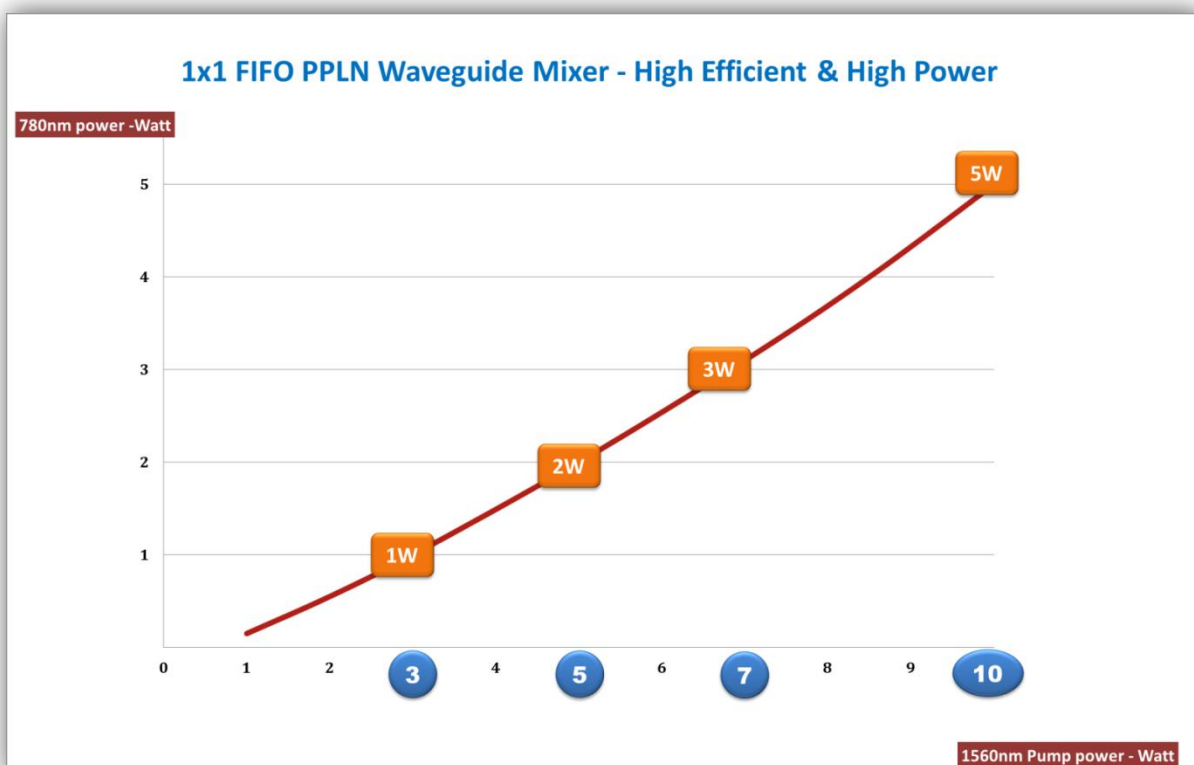
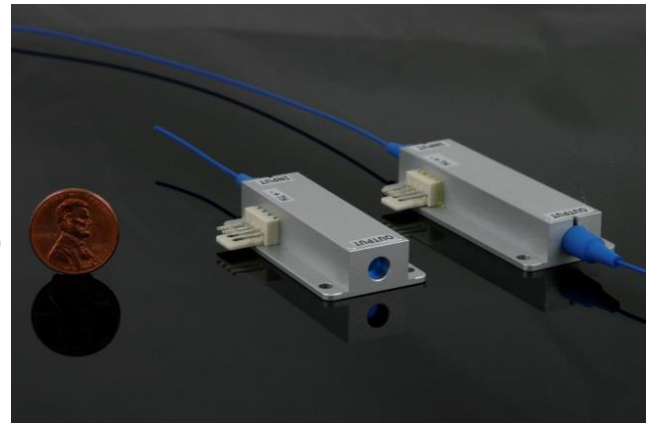
April 22, 2022

For decades, HCP has been committed to providing cost-effective and fast turnaround PPLN products for spectrum range from UV to mid-IR (355~5000nm) and THz. At the 25th World's leading trade fair for components, systems and applications of photonics, HCP proudly launches new high power wavelength converters-- 5W@780nm CW out of PM fiber. With its superb high overall conversion efficiency ($\geq 50\%$), it features record high output power from PPLN waveguide by up to 10W pump at C-band. It is easily to have synchronized multiple-arm outputs with PM splitters for different applications e.g. quantum. Upon news release, requests flooded in with no time. We strongly believe this will soon be used prevalently as cornerstone for applying to other wavelengths and even push it into higher power.

PPLN Waveguide Mixer

1x0 & 1x1 Mixers

- High efficiency (up to 50%)
- High power (up to **5W** out of PM fiber)
- Compact/Robust package ($\geq 60 \times 25 \times 10.5 \text{mm}^3$)
- Custom Wavelengths upon request
- Fiber delivery (FIFO, Fiber-In & Fiber-Out)
- **Commercial volume**





- Plug & play
- Single-pass & high-efficiency via waveguide structure
- Compact & robust

Reference Specification sheet

Optics (General)	unit	Specification			Note
Mixer Type		Second Harmonic Generation (SHG)			
Mixer Pigtailling Type		1x1			
Input Wavelength	nm	1560			
Output Wavelength	nm	780			
Input Fiber, Connector		PM1550+mode adaptor			[1]
Output Fiber, Connector		PM780/850, None			
Specified pump power	W	10			
Pump condition		CW, Single longitudinal mode			
Optics (output)	unit	Minimum	Typical	Maximum	Note
Output power @ specified pump	W	5	5.1		[2]
Output polarization state		linear @ slow axis			
Output PER	dB	18	20		
Back reflection of IR wavelength	dB		-45	-40	
Mechanics	unit	Specification			Note
Housing dimension (LxWxH)	mm	70 x 25 x 10.5			
Electrics	unit	Minimum	Typical	Maximum	Note
Electrical connector		Molex 0022112042 (4P)			
Thermoelectric cooler		3.9V, 1.7A maximum, Qc = 4.3 W			
NTC Thermistor resistance@25°C	kΩ	10			
Thermistor B vale (B25/85)	K	3478			
Environment	unit	Minimum	Typical	Maximum	Note
Storage temperature (no humidity)	°C	-20	-	70	
Operating ambient temperature range	°C	15	25	30	
Operating relative humidity (non condensing)	%RH	0	-	85	
Vibration / Shock		Refer to ISTA-2A			
Restriction of hazardous substances directive (RoHs)		Declaration of Conformity to 2011/65/EU			

[1] Additional fiber mode adaptor will be provided
 [2] Residual 1560nm not blocked