



ALTA750G® X-RAY TUBE HOUSING

### **PRODUCT DESCRIPTION**

The ALTA750G<sup>®</sup> is an x-ray tube housing assembly specifically designed for use with CT Scanners. This tube housing assembly consists of the ALTA750G<sup>®</sup> Tube loaded into the Richardson ALTA750G<sup>®</sup> Housing or reloaded into the Varex\* B-805H Housing. The Richardson G Heat Exchanger or the Varex\* HE-978 Exchanger can be used with this tube housing assembly.

#### **INTENDED USE**

The ALTA750G<sup>®</sup> X-Ray Tube Housing Assemblies are designed to emit ionizing radiation and are intended to be used as a component of a CT system which is used for diagnostic and interventional X-Ray applications.

#### INCLUDED INFORMATION AND SPECIFICATIONS

- Tube Specifications
- Housing Assembly Specifications
- Volumetric / Helical Scan Ratings
- Cathode Emission Characteristics
- Housing Diagram
- Housing Wiring
- Disposal Information

Originally written in English.

Additional copies and alternate language versions available upon request from techdata@rell.com

\*This product is not affiliated with, endorsed by, or sponsored by Varex Imaging.



## **TUBE SPECIFICATIONS**

Nominal X-ray Tube Voltage	kV	140		
Anode Diameter	mm	200		
Anode Material		ReW-TZM-C		
Anode Angle	Degrees	7		
Nominal Focal Spot – Small IEC 60336 Loading Factor 120kV x 200mA	IEC 60336	0.9 x 0.8		
Nominal Focal Spot – Large IEC 60336 Loading Factor 120kV x 200mA	IEC 60336	1.6 x 1.4		
Anode Heat Content (Maximum)	MJ	5.4		
Nominal Anode Input Power – Large IEC 60613	kW	72		
Nominal Anode Input Power – Small IEC 06013	kW	42		
Nominal CT Scan Power Index – Large IEC 60613	kW	69.5		
Nominal CT Scan Power Index – Small IEC 60613	kW	42		
Anode Heat Dissipation (Maximum)	W	12,000		
Maximum Filament Current - Large	A	5		
Maximum Filament Voltage - Large	V	14.4		
Maximum Filament Current - Small	A	4.8		
Maximum Filament Voltage - Small	V	12.3		

### HOUSING ASSEMBLY SPECIFICATIONS

Maximum Heat Content	MJ	3.6		
Maximum Continuous Heat Dissipation	kW	4.0		
Maximum Housing Temperature	Degrees C	78		
Permanent Filtration $\frac{233}{4}$ IEC 60522	mm AL	1.0		
Temperature Limits for Transport and Storage	Degrees C	-20 to 75		
Temperature Limits for Operation	Degrees C	5 to 40		
Weight of Assembly	kg	60.5		
Leakage Radiation @140 kV, 29 mA, 1 m	mGy/hr	0.57		

### ADDITIONAL HOUSING ASSEMBLY SPECIFICATIONS

Humidity Limits for Transport and Storage: 10% to 90% RH
Pressure Limits for Transport and Storage: 70 to 106 kPa
Humidity Limits for Normal Operation: 40 to 80% RH
Pressure Limits for Normal Operation: 70 to 106 kPa
Classification per IEC 60601-1: Class 1 Type B
Degree of Protection Against Ingress of Water is IPX0
Mode of Operation: Intermittent (non-continuous)
Device Classification: U.S FDA = Class 1, EU = Class IIb

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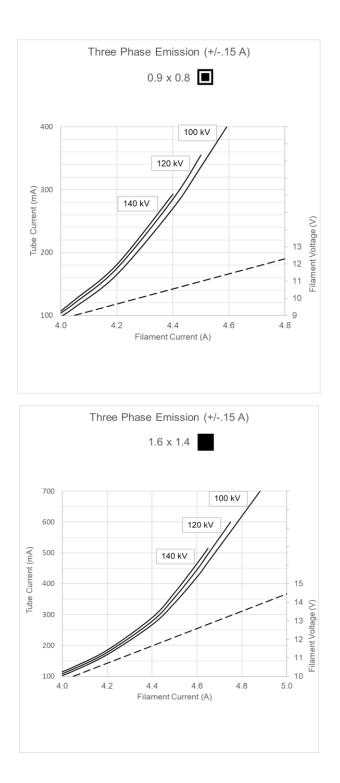
#### **VOLUMETRIC / HELICAL SCAN RATINGS IEC 60613**

