



The ION 1900 series node is a high performance strand mount unit, providing three RF outputs with up to 28 dB of gain as referenced to the optical receiver module RF level. The node's ability to accept a number of modular components makes it a cost-effective solution to your distribution needs. These optional plug-in modules, such as the return transmitter (Fabry-Perot or DFB), secondary receivers, damper switches and an assortment of attenuators and equalizers, allow you to customize each node to meet your local requirements. Remote status monitoring and control capabilities further increase the reliability of this ruggedized unit.

The optical receiver is designed to accept a lightwave signal from +1 to -3 dBm in either the 1310 nm or 1550 nm windows. After optical to electrical conversion (RF), the received signal is routed to the three outputs for distribution. The forward path bandwidth extends to 870 MHz, while the housing is specified to 1 GHz for future expandability.

The return path signals from each of the three

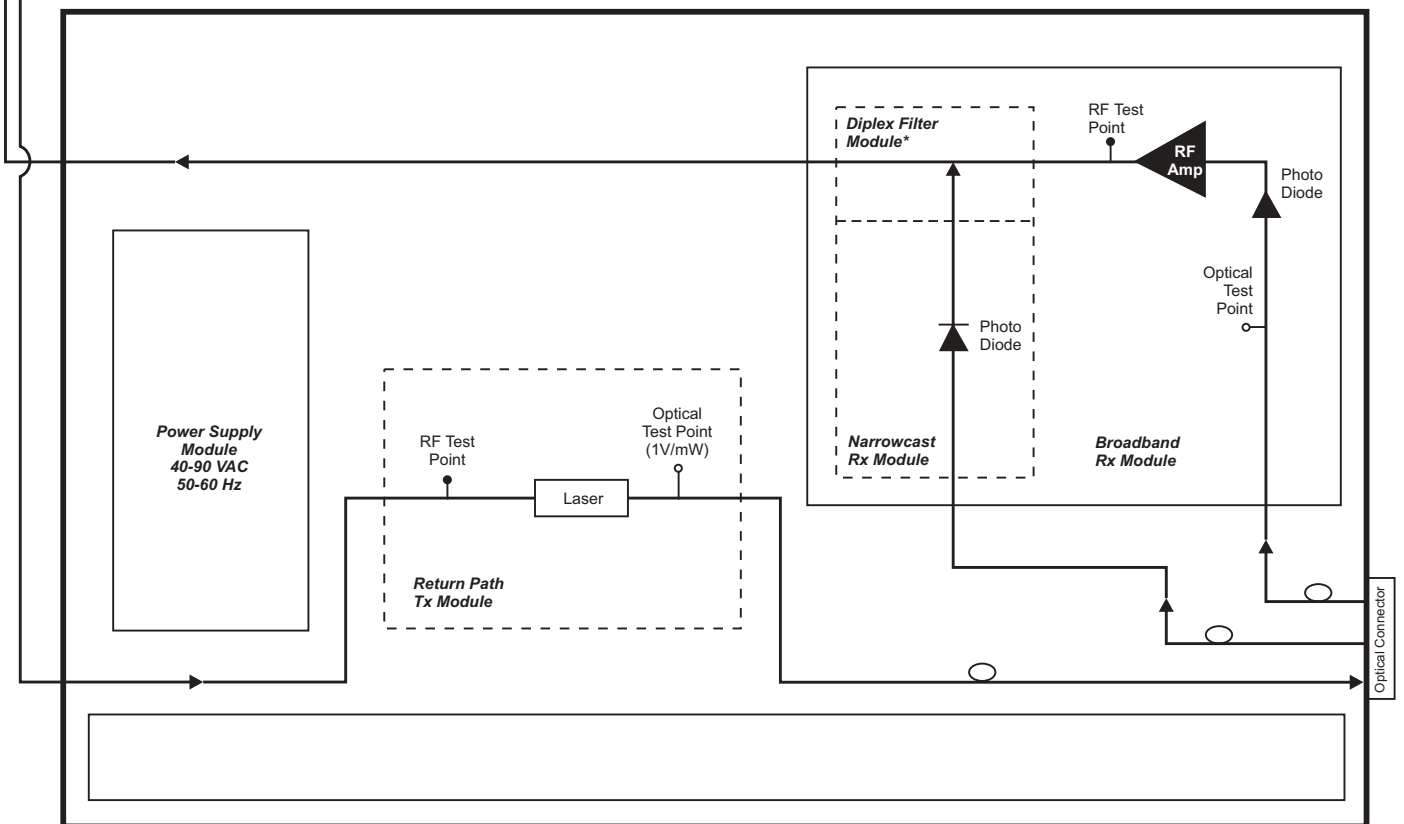
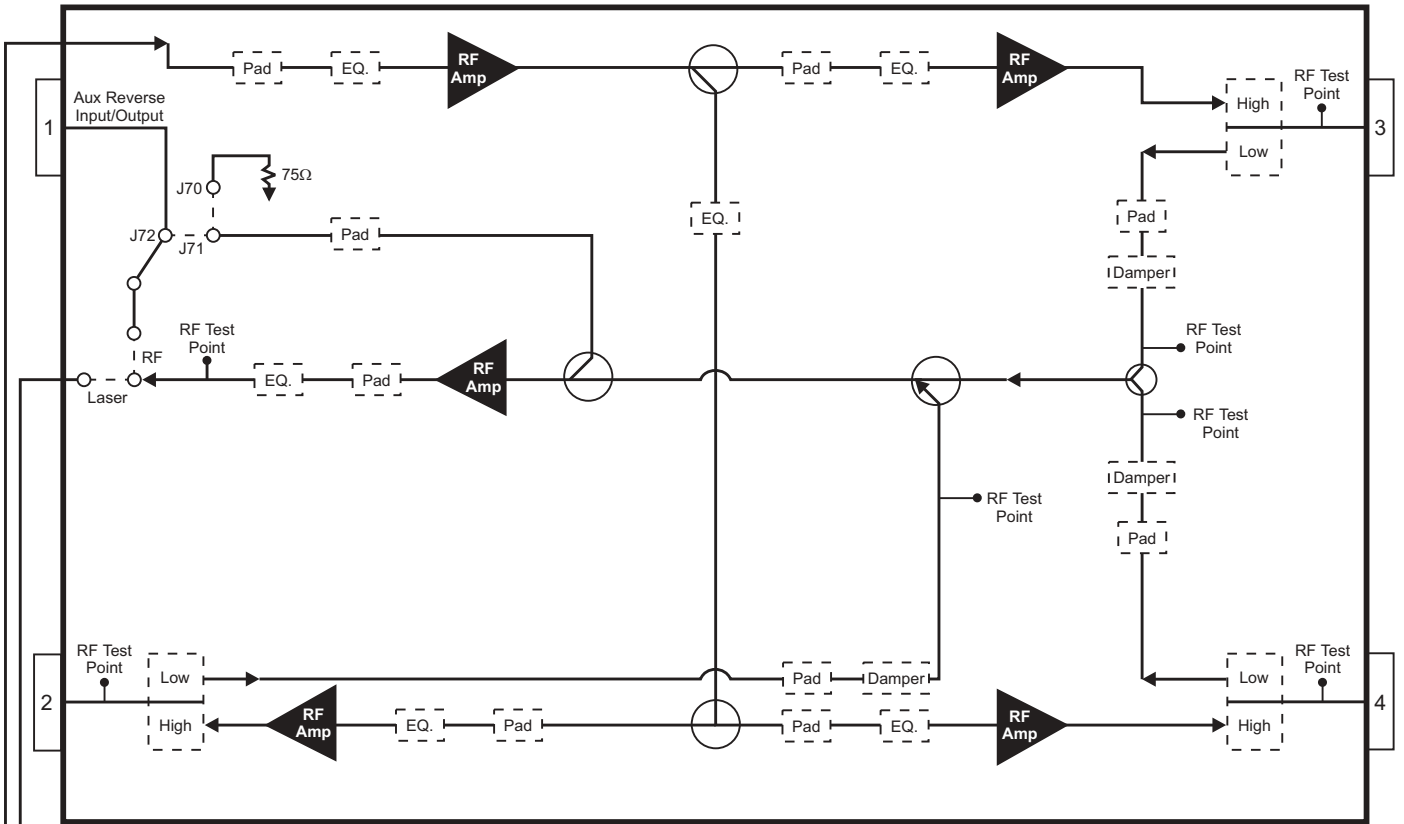
### **FEATURES & BENEFITS**

- **Three RF Outputs**
- **Separate RF Output Level Control**
- **870 MHz Forward Path, 1 GHz Housing**
- **Optional Node Control & Status Monitoring**
- **Optional Plug-in 5 to 200 Mhz Return Path Tx Module**
- **Optional Plug-in Damper Switches**

distribution ports are combined to a return path transmitter along with an optional fourth input from a local source. A variety of modular attenuators allows adjustment of RF amplitude, which sets the optical modulation index (OMI) of the return laser. The return path transmitter bandwidth of 5 to 200 MHz supports any future implementation of broad-band return path services.

