



# H.F Generator for CFTL/FTL

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## MEDI H.F Generators for FTL/CFTL

The two industrial products designed by Medi that are used in the quality control section of Lamp manufacturing industry are HF Generator and U.V Tester. The instrument U.V Tester is meant for GLS whereas H.F Generator is used for testing FTLs and CFTLs. Though Medi U.V Tester is meant for GLS it can also be used for checking fluorescent tube lights. But Medi H.F Generator is exclusively meant for tube lights and is very compact and cheaper compared to U.V Tester. In addition to this it consumes less power and is very ideal for fitting near or under the conveyer belt.

Tube lights while manufacturing undergoes different process viz. cutting, cleaning, vacuuming, cap fitting etc. During each process the tube light may become defective. If the defective tube is detected and duly rejected after each process, we can avoid it from undergoing the rest of the manufacturing process and reduce the wastage.

There are a lot of devices that check the tubes after each process. H.F generator is one among them and is used to check the tube after the gas filling, and before any further process is done on it. Conventional choke and starter method can't be used since the test is to be done before the caps are fitted.

Technically H.F generator is a device that generate a high frequency electro-static field. This field is strong enough to ionize low pressure gas filled tubes near it and make them glow. Since the H.F generator do not need any physical or electrical contact, it is very convenient to check the tubes before fixing the connection terminals.

MEDI has designed and developed an H.F generator for tube light manufactures. With the latest integrated circuits and switching devices like MOSFETs the MEDI H.F generator is very small in size and light in weight. Due to its high power radiation MEDI H.F generator is capable of glowing up to 5 tubes simultaneously. This is very convenient for detecting and replacing defective tube lights manually. For automatic manufacturing sections special design of H.F generator is available.

We can conveniently place the H.F generator near the conveyer belt, so that if the vacuum inside a tube coming near to the device is perfect, it will glow. This glow can be checked with a Medi GLOW SENSOR or its equivalents most probably available in tube light assembly line. The glow sensing and replacing of defective tube lights can also be done manually. Then HF generator to glow more tubes simultaneously will be practical.

### Parts description :-

The figure below shows the main parts of Medi H.F Generator.

