

- 26.5-220 GHz operating frequency
- Narrow band and full band types
- Low insertion losses
- High isolation
- Compact size

Applications

- Laboratory measurement and test equipment
- Junction of some parts of sub-systems
- Matching of several waveguide components
- Base of multi-junction devices (injection-locked amplifier)



Description

26.5-220GHz Circulators and Isolators are ferrite waveguide components. There are two kinds of the products operating within narrow frequency band (1-4 GHz) and full waveguide band. Junction circulators /isolators are narrow band. Wideband devices base on Faraday rotation effect. Used in many waveguide schemes for junction their parts and for matching different components and protecting against reflected mm-wave power.

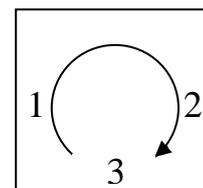
Standard line of ELVA-1's circulators CR-XX/CF/BW series provide low insertion losses and high isolation for all three ports. They have operation frequency band up to 4 GHz. Better performances of the circulators can be provided within narrow frequency band.

The IS-XX/CF/BW isolators realized by terminating of one port of the junction circulators. Ideally suit for suppression of reflected power coming from any waveguide devices with high VSWR.

Full band isolators IF-XX have good performances within full waveguide range. Mainly used in wideband sources or receivers for suppression mm-wave power propagating in one fixed direction. Have small insertion losses.

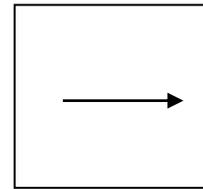
Specifications

Narrow band circulators **CR-XX/CF/BW** series:



	CR-XX/CF/BW			
Central frequency:	Fixed from 26.5- 110 GHz		Fixed from 110- 170 GHz	
Bandwidth:	2.5 GHz	0.5 GHz	2.5 GHz	0.5 GHz
Insertion losses: 1 to 2, 2 to 3, 3 to 1	0.7 dB	0.5 dB	1 dB	0.7 dB
Isolation: 2 to 1, 3 to 2, 1 to 3	23 dB (min)	30 dB	20 dB (min)	25 dB
VSWR	1.2 (typ)		1.3 (typ)	

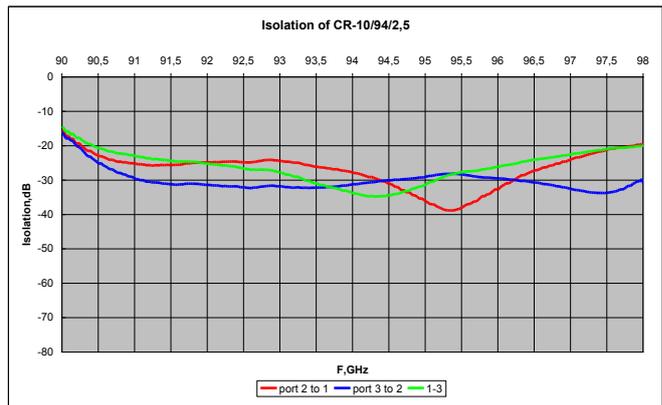
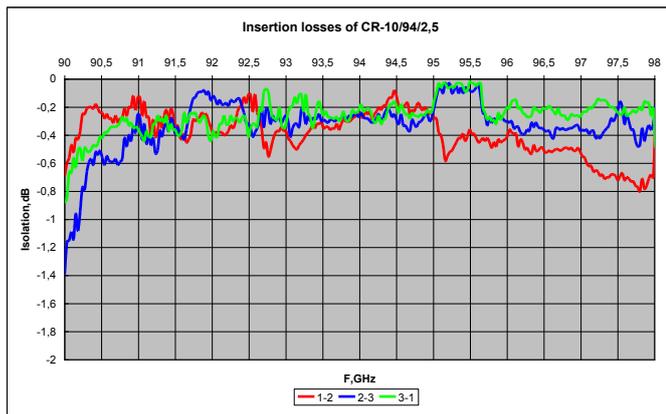
Narrow band isolators **IS-XX/CF/BW** series:



