
**PRODUCT DATA SHEET**
**C10870**

**4-Port Dual Directional Coupler** employs two, 3-Port Uni-Directional Couplers, internally connected, in tandem, providing measurement of both forward and reverse power. Ideal for simultaneously monitoring a system's forward and reverse power and for reflectometer measurements. Unlike the Bi-Directional Coupler, the directivity of the Dual Directional Coupler is unaffected by the loads on the coupled ports.

**Features:**

High Power      Wide Bandwidths      Small Size      Flat Coupling      Custom Designs Available

**Electrical Specifications:**

Frequency: 700 - 6000 MHz  
Power: 400 W CW  
Coupling:  $50 \pm 1.0$  dB Max.  
Insertion Loss: 0.2 dB Max.  
Flatness:  $\pm 1.0$  dB Max.  
VSWR (ML): 1.30:1 Max.  
Directivity: 15 dB Min.

**Mechanical Specifications:**

Type: Connectorized  
Material: Aluminum 6061-T6  
Surface Finish: Chem. Film Per MIL-DTL-5541F  
Type I Class 3 (Yellow Iridite)  
RoHS Compliant Available  
Operating Temperature: -55°C to +75°C  
Storage Temperature: -60°C to +85°C  
Humidity: 95% Non-Condensing  
Size: 2.0 x 2.0 x 1.06"

**Connector Configurations:**

| Model      | Input (J1) | Output (J2) | Fwd (J3) | Rev (J4) |
|------------|------------|-------------|----------|----------|
| C10870-10  | N Female   | N Female    | N Female | N Female |
| C10870-12  | N Female   | N Female    | SMA      | SMA      |
| C10870-612 | N Female   | N Male      | SMA      | SMA      |
| C10870-714 | N Male     | N Female    | N Female | N Female |

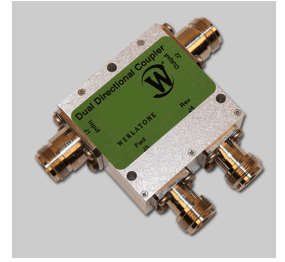
**Werlatone®** Broadband Dual, Uni, and Bi Directional RF Couplers are designed to tolerate the most stringent operating conditions associated with military and EMC testing environments. Many of our RF Directional Couplers, designated Mismatch Tolerant®, will operate continuously, at rated power, into a severe load mismatch condition. Our multi-octave Directional Couplers maintain exceptional coupling flatness, directivity, VSWR, and insertion loss.



# WERLATONE

Model C10870

Connectorized Directional Couplers

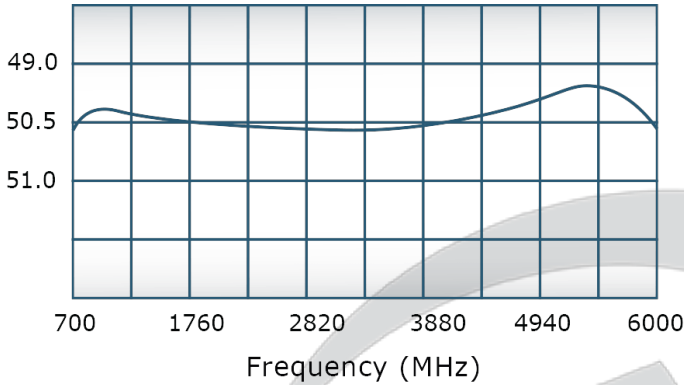


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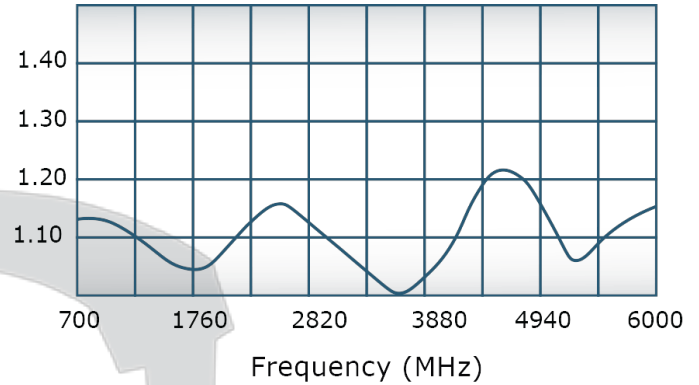
C10870

### Performance Data (Specifications subject to change without notice):

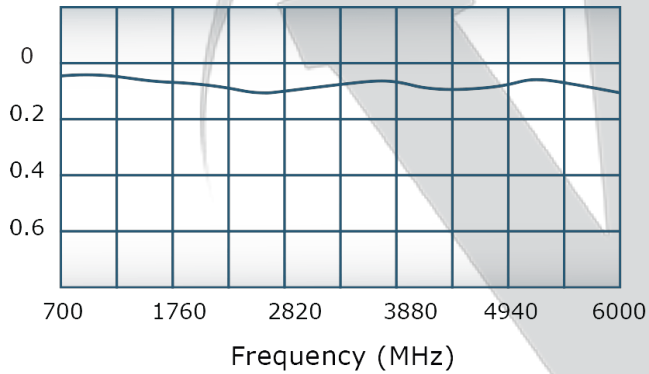
Coupling:



