

1x1 SPDC Waveguide Mixer-SC2308240350

Optics(General)	Unit	Specification		
Mixer type		SPDC		
Mixer pigtailing type		1x1		
Input wavelength	nm	775		
Output wavelength	nm	1550		
Input fiber type		PM780,		
Input connector type		FC/APC		
Output fiber type		PM1550 + mode adaptor,		
Output connector type		FC/APC		
Pump condition		CW, CW, single longitudinal mode		
Optics(Output)	Unit	Minimum	Typical	Maximum
Specified overall efficiency @ low input	%/W	35	40	
Output coupling efficiency	%	60	65	
PPLN phase matching temperature	deg. C	20	45	70
Output polarization state		Linear @ slow axis		
Mechanics	Unit	Specification		
Housing dimension (LxWxH)	mm^3	150x100x35		
Electrics	Unit	Minimum	Typical	Maximum
Electrical connector		Hirose HR 10G-10R-10P(73)		
Thermoelectric cooler		3.2V, 4A maximum, Qc = 6.9 W		
NTC Thermistor resistance @ 25 deg. C	kohm		10	
Thermistor B value (B25/85)			3478	
Environment	Unit	Minimum	Typical	Maximum
Storage temperature (no humidity)	deg. C	-20		70
Operation ambient temperature range	deg. C	10		35
Operation rel. humidity (non condensing)	%	0		85
Vibration / Shock		Refer to ISTA-2A		
Restriction of hazardous substances directive (RoHs)		Declaration of Conformity to 2011/65/EU		

Other:

[1] Spec of overall efficiency is defined in equivalent SHG assume filter overall transmittance >85%

[2] Spec of output coupling is defined include filter loss (customer consigned, at 1550nm side), and assume filter transmittance >85%.

[3] Provide SPDC/SHG spectrum for reference

[General Info]

Fibers are made with Ø900um loose tubes at typical length >=1 meter. Other length and protection options are available upon request.

[Handling Care and Maintenance]

- Isolators are strongly recommended to protect pump lasers against back reflection from mixers.
- Mixers with FC/APC Narrow Key (2.0 mm) Connectors require thorough cleaning before use.

A. Overview

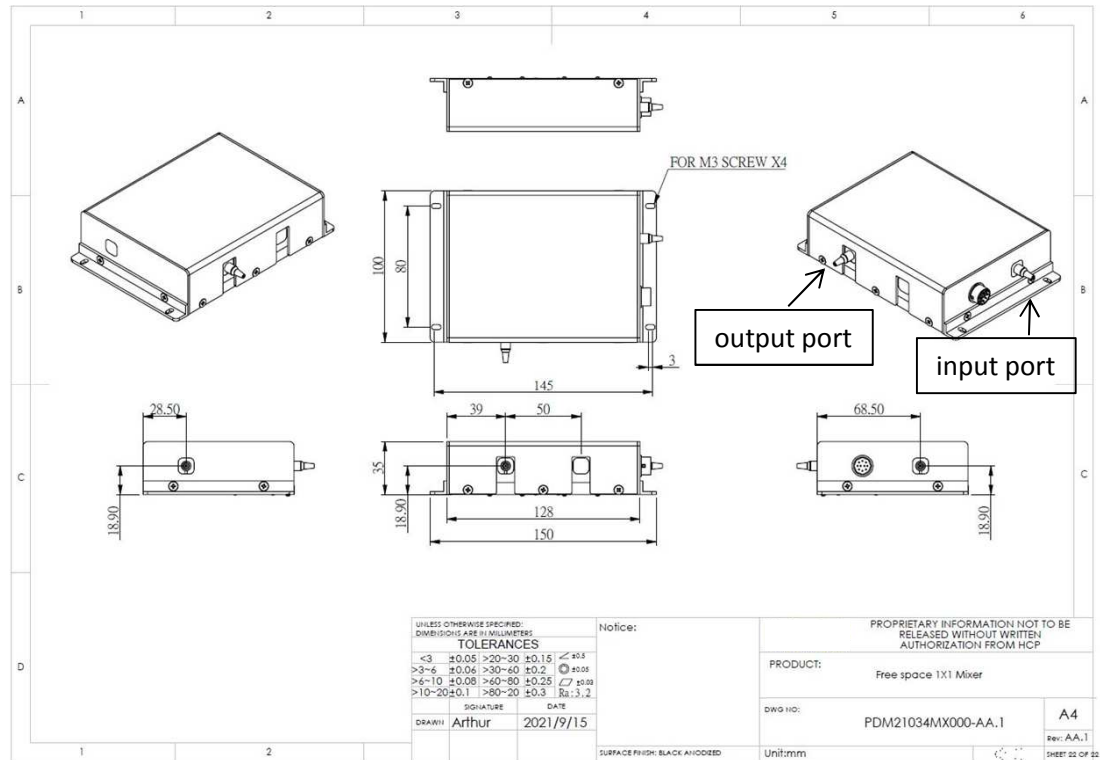
Report date : 2023/08/24

Item	Specification
HCP number	SC2109140414
Part number	1WM1550001111X1XCP022
Quantity (set)	1
Wavelength (nm)	SHG 1550 => 775 (nm)
Input fiber / Connector type	PM1550 + mode adaptor / FC/APC
Output fiber / Connector type	PM780 / FC/APC
Performance	≥ 25 %/W @ low input, CW, single frequency
Precautions	1. Do not dismantle the mixer housing. 2. Do not raise the operation temperature over 75°C.
Warranty	1 year after delivery under proper operation. (For the products with fiber connector, connector termination damage is excluded.)

Mixer ID : SC21414-01-02

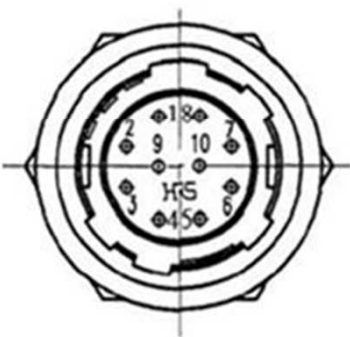
B. Electrical & Mechanical Overview
- Mechanics

Item	Unit	Specification
Housing dimension (LxWxH)	mm^3	150x100x35



- Electrics

Item	Unit	Specification
Electrical connector		Hirose HR 10G-10R-10P(73)
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Electrical connector - Pin assignment			
10 Pins layout	Pin number	Functionality	10 pin connector Cable
 <p>see from outside</p>	1	TEC anode (+)	red
	2	TEC cathode (-)	black
	3	Thermistor	white
	4	Thermistor	yellow
	5	empty	empty
	6	empty	empty
	7	empty	empty
	8	empty	empty
	9	empty	empty
	10	empty	empty

C. Specification

Item	Unit	Minimum	Typical	Maximum	Result	Note
Specified overall efficiency @ low input	%/W	25	27		42.4	
Normalized conversion efficiency	%/W/cm^2	80	85		60.4	
PPLN phase matching temperature	deg. C	20	45	70	54.6	
Waveguide length	mm	19.5	20		19.8	

Note: Please see appendix for details.

D. Appendix

Performance can be described as overall efficiency, which is calculated as **ICE x ICE x NCE x CL x CL x FilterT x OCE**.

ICE: input coupling efficiency at 1550nm (including APC connector loss)	42.4	%
NCE: chip conversion efficiency in SHG condition	60.4	%/W/cm/cm
FilterT: transmittance of filters	93.2	%
OCE: output coupling efficiency at 775nm	81.0	%
CL: chip length	1.98	cm
Overall efficiency	32.0	%/W