A PACKAGE

LASER DIODE ARRAY

200W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P200

1-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Mult-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	200	W
Operating Current	200W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	1.25	W/A
Electrical-Optical Efficiency	200W at 25˚C Heat Sink	57	%
Center Wavelength	200W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	200W at 25˚C Heat Sink	+/-3	nm
Spectral Width	200W at 25˚C Heat Sink	3.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.002	Ω
Operating Voltage	25˚C Heat Sink, 200W	2.0	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

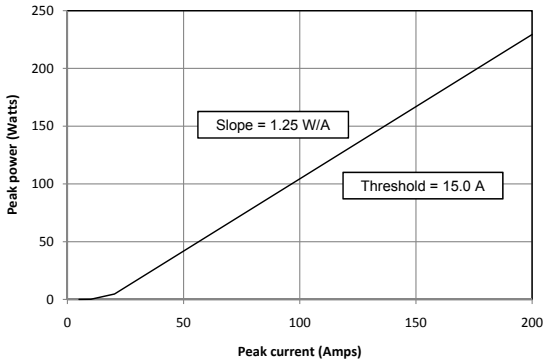
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

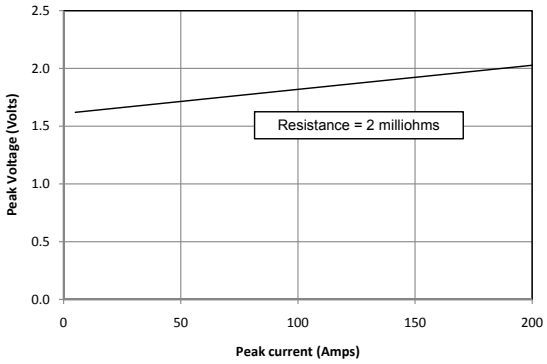
200W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

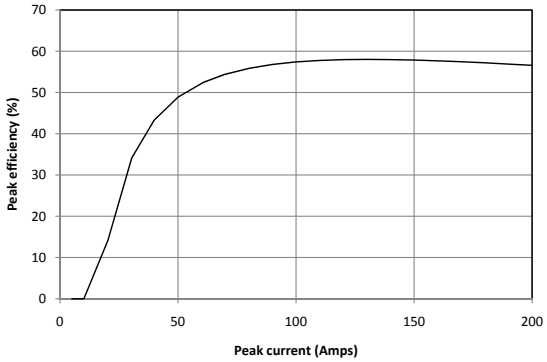
Power vs Current
9 Hz, 150 µsec, 25°C



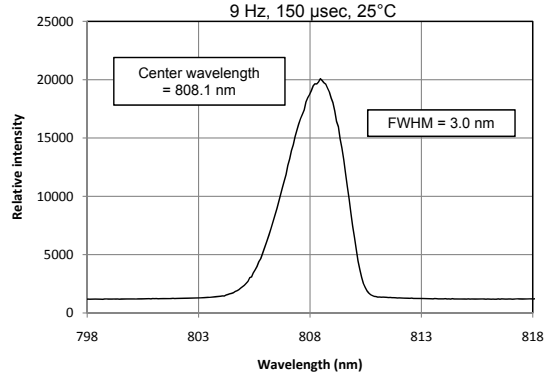
Voltage vs Current
9 Hz, 150 µsec, 25°C



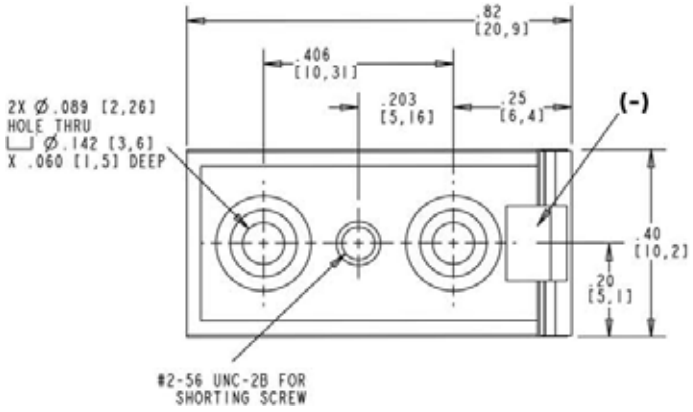
Efficiency vs Current
9 Hz, 150 µsec, 25°C

