

# RF/ MICROWAVE POWER COMPONENTS FOR LINAC APPLICATIONS



## POWER Components For LINAC Applications



Klystrons | Thyratrons



Magnetrons | Electron Emitters



Inductive Output Tubes



Solid-State Power Amplifiers

### Industrial Applications

- \* Cooking | Tempering | Drying
- \* Plasma Reactor | Sintering | Semiconductor Ion Implanting (Doping)
- \* Diamond | Materials Processing
- \* Water Purification | Sterilization/ Waste Treatment
- \* Cargo Screening
- \* Non-Destructive Testing (NDT)
- \* Polymer Modification, Up/Recycling, Per- and polyfluoroalkyl substances (PFAS) Processing
- \* Broadcasting (TV Stations)
- \* Laser Machining
- \* Green Energy | Decarbonization
- \* MW Accelerator | Chemical/ Catalyst/ MW Pyrolysis Reforming Processes

### Medical & Scientific Applications

- \* Research & Development
- \* Body Screening
- \* Stereotactic / Cancer Surgery
- \* Laser Dermatology / Skin Surgery
- \* Refractive Eye Surgery
- \* Radiotherapy
- \* Biomass Sterilization
- \* PPE Sterilization

Together, We Can Go Farther.

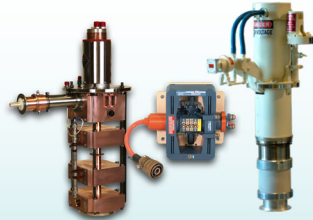
## OVERVIEW

Stellant Systems, Inc. (Stellant) has decades of experience as a LINAC products manufacturer, delivering a large portfolio of RF & Microwave Amplifier solutions with various energy outputs. From our knowledge of high-voltage and RF power engineering, we understand that RF systems need components and interfaces that are refined to work together to achieve sound performance, reliability and ease of use.

### KLYSTRONS

Stellant offers a variety of klystrons for use in particle accelerators for scientific, medical, and industrial applications.

These klystrons provide **up to 5.5 MW peak at 2.856 or 2.9985 GHz** at various RF pulse lengths and duty.



Model	Details	Ranges
L5822	S Band (2856 MHz)	5.5 KW Pk min.
L6145	X Band (9300 MHz)	5 MW Pk min.

### ELECTRON EMITTERS

Stellant is a key supplier of Electron Emitters designed for use in a wide variety of ultra high vacuum (UHV) surface physics, space physics, and processing applications. Our Electron Emitters are also used in medical systems to produce X-rays using a LINAC: where a high energy electron beam hits a target, stimulating emission of X-rays.



Model	Details	Ranges
WM059252 or WM059254	0.25" Cathode Diameter	9-15KV (Nom 12KV), Mix 3:1:1 or Mix 5:3:2

### THYRATRONS & SPARK GAPS

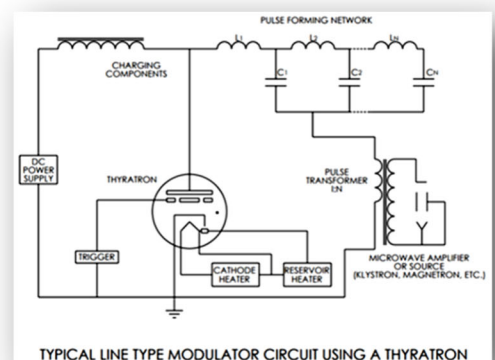
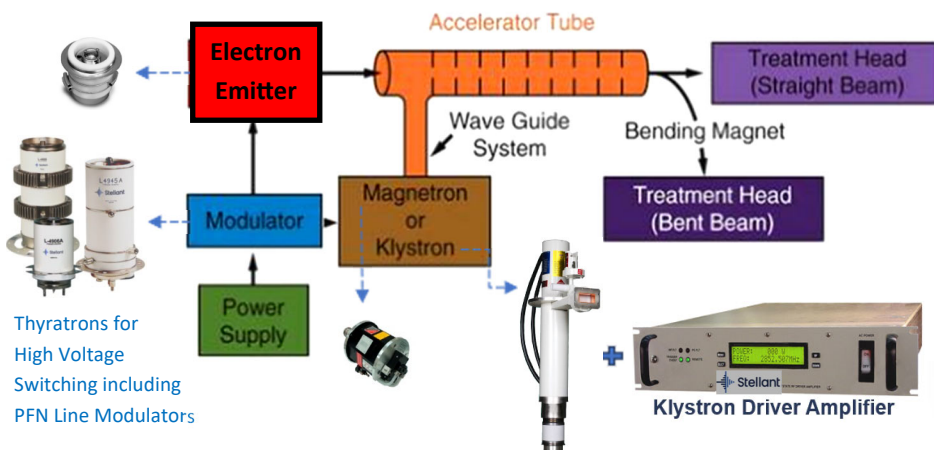
Stellant Thyratrons & Spark Gaps provide robust & reliable High-Voltage Switch Protection for a multitude of Scientific and Medical & Industrial (including E-Beam) applications including: laser machining, eye, & skin surgery, Lithotripsy, Klystron & IOT Line type modulator, kicker & crowbar circuit protection, high/directed energy surge protection, & large motor testing .

Model	Peak Anode Voltage (kv)	Peak Anode Current (A)
L4022	50	15,000
L4888	55	15,000
L4888B	50	10,000
L4886A	33	2,000
L4904A	35	1,750



We offer a complete portfolio of Thyratrons & Spark Gaps. See sample listing. Contact us for more models & details.

### LINAC & Related PFN Parts Diagram—Illustrated with Stellant Products



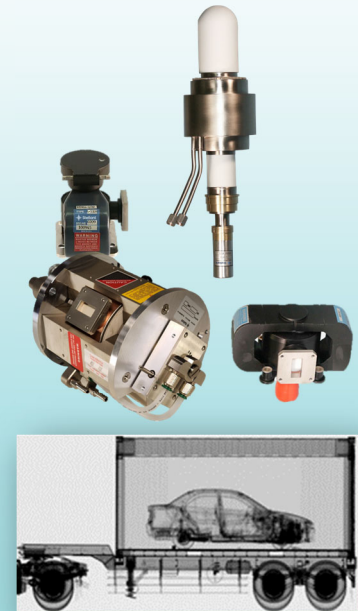
Thyratrons for High Voltage Switching including PFN Line Modulators

## MAGNETRONS

Our magnetrons power the linear accelerators to drive reliable and efficient medical & industrial systems. They can help producing the high-energy required for x-rays that destroy cancer cells. They can also be optimized for dual energy cargo scan applications, NDT, and offer superior efficiency for plasma & catalysis applications where the cost per KW is paramount. We work with all the leading system manufacturers to develop state-of-the-art devices, from custom design and R&D to manufacture, installation & service

Model	Details	Ranges
L0015	S Band (2450 +/- 30 MHz)	15/20 kW CW
L4021 LP *	S-Band 2.6 MW	2.6MW +
L4021 HP *	S-Band 3.1 MW	3.1MW +
L0075/ L0100	L Band (896,915,922,929 MHz)	75 KW CW/ 100 KW CW
L0125/L0150/L0200*	L Band (905-925 MHz)	125/150/200KW CW *
L4533	X Band (9375+/- 20 MHz)	70KW Pk Pwr
L6170-01, 03, 04	X Band (9275-9325 MHz)	1.7 MW Pk min, 1360 W avg 2 MW Pk min, 240 W Avg 2 MW Pk min, 400 W Avg

\* Denotes prospect under consideration/ consult factory.



## SOLID-STATE POWER AMPLIFIERS

Stellant PST offers Solid-State High-Power Broadband Amplifiers from 1 MHz to 18GHz, 10 to ~30kW in a 46,000 sq. ft. facility in Melville, NY. We design, develop, test, integrate & manufacture all in one facility.



Model	Details	Ranges
SSPA2856-240	S-Band (2852-2860 MHz)	2856MHz ± 4 MHz



## Inductive Output Tubes (IOT)

Stellant's inductive output tubes (IOTs) are amplifying devices for use in high-power transmitters. They are used world-wide as a more efficient replacement for the Klystron at UHF. They operate in the UHF-TV frequency range of 470 to 810 MHz.

Model	Details	Ranges
L444C	UHF-TV CW 80 kw Tube and Trolley	470 to 810 MHz
IOT4480	UHF-TV	470 to 810 MHz
CEA4201	UHF-TV	470 to 810 MHz



Stellant Systems is a premier manufacturer of critical spectrum and RF power amplification products to the space, defense, medical, science and industrial markets for both domestic and international customers.

Stellant has 5 domestic manufacturing facilities and approximately 1,100 employees.

## History of Innovation

Our business started as Charles Litton's Engineering Laboratories in 1932 (Redwood City, CA) and Howard Hughes' Electron Tube Laboratory in 1959 (Culver City, CA).

Along the way, there have been multiple acquisitions and consolidation of divisions that operated under larger organizations such as Sylvania, Loral, GM Hughes, Sperry, GE, RCA, Boeing, L3Harris and Comtech —to name a few.

This heritage is preserved and continues today as Stellant Systems.



## Our Business

- \* Approximately 1100 employees
- \* 5 manufacturing facilities — ISO 9001:2015, AS9100:2016, DCMA certified
- \* ONLY Vertically Integrated Space TWTA supplier in the world
- \* ONLY manufacturer of space-qualified TWTs in the USA



[StellantSystems.com](http://StellantSystems.com)



## Facilities



### Torrance, CA (Headquarters)

3100 Lomita Blvd.  
Torrance, CA 90505  
T: 310-517-6000

460,000 sq. ft.  
ISO 9001:2015 & AS9100:2016



### Williamsport, PA

1035 Westminster Dr.  
Williamsport, PA 17701  
T: 570-326-3561

210,000 sq. ft.  
ISO 9001:2015 & AS:9100:2022



### Folsom, CA

107 Woodmere Rd.  
Folsom, CA 95630  
T: 916-351-4500

57,000 sq. ft.  
ISO 9001:2015 & AS9100:2016



### Power Systems Technology

105 Baylis Road  
Melville, NY 11747  
T: 631-777-8900

46,000 sq. ft.  
ISO 9001:2015 &  
AS9100:2016

417 Boston Street  
Topsfield, MA 01983  
T: 978-887-5754

8,000 sq. ft.  
ISO 9001:2015

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