



communications

Electron Devices

The Technology and Value Leader in UHF TV Tubes

CEA — Our new multistage depressed collector IOT is the highest efficiency UHF amplifier tube on the market

- Saves \$20,000 per tube per year!
- 60% efficiency compared to 40% for a standard IOT
- Oil-cooled collector reduces maintenance and cost
- Entering service in major markets, including New York City, NY; San Francisco, CA; Albany, NY; Dallas, TX; and Hartford, CT

Our standard collector IOTs are the performance leaders around the world

- Input system delivers the best gain characteristics and easiest tuning in the industry
- Fully correctable at all rated powers due to excellent linearity
- Meets full rated specifications — from channel 14 through 69

All L-3 tubes feature:

- Unsurpassed warranty — 2 years full replacement
- Delivery from stock within 24 hours
- 24/7 technical support

Analog Ratings

Tube Type	Peak Sync Visual Only kW	Common Mode Visual Rating	Common Mode Aural Rating	Socket-Compatible Replacement
L-3 IOT 40	45	33	3.3	IOT 7430/8303/8300
L-3 IOT 60	64	44	4.4	IOT 7360/8404/8600
L-3 IOT 70	75	55	5.5	IOT 8505
L-3 IOT 80	80	70	7.0	IOT 8707 *

**Contact the factory for IOT 8707 socket applications.*

Digital Ratings

Tube Type	Peak/Average Power 8VSB kW	Socket-Compatible Replacement
L-3 IOTD 85	85/20	IOT D270
L-3 IOTD 110	110/25	IOT D2100
L-3 IOTD 130	130/30	IOT D2130*
L-3 CEA 130	130/30	Not applicable

**Contact the factory for IOT D2130 socket applications.*

CEA Savings

Average Power 8VSB kW	Standard IOT*	Solid State*
10	\$15,500	\$40,000
20	\$19,500	\$80,000
30	\$23,000	Impractical for solid state

**Yearly savings per socket based on \$0.10 per kW hour.*

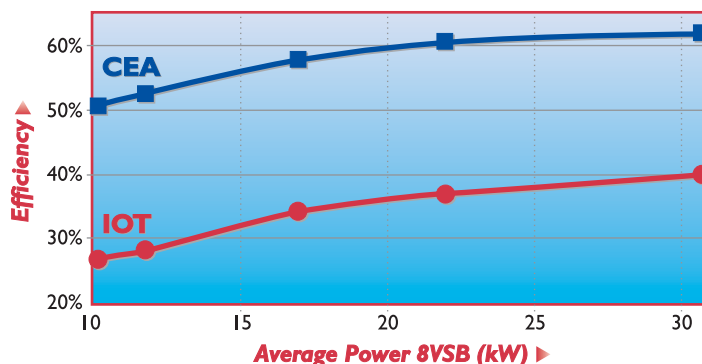


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CEA Features & Benefits

Efficiency Plots



At 30 kW 8VSB, CEA efficiency = 0.62 and IOT efficiency = 0.40

CEA Power Usage: $30 \text{ kW-h} \times 24 \text{ hours/day} \times 365 \text{ days/year} = 424,000 \text{ kW-h}$ 0.62 (eff.)

IOT Power Usage: $30 \text{ kW-h} \times 24 \text{ hours/day} \times 365 \text{ days/year} = 657,000 \text{ kW-h}$ 0.4 (eff.)

Yearly Savings: $657,000 \text{ kW-h} - 424,000 \text{ kW-h} = 233,000 \text{ kW-h}$

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At \$0.10 per kW-h — that's \$23,300 in savings per year, per socket!

Oil Cooling

Dielectric Systems, Inc. (DSI) of Tyler, Texas, manufactures the cooling oil. The oil is an Alpha-series poly alpha olefin (PAO) synthetic specifically developed as a dielectric heat transfer medium. The winter temperature range encountered at the transmitter site will determine the specific oil used. Please contact Electron Devices for more information. (Note: Oil replacement is not necessary on a yearly basis because the oil is highly resistant to oxidation. Electron Devices recommends changing the oil when the CEA is changed at the end of its life. A series-plumbed inline filter must be used in the oil-cooling loop, and the filter cartridge must be changed periodically based on system load.)

IOT Performance

The L-3 IOT and CEA socket assemblies (trolleys) have been designed to provide excellent match and gain performance across the UHF band. Input return loss is better than 22.5 dB at all frequencies and typically exceeds 25 dB. Gain at all frequencies is over 21.5 dB, with most frequencies providing over 22.0 dB. Drive amplifier reliability is enhanced, and it is easier for the transmitter engineer to maintain full performance. The excellent linearity of L-3 IOTs and CEAs assures FCC compliance at all rated powers with a variety of OEM correction and spectral control schemes.

Value and Support Every Day

L-3 is committed to customer service — from our 2-year full replacement warranty and overnight delivery of tubes from stock to our engineering and support services, which are available 24/7.

L-3 Electron Devices

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Characteristics and operating conditions are based upon performance tests. These values may change as the result of further data or product refinement. L-3 Electron Devices should be consulted before using this information for product design.

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