		Maximum Allowed Tube Current (mA)								
	Volume Scan	as a Function of the Following Starting Heat Storage and Tube Voltages								
3Ø 50 Hz 🔳	Time (Seconds)	Starting Heat Storage 40% Starting Heat			Heat Stor	leat Storage 55%		Starting Heat Storage 70%		
0.9 x 0.8 Focal Spot		100 kV	120 kV	135 kV	100 kV	120 kV	135 kV	100 kV	120 kV	135 kV
7 Degree Target	4	300	250	225	300	250	225	300	250	225
	10	300	250	225	300	250	225	300	250	225
	15	300	250	225	300	250	225	300	250	225
	20	300	250	225	300	250	225	300	250	225
	30	300	250	225	300	250	225	300	250	225
	45	300	250	225	300	250	225	300	250	225
	60	300	250	225	300	250	225	250	200	175
	75	300	250	225	300	250	225	225	175	150
	80	300	250	225	300	250	225	200	175	150
	90	300	250	225	275	225	200	200	150	150
		r								
						wed Tube				
	Volume Scan	a	is a Funct	ion of the	ollowing	ollowing Starting Heat Storage and Tube Voltages				
3Ø 50 Hz	Time (Seconds)	Starting	Heat Stor	age 40%	Starting	Heat Stor	age 55%	Starting	Heat Stor	age 70%
1.6 x 1.4 Focal Spot		100 kV	120 kV	135 kV	100 kV	120 kV	135 kV	100 kV	120 kV	135 kV
7 Degree Target	4	670	560	500	670	560	500	670	560	500
5 5	10	670	560	500	670	560	500	670	560	490
	15	670	560	500	670	560	500	640	530	470
	20	670	560	500	670	560	500	610	510	450
	30	600	500	440	600	500	440	440	360	320
	45	540	450	400	480	400	350	320	270	240
	60	450	370	330	380	310	280	260	220	190
	75	410	340	300	310	260	230	230	190	170
	80	380	320	280	300	250	220	220	180	160
	90	350	290	260	270	230	200	200	170	150
						wed Tube	,	,		
	Volume Scan	a	as a Funct				,	mA) ge and Tub	e Voltage	S
3Ø 100 Hz 盾	Volume Scan Time (Seconds)		as a Funct Heat Stor	ion of the	Following		eat Storag	e and Tub	e Voltage Heat Stora	
3Ø 100 Hz		Starting	Heat Stor	ion of the lage 40%	Following Starting	Starting H Heat Stora	eat Storag age 55%	ge and Tub Starting	Heat Stor	age 70%
0.9 x 0.8 Focal Spot	Time (Seconds)	Starting 100 kV	Heat Stor 120 kV	ion of the age 40% 135 kV	Following Starting 100 kV	Starting H Heat Stora 120 kV	eat Storag age 55% 135 kV	ge and Tub Starting 100 kV	Heat Stora 120 kV	age 70% 135 kV
	Time (Seconds)	Starting 100 kV 425	Heat Stor 120 kV 350	ion of the age 40% 135 kV 300	Following Starting 100 kV 425	Starting H Heat Stora 120 kV 350	eat Storag age 55% 135 kV 300	ge and Tub Starting 100 kV 425	Heat Stor 120 kV 350	age 70% 135 kV 300
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10	Starting 100 kV 425 425	Heat Stor 120 kV 350 350	ion of the age 40% 135 kV 300 300	Following Starting 100 kV 425 425	Starting H Heat Stora 120 kV 350 350	eat Storag age 55% 135 kV 300 300	ge and Tub Starting 100 kV 425 425	Heat Stora 120 kV 350 350	age 70% 135 kV 300 300
0.9 x 0.8 Focal Spot	Time (Seconds)	Starting 100 kV 425 425 425	Heat Stor 120 kV 350 350 350	ion of the age 40% 135 kV 300	Following Starting 100 kV 425 425 425	Starting H Heat Stor: 120 kV 350 350 350	eat Storag age 55% 135 kV 300 300 300	ge and Tub Starting 100 kV 425	Heat Stora 120 kV 350 350 350	age 70% 135 kV 300
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20	Starting 100 kV 425 425 425 425	Heat Stor 120 kV 350 350 350 350	ion of the age 40% 135 kV 300 300 300 300	Following Starting 100 kV 425 425 425 425 425	Starting H Heat Stora 120 kV 350 350 350 350	eat Storag age 55% 135 kV 300 300 300 300	e and Tub Starting 100 kV 425 425 425 425 425	Heat Store 120 kV 350 350 350 350	age 70% 135 kV 300 300 300 300
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15	Starting 100 kV 425 425 425 425 425 425	Heat Stor 120 kV 350 350 350 350 350	ion of the age 40% 135 kV 300 300 300	Following Starting 100 kV 425 425 425 425 425 425	Starting H Heat Stora 120 kV 350 350 350 350 350	eat Storag age 55% 135 kV 300 300 300 300 300	e and Tub Starting 100 kV 425 425 425 425 425 400	Heat Stors 120 kV 350 350 350 350 350 325	age 70% 135 kV 300 300 300
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30	Starting 100 kV 425 425 425 425 425 425 425	Heat Stor 120 kV 350 350 350 350 350 350 350	ion of the age 40% 135 kV 300 300 300 300 300	Following Starting 100 kV 425 425 425 425 425 425 425	Starting H Heat Stora 120 kV 350 350 350 350	eat Storage age 55% 135 kV 300 300 300 300 300 300 300	e and Tub Starting 100 kV 425 425 425 425 425 400 300	Heat Stor: 120 kV 350 350 350 350 325 250	age 70% 135 kV 300 300 300 300 300 225
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0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60	Starting 100 kV 425 425 425 425 425 425 425 425 425	Heat Stor 120 kV 350 350 350 350 350 350 350 350	ion of the lage 40% 135 kV 300 300 300 300 300 300 300 300 300	Following Starting 100 kV 425 425 425 425 425 425 425 375	Starting H Heat Stora 120 kV 350 350 350 350 350 350 350 350 300	eat Storage age 55% 135 kV 300 300 300 300 300 300 275	e and Tub Starting 100 kV 425 425 425 425 425 400 300 250	Heat Stors 120 kV 350 350 350 350 325 250 200	age 70% 135 kV 300 300 300 300 300 225 175
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75	Starting 100 kV 425 425 425 425 425 425 425 425 425 425	Heat Stor 120 kV 350 350 350 350 350 350 350 350	ion of the lage 40% 135 kV 300 300 300 300 300 300 300 300 300	Following Starting 100 kV 425 425 425 425 425 425 425 375 3000	Starting H Heat Stora 120 kV 350 350 350 350 350 350 350 350 300 250	eat Storage age 55% 135 kV 300 300 300 300 300 275 225	e and Tub Starting 100 kV 425 425 425 425 425 400 300 250 225	Heat Stor: 120 kV 350 350 350 350 325 250 200 175	age 70% 135 kV 300 300 300 300 225 175 150
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80	Starting 100 kV 425 425 425 425 425 425 425 425 425 400 375	Heat Stor 120 kV 350 350 350 350 350 350 350 325 300	ion of the age 40% 135 kV 300 300 300 300 300 300 300 300 300 275	Following Starting 100 kV 425 425 425 425 425 425 375 3000 300	Starting H Heat Stor: 120 kV 350 350 350 350 350 350 350 350 250 250	eat Storage age 55% 135 kV 300 300 300 300 300 300 275 225 225 225	e and Tub Starting 100 kV 425 425 425 425 425 425 425 425 420 300 250 225 200	Heat Stor: 120 kV 350 350 350 325 250 200 175 175	age 70% 135 kV 300 300 300 300 300 225 175 150 150
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80	Starting 100 kV 425 425 425 425 425 425 425 425 425 400 375	Heat Stor 120 kV 350 350 350 350 350 350 350 325 300	ion of the age 40% 135 kV 300 300 300 300 300 300 300 300 275 250	Following Starting 100 kV 425 425 425 425 425 425 425 375 3000 300 275	Starting H Heat Stor: 120 kV 350 350 350 350 350 350 350 350 250 250	eat Storage age 55% 135 kV 300 300 300 300 300 300 275 225 225 225 200	e and Tub Starting 100 kV 425 425 425 425 425 425 425 425 200 200 200	Heat Stor: 120 kV 350 350 350 325 250 200 175 175	age 70% 135 kV 300 300 300 300 300 225 175 150 150
0.9 x 0.8 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80 90	Starting 100 kV 425 425 425 425 425 425 425 425 425 425	Heat Stor. 120 kV 350 350 350 350 350 350 350 325 300 275	ion of the age 40% 135 kV 300 300 300 300 300 300 300 300 275 250	Following Starting 100 kV 425 425 425 425 425 425 375 3000 300 275	Starting H Heat Stor: 120 kV 350 350 350 350 350 350 350 250 250 225 www.et Tube	eat Storage age 55% 135 kV 300 300 300 300 300 275 225 225 220 200	e and Tub Starting 100 kV 425 425 425 425 425 425 425 425 200 200 200	Heat Stor. 120 kV 350 350 350 325 250 200 175 175 150	age 70% 135 kV 300 300 300 300 225 175 150 150 150
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0.9 x 0.8 Focal Spot 7 Degree Target 3Ø 100 Hz 1.6 x 1.4 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80 90 Volume Scan Time (Seconds) 4 10 15 20 30 30	Starting 100 kV 425 425 425 425 425 425 425 425 425 425	Heat Stor. 120 kV 350 350 350 350 350 350 350 350	ion of the age 40% 135 kV 300 300 300 300 300 300 300 300 300 30	Following Starting 100 kV 425 425 425 425 425 375 3000 300 275 sarting 100 kV 720 720 720 720 600	Starting H           Heat Stor:           120 kV           350	eat Storage age 55% 135 kV 300 300 300 300 300 275 225 225 200 Current ( eat Storage age 55% 135 kV 530 530 530 530	e and Tub Starting 100 kV 425 425 425 425 425 425 425 225 200 220 200 200 200 8 xarting 100 kV 720 720 610 440	Heat Stor. 120 kV 350 350 350 325 250 200 175 175 150 Heat Stor. 120 kV 600 600 600 510 360	age 70% 135 kV 300 300 300 225 175 150 150 150 150 150 150 150 530 530 530 530 530 320
0.9 x 0.8 Focal Spot 7 Degree Target 3Ø 100 Hz 1.6 x 1.4 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80 90 Volume Scan Time (Seconds) 4 10 15 20 30 45 5 80 90 4 5 80 90 80 90 80 8	Starting 100 kV 425 425 425 425 425 425 425 425 425 425	Heat Stor. 120 kV 350 350 350 350 350 350 325 300 275 As a Funct Heat Stor. 120 kV 600 600 600 600 500 450	ion of the age 40% 135 kV 300 300 300 300 300 300 300 275 250 Max 250 Max 40% 135 kV 530 530 530 440	Following Starting 100 kV 425 425 425 425 425 375 3000 300 275 5000 5000 100 kV 720 720 720 720 600 480	Starting H           Heat Stor:           120 kV           350           250           225           wed Tubes           Starting H           Heat Stor:           120 kV           600           600           600           600           600           600           600           600           600           600           600           600	eat Storage age 55% 135 kV 300 300 300 300 300 275 225 225 225 200 Current ( eat Storage age 55% 135 kV 530 530 530 440 350	e and Tub Starting 100 kV 425 425 425 425 425 425 425 200 250 225 200 200 200 200 200 200 2	Heat Stor: 120 kV 350 350 350 325 250 200 175 175 150 Heat Stor: 120 kV 600 600 600 510 360 270	age 70% 135 kV 300 300 300 225 175 150 150 150 150 150 150 320 530 530 530 530 220 240
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0.9 x 0.8 Focal Spot 7 Degree Target 3Ø 100 Hz 1.6 x 1.4 Focal Spot	Time (Seconds) 4 10 15 20 30 45 60 75 80 90 Volume Scan Time (Seconds) 4 10 15 20 30 45 5 80 90 4 5 80 90 80 90 80 8	Starting 100 kV 425 425 425 425 425 425 425 425 425 425	Heat Stor. 120 kV 350 350 350 350 350 350 325 300 275 As a Funct Heat Stor. 120 kV 600 600 600 600 500 450	ion of the age 40% 135 kV 300 300 300 300 300 300 300 275 250 Max 250 Max 40% 135 kV 530 530 530 440	Following Starting 100 kV 425 425 425 425 425 375 3000 300 275 5000 5000 100 kV 720 720 720 720 600 480	Starting H           Heat Stor:           120 kV           350           250           225           wed Tube           Starting H           Heat Stor:           120 kV           600           600           600           600           600           600           600           600           600           600           600           600	eat Storage age 55% 135 kV 300 300 300 300 300 275 225 225 225 200 Current ( eat Storage age 55% 135 kV 530 530 530 440 350	e and Tub Starting 100 kV 425 425 425 425 425 425 425 200 250 225 200 200 200 200 200 200 2	Heat Stor: 120 kV 350 350 350 325 250 200 175 175 150 Heat Stor: 120 kV 600 600 600 510 360 270	age 70% 135 kV 300 300 300 225 175 150 150 150 150 150 150 320 530 530 530 530 240

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## CATHODE EMISSION CHARACTERISTICS IEC 60613

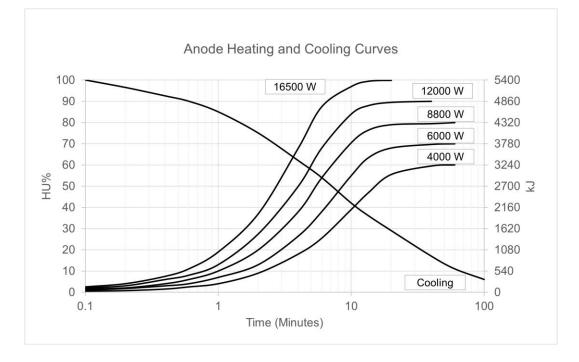


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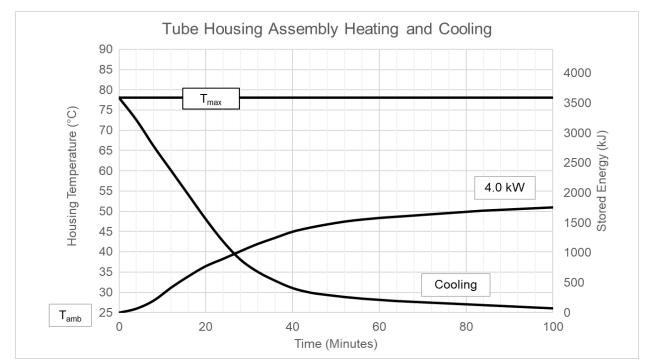




### ANODE HEATING AND COOLING CURVES IEC 60613



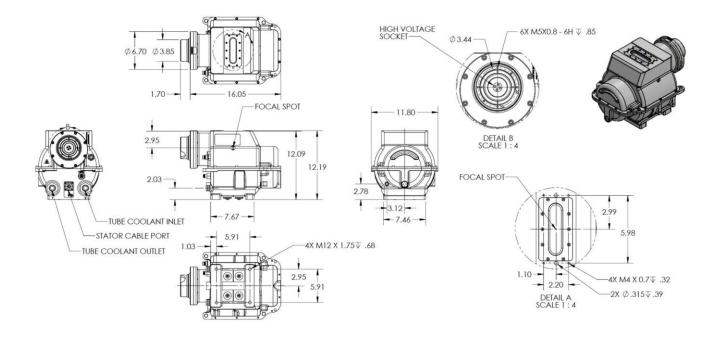
TUBE HOUSING ASSEMBLY HEATING AND COOLING CURVES



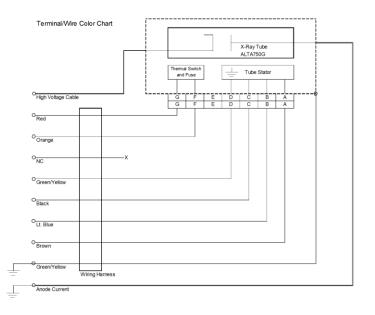
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# HOUSING DIAGRAM



### **HOUSING WIRING**



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#### DISPOSAL INFORMATION

Take back, proper disposal and recovery of medical devices takes place in accordance with European WEEE directive and the requirements of national legislation.

The x-ray tube contains beryllium. The x-ray tube housing assembly contains lead for radiation shielding and mineral oil. The x-ray tube and x-ray tube housing must not be disposed in domestic or industrial waste; they must be disposed in accordance with local regulation.

The tube and housing assembly may be returned to Richardson Electronics, Ltd. for proper disposal.

Richardson Electronics, Ltd strives to be environmentally conscious. Select materials and components are recycled. Controls are in place to assure that all product meet specifications and safety requirements.

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