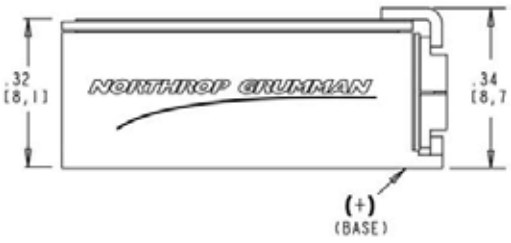


Wavelength Spectrum
200 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS





A PACKAGE

LASER DIODE ARRAY

200W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P200

2-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	200	W
Operating Current	200W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	2.50	W/A
Electrical-Optical Efficiency	200W at 25˚C Heat Sink	58	%
Center Wavelength	200W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	200W at 25˚C Heat Sink	+/-3	nm
Spectral Width	200W at 25˚C Heat Sink	2.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.004	Ω
Operating Voltage	25˚C Heat Sink, 200W	3.6	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

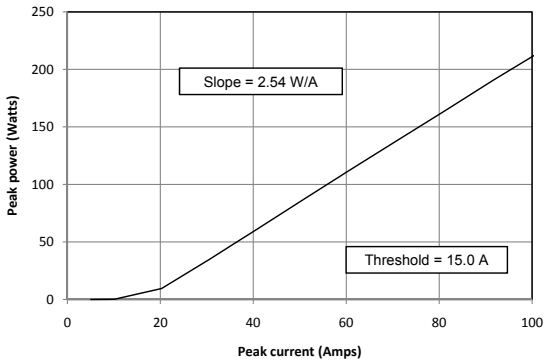
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

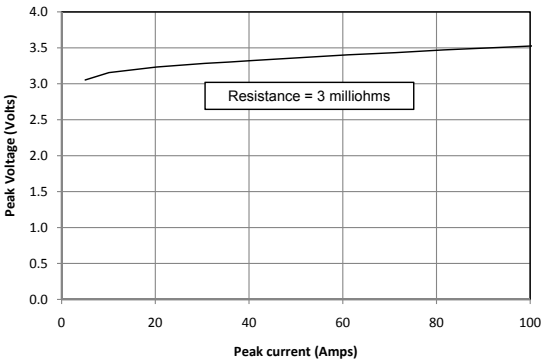
200W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

