



**LIGO HANFORD OBSERVATORY**  
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*MEMORANDUM*

DATE: September 19, 2014

TO: ISC team  
FROM: Daniel Sigg  
SUBJECT: RF Power Splitter/Combiners for RF Distribution Amplifier D1000124  
Refer to: LIGO-E1400377-v1

In a view instances, mainly EOM/Pockels cells, the 13 dBm output of the RF distribution amplifier D1000124 is just short of the required RF power level. RF power splitter / combiners can be used give an amplitude gain of 1.41, 1.73 and 2 for 2-way, 3-way and 4-way combiners, respectively.

BOM (for 3 ifo):

Qty	Item	Distributor	Description
1	802-4-0.252	Meca	5-500MHz 2-Way 50Ω Power Divider
1	803-2-0.252	Meca	5-500MHz 3-Way 50Ω Power Divider
1	804-4-0.252	Meca	5-500MHz 4-Way 50Ω Power Divider
1	PE9007	Pasternack	N Female to N Female Adapter

Meca: <http://e-meca.com/rf-power-divider.php>

Pasternack: <http://www.pasternack.com>



**MECA Power Divider/Combiners : 802-4-0.252**

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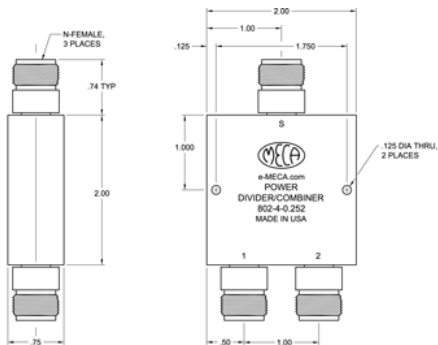


**ELECTRICAL SPECS**

**Frequency:** 5 - 500MHz GHz  
**Power:** 2 Watts  
**Isolation:** 30 dB Typ. , 23 dB Min.  
**Insertion Loss:** 0.3 dB Typ. , 0.6 dB Max.  
**Amplitude Balance:** 0.1 dB (Max)  
**Phase Balance:** 1 degrees (Max)  
**VSWR Input :** 1.10:1 Typ. , 1.20:1 Max.  
**VSWR Output :** 1.05:1 Typ. , 1.15:1 Max.

**MECHANICAL SPECS**

**Connectors:** N-Female Brass Albaloy Plate  
**Contact Pin:** Beryllium Copper Gold Plate  
**Housing:** Aluminum, Clear Iridite  
**Insulator:** PTFE Virgin Electrical Grade  
**Operating Temp.:** -55° C to +85° C



**RoHS Compliant**

This document gives only a general description of the product(s) and shall not form part of any contract.  
Please contact a MECA Applications Engineer for the most current specification drawing.





**MECA Power Divider/Combiners : 803-2-0.252**

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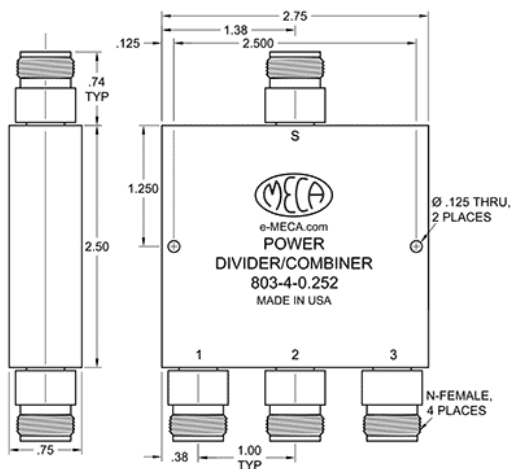
DC Block

**ELECTRICAL SPECS**

**Frequency:** 5-500MHz GHz  
**Power:** 2 Watts  
**Isolation:** 28 dB Typ. , 22 dB Min.  
**Insertion Loss:** 0.4 dB Typ. , 0.8 dB Max.  
**Amplitude Balance:** 0.4 dB (Max)  
**Phase Balance:** 4 degrees (Max)  
**VSWR Input :** 1.15:1 Typ. , 1.30:1 Max.  
**VSWR Output :** 1.15:1 Typ. , 1.30:1 Max.

**MECHANICAL SPECS**

**Connectors:** N-Female Brass Albaloy Plate  
**Contact Pin:** Beryllium Copper Gold Plate  
**Housing:** Aluminum, Clear Iridite  
**Insulator:** PTFE Virgin Electrical Grade  
**Operating Temp.:** -55° C to +85° C



Lead-Free Solder

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**MECA Power Divider/Combiners : 804-4-0.252**

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As Divider: 2 Watts Input with Load VSWR 1.151 or Better. As Combiner: 25 Milliwatts (+14dBm) into Ports 1-4 Simultaneously.

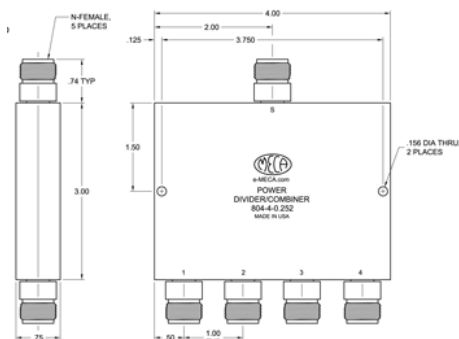


**ELECTRICAL SPECS**

**Frequency:** 5 - 500MHz GHz  
**Power:** 2 Watts  
**Isolation:** 30 dB Typ. , 23 dB Min.  
**Insertion Loss:** 0.5 dB Typ. , 1.00 dB Max.  
**Amplitude Balance:** 0.2 dB (Max)  
**Phase Balance:** 4 degrees (Max)  
**VSWR Input :** 1.10:1 Typ. , 1.20:1 Max.  
**VSWR Output :** 1.10:1 Typ. , 1.20:1 Max.

**MECHANICAL SPECS**

**Connectors:** N-Female Brass Albaloy Plate  
**Contact Pin:** Beryllium Copper Gold Plate  
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