

Dielectric®

**SETTING THE STANDARD FOR TV
3.0 BROADCASTING TECHNOLOGY**





CONFIÁVEL HÁ DÉCADAS. PRONTA PARA O AMANHÃ.

Fundada em 1942, a Dielectric está comemorando seus 83 anos de existência. Fundada pelo Dr. Charles Brown (Doc Brown), a empresa começou sua trajetória desenvolvendo radares militares e, desde então, tem estado na vanguarda da engenharia, design e fabricação de sistema RF de antenas passivas, linhas de transmissão, filtros e componentes que operam desde Alta Frequência até a Banda L.

A expertise da Dielectric em RF com engenharia e fabricação, estabelece um padrão para transmissões de alta potência ao redor do mundo. Por meio do uso de técnicas avançadas de modelagem com softwares inteligentes de simulação (HFSS), a Dielectric eliminou a necessidade de modelos físicos antes da pré-qualificação para fabricação. Otimizações de padrões com uso de inteligência artificial e uma equipe jovem e motivada de engenheiros—liderada por mentores com décadas de experiência—completam a equipe da qual o Dr. Brown se orgulharia.

Assim como nos padrões TV 3.0 e DTV+, a Dielectric projetou, fabricou e testou mais de 1.000 sistemas prontos para ATSC 3.0 desde 2016.

O mercado brasileiro se assemelha bastante ao mercado dos EUA, com estações de alta potência nas principais cidades. Até o momento, a Dielectric forneceu 118 sistemas de antenas para o Brasil desde 1977.

TRUSTED FOR DECADES. READY FOR TOMORROW.

Founded in 1942, Dielectric is celebrating their 83rd year in business. Founded by Dr. Charles Brown (Doc. Brown), Dielectric began with involvement in the early development of military radar and has been on the forefront of engineering, design and fabrication of passive RF antennas, transmission lines, filters and components from HF through L Band.

Dielectrics expertise in RF engineering and manufacturing sets the standard for high power broadcast globally. Through the use of advanced modeling techniques within high frequency simulation software (HFSS), Dielectric has eliminated the need for physical models prior to manufacturing release. AI enabled pattern optimizations and a young yet motivated engineering team led by mentors with decades of experience round out the team that Doc Brown would have been proud of.

Similar to TV 3.0 and DTV+, Dielectric has designed, manufactured and tested more than 1,000 ATSC 3.0 ready systems since 2016.

With high power sites in major markets, the Brazilian market is similar to the U.S. Dielectric led the American repack movement and we have supplied well over 100 antenna to Brazil since 1977.

EXPERIÊNCIA DA DIELECTRIC E A TV 3.0 NO BRASIL.

Brasil está comprometido com a adoção da terceira geração de TV Digital, a DTV+, que incorpora diversas inovações empregando tecnologias de ponta já utilizadas em outros países. Em abril de 2025, começaram os testes da TV 3.0 nas cidades do Rio de Janeiro, com excelentes resultados e até o final deste ano as cidades de São Paulo e Brasília também serão contempladas. A DTV+ representa a nova geração da televisão aberta e gratuita no país, com foco na modernização da experiência do usuário, imagem 4K, som imersivo, interatividade entre outras inovações.

A Dielectric desenvolveu as antenas MIMO da Série TEM, projetadas especialmente para este novo padrão brasileiro, disponibilizando o que há de mais moderno em tecnologia de transmissão. A Dielectric combina décadas de experiência com uma visão de futuro, aplicando conceitos como planejamento e design de sistemas irradiantes definidos por software. Nossa equipe de engenheiros de RF altamente qualificados, nos ajudam a levar a inovação a um novo patamar.

Quaisquer que sejam as novas tecnologias que surjam, há grandes chances de que elas comecem aqui, na sede mundial da Dielectric em Maine, EUA.

Estamos ansiosos para atender às suas necessidades personalizadas rumo ao futuro.

DIELECTRIC EXPERIENCE AND TV 3.0 IN BRAZIL.

Brazil is committed to the adoption of a new digital standard known as TV 3.0. The new Brazilian TV standard will be composed of several cutting-edge technologies already available in other countries. In April 2025 trials began in the cities of Sao Paulo and Rio de Janeiro with excellent results. TV 3.0 represents the next generation of open and free TV in the country, with a focus on modernizing the user experience and improving image and sound quality.

Dielectric has developed the TEM Series MIMO antennas specifically for the new Brazilian TV 3.0 television standard, putting the best technology at your fingertips. Dielectric combines decades of experience with a vision for the future in software-defined planning and design. We employ many of today's brightest RF engineers, who help us drive innovative products to the next level.

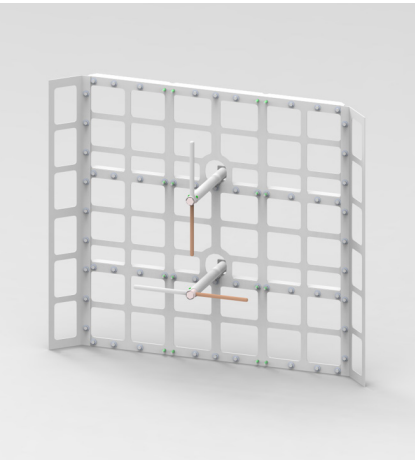
Whatever new technologies emerge, there's a good chance they'll start here at Dielectric world headquarters in Maine, USA. We look forward to meeting your customized needs for the future.

Key Features

- Designed specifically for the extended band, MIMO DTV+ applications
- Ease of Installation
- Reliability. Low part count yields longevity in field
- MIMO antenna as specified by Brazilian broadcasters
- Stainless steel and aluminum designs available

Electrical Specifications

Operating Frequency	300 MHz Extended Band and Band III
Polarization	Horizontal / Vertical
Horizontal Pattern	Omni (+/- 3dB) Custom Directional Pattern Available
Beam Tilt	0 to 5 degrees
Null Fill	> 10%
Horizontal to Vertical Isolation	>25 dB
Antenna Input	2 x 3 1/8" EIA
Radiator Input	2 x 7/16 DIN
Antenna Input Power	30 kW Per Polarization
Radiator Input Power	1 kW Per Polarization
Input VSWR	1.1:1 Channel

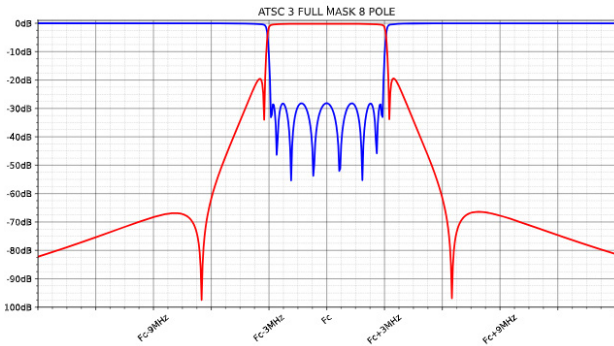
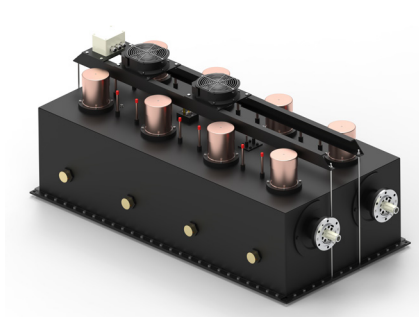


Mechanical Specifications

Power Band Center (MHz)	EPA _{side} (ft²)	EPA _{front} (ft²)	W (lbs)*
271	2.6	9.5	48
195	4	18	65

*Aluminum panels with side fins

Notes: _____



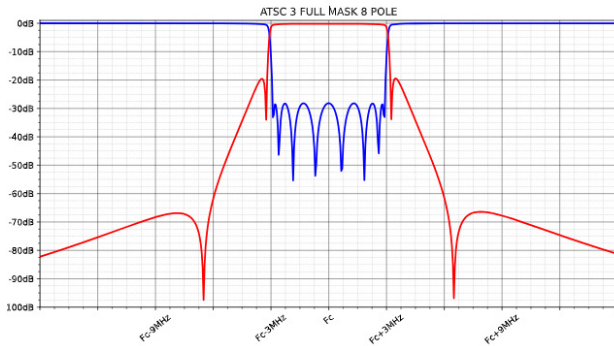
Key Features

- Proven 8 pole coaxial filter
 - Hundreds shipped in past 5 years for VHF and UHF
 - Proven technology scaled to 300 MHz design channels
- Multiple power levels
 - Low insertion loss
 - Air cooled
 - Compact design making it easily fit not all transmitter rooms

Technical Specifications

Mask		ATSC 3.0 Critical - fo (+/- 2.915 MHz)		
Model Number		300-8D13F-7K	300-8D13F-20K	300-8D13F-30K
Maximum Input Power (W)		7,000	20,000	30,000
Input Size		1 5/8" 50Ω	3 1/8" 50Ω	4 1/16" 50Ω
Output Size		1 5/8" 50Ω	3 1/8" 50Ω	4 1/16" 50Ω
Cooling		Convection	Forced Air (Fans) 120/230V - 15A	
Operating Channel		TBD		
Operating Frequency		TBD		
Frequency Range		231 MHz - 363 MHz		
Channel Bandwidth		6 MHz		
Insertion Loss @ Fo		≤ 0.35 dB		
Insertion Loss @ Band Edge		≤ 1.15 dB		
Attenuation	+/-3.25 MHz	≥ 15 dB		
	+/-4.5 MHz	≥ 18 dB		
	+/-9.0MHz	≥ 64 dB		
Group Delay Variation		< 730 nsec		
VSWR/Return Loss		<1.10 : 1 / >26.4 dB		
Ambient Temperature		32 °F to 104 °F (0 °C to 40 °C)		
Storage Temperature		14 °F to 131 °F (-10 °C to 55 °C)		
Humidity		< 95% Non-Condensing		
Altitude		10,000 ft (3,048 m)		
Dimensions		53.5" X 27" X 15" (135.89 cm X 68.58" cm X 38.10 cm)		
Weight		390 lbs (176.9 kg)		

Notes:
1. Seek Dielectric Factory Assistance For Any Site Elevation Over 10000ft
2. All specs are subject to change



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Technical Specifications

Mask		ATSC 3.0 Critical - fo (+/- 2.915 MHz)		
Model Number		HT8D8F-8K	HT8D8F-8K	HT8D8F-8K
Maximum Input Power (W)		8,000	8,000	10,000
Input Size		1 5/8" 50Ω	3 1/8" 50Ω	3 1/8" 50Ω
Output Size		1 5/8" 50Ω	3 1/8" 50Ω	3 1/8" 50Ω
Cooling		Convection		Forced Air (Fans) 120/230V - 15A
Operating Channel		7 - 13		
Operating Frequency		TBD		
Frequency Range		174 MHz - 216 MHz		
Channel Bandwidth		6 MHz		
Insertion Loss @ Fo		≤ 0.14 dB		
Insertion Loss @ Band Edge		≤ 1.55 dB		
Attenuation	+/-3.25 MHz	≥ 15 dB		
	+/-4.5 MHz	≥ 18 dB		
	+/-9.0MHz	≥ 64 dB		
Group Delay Variation		< 730 nsec		
VSWR/Return Loss		<1.10 : 1 / >26.4 dB		
Ambient Temperature		32 °F to 104 °F (0 °C to 40 °C)		
Storage Temperature		14 °F to 131 °F (-10 °C to 55 °C)		
Humidity		< 95% Non-Condensing		
Altitude		2,000 ft (609.6 m)		
Dimensions		42" X 20" X 33" (106.68 cm X 50.8" cm X 83.82 cm)		
Weight		165 lbs (74.8 kg)		

Notes:
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