The optional status monitoring/control system allows remote control of the plug-in damper switches. These switches can turn any return path signal on, off, or attenuate it by 10 dB. This can be helpful in identifying a source of ingress and/or disabling that port without losing signalling from the other return ports. Optional node status monitoring also relays critical information, such as the optical input level, optical output level, DC voltage and AC voltage, back to the monitoring facility.

The node's switch mode power supply accepts an input voltage from 40 to 90 VAC. The unit may also



# SPECIFICATIONS

## Optical Receiver Module

Bandwidth:	45 - 870 MHz
Input Level:	+1 to -3 dBm
Response:	±0.75 dB
Output Level (3.7% OMI):	
+1 dBm:	27 dBmV
-3 dBm:	19 dBmV
CSO <sup>1</sup> :	-70 dBc
CTB <sup>2</sup> :	-80 dBc

## Return Path Transmitter Module (uncooled Fabry-Perot)

Bandwidth:	5 - 200 MHz
Optical Output Level:	-4 dBm
Response:	±1.0 dB
CNR <sup>3</sup> :	40 dB
CSO <sup>3</sup> :	-40 dBc
CTB <sup>3</sup> :	-40 dBc

## Return Path RF Amplifier

Bandwidth:	5 - 30 MHz 5 - 40 MHz 5 - 50 MHz
Operating Gain:	15 dB
Return Loss:	16 dB

## Forward Path RF Amplifier

	<b>77 NTSC</b>	<b>42 CENELEC</b>
Bandwidth:	46 - 870 MHz 52 - 870 MHz 70 - 870 MHz	
Gain:	28 dB	
Response:	±0.5 dB	
Return Loss:	16 dB	
CNR <sup>4</sup> :	-64 dB	-64 dB
CSO <sup>4</sup> :	-60 dBc	-69 dB
CTB <sup>4</sup> :	-65 dBc	-65 dB
XMOD <sup>4</sup> :	-65 dBc	-67 dB

## Power Supply

DC Current:	1.8 Amps
AC Input:	40 - 90 VAC
AC Current (60 VAC):	2.3 Amps

## Notes:

- 2 sources, 40% OMI
- 3 sources, 40% OMI
- 16 carriers at 16 dBmV, 5 dB optical loss
- 45 dBmV output at 25° C with 10 dB output tilt at band extremes

### 45 - 750 MHz EQUALIZERS

#### Attenuation (dB)

Model Number	45 MHz	550 MHz	750 MHz
ION3-1900-SEQ-7-01	2.1	1.2	1.0
ION3-1900-SEQ-7-02	3.3	1.4	1.0
ION3-1900-SEQ-7-03	4.4	1.6	1.0
ION3-1900-SEQ-7-05	5.5	1.9	1.0
ION3-1900-SEQ-7-06	6.7	2.1	1.0
ION3-1900-SEQ-7-07	7.8	2.3	1.0
ION3-1900-SEQ-7-08	8.9	2.5	1.0
ION3-1900-SEQ-7-09	10.1	2.7	1.0
ION3-1900-SEQ-7-10	11.2	2.9	1.0
ION3-1900-SEQ-7-11	12.3	3.2	1.0
ION3-1900-SEQ-7-13	13.5	3.4	1.0
ION3-1900-SEQ-7-14	14.6	3.6	1.0
ION3-1900-SEQ-7-15	15.7	3.8	1.0
ION3-1900-SEQ-7-16	16.9	4.0	1.0
ION3-1900-SEQ-7-17	18.0	4.2	1.0
ION3-1900-SEQ-7-18	19.1	4.4	1.0
Accuracy	±0.75	±0.75	±0.75

