

BROADBAND SPIRAL ANTENNA

1 GHz TO 18 GHz

SPIR1000

KEY FEATURES

- Very wide bandwidth from 1 GHz to 18 GHz with a circularly polarized unidirectional radiation pattern
- VSWR typically below 2:1 with gain up to 6 dBic
- Axial ratio typically under 2 dB
- Available in RHCP or LHCP configurations
- Low weight and compact size
- Professionally designed and hand-tested by engineers in the United States

DESIGN SPECIFICATIONS

- Design: Cavity-backed spiral antenna
- Operating Frequency: 1.0 GHz to 18.0 GHz
- Polarization: Right-hand circular or left-hand circular
- Connector: SMA Female
- Construction: Aluminum cavity with PCB spiral
- Mounting: #10-24 screw holes (see diagram on page 6)
- Length: 4.0 in [102 mm]
- Width: 4.0 in [102 mm]
- Height: 2.0 in [51 mm] (not including SMA connector)
- Weight: 6 oz [170 g]



SPIR1000 (Top)



SPIR1000 (Bottom)

MODELS

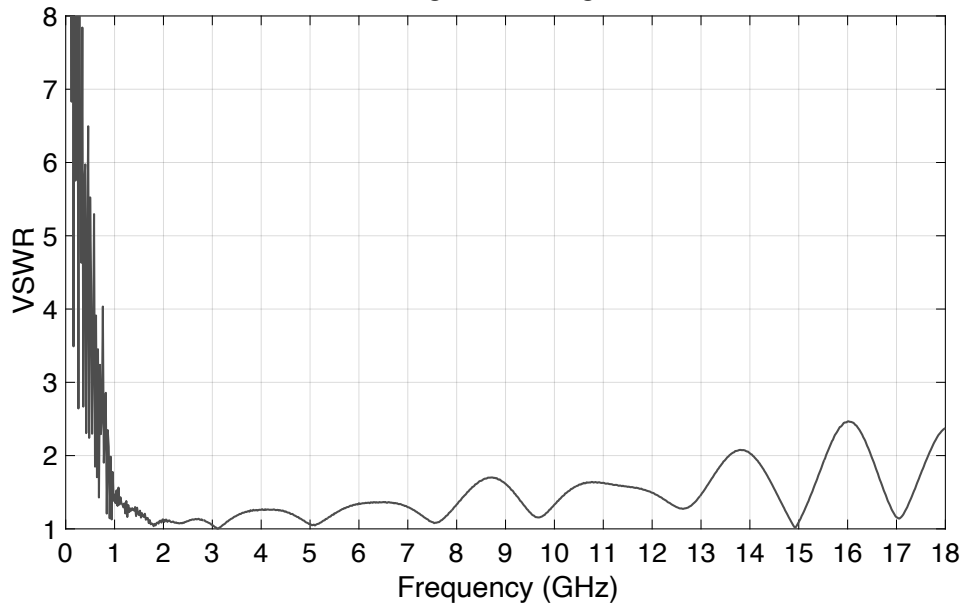
SPIR1000-R	RHCP
SPIR1000-L	LHCP

PERFORMANCE SPECIFICATIONS

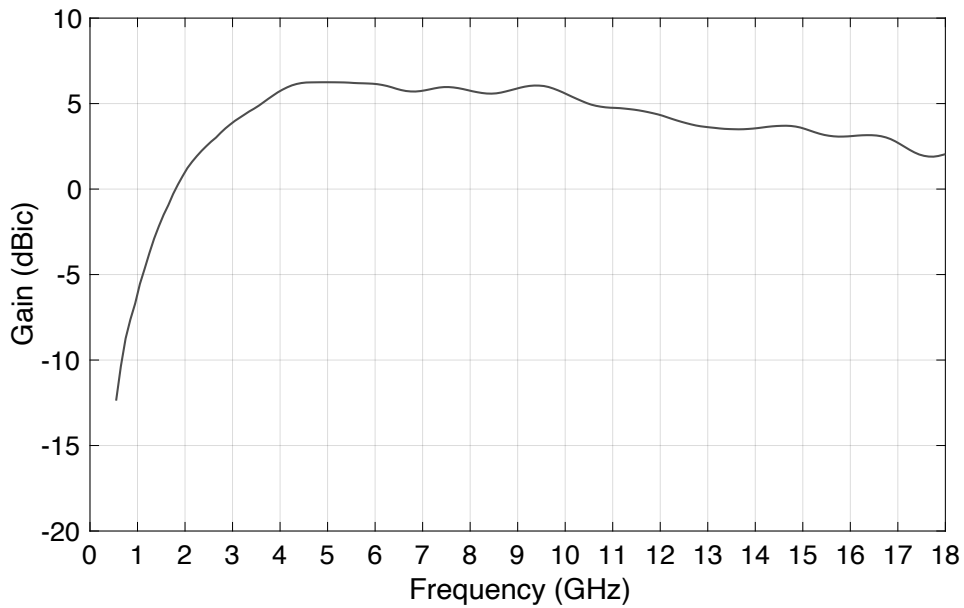
Parameter	Frequency	Min.	Typ.	Max.	Unit
VSWR	1.0 GHz – 2.0 GHz	—	1.2	2.5	—
	2.0 GHz – 12.0 GHz	—	1.3	2.0	
	12.0 GHz – 18.0 GHz	—	1.7	3.0	
Gain	1.0 GHz – 2.0 GHz	-7.0	-2.0	2.5	dBic
	2.0 GHz – 3.0 GHz	0.0	2.5	5.0	
	3.0 GHz – 12.0 GHz	3.0	5.5	7.0	
	12.0 GHz – 18.0 GHz	0.0	3.0	5.0	
Boresight Axial Ratio	1.0 GHz – 2.0 GHz	0.3	1.4	4.0	dB
	2.0 GHz – 16.0 GHz	0.2	0.9	2.5	
	16.0 GHz – 18.0 GHz	1.0	2.0	3.5	
HPBW	1.0 GHz – 18.0 GHz	55	85	130	deg.
Input Power	1.0 GHz – 18.0 GHz	—	—	10	W
Impedance	—	50			Ω
Connector	—	SMA (female)			—

TYPICAL PERFORMANCE

SPIR1000 Voltage Standing Wave Ratio



SPIR1000 RHCP/LHCP Gain



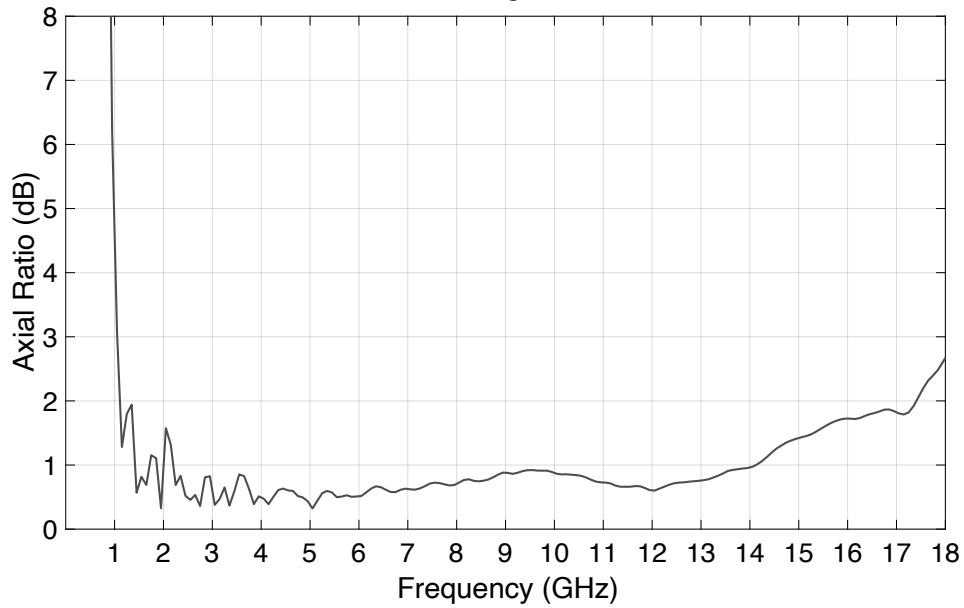
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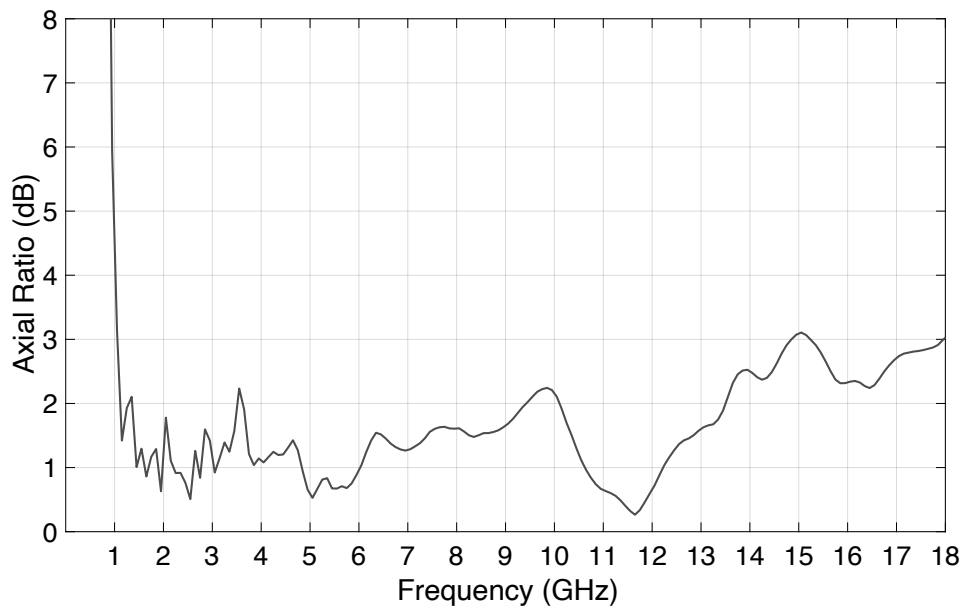
SPIR1000