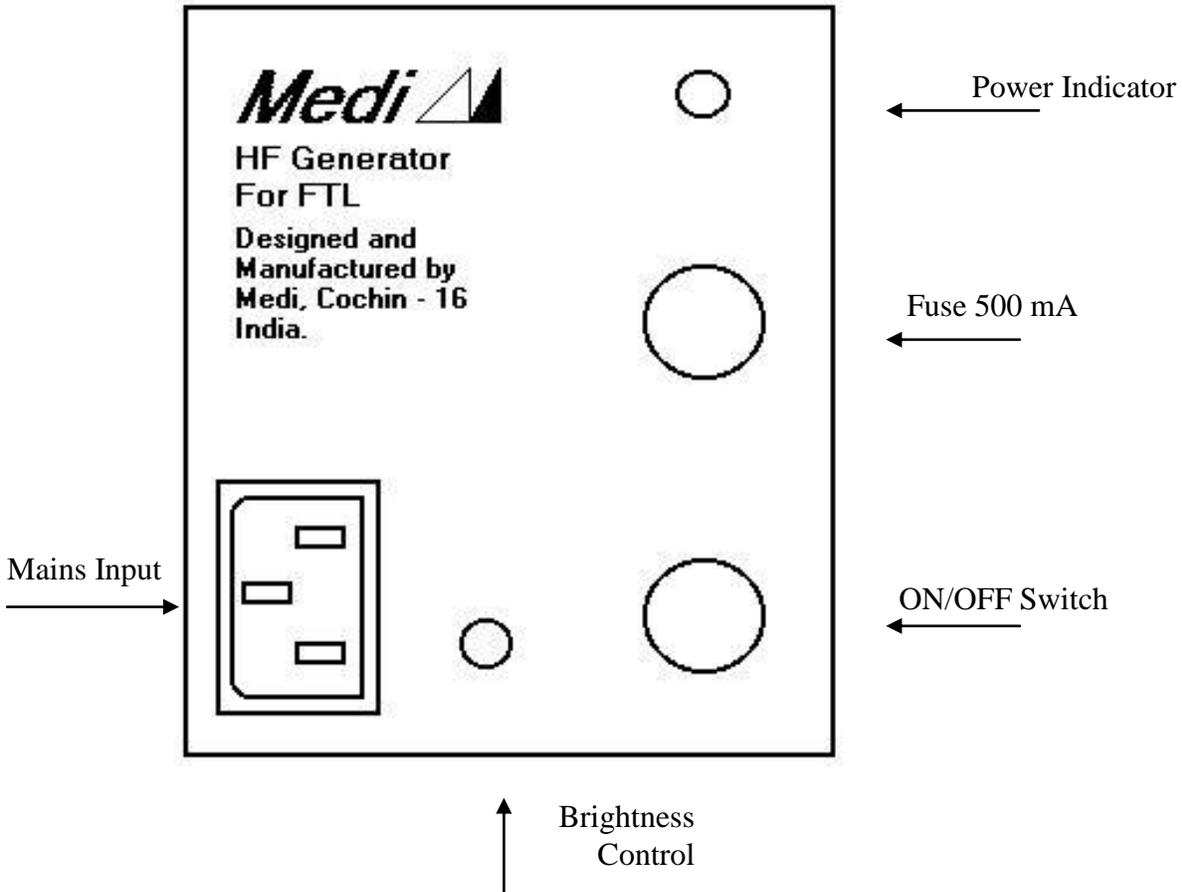
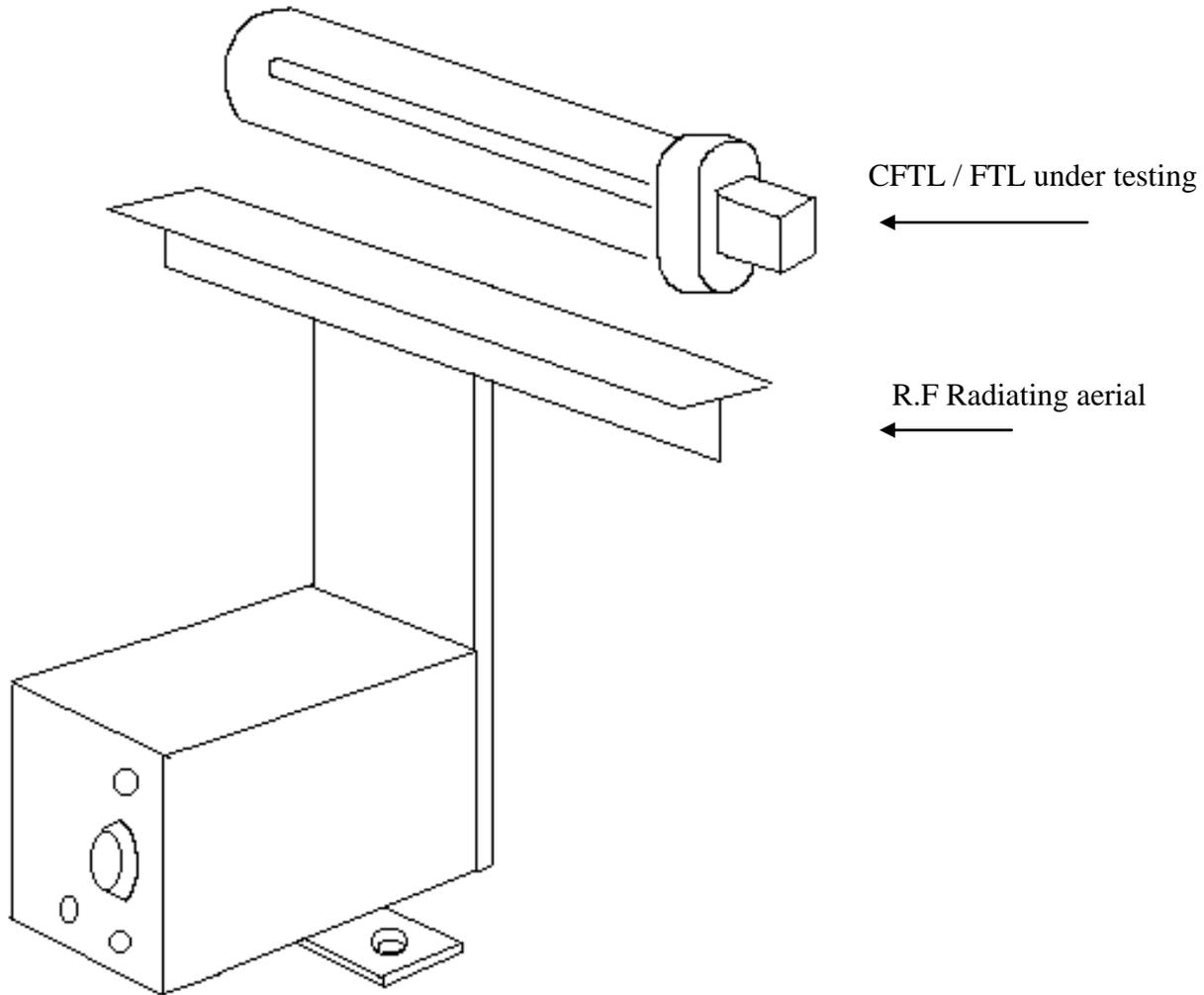