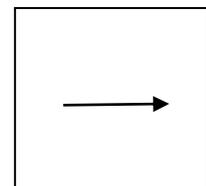
	IS-XX/CF/BW			
Central frequency	Fixed from 26.5- 110 GHz		Fixed from 110- 170 GHz	
Bandwidth	2.5 GHz	0.5 GHz	2.5 GHz	0.5 GHz
Insertion losses	0.7 dB	0.5 dB	1 dB	0.8 dB
Isolation	23 dB (min)	30 dB	20 dB (min)	25 dB
VSWR	1.2 (typ)		1.3 (typ)	

Note: CR/IS-05 circulators/isolators can be produced upon special request

Typical data of circulators/isolators presented in the plots below.



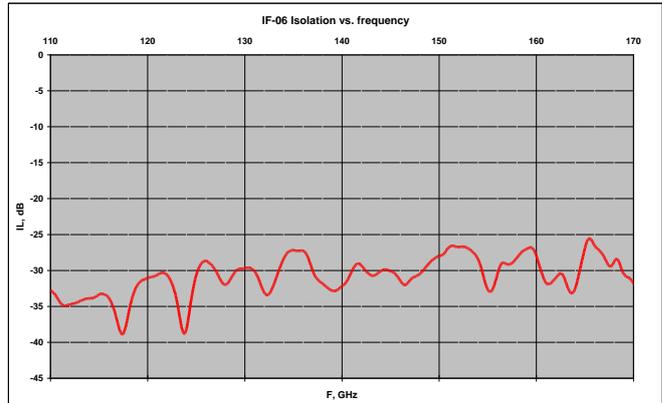
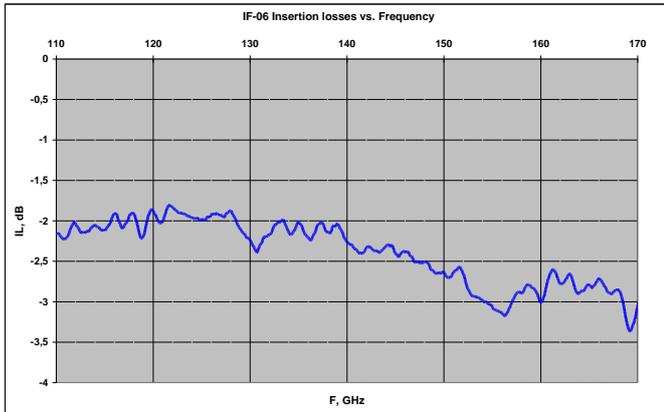
Full band Faraday Isolators **IF-XX** series:



Model	IF-15	IF-12	IF-10	IF-08	IF-06
Operating bandwidth, GHz	50-75	60-90	75-110	90-140	110-170
Insertion losses	1.7 dB	1.8 dB	2.2 dB	2.7 dB	3.3 dB
Isolation	25 dB	25 dB	25 dB	25 dB	25 dB
VSWR	1.3:1	1.3:1	1.4:1	1.4:1	1.5:1
Waveguide	WR-15	WR-12	WR-10	WR-08	WR-06
Flange	UG-385/U	UG-387/U	UG-387/U-M	UG-387/U-M	UG-387/U-M

Note: IF-28/22/19/05 Faraday isolators can be produced upon special request

Typical data of circulators/isolators presented in the plots below.



How to Order

Specify Model Number CR/IS/IF-XX/CF/BW, where

- **XX** – number of waveguide standard (Ex. 10 for WR-10 and 06 for WR-06)
- **CF**- central frequency (GHz), nothing if full band
- **BW** – or operating range (GHz), nothing if full band

Example

IS-10/94/1 (W-band isolator, WR-10, Central frequency **94** GHz, Bandwidth **1** GHz)

CR-06/140/2 (D-band circulator, WR-06, Central frequency **140** GHz, Bandwidth **2** GHz)

IF-06 (D-band Faraday isolator, WR-06, full band 110-170GHz)