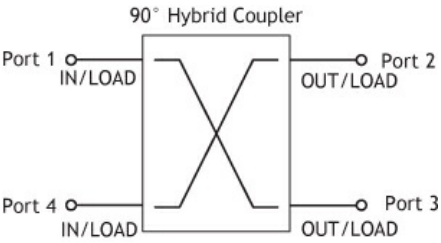
200 W 3 dB Coupler (90° Hybrid)

DESCRIPTION

- Hybrid Coupler with 3 dB coupling covering the 380 - 2700 MHz band.
- Excellent high-power performance - 200 W.
- Low insertion loss over the entire frequency range.
- Available with N(f), 4.3/10(f) or 7/16-DIN(f) connectors.
- 3 dB 90° Hybrid Couplers also known as quadrature hybrids are a passive four port device that can be used in many different modes depending on the application. It can be used as a splitter, combiner or injection of a signal into a signal path.

BLOCK DIAGRAM



COMMON APPLICATIONS OF 3 DB 90° HYBRID COUPLERS

- Combining two transmitters with very narrow spacing to one common antenna or to a DAS network.
- Combining two carrier inputs to one or two antennas or leaky feeder/radiating cables.
- Splitting signals from tower mounted amplifiers to base station receivers.

SPECIFICATIONS

Electrical	
Model	PRO-PHY 380-2700-3 dB-...
Frequency	380 - 2700 MHz
Max. Input Power	200 W (composite)
Insertion Loss	Port 1 to 2 or 1 to 3 : 3.5 dB ±1 dB
Impedance	50 Ω
Isolation	380 - 960 MHz : > 20 dB 960 - 2100 MHz : > 15 dB 2100 - 2700 MHz : > 20 dB
VSWR	< 1.5:1
Passive Intermodulation	< -130 dBc (2 x 43 dBm)

Mechanical	
Compliance	RoHS
Connection(s)	N(f), 4.3/10(f) or 7/16 DIN(f)
Dimensions	125.6 x 99.6 x 46.1 mm / 4.94 x 3.92 x 1.81 in. (incl. connectors and flanges)
Weight	Approx. 0.865 kg / 1.91 lb.
Mounting	5.2 mm / 0.205 in. dia. (4 holes)

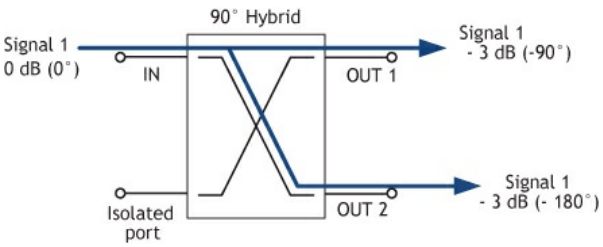
Environmental	
Operating Temperature Range	-30°C to +60°C
Ingress Protection	IP67

ORDERING

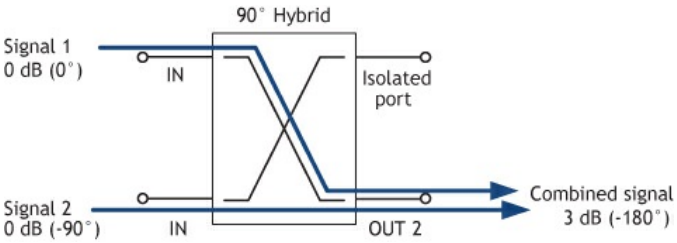
Model	Product No.
PRO-PHY 380-2700-3 dB-N(f)	200002403
PRO-PHY 380-2700-3 dB-4.3/10(f)	200002762
PRO-PHY 380-2700-3 dB-7/16(f)	200002408

DIFFERENT MODES OF THE 3 DB HYBRID COUPLER

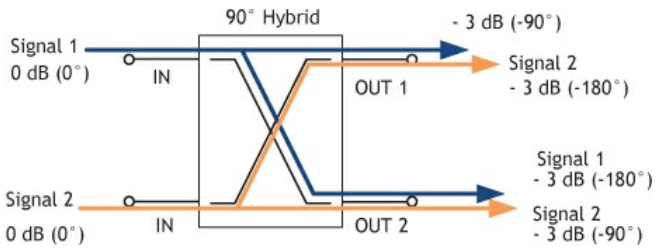
Coupler splitter mode:
Divides the signal into two equal components with a 90° phase difference that can be used to split signals from tower top amplifiers to the base station receivers.



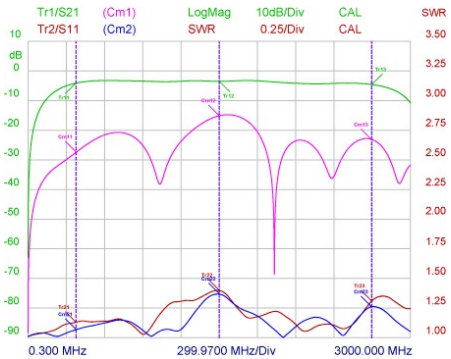
Coupler combiner mode 1 :
If the same signals is applied at the input ports with a 90° phase difference the signals adds up on one port.



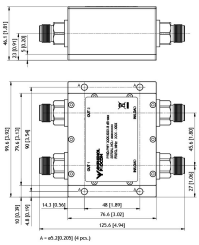
Coupler combiner mode 2:
Combining two non-coherent signals that are available at both ports.



TYPICAL COUPLING, ISOLATION AND VSWR CURVES



MOUNTING DETAILS



All dimensions are given in mm [in.]