Return Loss: > 18.0 dB

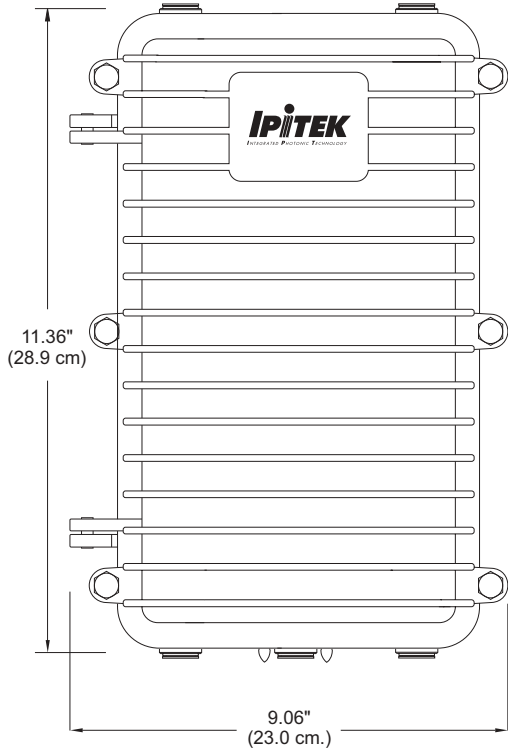
### 45 - 870 MHz EQUALIZERS

#### Attenuation (dB)

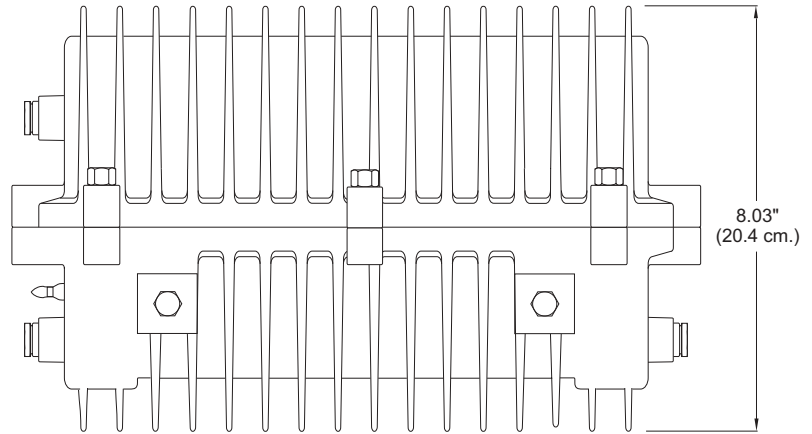
Model Number	45 MHz	550 MHz	750 MHz	870 MHz
ION3-1900-SEQ-9-01	2.2	1.3	1.1	1.0
ION3-1900-SEQ-9-02	3.3	1.6	1.2	1.0
ION3-1900-SEQ-9-04	4.5	1.9	1.3	1.0
ION3-1900-SEQ-9-05	5.6	2.2	1.4	1.0
ION3-1900-SEQ-9-06	6.8	2.5	1.5	1.0
ION3-1900-SEQ-9-07	8.0	2.8	1.6	1.0
ION3-1900-SEQ-9-08	9.1	3.2	1.8	1.0
ION3-1900-SEQ-9-09	10.3	3.5	1.9	1.0
ION3-1900-SEQ-9-10	11.4	3.8	2.0	1.0
ION3-1900-SEQ-9-12	12.6	4.1	2.1	1.0
ION3-1900-SEQ-9-13	13.7	4.4	2.2	1.0
ION3-1900-SEQ-9-14	14.9	4.7	2.3	1.0
ION3-1900-SEQ-9-15	16.1	5.0	2.4	1.0
ION3-1900-SEQ-9-16	17.2	5.3	2.5	1.0
ION3-1900-SEQ-9-17	18.4	5.6	2.6	1.0
ION3-1900-SEQ-9-19	19.5	5.9	2.7	1.0
Accuracy	±0.75	±0.75	±0.75	±0.5

Return Loss: > 18.0 dB

TOP VIEW



SIDE VIEW



## ORDERING INFORMATION

**ION3 - 1900 - SR - 1 - X - X**

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Type**  
Strand Node with Rx Module

**Bandwidth**  
1 = 45-870 MHz

**Connector**  
F = FC  
S = SC  
E = E-2000

**Polish**  
A = APC  
P = PC

**ION3 - 1900 - STM - XX - 2 - X - A**

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Type**  
Strand Node Return Tx Module

**Laser**  
F1 = Uncooled FP (-4 dBm)  
F2 = Cooled FP (-4 dBm)  
D1 = Uncooled DFB (0 dBm)  
D2 = Cooled DFB (0 dBm)

**Bandwidth**  
5 to 200 MHz

**Connector**  
F = FC  
S = SC  
E = E-2000

**Polish**  
A = APC

**ION3 - 1900 - SRM - 1 - X - X**      **ION3 - 1900 - SDS**

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Type**  
Strand Node Rx Module

**Bandwidth**  
1 = 45-870 MHz

**Connector**  
F = FC  
S = SC  
E = E-2000

**Polish**  
A = APC

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Type**  
Strand Node Damper Switch

**ION3 - 1900 - SEQ-X - XX**      **ION3 - 1900 - SPD - XX**

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Strand Equalizer**  
SEQ-7 = 750 MHz  
SEQ-9 = 870 MHz

**Attenuation**  
See Chart

**3 Output IPITEK Optical Node**

**Model**  
1900 Series

**Type**  
Strand Node Attenuator

**Attenuation**  
01 = 1 dB  
02 = 2 dB  
03 thru 20 dB  
(1 dB increments)



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