

Use this Model Number Definition to specify part numbers when ordering T, ST, WT, and CT Series dry loads.

* Termination Model Number Definition: **100 - T - FN**

Power Rating (Watts) Product Type T, WT – Convection-cooled CT – Conduction-cooled ST – Square Convection Cooled	Connector Gender F – Female M – Male	Connectors+ A – SMA B – BNC E – IEC 7/16 N – N T – TNC	+ Call for custom connector options not shown in this catalog
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MODELS 0.5-T, 2-T, 5-T, 10-T

Models	0.5-T	2-T *	5-T **	10-T ***
Power Rating	1/2 Watt	2 Watt	5 Watt	10 Watt
Connector	SMA	BNC, N, TNC, SMA	BNC, N, TNC, 7/16	BNC, N, TNC, 7/16, SMA
Frequency Range	DC to 4 GHz			
VSWR	1.25:1 max.			
Ambient Temperature	-40 °C to +40 °C			
Operating Position	Any			
Coolant	Dry (Convection cooled)			
Finish	Silver or Tri-Alloy			Black Anodized (Silver or Tri-Alloy Connectors)
Dimensions	1.6" L x 0.8" dia.	1.6" L x 0.8" dia.	2.85" L x 0.8" dia.	2.5" x 2.3" x 2.6"
Weight	1.9 oz.	1.9 oz.	1.9 oz.	3.0 oz.



*Note: The 2-T is rated up to 6 GHz for the TNC(F), N(M), N(F), and SMA(M) connectors.

**Note: The 5-T is rated up to 6 GHz for the N(F) and up to 10 GHz for the N(M) connectors.

***Note: The 10-T is rated up to 10 GHz for the N(M) connectors.

MODELS 25-T, 50-T, 75-T, 100-T

Models	25-T	50-T	75-T	100-T
Power Rating	25 Watt	50 Watt	75 Watt	100 Watt
Connector	BNC, N, TNC, 7/16, SMA	BNC, N, TNC, 7/16, SMA	BNC, N, TNC, 7/16, SMA	BNC, N, TNC, 7/16
Frequency Range	DC to 4.0 GHz			
VSWR	1.25:1 max.			
Ambient Temperature	-40 °C to +40 °C			
Operating Position	Any			
Coolant	Dry (Convection cooled)			
Finish	Black Anodized Aluminum			
Dimensions	5.2" x 2.3" x 2.6"	5.3" x 2.3" x 2.6"	7.3" x 2.3" x 2.6"	7.3" x 6.4" x 2.6"
Weight	7 oz.	1.1 lbs.	1.3 lbs	3.6 lbs.



MODELS 25-6T, 50-6T, 100-6T

Models	25-6T	50-6T	100-6T
Power Rating	25 Watt	50 Watt	100 Watt
Connector	N	N	N
Frequency Range	DC to 6.0 GHz		
VSWR	1.20:1 max.	1.20:1 max.	1.40:1 max.
Ambient Temperature	-40 °C to +40 °C		
Operating Position	Any	Any	Heat Sink Vertical
Coolant	Dry (Convection cooled)		
Finish	Black Anodized Aluminum		
Dimensions	3.5" L x 2.3" sq.	4.0" L x 3.0" sq.	5.5" x 3.8" x 3.5"
Weight	13.3 oz.	1.6 lbs.	2.2 lbs.



MODELS 2-18T, 5-18T, 10-18T, 25-18T, 50-18T

Models	2-18T	5-18T	10-18T	25-18T	50-18T
Power Rating	2 Watt	5 Watt	10 Watt	25 Watt	50 Watt
Connector	N, SMA	N	N	N	N
Frequency Range	DC to 18 GHz				
VSWR	1.25:1 max.	1.35:1 max.	1.35:1 max.	1.40:1 max.	1.45:1 max.
Ambient Temperature	-65 °C to +125 °C				
Operating Position	Any				
Coolant	Dry (Convection cooled)				
Finish	Stainless Steel	Black Anodized Aluminum			
Dimensions	1.0" L x 0.86" dia.	1.4" L x .86" dia.	1.7" L x 1.0" dia.	3.5" L x 2.3" sq.	4.0" L x 3.0" sq.
Weight	2.0 oz.	2.0 oz.	2.0 oz.	13.3 oz.	1.6 lbs.





25-CT-FA, 25 CT-MA (25 Watt)**

Power Rating 25 W max. @ 100°C flange temperature, derated to 0 W @ 150°C

Connectors SMA

Frequency Range and VSWR DC to 1 GHz at 1.15:1 max., 1 GHz to 3 GHz at 1.25:1 max.

Operating Position Any

Coolant Dry (Conduction cooled)

Finish Silver or Tri-alloy plated

Nominal Size 0.9" L x 1.0" W x 0.5" H, (includes connector) (22.9 mm x 25.4 mm x 12.7 mm)

Base to Connector Center 0.25" (6.4 mm)

Mounting Centers 0.614" (15.6 mm)

Weight 0.4 oz. (11.4 g)



100-ST SERIES (100 WATT)

Connectors BNC, N, TNC, IEC 7/16

Frequency Range DC to 1 GHz at 1.10:1 max., 1 GHz to 4 GHz at 1.25:1 max.

Ambient Temp. -40°C to +40°C

Operating Position Any

Coolant Dry (Convection cooled)

Finish Black anodized fins.

Nominal Size Silver or Tri-alloy plated connector (with N-type connector): 6.95" H x 2.75" W x 2.75" D, (174 mm x 69.9 mm x 69.9 mm)

Weight 2.62 lbs. (1.20 kg)



150-T SERIES (150 WATT)*

Connectors BNC, N, TNC, IEC 7/16

Frequency Range and VSWR DC to 1 GHz at 1.10:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.

Ambient Temp. -40°C to +40°C

Operating Position Vertical

Coolant Dry (Convection cooled)

Finish Black semigloss paint per Federal Standard 595.

Nominal Size Silver or Tri-alloy plated connector (with N-type connector): 10.87" H x 2.6" W x 6.8" D, (276.1 mm x 66.1 mm x 172.8 mm)

Weight 6.0 lbs. (2.73 kg)



* WT SERIES also available

** When mounted to a suitable heatsink capable of maintaining a 100°C or lower flange temperature.



50-CT-FA, 50-CT-MA (50 WATT)**

Power Rating 50 W max. @ 100°C flange temperature, derated to 0 W @ 150°C

Connectors SMA

Frequency Range and VSWR DC to 3 GHz at 1.15:1 max., 3 GHz to 6 GHz at 1.25:1 max.

Operating Position Any

Coolant Dry (Conduction cooled)

Finish Silver or Tri-alloy plated

Nominal Size 0.86" L x 0.75" W x 0.39" H, (includes connector) (21.9 mm x 19.2 mm x 10.0 mm)

Base to Connector Center 0.162" (4.12 mm)

Mounting Centers 0.52" (13.3 mm)

Weight 1.1 oz. (31.2 g)



100-CT-FA, 100-CT-MA (100 WATT)**

Power Rating 100 W max. @ 100°C flange temperature derated to 0 W at 150°C

Connectors SMA

Frequency Range and VSWR DC to 2 GHz at 1.15:1 max., 2 GHz to 3 GHz at 1.25:1 max.

Operating Position Any

Coolant Dry (Conduction cooled)

Finish Silver or Tri-alloy plated

Nominal Size 1.34" L x 1.375" W x 0.56" H, (includes connector) (34.1 mm x 35 mm x 14.3 mm)

Base to Connector Center 0.26" (6.6 mm)

Mounting Centers 0.625" x 1.125" (15.9 mm x 28.6 mm)

Weight 1.0 oz. (28.4 g)



150-ST SERIES (150 WATT)

Connectors BNC, N, TNC, IEC 7/16

Frequency Range and VSWR DC to 1 GHz at 1.10:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.

Ambient Temp. -40°C to +40°C

Operating Position Vertical

Coolant Dry (Convection cooled)

Finish Black anodized fins.

Nominal Size Silver or Tri-alloy plated connector (with N-type connector): 7.54" H x 4.0" W x 4.0" H, (189 mm x 100 mm x 100 mm)

Weight 5.0 lbs. (2.30 kg)



Termaline® RF Coaxial Termination



150-CT SERIES (150 WATT)**

Power Rating	150 W max. @ 100°C flange temperature, derated to 0 W @ 150°C
Connectors	BNC, N, TNC, SMA
Frequency Range and VSWR	DC to 1 GHz at 1.15:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.
Operating Position	Any
Coolant	Dry (Conduction cooled)
Finish	Silver or Tri-alloy plated
Nominal Size	(with N connector): 1.86" L x 1.25" W x 1.062" H, (47.3 mm x 31.8 mm x 27.0 mm)
Base to Connector Center	0.531" (13.5 mm)
Mounting Centers	0.575" x 0.825" (14.6 mm x 21.0 mm)
Weight	(with N connector): 2.2 oz. (62.5 g)



250 CT-SERIES (250 WATT)**

Power Rating	250 W max. @ 100°C flange temperature, derated to 0 W @ 150°C
Connectors	BNC, N, TNC, SMA
Frequency Range and VSWR	SMA: DC to 2 GHz at 1.15:1 max., 2 GHz to 3 GHz at 1.25:1 max.; All Others: DC to 1 GHz at 1.15:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.
Operating Position	Any
Coolant	Dry (Conduction cooled)
Finish	Silver or Tri-alloy plated
Nominal Size	(includes connector) 2.36" L x 2.00" W x 1.062" H, (60.0 mm x 50.8 mm x 27.0 mm)
Base to Connector Center	SMA: 0.26" (6.6 mm), N: 0.515" (13.1 mm)
Mounting Centers	0.875" x 1.625" (22.3 mm x 41.3 mm)
Weight	(with N connector) 5.2 oz. (147.6 g)



300-T SERIES (300 WATT) (WT SERIES also available)

Connectors	BNC, N, TNC, IEC 7/16
Frequency Range and VSWR	DC to 1 GHz at 1.10:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.
Ambient Temp.	-40°C to +40°C
Operating Position	Vertical
Coolant	Dry (Convection cooled)
Finish	Black semigloss paint per Federal Standard 595. Silver or Tri-alloy plated connector
Nominal Size	(with N-type connector): 10.9" H x 5.4" W x 16.8" D, (276.9 mm x 137.2 mm x 172.8 mm)
Weight	11.5 lbs. (5.23 kg)



MODEL 8135 (150 WATT)

Power Rating	150 W continuous
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 to 2.5 GHz at 1.2 max. 2.5 to 4 GHz at 1.3 max.
Ambient Temp.	-40°C to +45°C
Connector	QC type (Female N normally supplied)
Operating Position	Horizontal only
Load Coolant	0.1 gal. (380 ml) refined mineral oil
Finish	Gray powder coat
Nominal Size	9 1/2" L x 6 11/32" H x 3 15/16" W, (241 mm x 161 mm x 100 mm)
Weight	6.0 lbs. (2.7 kg)



MODEL 8141 (250 WATT)

Power Rating	250 W continuous
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 GHz to 1.8 GHz at 1.2 max., 1.8 to 2.5 GHz at 1.3 max.
Ambient Temp.	-40°C to +45°C
Connector	QC type (Female N normally supplied)
Operating Position	Horizontal only
Load Coolant	0.35 gal. (1.3 liters) silicone oil
Finish	Gray powder coat
Nominal Size	9 9/16" L x 8 1/2" H x 5 15/16" W, (243 mm x 216 mm x 151 mm)
Weight	10 lbs. (4.5 kg)



MODEL 8072A-1 (300 WATT)**

Power Rating	300 W continuous @ 100°C case temperature
Connectors	N female
Frequency Range and VSWR	DC to 1 GHz at 1.10:1 max., 1 to 2.5 GHz at 1.20:1 max.
Ambient Temp.	-40°C to +45°C
Operating Position	Any
Coolant	Dry (Conduction cooled)
Finish	Silver or Tri-alloy, Silver plated or Tri-alloy connectors
Nominal Size	(with N-type connector): 4.4" L x 2" W x 1.3" H, (110 mm x 51 mm x 26 mm)
Weight	12 oz. (340 g)



** When mounted to a suitable heatsink capable of maintaining a 100°C or lower flange temperature.



500-WT SERIES (500 WATT)

Connectors N, TNC, IEC 7/16
Frequency Range and VSWR DC to 1 GHz at 1.10:1 max., 2.5 GHz at 1.25:1 max.
Operating Position Any, except mounting surface up
Coolant Dry (Convection cooled)
Finish Black anodized fins, tri-alloy plated connectors (with female N-type connector; excludes removable feet):
Nominal Size 10.59" L x 5.4" W x 4.3" H, (266.7 mm x 137.2 mm x 109.3 mm)
 1.812" x 7.687",
4 Mounting Holes, Center and Size typical 10-32 thread x 0.5" D
Weight 7.8 lbs. (3.6 kg)



MODEL 8201 (500 WATT)

Power Rating 500 W continuous
Frequency Range and VSWR DC to 1 GHz at 1.1 max., 1 GHz to 2.5 GHz at 1.25 max.
Ambient Temp. -40°C to +45°C
Connector QC type (Female N normally supplied)
Operating Position Horizontal only
Load Coolant 0.9 gal. (3.42 liters) refined mineral oil
Finish Gray powder coat
Nominal Size 16 13/16" L x 5 15/16" W x 8 1/2" H (427 mm x 151 mm x 216 mm)
Weight 21 lbs. (9.5 kg)



MODEL 8401 (600 WATT)

Power Rating 600 W continuous
Frequency Range and VSWR DC to 1 GHz at 1.1 max., 1 GHz to 2.8 GHz at 1.2 max., 2.8 GHz to 3 at 1.3 max.
Ambient Temp. -40°C to +45°C
Connector QC type (Female N normally supplied)
Operating Position Horizontal only
Load Coolant 0.7 gal. (2.65 liters) refined mineral oil
Finish Gray powder coat
Nominal Size (16 13/16" H x 8 1/2" W x 5 15/16" D, (427 mm x 216 mm x 151 mm)
Weight 20 lbs. (9.1 kg)



500-CT SERIES (500 WATT)**

Power Rating 500 W max. @ 100°C flange temperature, derated to 0 W @ 150°C
Connectors BNC, N, TNC, SMA, IEC 7/16
Frequency Range and VSWR DC to 1 GHz at 1.10:1 max.
Operating Position Any
Coolant Dry (Conduction cooled)
Finish Silver or Tri-alloy plated
Nominal Size **N:** 2.36" L x 2.00" W x 1.062" H, (60.0 mm x 50.8 mm x 27.0 mm); **IEC 7/16:** 2.80" L x 2.00" W x 1.20" H, (71.2 mm x 50.8 mm x 30.5 mm)
Base to Connector Center **N:** 0.515 (13.1 mm)
Mounting Centers **IEC 7/16:** 0.675" (17.2 mm)
Weight **N:** 8.2 oz. (232.9 g), **IEC 7/16:** 6.0 oz. (170.3 g)



600-T-QFN (600 WATT)

Frequency Range and VSWR DC to 1 GHz at 1.10:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.
Ambient Temp. -40°C to +40°C
Connector QC type (Female N supplied)
Coolant Dry (Convection cooled)
Finish Black anodized fins, tri-alloy plated connector
Nominal Size 12.25" L x 9.65" W x 8.875" H
Weight 21.5 lbs.
Accessories QC Connector



1000-WT (1000 WATT)

Connectors N, TNC, IEC 7/16
Frequency Range and VSWR DC to 1 GHz at 1.10:1 max., 1 GHz to 2.4 GHz at 1.25:1 max.
Operating Position Any, except mounting surface up
Coolant Dry (Convection cooled)
Finish Black anodized fins, tri-alloy plated connectors (with female N-type connector; excludes removable feet):
Nominal Size 17.98" L x 8.95" W x 4.3" H
 1.885" x 14.65",
4 Mounting Holes, Center and Size typical 1/4 - 20 thread x 0.5" D
Weight 26.5 lbs. (12.1 kg)



** When mounted to a suitable heatsink capable of maintaining a 100°C or lower flange temperature.

Bird® Digital Conduction Cooled Loads

Bird Technologies Group is proud to offer an extension to its line of Conduction-Cooled Dry Terminations. These loads are specifically designed for use in Digital Power applications and are capable of handling a large amount of average power for a conduction cooled load as well as power spikes as high as 20 times the maximum average power.

- Rugged Reliability provides years of trouble free use
- Handles >13 dB Peak to Average power ratio
- 1.25:1 Maximum VSWR
- Fully shielded against the production of extraneous radiation
- Compact size, lightweight
- Easy to use



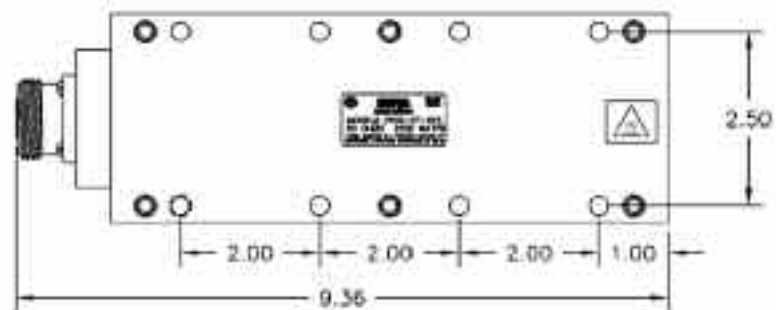
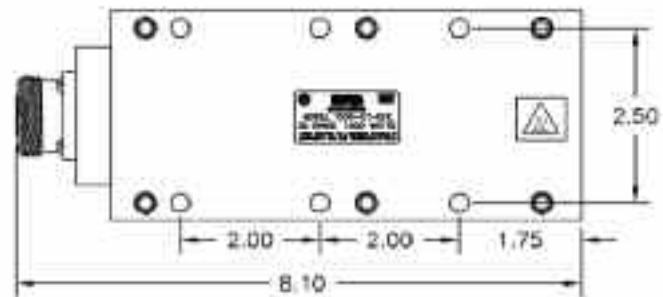
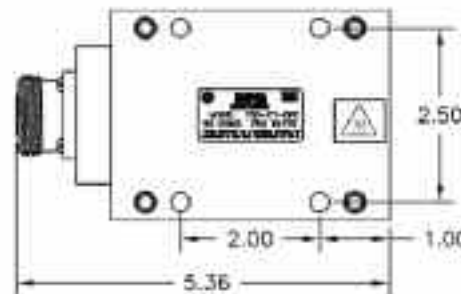
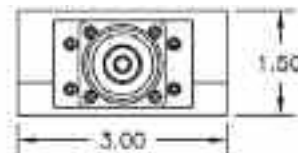
APPLICATIONS

This family of Digital Conduction Cooled loads is ideally suited to both primary applications for loads: in Dummy Load applications, where the load must terminate the full generated power, and in Reject Load applications, where power must be dissipated continuously on the reject port of a combining system.

SPECIFICATIONS

Power Rating*	750 CT: 750 W 1500 CT: 1.5 kW 2500 CT: 2.5 kW
Frequency Range	460-890
Peak to Average Power	>13 dB
VSWR	1.25:1 max
Impedance	50 Ohms (nominal)
Connector "QC"	7/16 DIN Female normally supplied
Coolant	Dry (Conduction Cooled)
Dimensions (mm)	750 CT 5.36" x 3.00" x 1.50" (138 mm x 78 mm x 38 mm) 1500 CT 8.10" x 3.00" x 1.50" (208 mm x 78 mm x 38 mm) 2500 CT 9.36" x 3.00" x 1.50" (240 mm x 78 mm x 38 mm)
Weight (kg)	750 CT: 2.3 lbs (1.1 kg) 1500 CT: 3.5 lbs (1.6 kg) 2500 CT: 4.2 lbs (2 kg)
Operating Position	Any
Protection Rating	IP60
Ambient Temperature	-40°C to +55°C
Finish	Chromate Coating on Aluminum/Copper
RoHS Compliant	Yes

*When mounted in a heatsink capable of maintaining a maximum case temperature of 100°C





8251 SERIES
Model 8251 & 8251N (1 kW)

Power Rating	1000 W continuous
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 GHz to 2 GHz at 1.25 max., 2 GHz to 2.4 at 1.3 max.
Ambient Temperature Range	-40°C to +45°C
Connector	QC type (Female LC normally supplied, and Female N normally supplied unmounted)
Operating Position	Horizontal only
Load Coolant	1.1 gal. (4.1 liters) silicone oil
Finish	Gray powder coat
Nominal Size	17 29/32" L x 5 15/16" W x 8 1/2" H (includes connector) (455 mm x 151 mm x 216 mm)
Weight	25 lbs., 8 oz. (11.5 kg)



8890-300 SERIES (2.5 kW)

Models	8890-300	8892-300*	8895-300	8891-300
Power Rating	2500 W continuous			
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 GHz to 2 GHz at 1.25 max., 2 GHz to 2.4 GHz at 1.3 max.			
Impedance	50 ohm nominal	50 ohm nominal	50 ohm nominal	50 ohm nominal
Ambient Temperature Range	-40°C to +45°C			
Connector	QC-LC (F)	1 5/8" EIA fig.	1 5/8" Unflg.	3 1/8" EIA fig.
Recess (In.)	—	0.625	0.438	0.922
Operating Position	Horizontal only			
Load Coolant	2.9 gal. (11 liters) silicone oil			
Finish	Gray powder coat			
Nominal Size	23 1/8" L x 7" W x 17 3/16" H, (587 mm x 178 mm x 437 mm)	23 1/8" L x 7" W x 17 3/16" H, (587 mm x 178 mm x 437 mm)	22 3/16" L x 7" W x 17 3/16" H, (564 mm x 178 mm x 437 mm)	25 1/8" L x 7" W x 17 3/16" H, (638 mm x 178 mm x 437 mm)
Weight	57 lbs. (26 kg)	58 lbs. (26 kg)	58 lbs. (26 kg)	59 lbs. (27 kg)



NOTE: Overload thermostwitch P/N 8890-008 is optional. Free assembly when ordered as a package.

* Available in special 8892D300 model for Digital Broadcast. VSWR = 1.065 max., 470 – 860 MHz.



8860 SERIES (1.5 kW)

Models	8860	8861	8862 & 8862 D	8863	8864 & 8864D
Power Rating	1500 W continuous				
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., (1.065 max., 470-860 MHz for "D" Model) 1 GHz to 2 GHz at 1.25 max.				
Ambient Temperature Range	-40°C to +45°C				
Connector	QC-LC (F)	1 5/8" Unflg.	1 5/8" EIA fig.	3 1/8" Unflg.	3 1/8" EIA fig.
Operating Position	Horizontal only				
Load Coolant	1.5 gal. (5.68 liters) silicone oil				
Finish	Gray powder coat				
Nominal Size	17 1/8" L x 7 1/2" W x 13 1/8" H, (445 mm x 184 mm x 333 mm)	17 7/8" L x 7 1/2" W x 13 1/8" H, (454 mm x 184 mm x 333 mm)	17 1/8" L x 7 1/2" W x 13 1/8" H, (445 mm x 184 mm x 333 mm)	18 5/8" L x 7 1/2" W x 13 1/8" H, (473 mm x 184 mm x 333 mm)	19 1/2" L x 7 1/2" W x 13 1/8" H, (495 mm x 184 mm x 333 mm)
Weight	30 lbs. (13.6 kg)	31 lbs. (14.1 kg)	31 lbs. (14.1 kg)	32 lbs. (14.5 kg)	32 lbs. (14.5 kg)



8890-300 SERIES with BA 310-115, -230 (5 kW)

Models with BA-300-***	8890 -315 -320	8892 -315 -320	8895 -315 -320	8891 -315 -320	8897 -315 -320
Power Rating	5000 W continuous with blower on, 1250 W with blower off				
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 GHz to 2 GHz at 1.25 max., 2 GHz to 2.4 GHz at 1.3 max.				
Impedance	50 ohm nominal	50 ohm nominal	50 ohm nominal	50 ohm nominal	50 ohm nominal
Ambient Temperature Range	-40°C to +45°C				
Connector	QC-LC (F)	1 5/8" EIA fig.	1 5/8" Unflg.	3 1/8" EIA fig.	3 1/8" Unflg.
Recess (In.)	—	0.625	0.438	0.922	0.0
Operating Position	Horizontal only				
Load Coolant	2.9 gal. (11 liters) silicone oil				
Finish	Gray powder coat				
Nominal Size	23 1/8" L x 7 3/8" W x 22 11/16" H, (587 mm x 187 mm x 560 mm)	23 1/8" L x 7 3/8" W x 22 11/16" H, (587 mm x 187 mm x 560 mm)	22 3/16" L x 7 3/8" W x 22 11/16" H, (564 mm x 187 mm x 560 mm)	25 1/8" L x 7 3/8" W x 22 11/16" H, (638 mm x 187 mm x 560 mm)	24 5/32" L x 7 3/8" W x 22 11/16" H, (614 mm x 187 mm x 560 mm)
Weight	70 lbs. (32 kg)	72 lbs. (33 kg)	72 lbs. (33 kg)	73 lbs. (33 kg)	73 lbs. (33 kg)



NOTE: Overload thermostwitch P/N 8890-008 is optional. Free assembly when ordered as a package. * Available in special 8892D320 model for Digital Broadcast. VSWR = 1.065 max., 470 – 860 MHz.

Specify 315 for 115 VAC Blower or 320 for 230 VAC Blower



8921 SERIES (5 kW OIL DIELECTRIC)

Models	8921	8922 & 8922D	8926 & 8926D	8927 & 8927D
Power Rating	5000 W continuous			
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., (1.065 max., 470-860 MHz for "D" Model)			
Ambient Temperature Range	-40°C to +45°C			
Connector	QC-LC (F)	1 5/8" EIA fig.	3 1/8" EIA fig.	3 1/8" Unflg.
Operating Position	Horizontal only			
Load Coolant	6 2/3 gal. (25.3 liters) silicone oil			
Finish	Gray powder coat			
Nominal Size	30 27/32" L x 9 1/2" W x 25 13/16" H, (783 mm x 241 mm x 656 mm)	30 27/32" L x 9 1/2" W x 25 13/16" H, (783 mm x 241 mm x 656 mm)	32 3/4" L x 9 1/2" W x 25 13/16" H, (832 mm x 241 mm x 656 mm)	31 7/8" L x 9 1/2" W x 25 13/16" H, (809 mm x 241 mm x 656 mm)
Weight	119 lbs. (54 kg)	121 lbs. (55 kg)	126.5 lbs. (57 kg)	126 lbs. (57 kg)



NOTE: An 8890-008 over-temperature interlock safety switch is optional.

* Available in special 8922 D model for Digital Broadcast. VSWR = 1.065 max., 470-860 MHz

Termaline® RF Coaxial Termination



8931-115, -230 SERIES (10 kW OIL DIELECTRIC)

Models	8931-**	8932-**	8936-**	8937-**
Power Rating	10 kW continuous with blower on, 2.5 kW with blower off			
Frequency Range and VSWR	DC to 400 MHz at 1.15 max., 400 MHz to 1 GHz at 1.20 max.			
Ambient Temperature Range	-40°C to +45°C			
Connector	QC-LC (F)	1 5/8" EIA fig.	3 1/8" EIA fig.	3 1/8" Unflg.
Operating Position	Horizontal only			
Load Coolant	6 2/3 gal. (25.3 liters) silicone oil			
Finish	Gray powder coat			
Nominal Size	30 7/32" L x 9 1/2" W x 33 5/16" H, (768 mm x 241 mm x 847 mm)	30 7/32" L x 9 1/2" W x 33 5/16" H, (768 mm x 241 mm x 847 mm)	32 1/8" L x 9 1/2" W x 33 5/16" H, (816 mm x 241 mm x 847 mm)	31 1/4" L x 9 1/2" W x 33 5/16" H, (793 mm x 241 mm x 847 mm)
Weight	135 lbs. (61 kg)	137 lbs. (62 kg)	142 lbs. (64.8 kg)	142 lbs. (64.5 kg)



NOTE: The 8892-333 blower control switch is included. The 8890-017 over-temperature interlock safety switch is optional.
** AC power 115 or 230 VAC, 50/60 Hz (add suffix -115 or -230 to Model number)

8710 SERIES (1 kW DIRECT WATER COOLED)



Models	8710F	8710M	8713
Power Rating	1000 W continuous		
Frequency Range and VSWR	DC to 1 GHz at 1.1 max., 1 GHz to 3 GHz at 1.3 max., 3 GHz to 3.5 GHz at 1.35 max.		
Water Temp Range	+8°C to +80°C		
Water Flow Rate	1 quart/minute @ 8°C to 3 gpm @ 80°C (.95 liters/minute @ 8°C to 2.84 lpm @ 80°C)		
Waterlines	1/8" FPT		
Connectors	N Female	N Male	7/8" EIA Fig.
Operating Position	Any		
Load Coolant	Potable water		
Finish	Silver plated		
Nominal Size	(excl. 18" waterlines) 3 21/32" L x 11/16" Dia., (93 mm x 17 mm)		
Weight	5 oz. (142 g)	5 oz. (142 g)	14 oz. (397 g)



8720, 8726 (5 kW DIRECT WATER COOLED)



Models	8720	8726
Power Rating	5 kW continuous	
Frequency Range and VSWR	DC to 500 MHz at 1.1 max., 500 MHz to 900 MHz at 1.15 max., 900 MHz to 2000 MHz at 1.25 max.	DC to 500 MHz at 1.1 max., 500 MHz to 2000 MHz at 1.25 max.
Water Temp Range	+5°C to +80°C	
Water Flow Rate	1 gal./minute @ 5°C to 4 gpm @ 80°C (3.8 liters/minute @ 5°C to 15.21 lpm @ 80°C)	
Waterlines	1/4" FPT	3/4" hose
Connectors	1 5/8" EIA Fig.	QC type (Female LC normally supplied)
Operating Position	Any	
Load Coolant	Potable water	
Finish	Bright nickel plated	
Nominal Size	(excl. 8" waterlines) 8 1/32" L x 1 5/8" Dia., (204 mm x 41 mm)	10 7/16" L x 1 5/8" Dia., (225 mm x 41 mm)
Input Flange	3 1/2" Dia.	—
Weight	2 lbs. (900 g)	2 1/2 lbs. (1.1 kg)



8730A, 8731, 8738A (10 kW Econoload®)



Models	8730A*	8731	8738A*
Power Rating	10 kW continuous		
Frequency Range and VSWR	1.1 max. DC to 1 GHz	1.1 max. 1 kHz to 1 GHz (DC for continuity checks)	1.1 max. DC to 1 GHz
Water Temp Range	+5°C to +60°C		
Water Flow Rate	4 gals./minute @ 5°C to 6 gpm @ 60°C (15.2 liters/minute @ 5°C to 22.8 lpm @ 60°C)		
Waterlines	1/2" FPT or 3/4" hose		
Connectors	1 5/8" EIA Fig.	3 1/8" EIA Fig.	3 1/8" Unflg. (Flush)
Operating Position	Any		
Load Coolant	Distilled water (<1KHz). Distilled or potable water (>1KHz).		
Finish	Black powder coat		
Nominal Size	14 3/4" L x 2 3/4" Dia., (375 mm x 70 mm)	14 3/4" L x 2 3/4" Dia., (375 mm x 70 mm)	14 3/4" L x 2 3/4" Dia., (375 mm x 70 mm)
Input Flange	3 1/2" Dia. (89 mm)	5 3/16" Dia. (132 mm)	—
Weight	7 lbs. 14 oz. (3.6 kg)	6 lbs. 10 oz. (3 kg)	6 lbs. (2.8 kg)

*Recommended for areas with water quality conditions





8745, 8746 (20 kW Econoload®)

Models	8745	8746
Power Rating	20 kW continuous	
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)	
Water Temperature Range	+5°C to +60°C	
Water Flow Rate	6 gal./minute @ 5°C to 8 gpm @ 60°C (22.8 liters/minute @ 5°C to 30.4 lpm @ 60°C)	
Waterlines	1/2" FPT or 3/4" hose	
Connectors	3 1/8" EIA Fig.	3 1/8" Unflg. (Flush)
Operating Position	Any	
Load Coolant	Potable water	
Finish	Black powder coat	
Nominal Size	19 1/2" L x 3 1/2" Dia., (495 mm x 90 mm)	
Input Flange	5 3/16" Dia. (132 mm)	
Weight	15 lbs. 13 oz. (7.2 kg)	15 lbs. 5 oz. (7 kg)



8755, 8756 (30 kW Econoload®)

Models	8755	8756
Power Rating	30 kW continuous	
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)	
Water Temperature Range	+5°C to +60°C	
Water Flow Rate	7 gal./minute @ 5°C to 9 gpm @ 60°C (26.6 liters/minute @ 5°C to 34.2 lpm @ 60°C)	
Waterlines	1/2" FPT or 3/4" hose	
Connectors	3 1/8" EIA Fig.	3 1/8" Unflg. (Flush)
Operating Position	Any	
Load Coolant	Potable water	
Finish	Black powder coat	
Nominal Size	19 1/2" L x 3 1/2" Dia., (495 mm x 90 mm)	
Input Flange	5 3/16" Dia. (132 mm)	
Weight	15 lbs. 13 oz. (7.2 kg)	15 lbs. 5 oz. (7 kg)



8765 (40 kW Econoload®)

Model	8765
Power Rating	40 kW continuous
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)
Water Temperature Range	+5°C to +60°C
Water Flow Rate	8 gal./minute @ 5°C to 10 gpm @ 60°C (30.4 liters/minute @ 5°C to 37.9 lpm @ 60°C)
Waterlines	1/2" FPT or 3/4" hose
Connectors	3 1/8" EIA Fig.
Operating Position	Any
Load Coolant	Potable water
Finish	Black powder coat
Nominal Size	19 1/2" L x 3 1/2" Dia., (495 mm x 90 mm)
Input Flange	5 3/16" Dia. (132 mm)
Weight	15 lbs. 13 oz. (7.2 kg)



8775, 8776 (50 kW Econoload®)

Models	8775	8776
Power Rating	50 kW continuous	
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)	
Water Temperature Range	+5°C to +60°C	
Water Flow Rate	9 gal./minute @ 5°C to 11 gpm @ 60°C (34.2 liters/minute @ 5°C to 41.8 lpm @ 60°C)	
Waterlines	1/2" FPT or 3/4" hose	
Connectors	3 1/8" EIA Fig.	3 1/8" Unflg. (Flush)
Operating Position	Any	
Load Coolant	Potable water	
Finish	Black powder coat	
Nominal Size	19 1/2" L x 3 1/2" Dia., (495 mm x 90 mm)	
Input Flange	5 3/16" Dia. (132 mm)	
Weight	15 lbs. 13 oz. (7.2 kg)	15 lbs. 5 oz. (7 kg)



8792 (80 kW Econoload®)

Model	8792
Power Rating	80 kW continuous
Frequency Range and VSWR	1.15 max. 1 kHz - 800 MHz (DC for continuity checks)
Water Temperature Range	+5°C to +60°C
Water Flow Rate	9 gal./minute @ 5°C to 12 gpm @ 60°C (34.2 liters/minute @ 5°C to 45.6 lpm @ 60°C)
Waterlines	1/2" FPT or 3/4" hose
Connectors	6 1/8" EIA Fig.
Operating Position	Any
Load Coolant	Potable water
Finish	Black powder coat
Nominal Size	34" L x 5" Dia., (864 mm x 127 mm)
Input Flange	8 1/8" Dia. (206 mm) add approximately 1 1/4" (32 mm) to length for rear water fitting
Weight	30 lbs. 10 oz. (14 kg)



Termaline® RF Coaxial Termination



8631B, 8635B, 8638B (10 kW Moduload®)

Models	8631B	8635B	8638B
Power Rating	10 kW continuous		
Frequency Range and VSWR	1.1 max. 1 kHz - 1000 MHz (DC for continuity checks)		
Ambient Temperature Range	(per power level and coolant mix) ≤10 kW: (100% Water) +5°C to +45°C; ≤10 kW: (35% Ethylene Glycol/65% Water) -20°C to +35°C		
Connector	3 1/8" EIA Flg.	1 5/8" EIA Flg.	3 1/8" Unflg.
Operating Position	Horizontal only		
Load Coolant	10 pts (4.75 liters) 100% water or 65% water/35% industrial Ethylene Glycol. With forced-air cooling		
Finish	Gray powder coat		
Nominal Size	22 1/8" L x 15 15/16" W x 15 13/16" D, (562 mm x 405 mm x 402 mm)		
Weight	110 lbs. (50 kg)		
AC power	115 V models: 9 1/2 A nominal @ 115 V ± 10% 60 Hz; 230 V models: 4 3/4 A nominal @ 230 V ± 10% 50 Hz		
Optional Dolly	P/N 6771-011		

Power	Add Suffix to Model
115 V 60 Hz	-115
230 V 50 Hz	-230



8645B, 8646B (25 kW Moduload®)

Models	8645B	8646B
Power Rating	25 kW continuous	
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)	
Ambient Temperature Range	(per power level and coolant mix) ≤25 kW: (100% Water) +5°C to +30°C; <20 kW: (100% Water) +5°C to +45°C; ≤25 kW: (35% Ethylene Glycol/65% Water) -20°C to +25°C; <20 kW: (35% Ethylene Glycol/65% Water) -20°C to +35°C	
Connector	3 1/8" EIA Flg.	3 1/8" Unflg.
Operating Position	Horizontal only	
Load Coolant	9 qts. (8.5 liters) 100% water or 65% water/35% industrial Ethylene Glycol. With forced-air cooling	
Finish	Gray powder coat	
Nominal Size	25 15/16" L x 19 5/32" W x 19 9/16" D, (659 mm x 487 mm x 497 mm)	
Weight	155 lbs. (70 kg)	
AC power	115 V models: 11 A nominal @ 115 V ± 10% 60 Hz; 230 V models: 5 1/2 A nominal @ 230 V ± 10% 50 Hz	
Optional Dolly	P/N 6771-011	

Power	Add Suffix to Model
115 V 60 Hz	-115
230 V 50 Hz	-230
230 V 60 Hz	-230-6



8655B, 8656B (50 kW Moduload®)

Models	8655B	8656B
Power Rating	50 kW continuous	
Frequency Range and VSWR	1.1 max. 1 kHz - 900 MHz (DC for continuity checks)	
Ambient Temperature Range	(per power level and coolant mix) ≥40 kW: (100% Water) +5°C to +30°C; <40 kW: (100% Water) +5°C to +45°C; ≥40 kW: (35% Ethylene Glycol/65% Water) -20°C to +25°C; <40 kW: (35% Ethylene Glycol/65% Water) -20°C to +35°C	
Connector	3 1/8" EIA Flg.	3 1/8" Unflg. (Flush)
Operating Position	Horizontal only	
Load Coolant	17 qts. (16.1 liters) 100% water or 65% water/35% industrial Ethylene Glycol. With forced-air cooling	
Finish	Gray powder coat	
Nominal Size	50 1/2" L x 19 5/32" W x 19 9/16" D, (1283 mm x 487 mm x 497 mm)	
Weight	275 lbs. (125 kg)	
AC power	115 V models: 14 A nominal @ 115 V ± 10% 60 Hz; 230 V models: 7 A nominal @ 230 V ± 10% 50 Hz	
Optional Dolly	P/N 6772B011	

Power	Add Suffix to Model
115 V 60 Hz	-115-6
230 V 50 Hz	-230-5
230 V 60 Hz	-230-6



8578B100, 8578B150 (10 kW, 15 kW, Dry, Forced Air Load)

Models	8578B100	8578B100-1	8578B150	8578B150-1
Power Rating	10 kW continuous	10 kW continuous	15 kW continuous	15 kW continuous
Frequency Range and VSWR	1.15:1, 87.5 - 108 MHz			
Ambient Temp.	-40°C to +40°C			
Connector	1 5/8" EIA Flanged (Swivel)	3 1/8" Unflg.	1 5/8" EIA Flanged (Swivel)	3 1/8" Unflg.
Operating Position	Any (except blockage of air inlets and exhaust)			
Load Coolant	Dry (forced air)			
Resistors	Tubular type, parallel connection, 50 ohm nominal			
Finish	Gray powder coat			
Nominal Size	39 7/32" H x 16 15/32" W x 13 7/16" D, (996 mm x 418 mm x 341 mm)			
Weight	58 lbs. (26.1 kg)		60 lbs. (27.2 kg)	
AC power	115/230 ± 10% VAC, 50/60 Hz 8.6 amps max. @ 115 VAC			



Bird® High-Power Forced Air Loads for Broadcast Applications

- Low maintenance and high reliability.
- Handles > 10 dB Peak to Average power ratio.
 < 1.05:1 typical VSWR (1.1:1 max.) across rated frequency range.
- Ductable exhaust and cool-to-the-touch exterior surfaces.
- Flanged and unflanged EIA & IEC industry standard connectors.
- Fully shielded against the production of extraneous radiation.
- Manual/automatic fan modes, plus interlock for overload protection.



Digital Air® Load

VHF

Impedance 50 ohm nominal
VSWR (DC-240 MHz) 1.05:1 typical, 1.10:1 maximum
Cooling Method Forced air-cooled
Peak to Average Power >10 dB
Ambient Temperature -40°C to +45°C (-40°F to +113°F)
Interlock Contact Rating 10 A @ 120 VAC, 5 A @ 250 VAC
Finish Blue Powder Coat
AC Power Required 115 V/230 V 50/60 Hz

UHF

Impedance 50 ohm nominal
VSWR (470-890 MHz) 1.05:1 typical, 1.10:1 maximum
Cooling Method Forced air-cooled
Peak to Average Power >10 dB*
Ambient Temperature -40°C to +45°C (-40°F to +113°F)
Interlock Contact Rating 10 A @ 120 VAC, 5 A @ 250 VAC
Finish Blue Powder Coat
AC Power Required 115 V/230 V 50/60 Hz

*DA40 Peak to Average is 14 dB



Model	Power Rating	Frequency Range	Dimensions (L x W x H)	Weight	Connector	AC Power
DA10V1F15	10 kW	0-240 MHz-AM, FM, VHF			1 5/8" Flanged	115 VAC
DA10V1U15	10 kW	0-240 MHz-AM, FM, VHF	23.5" x 23.5" x 59"	130 lbs.	1 5/8" Unflanged	115 VAC
DA10V1F30	10 kW	0-240 MHz-AM, FM, VHF	597 mm x 597 mm x 1499 mm	58.97 kg	1 5/8" Flanged	230 VAC
DA10V1U30	10 kW	0-240 MHz-AM, FM, VHF			1 5/8" Unflanged	230 VAC
DA10V3F15	10 kW	0-240 MHz-AM, FM, VHF			3 1/8" Flanged	115 VAC
DA10V3U15	10 kW	0-240 MHz-AM, FM, VHF	23.5" x 23.5" x 59"	130 lbs.	3 1/8" Unflanged	115 VAC
DA10V3F30	10 kW	0-240 MHz-AM, FM, VHF	597 mm x 597 mm x 1499 mm	58.97 kg	3 1/8" Flanged	230 VAC
DA10V3U30	10 kW	0-240 MHz-AM, FM, VHF			3 1/8" Unflanged	230 VAC
DA25V3F15	25 kW	0-240 MHz-AM, FM, VHF			3 1/8" Flanged	115 VAC
DA25V3U15	25 kW	0-240 MHz-AM, FM, VHF	27" x 27" x 61"	160 lbs.	3 1/8" Unflanged	115 VAC
DA25V3F30	25 kW	0-240 MHz-AM, FM, VHF	686 mm x 686 mm x 1549 mm	72.57 kg	3 1/8" Flanged	230 VAC
DA25V3U30	25 kW	0-240 MHz-AM, FM, VHF			3 1/8" Unflanged	230 VAC
DA25V4U15	25 kW	0-240 MHz-AM, FM, VHF	27" x 27" x 61"	160 lbs.	4 1/2" Unflanged	115 VAC
DA25V4U30	25 kW	0-240 MHz-AM, FM, VHF	686 mm x 686 mm x 1549 mm	72.57 kg	4 1/2" Unflanged	230 VAC
DA5F15	5 kW	470-890 MHz UHF			3 1/8" Flanged	115 VAC
DA5U15	5 kW	470-890 MHz UHF	17" x 17" x 64"	100 lbs.	3 1/8" Unflanged	115 VAC
DA5F30	5 kW	470-890 MHz UHF	432 mm x 432 mm x 1608 mm	45.5 kg	3 1/8" Flanged	230 VAC
DA5U30	5 kW	470-890 MHz UHF			3 1/8" Unflanged	230 VAC
DA10F15	10 kW	470-890 MHz UHF			3 1/8" Flanged	115 VAC
DA10U15	10 kW	470-890 MHz UHF	19.5" x 19.5" x 68.5"	130 lbs.	3 1/8" Unflanged	115 VAC
DA10F30	10 kW	470-890 MHz UHF	495 mm x 495 mm x 1740 mm	58.97 kg	3 1/8" Flanged	230 VAC
DA10U30	10 kW	470-890 MHz UHF			3 1/8" Unflanged	230 VAC
DA15F15	15 kW	470-890 MHz UHF			3 1/8" Flanged	115 VAC
DA15U15	15 kW	470-890 MHz UHF	25" x 25" x 76.5"	192 lbs.	3 1/8" Unflanged	115 VAC
DA15F30	15 kW	470-890 MHz UHF	635 mm x 635 mm x 1943 mm	87.09 kg	3 1/8" Flanged	230 VAC
DA15U30	15 kW	470-890 MHz UHF			3 1/8" Unflanged	230 VAC
DA25F15	25 kW	470-890 MHz UHF			4 1/16" Myat Flanged	115 VAC
DA25U15	25 kW	470-890 MHz UHF			4 1/16" Myat Unflanged	115 VAC
DA25F30	25 kW	470-890 MHz UHF	27" x 27" x 76.5"	245 lbs.	4 1/16" Myat Flanged	230 VAC
DA25U30	25 kW	470-890 MHz UHF	686 mm x 686 mm x 1943 mm	111.13 kg	4 1/16" Myat Unflanged	230 VAC
DA25-4U15	25 kW	470-890 MHz UHF			4 1/2" IEC Unflanged	115 VAC
DA25-4U30	25 kW	470-890 MHz UHF			4 1/2" IEC Unflanged	230 VAC
DA40-5U15	40 kW	470-890 MHz UHF			4 7/8" IEC Unflanged	115 VAC
DA40-5U30	40 kW	470-890 MHz UHF	27.5" x 27.5" x 84"	310 lbs.	4 7/8" IEC Unflanged	230 VAC
DA40F15	40 kW	470-890 MHz UHF	701 mm x 701 mm x 2134 mm	140.6 kg	6 1/8" IEC Flanged	115 VAC
DA40F30	40 kW	470-890 MHz UHF			6 1/8" IEC Flanged	230 VAC
DA40U30	40 kW	470-890 MHz UHF			6 1/8" IEC Unflanged	230 VAC

Other models available, please consult factory.

SC 13 Series

Ultra-Stable, Oil-Dielectric RF Termination Loads For Semiconductor Processing Advantages

- No warm-up time
- Ultra-stable: 0.1 dB total change in VSWR from 0 to 100% rating power at 13.56 MHz
- Passive design
- Ultra-low VSWR – typically 1.05:1 at process critical frequencies
- Homogeneous RF design provides long-term repeatability

For maximum process repeatability and consistency, modern plasma applications require precise RF power regulation and control. A key component in ensuring accurate and repeatable RF power delivery to the chamber is calibration, regulation, and monitoring of the RF generator.

Bird® now offers ultra-stable, low VSWR loads for quick and precise measurement of generator power output when used with precision power sensors such as the Bird® 4020 & 4027A Series.

Bird® models 8865SC13, 8890-300SC13, 8921SC13 & 8931-115SC13/-230SC13 not only provide low VSWR but also less than 0.1 dB total change in VSWR at process critical frequencies. There is no need for load warm-up or risk of repeatability due to calibration for different lengths of time. This can minimize the errors associated with this calibration and control one of the more critical process variables in the etch process.



Model	Frequency Range & VSWR	Power Rating
8865SC13	DC to 28 MHz at 1.1 max. (less than 1.05 typical)	1 kW
8890-300SC13	DC to 28 MHz at 1.1 max. (less than 1.05 typical)	2.5 kW
8921SC13	DC to 28 MHz at 1.1 max. (less than 1.05 typical)	5 kW
8931-115SC13	DC to 28 MHz at 1.1 max. (less than 1.05 typical)	10 kW, 115 V
8931-230SC13	DC to 28 MHz at 1.1 max. (less than 1.05 typical)	10 kW, 230 V

