

High Precision Dual-Directional Coupler

532x series is a family of passive four-port dual-directional couplers based on ACST high-precision manufacturing technology.

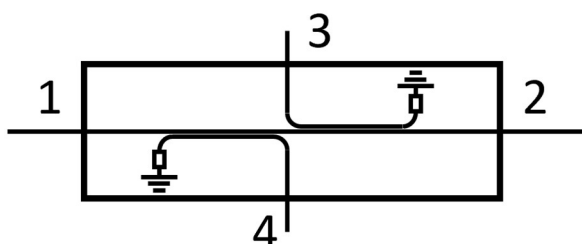
covering the range of frequencies **from 50 to 500 GHz**. All coupler designs within this series exhibit high directivity combined with low loss and flat coupling response across their respective frequency bands



Technical Specifications

| PRODUCT | 532R | 532S | 532A | 532B | 532C | 532D | 532E | 532F | 532G | 532H |
|------------------------------------|-------------------|-------|-------|------|--------|--------|--------|--------|--------|--------|
| Band | WR-15 | WR-12 | WR-10 | WR-8 | WR-6.5 | WR-5.1 | WR-4.3 | WR-3.4 | WR-2.9 | WR-2.2 |
| Frequency Min [GHz] | 50 | 60 | 75 | 90 | 110 | 140 | 170 | 220 | 260 | 330 |
| Frequency Max [GHz] | 75 | 90 | 110 | 140 | 170 | 220 | 260 | 330 | 400 | 500 |
| Device width [mm, +-0.05] (W) | 20 | | | | | | | | | |
| Device height [mm, +-0.1] (H) | 21 | | | | | 20 | | | | |
| Device length [mm, +-0.05] (L) | 70 | | | | | 60 | | 40 | | |
| Coupled Port Position [mm] (L1) | 35 | | | | | 25 | | 20 | | |
| Input Port Height [mm] (H1) | 9.5 | | | | | | | | | |
| Insertion loss (S21) [dB, +-0.75] | 1.3 | | | | | 1.8 | | | 2.7 | |
| Port 3 Coupling (S32) [dB, +-0.75] | 30 | | | | | 18 | | 13 | 15 | |
| Port 4 Coupling (S41) [dB, +-0.75] | 30 | | | | | 18 | | | 15 | |
| Port 3 Isolation (S31) [dB] | 25 or greater | | | | | | | | | |
| Port 4 Isolation (S42) [dB] | 25 or greater | | | | | | | | | |
| Return loss (S11) [dB] | 20 or greater | | | | | | | | | |
| Return loss (S33, S44) [dB] | 25 or greater | | | | | | | | | |
| Material and Finish | Gold plated brass | | | | | | | | | |

* Customised or asymmetrical coupling values available upon request



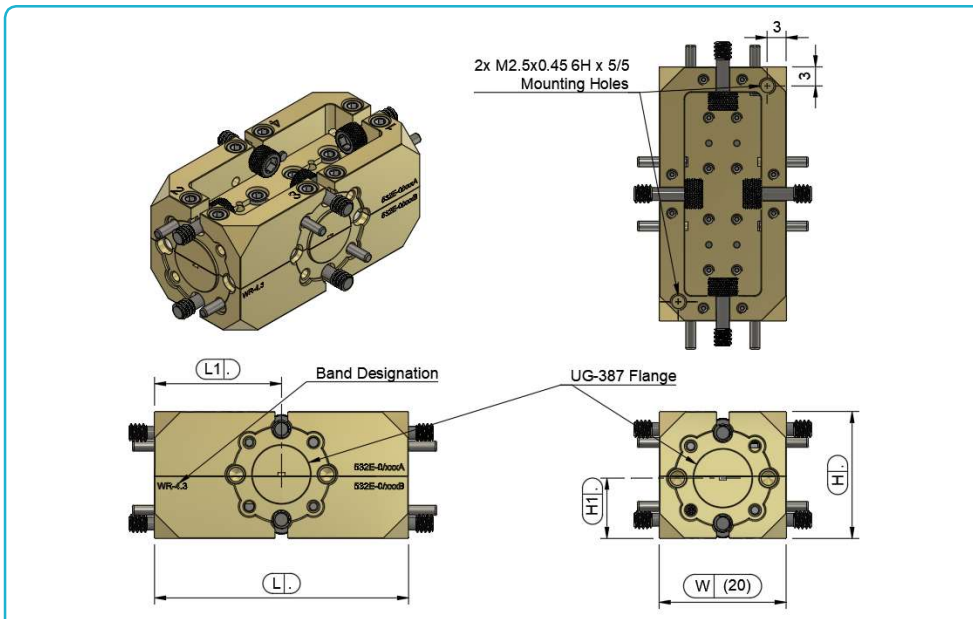
$$\text{Insertion Loss} = -10 \log \left\{ \frac{P_2}{P_1} \right\}$$

$$\text{Port 3 Coupling} = -10 \log \left\{ \frac{P_3}{P_2} \right\}$$

$$\text{Port 4 Coupling} = -10 \log \left\{ \frac{P_4}{P_1} \right\}$$

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Outline Dimensions



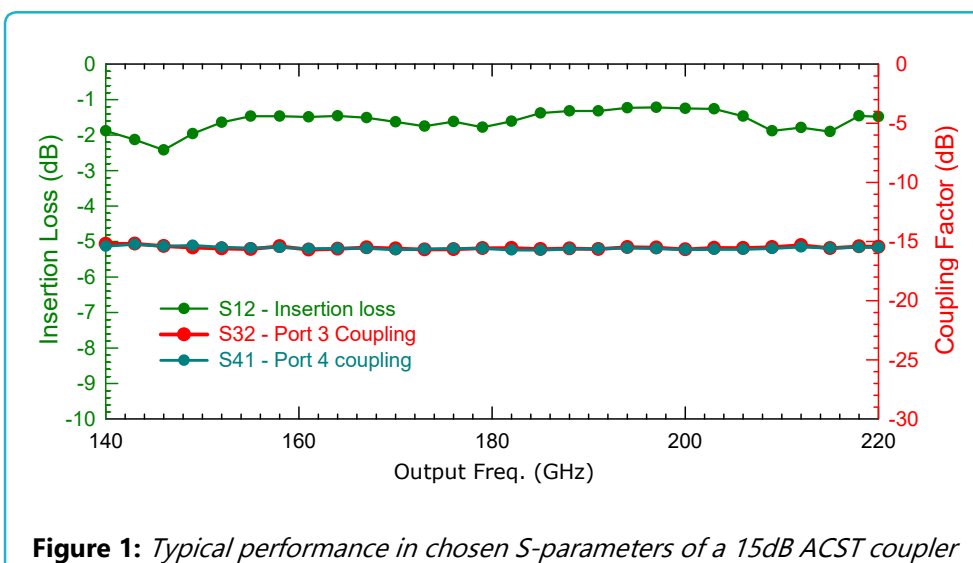
Notes

- > All plotted data represent typical values. Actual performance may vary from unit to unit.
- > All tests are carried out at a room temperature of 24 °C.

Caution

- > Absolute maximum ratings should not be used under normal operating conditions. Exceeding maximum ratings may lead to permanent failure.
- > Any foreign body inserted into the waveguide will diminish performance and may cause damage to instruments.

Typical Performance



Order information

- Please indicate product name and type.
- Please indicate desired optional features



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