Figure 3. Front panel view of Medi H.F Generator

1. Fuse :- The fuse comes in series with the mains input. The current rating is 250 Millie ampere. Do not use fuse with excess capacity.
2. ON/OFF switch :- The ON/OFF switch comes in series with the fuse and have the ON position in UP direction.
3. Indication :- The LED indicator provided above the fuse indicate the true status of the R.F power. If the R.F power is present the LED will glow.
4. Brightness control :- This control is provided on H.F Generators with the brightness control facility only. This is accessed with an alignment screw driver and is used for varying the R.F power. The power increases while trimming in clock wise direction.
5. A.C input :- The working voltage input to the instrument is 230 V +/- 15%, 50 - 60 Hz AC. The current consumption is 200 milli ampere.

6. Radiating aerial :- When the lamp (FTL) under checking is brought near this radiating aerial it will glow if the vacuum is perfect. It is better to hold the lamp in parallel to this aerial. (see the figure below) This point should be noted when fitting the instrument near the conveyer belt.



### Precautions :-

Though there are various protection circuits for meeting abnormal operating conditions it is recommended to take the following precautions.

1. The working voltage of Medi H.F Generator is 230 V AC  $\pm$  15% (ie 195.5 V to 264.5 V). It is better to keep the working voltage within this limit.
2. Do not input DC voltage as the working voltage to the equipment.

3. The fuse provided on the front panel of the equipment has a current rating of 500 Milli Amp. Do not use fuses with excess current capacity.
4. Though current limiting circuits are provided on the R.F output it is not recommended to short circuit the R.F radiating aerial to the cabinet / earth potential or large metallic parts for a long time. Similarly it is not supposed to extend the aerial with wires. For this purpose please use Medi handheld HF Generator.
5. It is better NOT to input the working voltage of the equipment while the ON/OFF switch is in ON position.
6. It is better to keep the equipment in dust free surroundings and the temperature in between 0 and 70 degree centigrade.

### Specification :-

Input :- 230 V +/- 15%, 50 - 60 Hz AC. (or other ranges as per order)

Current consumption :- Less than 200 Millie amp at 230 V.

Output Frequency :- 12 to 14 MHz.

Operation :- Continuous.

Operating temperature :- 0 to 70 degree centigrade.

Size :- 8 CM X 9 CM X 20 CM

Weight :- 2.75 Kg (approx.)

Solid state. No vacuum tubes or such components used.

Note :- For the easiness of packing Medi H.F Generator is shipped with the radiating aerial removed from the instrument. Before using the instrument do the following.

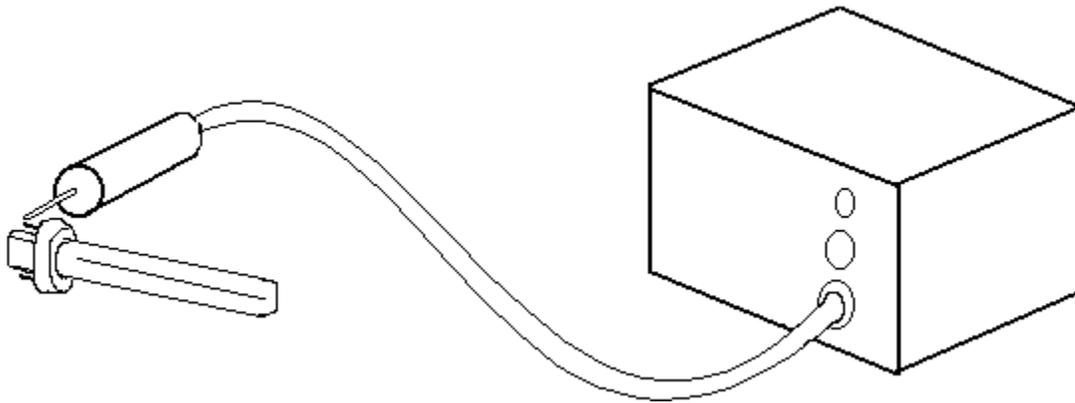
1. With a screw driver remove the screw from the Formica sheet meant for aerial fixing.
2. Place the aerial on the proper place. The anodized coating is removed from one side of the aerial. This side should touch the aluminum plate. Also note that each instrument has its own matching aerial marked 1, 2, 3 etc.
3. Replace the screw and tight firmly

## MEDI Handheld type H.F Generators for FTL/CFTL

This is an improved version of ordinary H.F Generator and the latest development of Medi. This instrument is much ideal for testing the CFTLs and FTLs during packing.

In ordinary H.F Generator the RF radiation is produced from the radiating aerial fixed on the rear side of the instrument. Since the radiating aerial is the part of the tuned circuit that produce the high power radiation the length of the aerial can not be changed. This means that the radiating aerial can not be extended with wires.

In practical use it is found that the user usually try to extend the RF radiation using wires. This was the motivation for designing the Handheld type HF generator. This instrument has two unit :- a base unit and a hand held unit. From the handheld unit there will be an RF cable which can be plugged to RF socket provided on the base unit. Now the user can freely move the handheld unit and touch the RF radiating tip of the handheld unit at the tip of the CFTL / FTL under testing. (see the figure below).



MEDI Handheld type H.F Generators for FTL/CFTL

# Medi Hand Held H.F Generator for FTL and CFTL

Medi has introduced a new instrument for testing FTL and CFTL during manufacturing as well as packing.

This hand held version has two units :- a base unit having a size of 13 CM X 16 CM X 9 CM and a cylindrical shaped hand held unit of 3.5 CM diameter and 20 CM length. From one end of the hand held unit there will be a 2 meter long RF cable and from the other end there is a short metallic rod which generate RF. The RF cable from the hand held unit can be plugged to the base unit. When the base unit is powered a high power high frequency (14 MHz) generated from the tip of the metallic rod which when touched to the end cap of a CFL or FTL will glow the tube with full brightness.



Hand held HF Generator

## Operating instructions

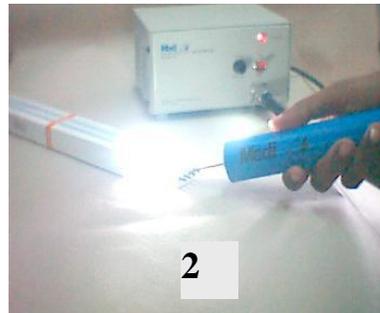
1. Plug the connector at the end of the RF probe to the base unit
2. Switch on the base unit. The power indicator will glow.
3. Touch the metallic tip from the RF probe to the end cap of a CFL or FTL under testing. It will glow (see the figures below)



RF Probe



1



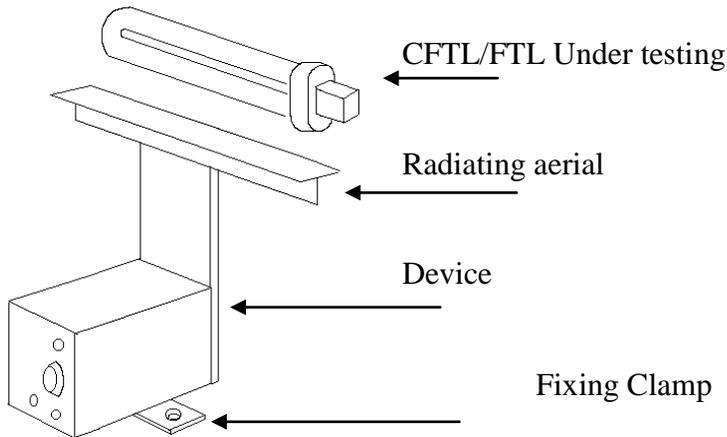
2

Switch on the base Unit and .... Touch the end of the tube and it glows

If you like to view a short video that shows the use of Medi hand held HF Generator you may please click [here](#)

HF Generator suitable for testing CFTL and FTL during manufacturing line is also available.

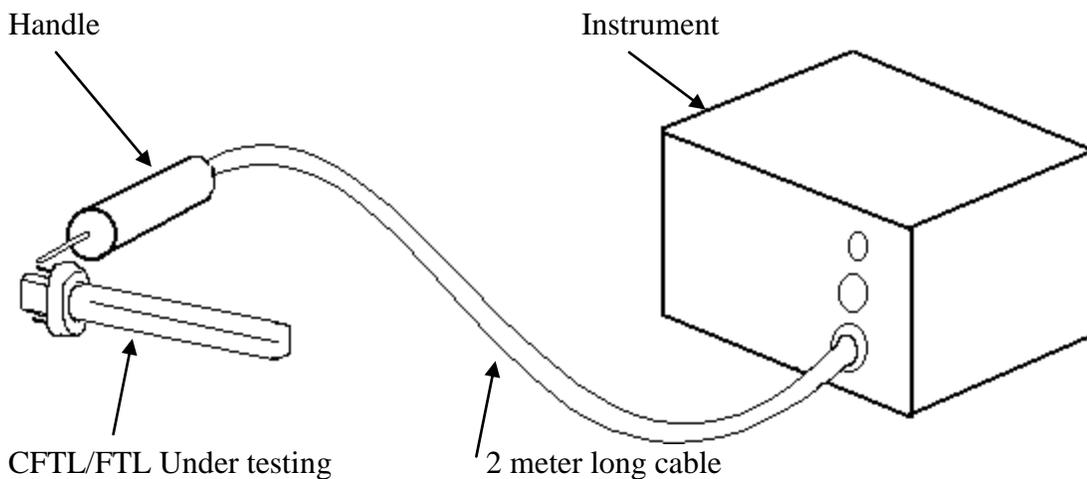
## HF Generator (Radiating Aerial type)



Standard type HF Generator with radiating aerial. This instrument is more suitable for testing CFTL or FTL during manufacturing. The instrument can be fixed near the conveyer belt with the radiating aerial coming near the tube light. For maximum brightness the tube light must come in parallel position with the radiating aerial.

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## Hand held HF Generator



Hand Held HF Generator is suitable for testing CFTL / FTL during packing. Since the cable connecting the instrument and the handle has a length of 2 meters the handle can be taken to any point and conveniently test the tube lights. The high power HF required for testing the tubes is generated inside the handle, not in the instrument. That is, there is no voltage stress in the cable. So there is no problem in dragging the cable through the ground or metal.