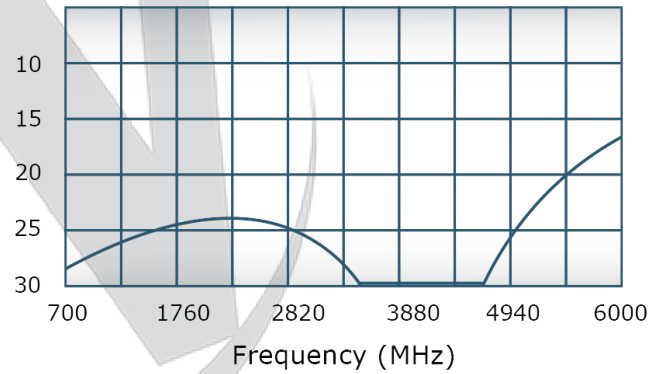
VSWR:



Insertion Loss:



Directivity:

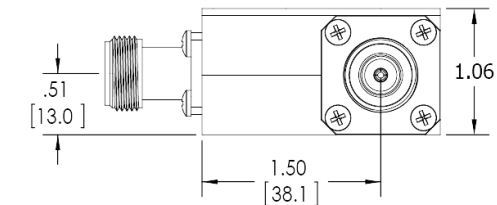
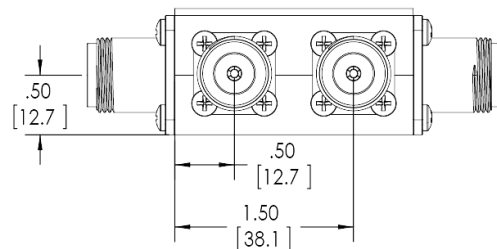
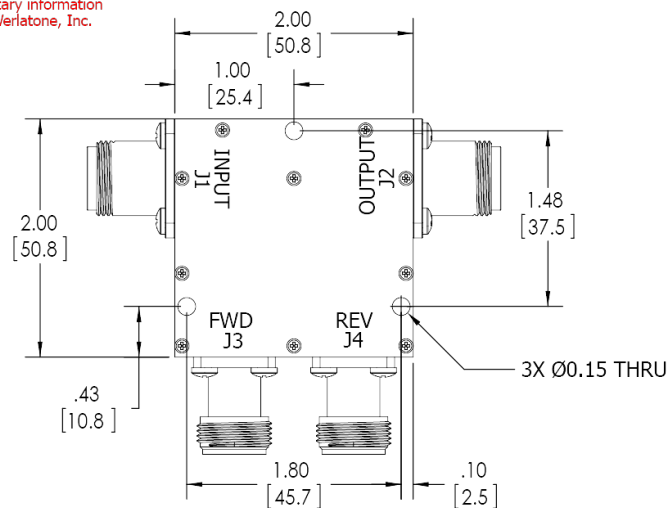


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**NOTES: UNLESS OTHERWISE SPECIFIED**

1. MATERIAL: ALUMINUM
2. SURFACE FINISH: CHEM FILM PER MIL-DTL-5541F TYPE II CLASS 3 (CLEAR)
3. CONNECTORS: ALL N FEMALE

| REVISION HISTORY |                 |          |          |
|------------------|-----------------|----------|----------|
| REV.             | REVISION RECORD | DATE     | APPROVED |
| -                | INITIAL RELEASE | 3 2 2015 | CS       |

|                   |  |                                           |  |      |           |                                                                                                             |  |                                          |  |
|-------------------|--|-------------------------------------------|--|------|-----------|-------------------------------------------------------------------------------------------------------------|--|------------------------------------------|--|
|                   |  | UNLESS OTHERWISE SPECIFIED                |  | OWN  | DATE      |  WERLATONE® SINCE 1965 |  | 17 Jon Barrett Rd<br>Patterson, NY 12563 |  |
|                   |  | INTERPRET DRAWING 1401 MIL-STD-100        |  | SC   | 9/30/2014 |                                                                                                             |  |                                          |  |
|                   |  | DIMENSIONS PER ASME Y14.5M-2009           |  | CHK  | DATE      | TITLE                                                                                                       |  | OUTLINE                                  |  |
|                   |  | PARENTHESES FOR REF ONLY                  |  | CS   | 9/30/2014 |                                                                                                             |  |                                          |  |
|                   |  | DIMENSIONS ARE IN INCHES (mm)             |  | ENGR | DATE      | SIZE CAGE CODE DWG NO                                                                                       |  | REV                                      |  |
|                   |  | DIMENSIONAL LIMITS APPLY PER PRIORITIES   |  | BW   | 9/30/2014 |                                                                                                             |  |                                          |  |
|                   |  | TOLERANCES:                               |  | INFR | DATE      | B 28812 21250-500                                                                                           |  | -                                        |  |
|                   |  | ANGLES ± 2°                               |  | QA   | DATE      |                                                                                                             |  |                                          |  |
|                   |  | 3 PL ± .005 (.13)                         |  | RLSE | DATE      | SCALE                                                                                                       |  | SHEET 1 OF 1                             |  |
|                   |  | 2 PL ± .015 (.4)                          |  |      |           |                                                                                                             |  |                                          |  |
|                   |  | REMOVE ALL BURRS AND SHARP EDGES R.01 MAX |  |      |           |                                                                                                             |  |                                          |  |
|                   |  | CONCENTRICITY MACHINED DIA. .002 FPM      |  |      |           |                                                                                                             |  |                                          |  |
|                   |  | MACHINE TOOL MISMATCH .003 FPM            |  |      |           |                                                                                                             |  |                                          |  |
| NEXT ASSY USED ON |  | THIRD ANGLE PROJECTION                    |  |      |           |                                                                                                             |  |                                          |  |
| APPLICATION       |  |                                           |  |      |           |                                                                                                             |  |                                          |  |

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