

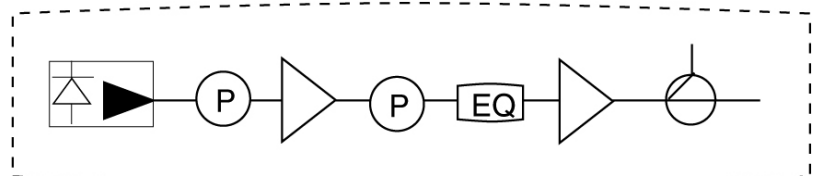
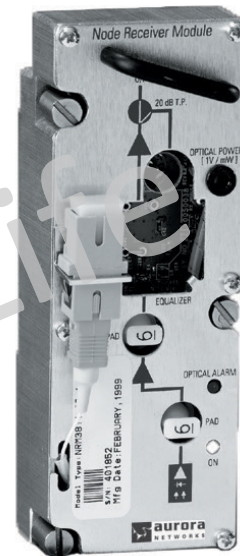
# Optical Node Series (HL2)

## NRM3111H

### HL2 Series PWRBlazer™ Optical Node Receiver Module

## FEATURES

- 20 dB directionally coupled RF test point and VDC optical power test point allow easy in-service testing of the optical path
- I2C interface provides a connection to status monitoring transponder for full network control and supervision
- Optimized for fiber deep nodes



## PRODUCT OVERVIEW

The ARRIS HL2 Series compact PWRBlazer™ Optical Node's optical receiver module, NRM3111H, uses state-of-the-art GaAs power-doubling hybrid output amplifier for superior distortion performance. For convenient deployment, each module has a fiber connector as well as locations for two plug-in pads and a slope equalizer, all accessible from the top.

Two LED indicators on the module indicate DC power's presence and optical input below  $-6$  dBm, visually indicating that the module is operating. The module also features an RF output test point to allow troubleshooting of optical links.

## SPECIFICATIONS

Characteristics	Specification
<b>Physical</b>	
Dimensions (with plug-ins)	5.5" W x 2.0" H x 1.9" D (14 cm x 5.1 cm x 4.9 cm)
Weight	0.7 lbs (0.3 kg)
<b>Power Requirements</b>	
Power Consumption, maximum	18.4 W
<b>Optical Input</b>	
Wavelength	1300-1600 nm
Nominal Optical Input	0 dBm
Optical Input Range	-10 to +3 dBm
Optical Return Loss	≥ 45 dB
Detector Noise	≤ 7 pA/√Hz
Detector Responsivity, nominal	0.85 A/W @ 1310nm 0.95 A/W @ 1550nm
Connectors	<ul style="list-style-type: none"> <li>• NRM3111H-AS: SC/APC</li> <li>• NRM3111H-US: SC/UPC</li> <li>• NRM3111H-AF: FC/APC</li> <li>• NRM3111H-UF: FC/UPC</li> <li>• NRM3111H-AE: E2000</li> </ul>
<b>RF Output</b>	
Nominal Output Level at Minimum Full Gain <sup>1</sup>	38 dBmV
Plug-in Options	Slope equalizer and two inter-stage pads
Passband	46-1003 MHz
Frequency Response Ripple	-0.5 to +0.5 dB: 45 to 1003 MHz
Slope	<ul style="list-style-type: none"> <li>• 1.0 ± 1.0 dB: -20° to +75°C</li> <li>• 1.0 ± 1.5 dB: -40° to +85°C</li> </ul>
C/CSO	≥ 78 dB <sup>2</sup> ≥ 75 dB <sup>3</sup>
C/CTB	≥ 83 dB <sup>2</sup> ≥ 77 dB <sup>3</sup>
CNR	≥ 54 dB <sup>2</sup> ≥ 53 dB <sup>3</sup>
<b>User Interface</b>	
Monitor Points	<ul style="list-style-type: none"> <li>• Optical Power: 1 V/mW</li> <li>• RF Output: -20 ± 1 dBc directionally coupled</li> </ul>
LED Indicator for Module Powering	GREEN = Module Power ON; OFF = Module Power OFF
LED Indicator for Input Optical Power Alarm	GREEN = Normal; RED = Optical Power < -6 dBm
<b>Status Monitor Interface</b>	
Monitored parameters	<ul style="list-style-type: none"> <li>• Optical input power</li> <li>• Optical alarm</li> <li>• Module version</li> </ul>
Remotely controllable parameters	<ul style="list-style-type: none"> <li>• Status monitor carrier on/off</li> </ul>

### NOTES:

1. At 0 dBm optical input with 3.7% modulation index and 8 dB pad.
2. At 42 dBmV output level at 1003 MHz with 14 dB slope, 78 NTSC CW carriers, 256 QAM digital at -6 dB, optical input = 0 dBm, 3.7% OMI, without transmitter contribution.
3. At 46 dBmV output level at 1003 MHz with 14 dB slope, 78 NTSC CW carriers, 256 QAM digital at -6 dB, optical input = 0 dBm, 3.7% OMI, without transmitter contribution.

**ORDERING INFORMATION**

Part Numbers	Description
NRM3111H-zz	zz designates the optical connector = AS: SC/APC US: SC/UPC AF: FC/APC UF: FC/UPC AE: E2000

End of Life

**RELATED PRODUCTS**

HLN3142C	HLN3142E
HLN3144	

**Customer Care**

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

**Note:** Specifications are subject to change without notice.

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