

ACCELERATOR DIVISION DEPARTMENTAL PROCEDURE

PROTON SOURCE DEPARTMENT

**ADDP-PR-2004**

**LOW ENERGY LINAC 7835 MEASUREMENTS PROCEDURE**

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Head of Linac

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Proton Source Department Head

REVISION NO. \_\_\_\_ REVISION ISSUE DATE \_\_\_\_\_

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REVIEW AND CONCURRENCE RECORD

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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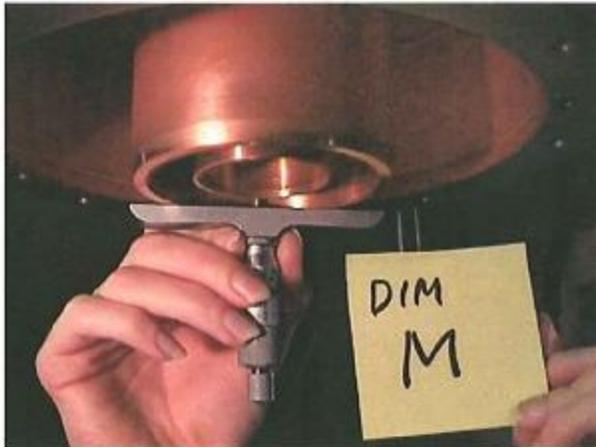
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## LOW ENERGY LINAC 7835 MEASUREMENT PROCEDURE



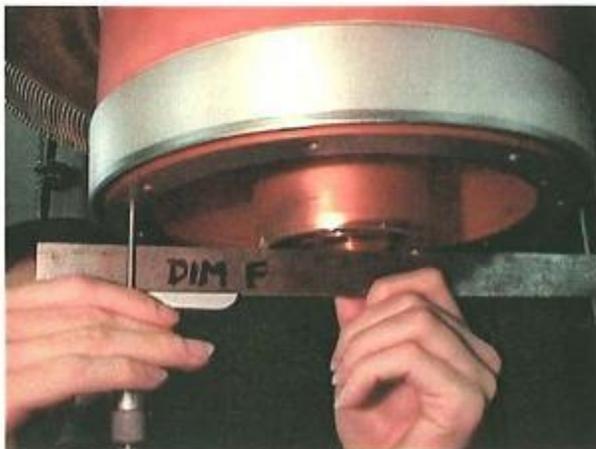
Dimension BG is measured from the bottom of the inside filament connector to the bottom of the outside filament connector.

(0-1 inch)



Dimension M is measured from the bottom of the outside filament connector to the absolute farthest distance in between the inner and outer filament rings, at the flat part where the four spanner wrench holes are.

(3-4 inches)



Dimension F is measured from the bottom of the outer filament ring to the bottom of the grid ring (flat area on the outermost side of the tube).

Use the one (1) inch space bar and subtract 1 in from your measurement.

(1-2 inches)

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Dimension 3 is usually kept in the front few pages of the 7835 installation log book. It refers to the serial number of the cavity.

If it cannot be found, take four measurements around the outside ring of the slave cavity and divide by four.



Dimension 4 is the distance between the absolute top of the outer filament connector to the last inner ridge of the output cavity where the slave cavity rests when the tube is inserted.

(4-5 inches)



Dimension 5 is the distance from the absolute top of the outer filament ring to the absolute top of the inner filament ring.

(0-1 inch)

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**7835 Installation Data Sheet**

Measured	Dim BG	Dim M	Dim 3	Dim F	Dim 4	Dim 5
Reading 1						
Reading 2						
Reading 3						
Reading 4						
Average			See reference value			
Expected Value	0.0400	4.0000	0.5	0.6450	3.5900	0.9310

	PA Socket Number		7835 Serial Number		Date	

**1. 7835 DATA (inches)**

(Reference Drawing 0230 - MB - 4721)	Measured	* Nominal	Error (Mes-Nom)
<b>Dim BG</b> (Inner Filament Extension) w/s Outer Filament		0.0400	
<b>Dim M</b> (Outer Filament length)		4.0000	
<b>Dim 3</b> (7835 elevation ) w/s Socket Seat		0.5000	
<b>Dim F</b> (Outer Filament extension)		0.6450	

\* Nominal measured value was within +/- .015 of 75% of sample

**2. Calculations**

<b>Dim 4</b> (Socket Outer Filament height)	$3.590 + (\text{Err M} + \text{Err 3} - \text{Err F})$	
<b>Dim 5</b> (Socket Inner filament depth)	$.931 + (\text{Err M} - \text{Err BG})$	

**3. Socket Data and Results**

<b>Dim 4</b> (Measured)		
<b>Dim 4</b> (Calculated)		
Error <b>Dim 4</b> (Measured - Calculated)		Tolerance +.030 / -.060
<b>Dim 5</b> (Measured)		
<b>Dim 5</b> (Calculated)		
Error <b>Dim 5</b> (Measured - Calculated)		Tolerance +/- .010

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