TYPICAL PERFORMANCE (CONT.)

SPIR1000 Boresight Axial Ratio



SPIR1000 Axial Ratio at $\theta = 30^\circ$



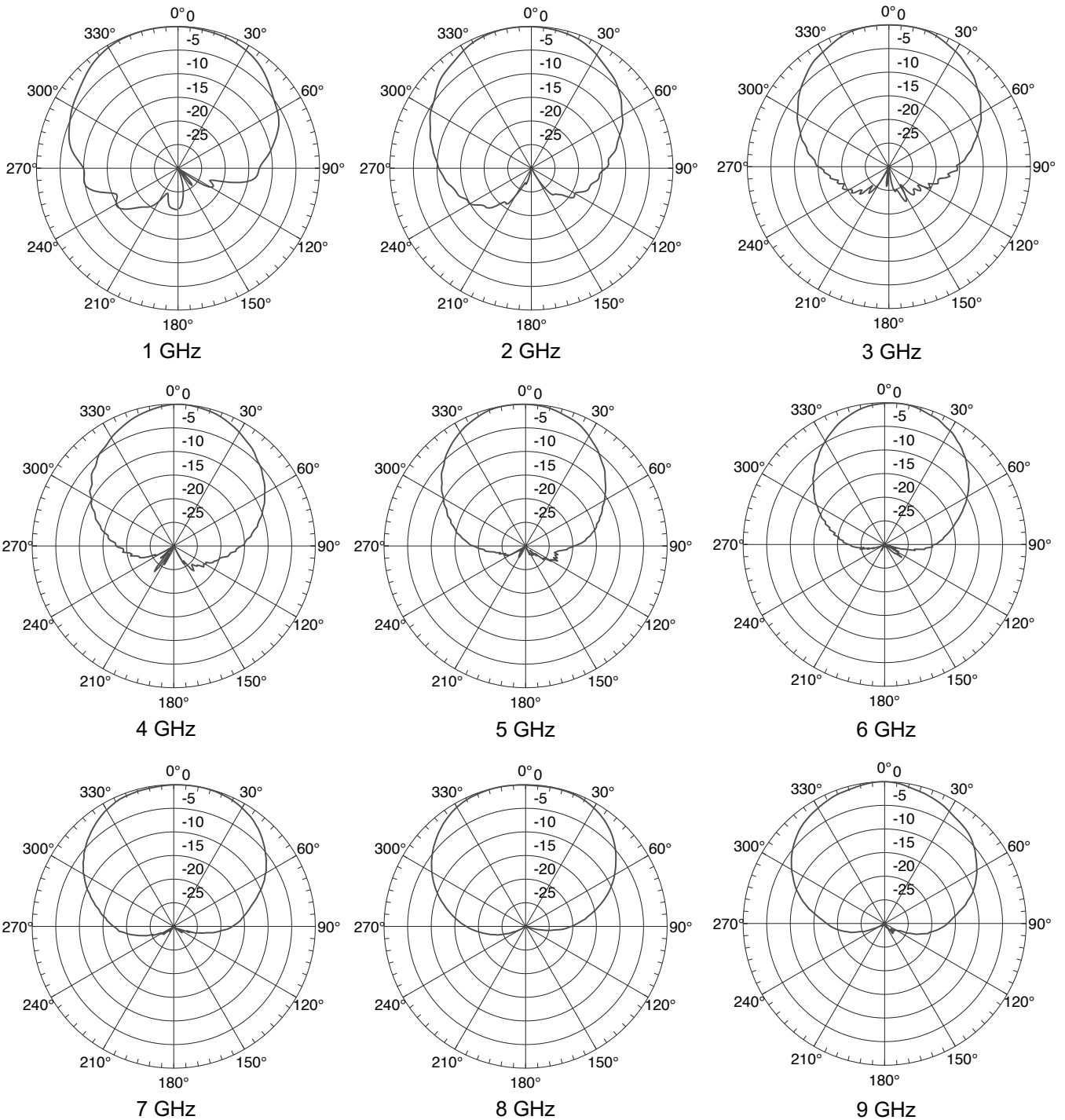
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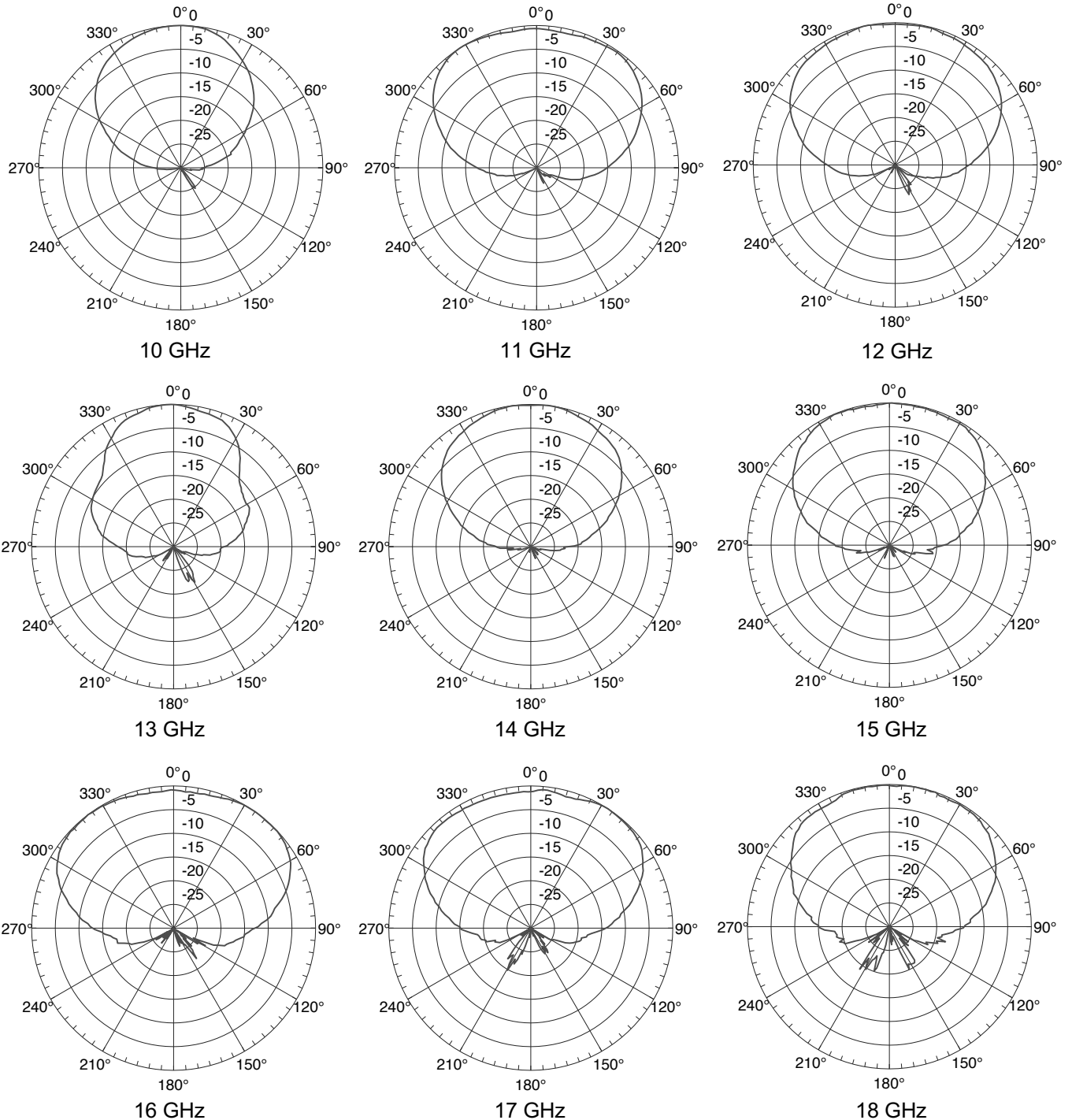
TYPICAL PERFORMANCE (CONT.)

SPIR1000 Normalized Radiation Patterns



TYPICAL PERFORMANCE (CONT.)

SPIR1000 Normalized Radiation Patterns

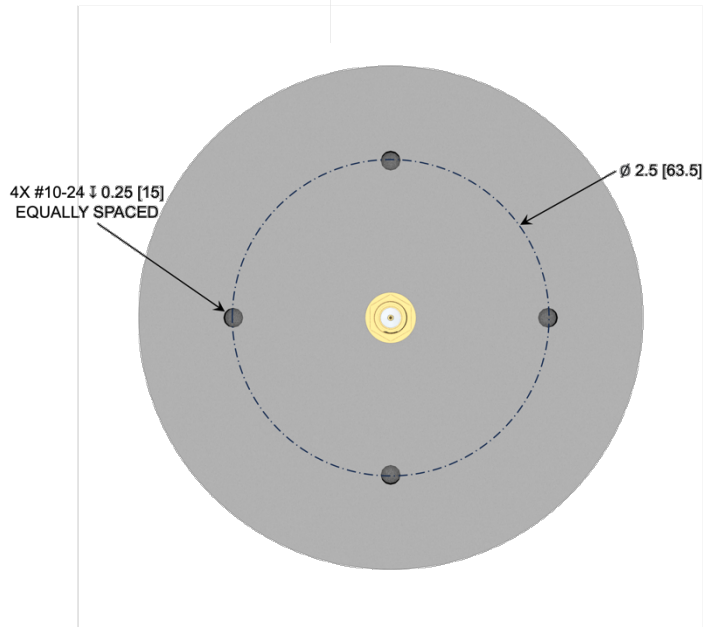
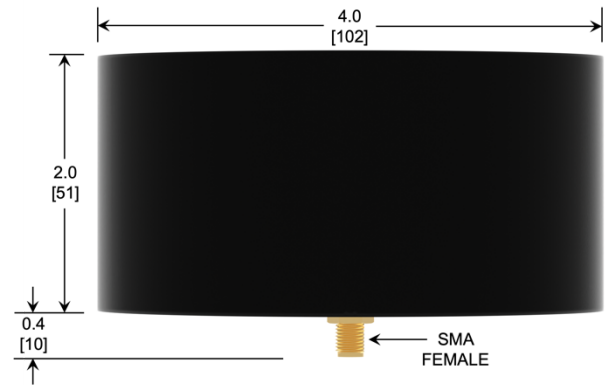
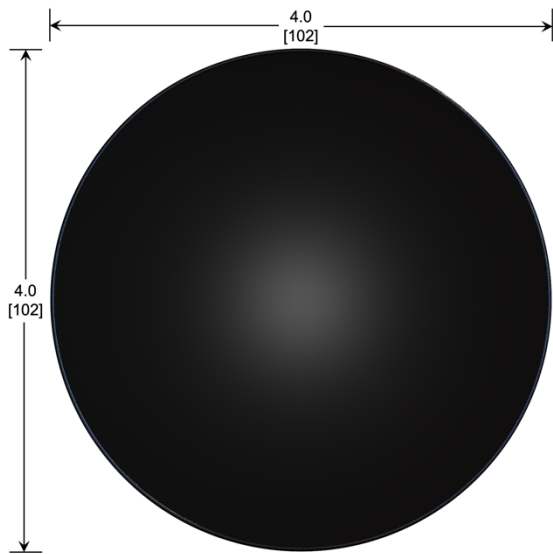


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CAD DRAWING



NOTES

1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL
2. DIMENSIONS ARE IN INCHES [mm]
3. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME