

# ELECTROMAGNETIC FLUORESCENT BALLASTS

## Ballast Sound

The slight hum present in fluorescent lighting installations originates from the inherent magnetic action in the core and coil assembly of the ballasts. This hum may be amplified by the method of mounting the ballast in the fixture – the fixture design – and, more often than not, this hum is amplified by the resonant qualities of the ceiling, walls, floors and furniture. In planning a lighting installation, careful consideration must be given to the selection of the fluorescent lamp ballast, the lighting fixture and room components. These precautions will help to achieve the quietest installation possible.

The choice of fluorescent lamp ballast should be made on the basis of selecting the one rated quietest for a specific location or interior as some ballast have a more discernable hum due to basic construction features and electrical ratings.

## Sound Ratings

For Any Installation in:	Average Ambient Noise Level Of Interior	Sound Level Rating*
TV or Radio Station, Library, Reception or Reading Room, Church, School Study Hall	20-24 Decibels	A
Residence, Quiet Office, Night School Classroom	25-30 Decibels	B
General Office Area, Commercial Building, Storeroom	31-36 Decibels	C
Manufacturing Facility, Retail Store, Noisy Office	37-42 Decibels	D

\*These sound ratings are based on measurements of Average Ambient noise levels during conditions of normal occupancy. Audible ballast hum may appear amplified during exceptionally quiet periods and at times when area is unoccupied.

## Radio Interference Filter



Radio interface is caused by the action of the arc at the lamp electrodes which creates a series of radio waves. This energy may interfere with radio reception by:

1. Direct radiation from the fluorescent lamp to the aerial circuit.
2. Line feedback from the lamp through the power line to the radio.
3. Direct radiation from the electrical supply line to the aerial circuit.

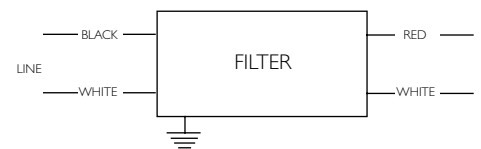
To correct the first cause, it is recommended the radio and aerial circuit be separated at least 10 feet from the fluorescent lamp and the radio provided with a positive ground.

The second and third causes can generally be corrected by the addition of an external capacitor-reactor filter. It is also desirable that the radio and fluorescent lamp fixture be provided a supply voltage from separate branch circuits.

SOUND RATED A

Input Volts	Catalog Number	Certifications		Line Current (Amps)	Dimensions (inches)				Wiring Diagram
					Length	Width	Height	Mounting	
120-277	RIF-1	✓	✓	4.25 max.	4 <sup>3</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	118

For bottom leads with studs, add suffix -BLS



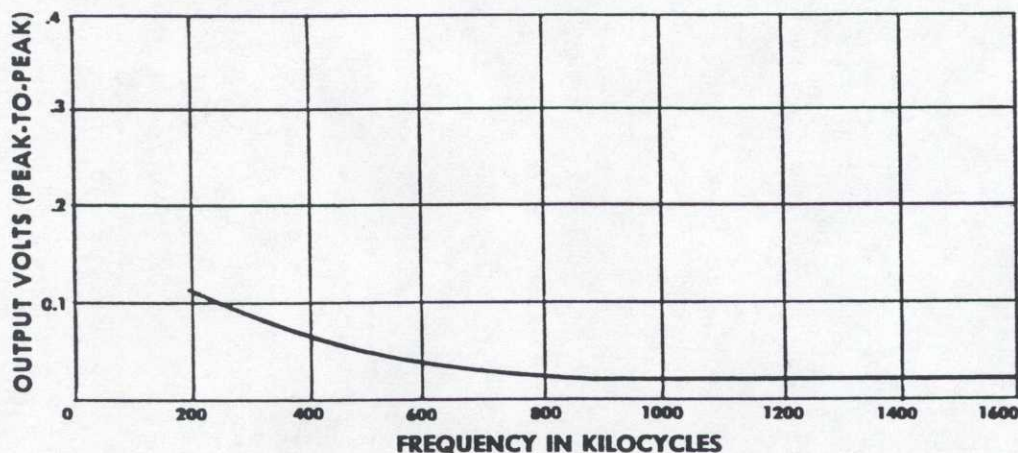
Diag. 118

## TEST 1

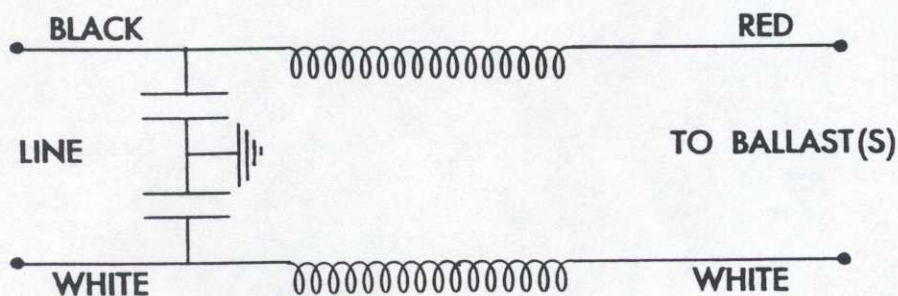
RIF-1

The test was conducted by supplying the RIF-1 with a one (1) volt peak-to-peak signal from an R. F. generator. The output of the RIF-1 was observed on a calibrated oscilloscope. The input signal, maintained at a constant one (1) volt peak-to-peak level, was then carried over the range of 200 to 1600 kilocycles, with the output measured in 100 cycle increments. The attached graph shows the results. See graph below.

### Output Voltage (Peak-to-Peak) at Different Frequencies With a One Volt (Peak-to-Peak) Input Signal on Advance Transformer R. F. Filter RIF-1



### INTERNAL WIRING OF ADVANCE TRANSFORMER RIF-1



#### RATING

105-280 VOLTS

4.25 AMP.

50/60 CPS

UNDERWRITERS' LABORATORIES APPROVED

Government specification requires testing of filter, ballast, lamps, lens, and fixture combination.