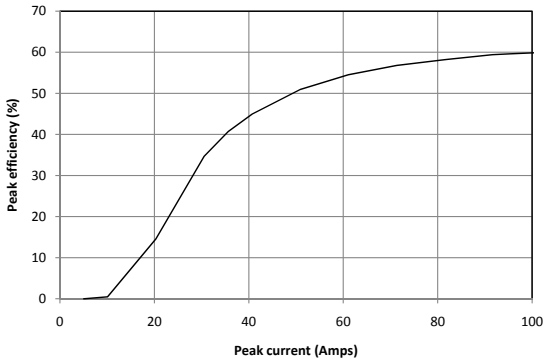
Power vs Current
9 Hz, 150 µsec, 25°C



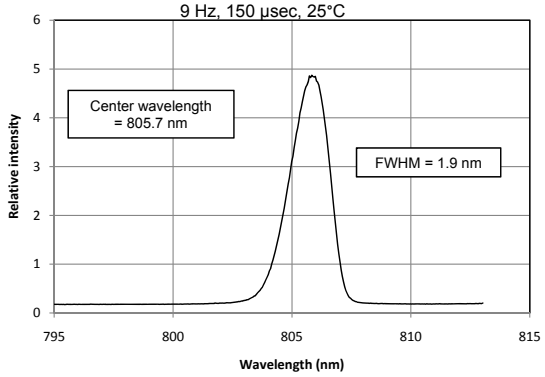
Voltage vs Current
9 Hz, 150 µsec, 25°C



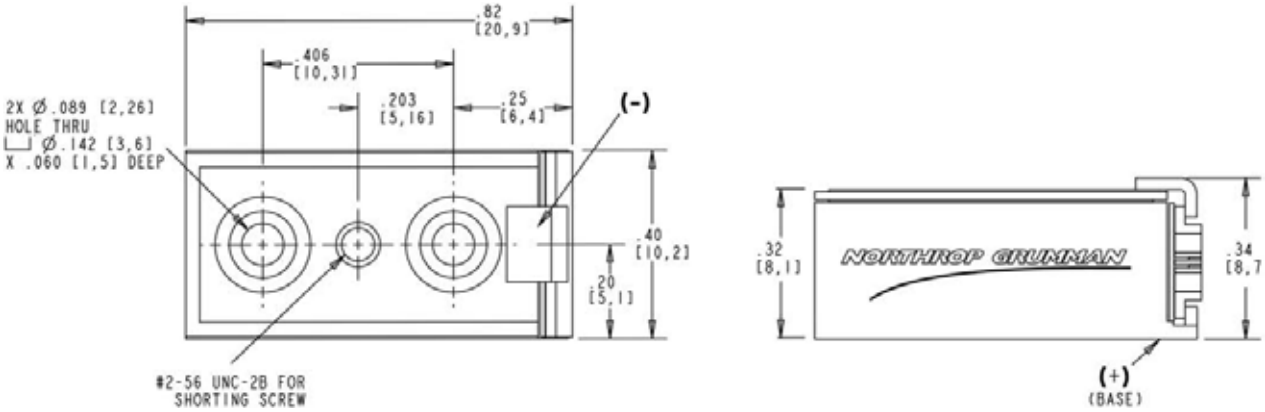
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
200 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

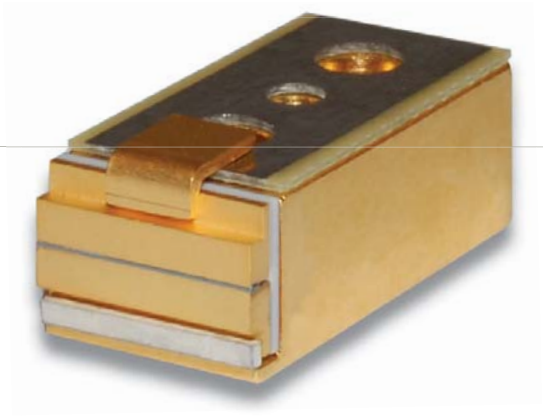


LASER DIODE ARRAY

A PACKAGE

300W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR189P300

3-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	300	W
Operating Current	300W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	3.75	W/A
Electrical-Optical Efficiency	300W at 25˚C Heat Sink	58	%
Center Wavelength	300W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	300W at 25˚C Heat Sink	+/-3	nm
Spectral Width	300W at 25˚C Heat Sink	2.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.006	Ω
Operating Voltage	25˚C Heat Sink, 300W	5.4	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

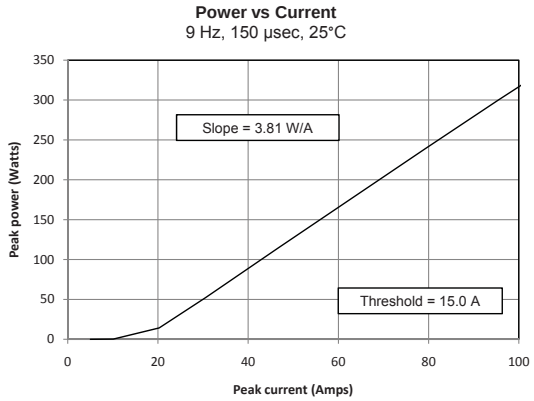
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

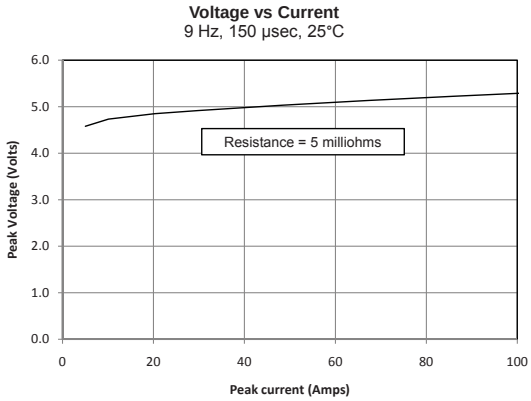
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

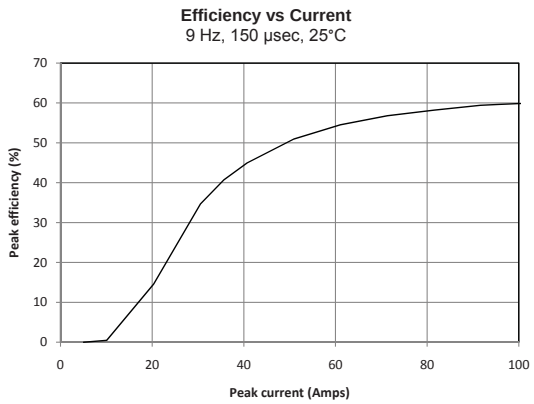
300W QCW

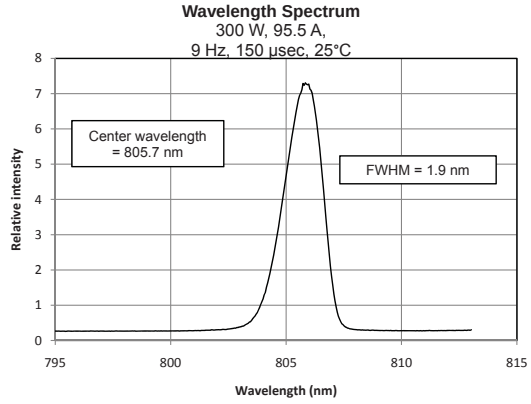
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

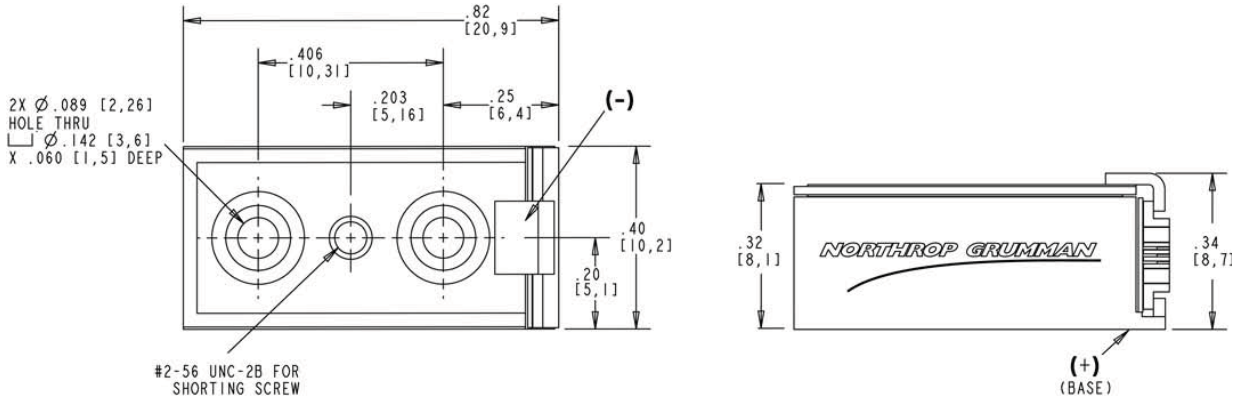








MECHANICAL CHARACTERISTICS



A PACKAGE

LASER DIODE ARRAY

400W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P400

4-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	400	W
Operating Current	400W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	5.00	W/A
Electrical-Optical Efficiency	400W at 25˚C Heat Sink	58	%
Center Wavelength	400W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	400W at 25˚C Heat Sink	+/-3	nm
Spectral Width	400W at 25˚C Heat Sink	2.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.008	Ω
Operating Voltage	25˚C Heat Sink, 400W	7.2	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

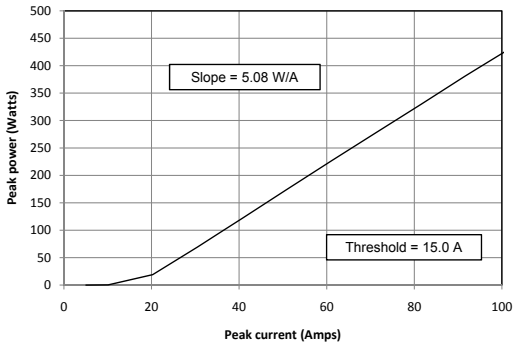
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

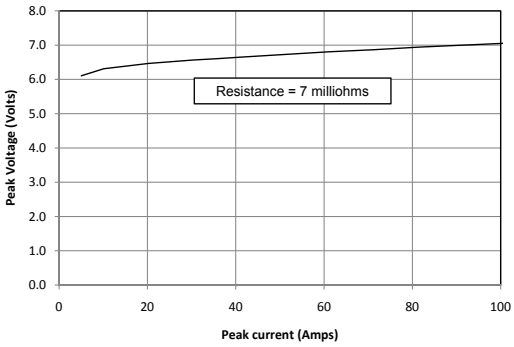
400W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

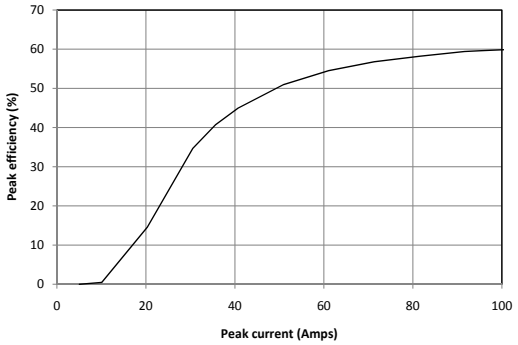
Power vs Current
9 Hz, 150 µsec, 25°C



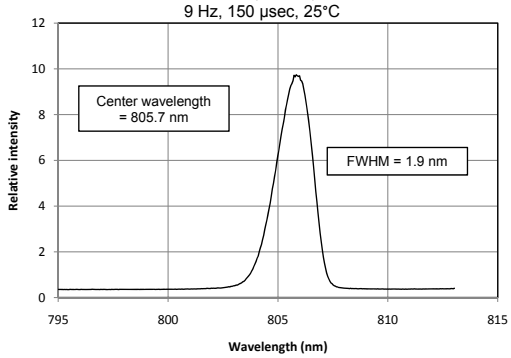
Voltage vs Current
9 Hz, 150 µsec, 25°C



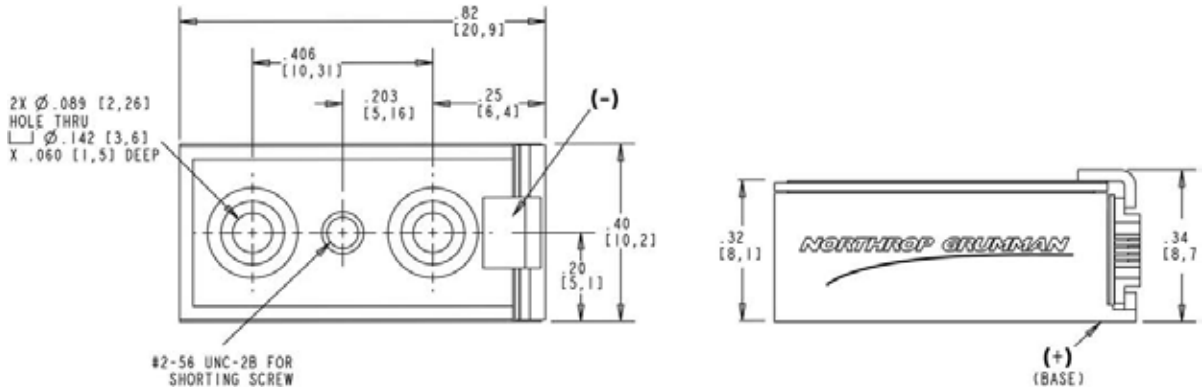
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
400 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS



A PACKAGE

LASER DIODE ARRAY

600W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P600

6-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	600	W
Operating Current	600W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	7.50	W/A
Electrical-Optical Efficiency	600W at 25˚C Heat Sink	58	%
Center Wavelength	600W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	600W at 25˚C Heat Sink	+/-3	nm
Spectral Width	600W at 25˚C Heat Sink	2.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.012	Ω
Operating Voltage	25˚C Heat Sink, 600W	10.8	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

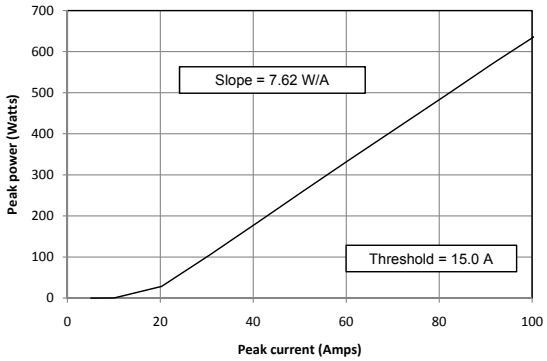
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

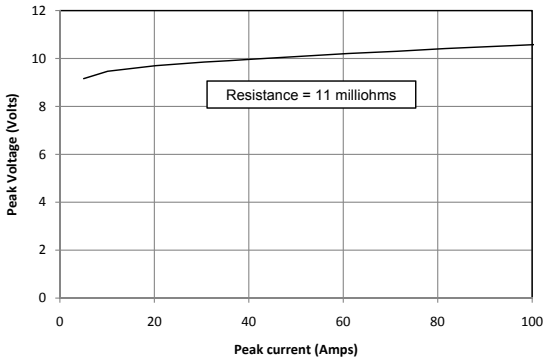
600W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

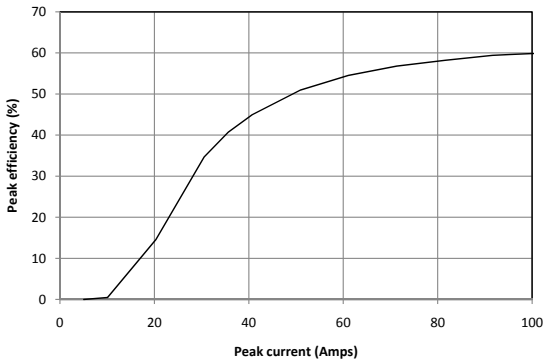
Power vs Current
9 Hz, 150 µsec, 25°C



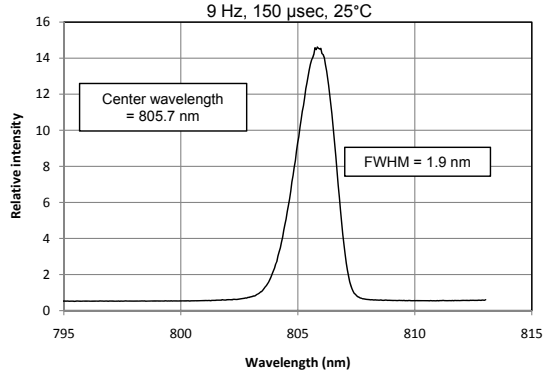
Voltage vs Current
9 Hz, 150 µsec, 25°C



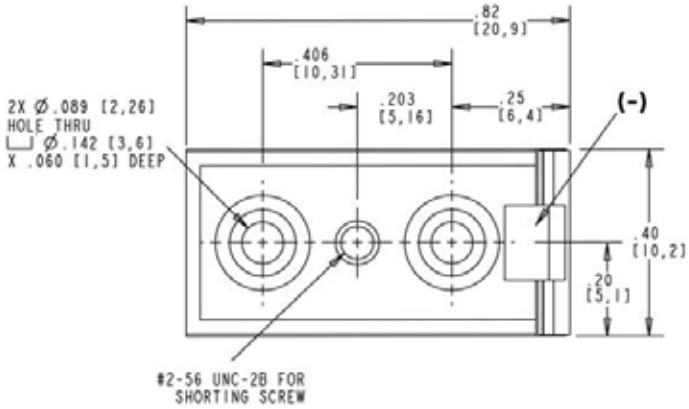
Efficiency vs Current
9 Hz, 150 µsec, 25°C

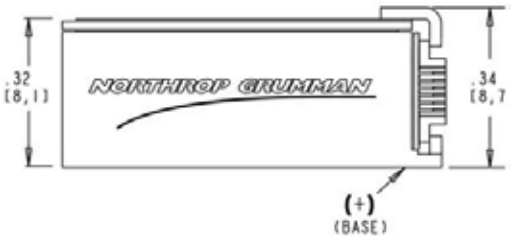


Wavelength Spectrum
600 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS





A PACKAGE

LASER DIODE ARRAY

800W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P800

4-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Also Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	800	W
Operating Current	800W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	5.00	W/A
Electrical-Optical Efficiency	800W at 25˚C Heat Sink	57	%
Center Wavelength	800W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	800W at 25˚C Heat Sink	+/-3	nm
Spectral Width	800W at 25˚C Heat Sink	3.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.008	Ω
Operating Voltage	25˚C Heat Sink, 800W	8.0	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

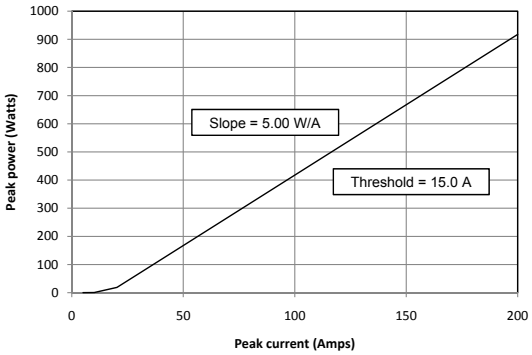
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

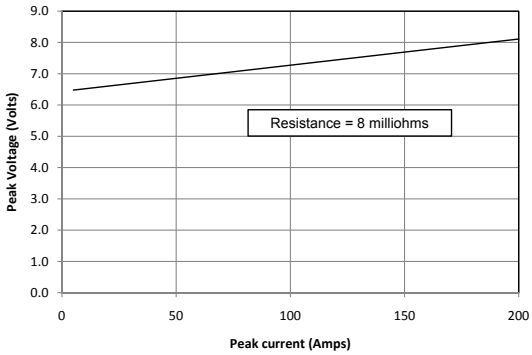
800W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

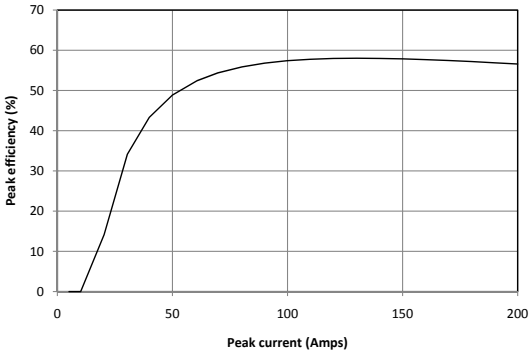
Power vs Current
9 Hz, 150 µsec, 25°C



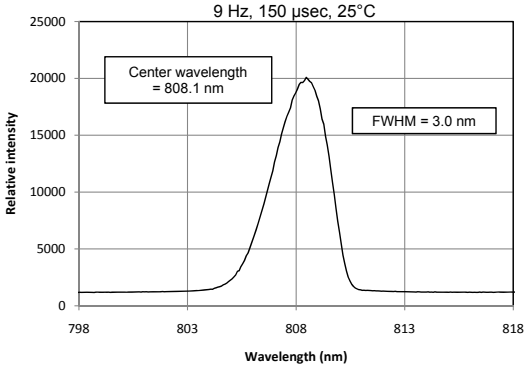
Voltage vs Current
9 Hz, 150 µsec, 25°C



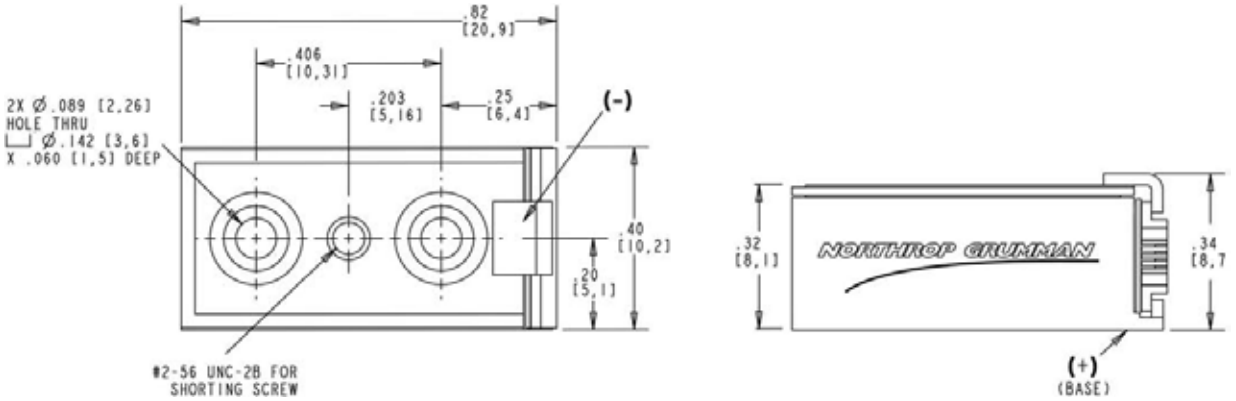
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
800W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS



A PACKAGE

LASER DIODE ARRAY

1600W QCW

NORTHROP GRUMMAN

PART NUMBER: ARR189P1600

8-BAR A PACKAGE

FEATURES AND BENEFITS

- Assembled With Hard Solder & Expansion Matched Materials
- Ideal For Long Pulse And/Or High Duty Cycle Applications
- Standard Bar Pitch Options Include 400 µm, 800 µm, & 1200 µm
- Available Wavelengths: 790-1550nm
- Multi-wavelength Configurations Available
- A Package Available With Up To 8 Bars For A Maximum Output Power Of 1.6 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	1600	W
Operating Current	1600W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	10.0	W/A
Electrical-Optical Efficiency	1600W at 25˚C Heat Sink	57	%
Center Wavelength	1600W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	1600W at 25˚C Heat Sink	+/-3	nm
Spectral Width	1600W at 25˚C Heat Sink	3.0	nm
Wavelength Shift	—	0.25	nm/˚C
Beam Divergence FWHM	—	38x7	x°
Beam Divergence FWHM (Lensed)	—	1x7	x°

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
Series Resistance	25˚C Heat Sink	0.016	Ω
Operating Voltage	25˚C Heat Sink, 1600W	16.0	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions
Reverse Current	0 A
Reverse Voltage	0 V
Operating Temperature Range	-40˚C to 70˚C
Storage Temperature Range	-40˚C to 85˚C

NOTES

(1) These specifications apply for operation at 808nm. Other wavelengths available upon request.

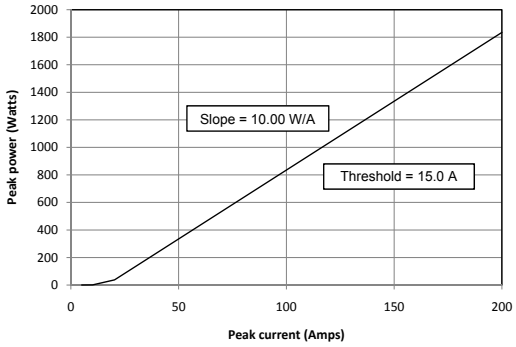
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

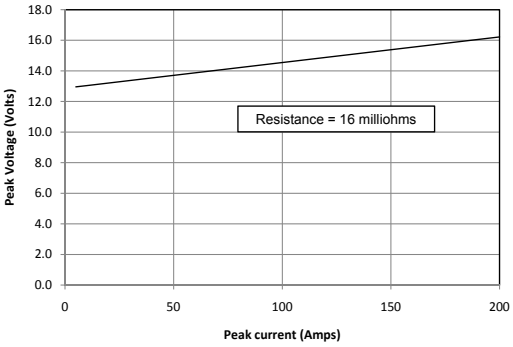
1600W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

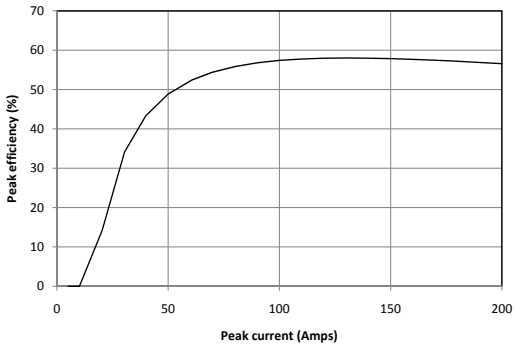
Power vs Current
9 Hz, 150 µsec, 25°C



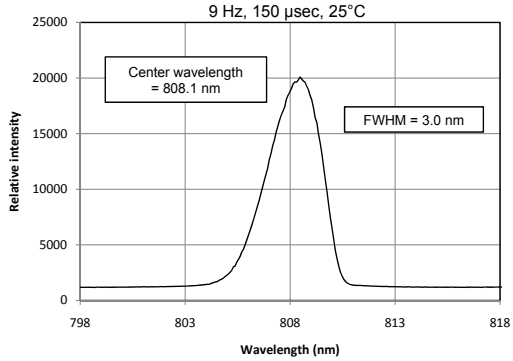
Voltage vs Current
9 Hz, 150 µsec, 25°C



Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
1600 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS