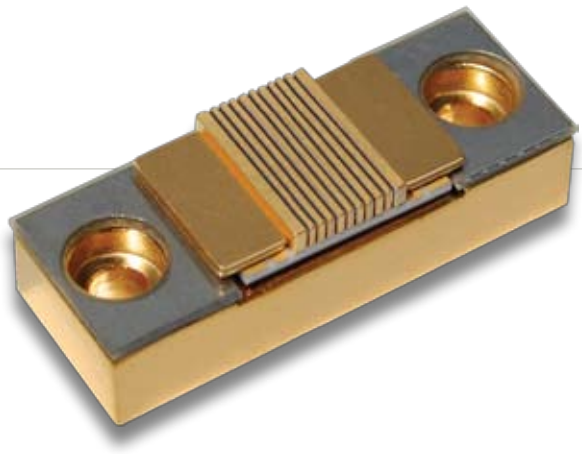
G PACKAGE

LASER DIODE ARRAY

1000W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P1000

10-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	1000	W
Operating Current	1000W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	12.5	W/A
Electrical-Optical Efficiency	1000W at 25˚C Heat Sink	58	%
Center Wavelength	1000W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	1000W at 25˚C Heat Sink	+/-3	nm
Spectral Width	1000W 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	0.020	Ω
Operating Voltage	25˚C Heat Sink, 1000W	18.0	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.

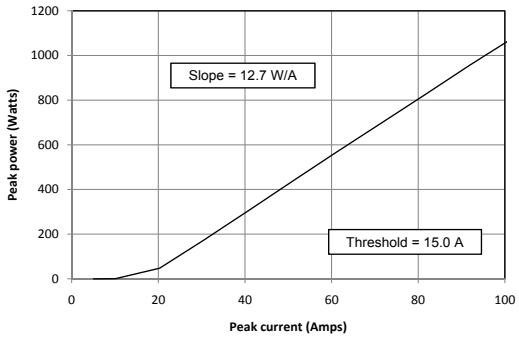
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

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

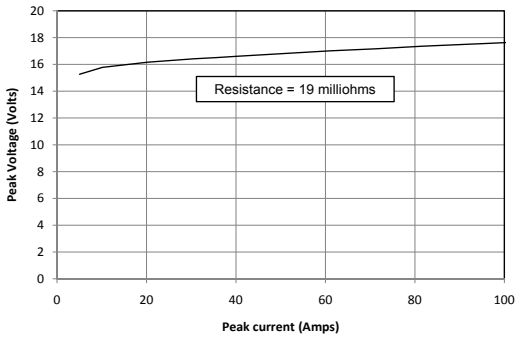
1000W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

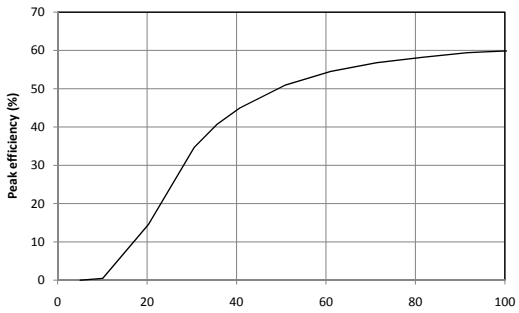
Power vs Current
9 Hz, 150 µsec, 25°C



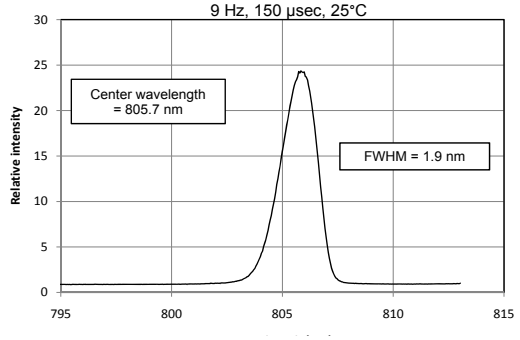
Voltage vs Current
9 Hz, 150 µsec, 25°C



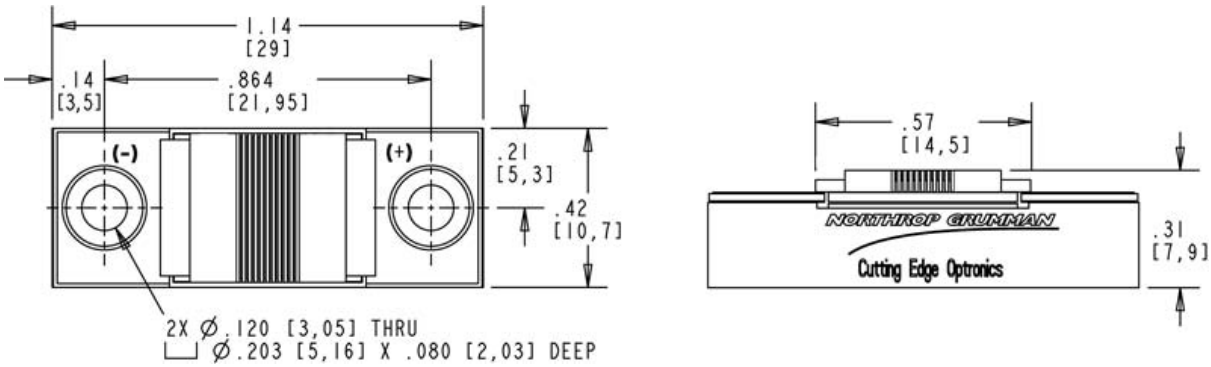
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
1000 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

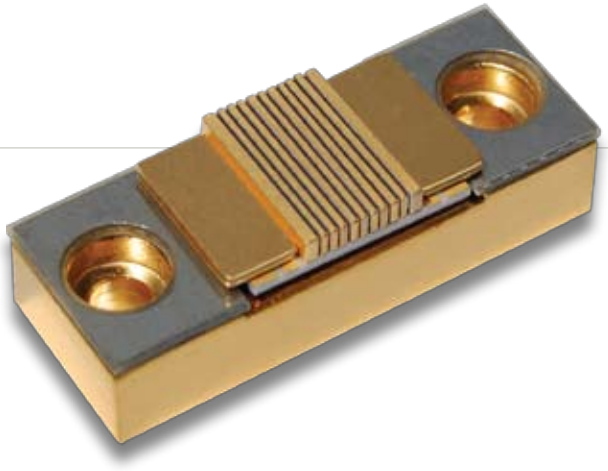


G PACKAGE

LASER DIODE ARRAY

1200W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P1200

12-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	1200	W
Operating Current	1200W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	15.0	W/A
Electrical-Optical Efficiency	1200W at 25˚C Heat Sink	58	%
Center Wavelength	1200W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	1200W at 25˚C Heat Sink	+/-3	nm
Spectral Width	1200W 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	0.024	Ω
Operating Voltage	25˚C Heat Sink, 1200W	21.6	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.

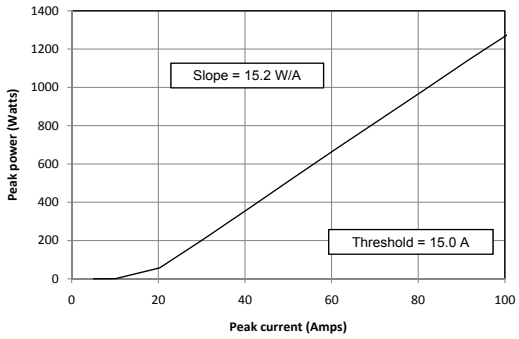
(2) A dry nitrogen environment should be provided by the user when storing and operating at temperatures below ambient dew point.

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

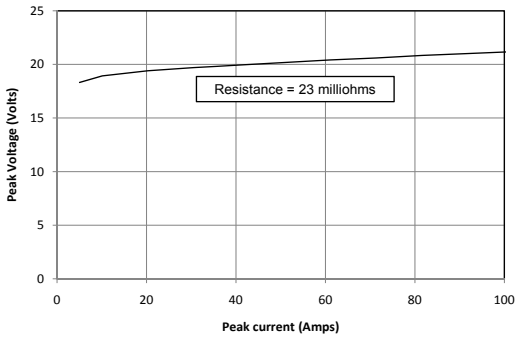
1200W QCW

OPTICAL CHARACTERISTICS (SAMPLE)

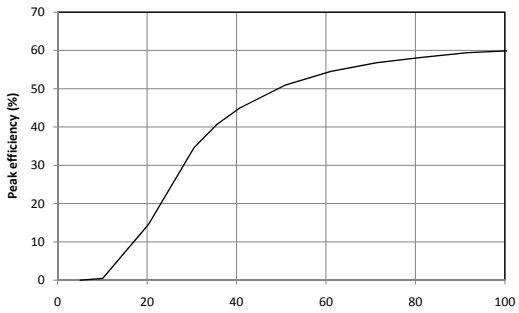
Power vs Current
9 Hz, 150 µsec, 25°C



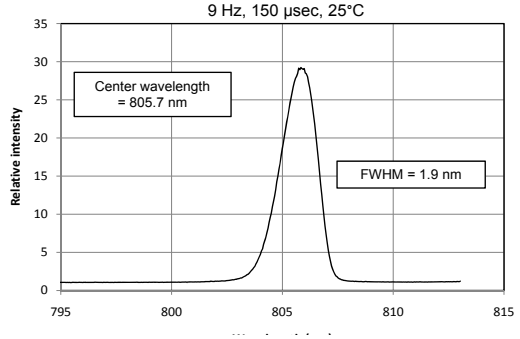
Voltage vs Current
9 Hz, 150 µsec, 25°C



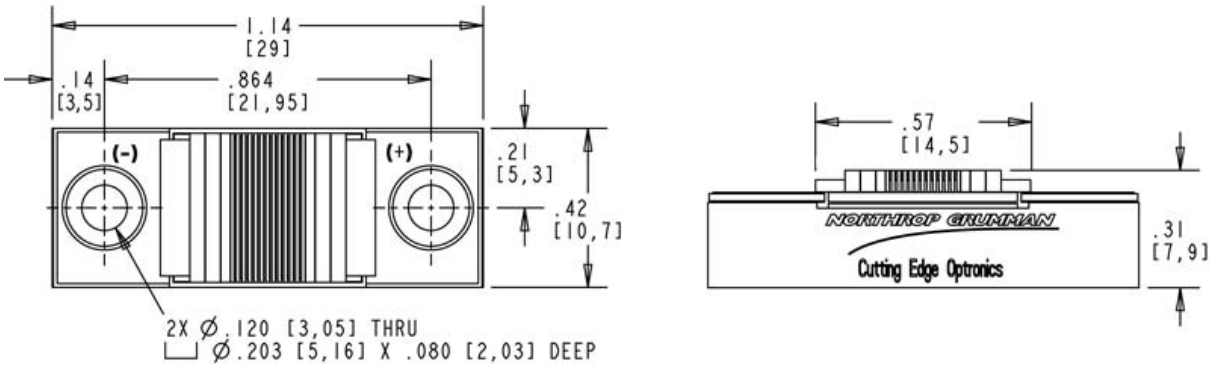
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
1200 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

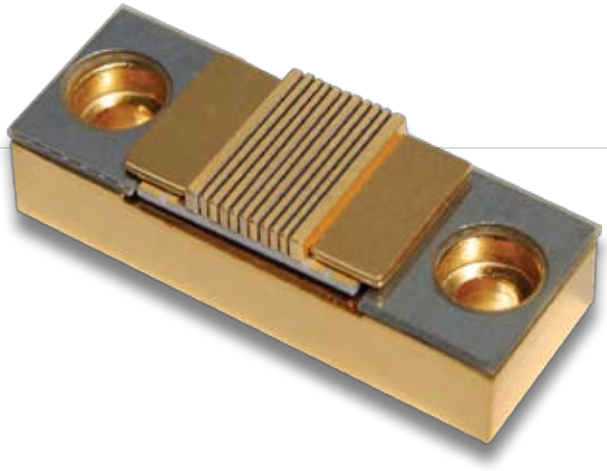


G PACKAGE

LASER DIODE ARRAY

1700W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P1700

17-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	1700	W
Operating Current	1700W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	21.3	W/A
Electrical-Optical Efficiency	1700W at 25˚C Heat Sink	58	%
Center Wavelength	1700W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	1700W at 25˚C Heat Sink	+/-3	nm
Spectral Width	1700W 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	0.034	Ω
Operating Voltage	25˚C Heat Sink, 1700W	30.6	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.

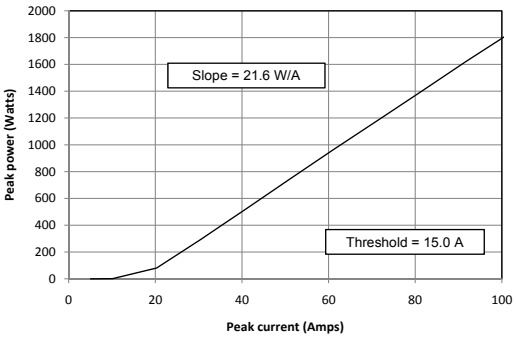
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

1700W QCW

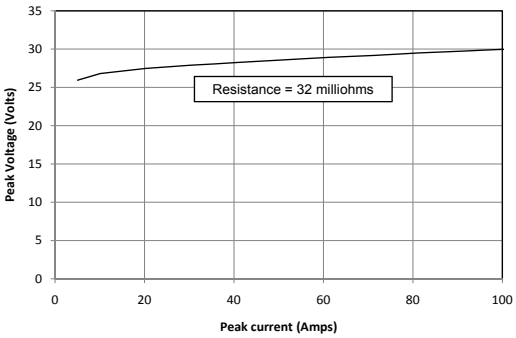
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

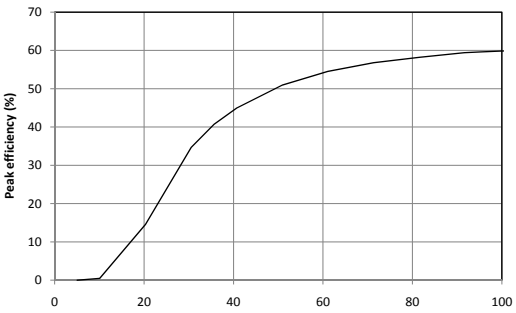
Power vs Current
9 Hz, 150 µsec, 25°C



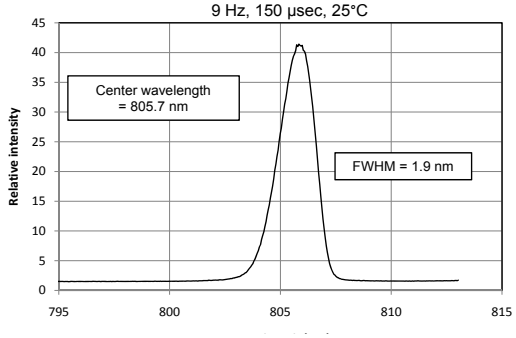
Voltage vs Current
9 Hz, 150 µsec, 25°C



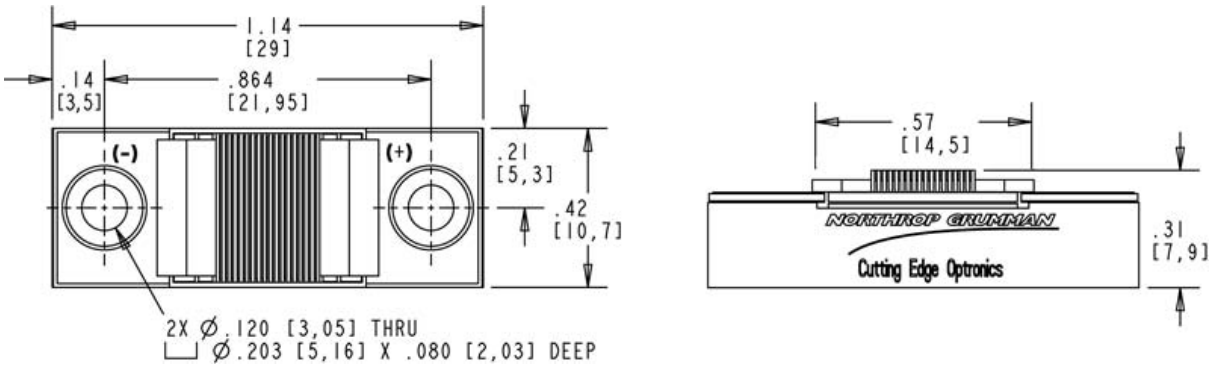
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
1700 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

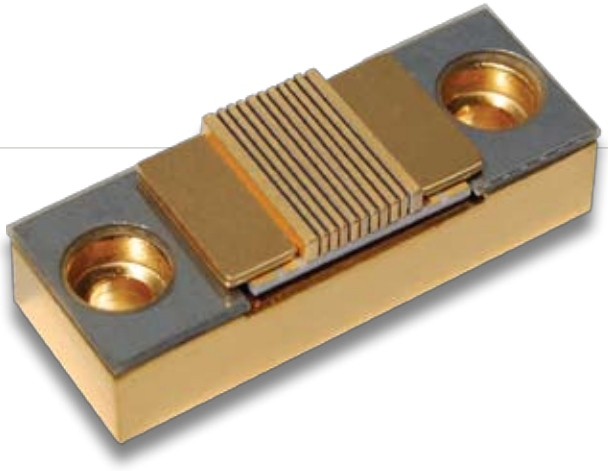


G PACKAGE

LASER DIODE ARRAY

1800W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P1800

9-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	1800	W
Operating Current	1800W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	11.3	W/A
Electrical-Optical Efficiency	1800W at 25˚C Heat Sink	57	%
Center Wavelength	1800W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	1800W at 25˚C Heat Sink	+/-3	nm
Spectral Width	1800W at 25˚C Heat Sink	2.5	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	0.018	Ω
Operating Voltage	25˚C Heat Sink, 1800W	18.0	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.

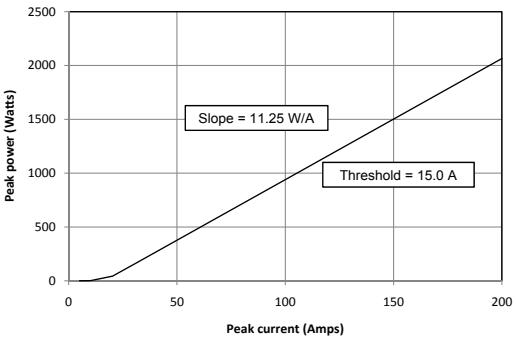
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

1800W QCW

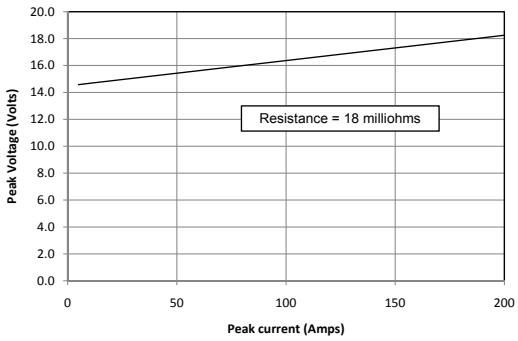
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

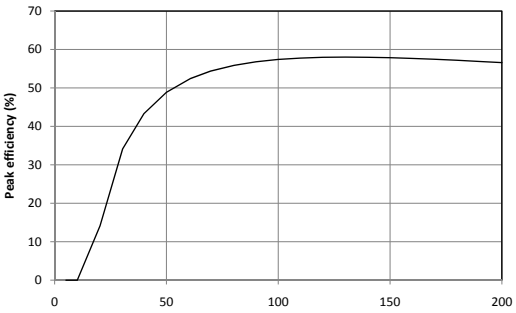
Power vs Current
9 Hz, 150 µsec, 25°C



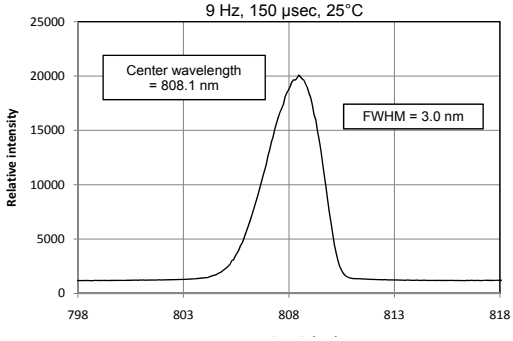
Voltage vs Current
9 Hz, 150 µsec, 25°C



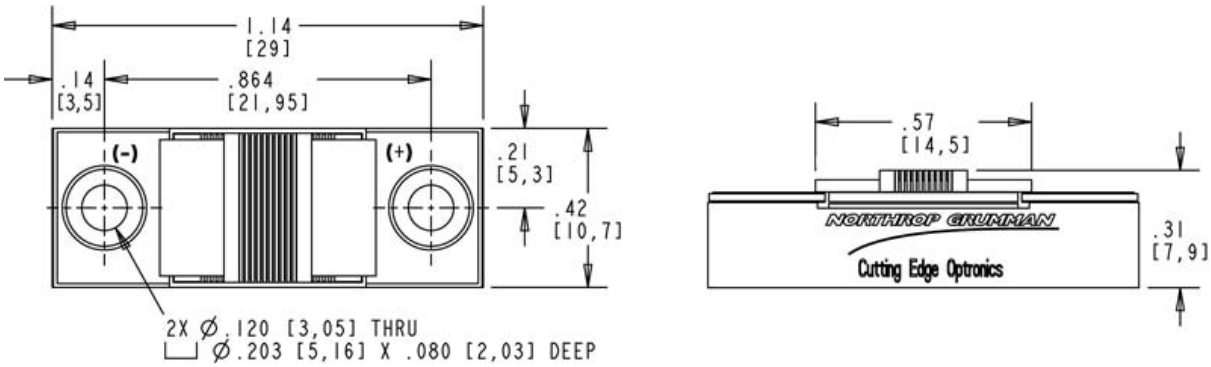
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
1800 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

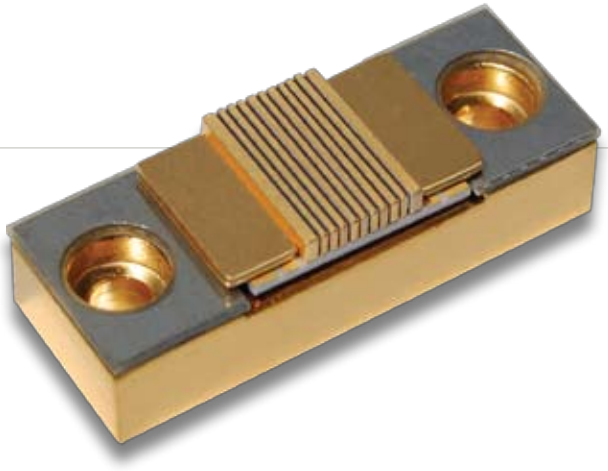


G PACKAGE

LASER DIODE ARRAY

2200W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P2200

22-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	95A at 25˚C Heat Sink	2200	W
Operating Current	2200W at 25˚C Heat Sink	95	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	27.5	W/A
Electrical-Optical Efficiency	2200W at 25˚C Heat Sink	58	%
Center Wavelength	2200W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	2200W at 25˚C Heat Sink	+/-3	nm
Spectral Width	2200W 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	0.044	Ω
Operating Voltage	25˚C Heat Sink, 2200W	39.6	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.

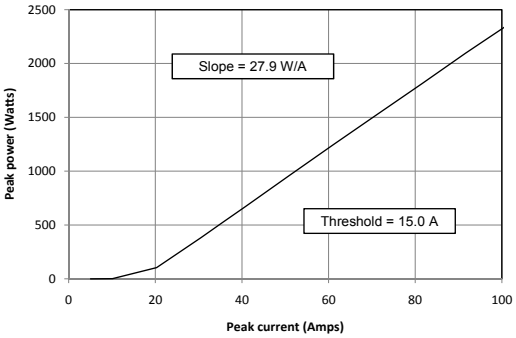
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

2200W QCW

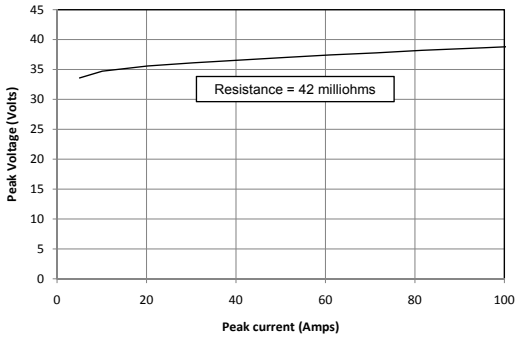
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

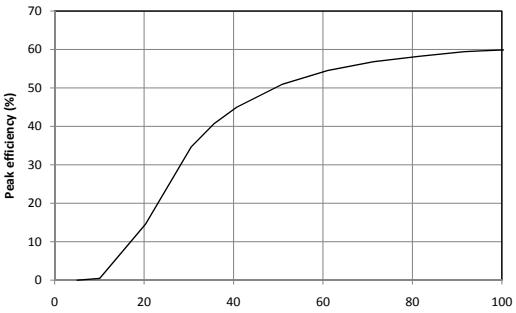
Power vs Current
9 Hz, 150 µsec, 25°C



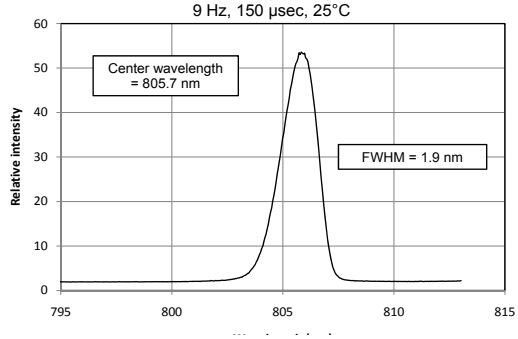
Voltage vs Current
9 Hz, 150 µsec, 25°C



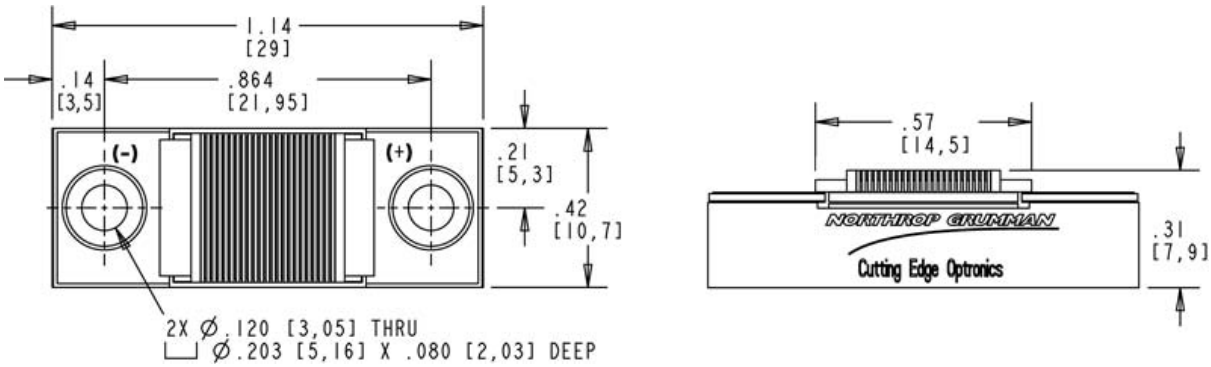
Efficiency vs Current
9 Hz, 150 µsec, 25°C



Wavelength Spectrum
2200 W, 95.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS

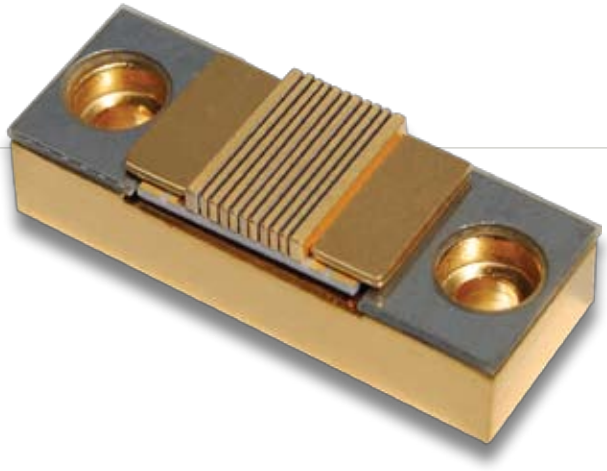


G PACKAGE

LASER DIODE ARRAY

2400W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P2400

12-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	2400	W
Operating Current	2400W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	15.0	W/A
Electrical-Optical Efficiency	2400W at 25˚C Heat Sink	57	%
Center Wavelength	2400W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	2400W at 25˚C Heat Sink	+/-3	nm
Spectral Width	2400W at 25˚C Heat Sink	2.5	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	0.024	Ω
Operating Voltage	25˚C Heat Sink, 2400W	24.0	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.

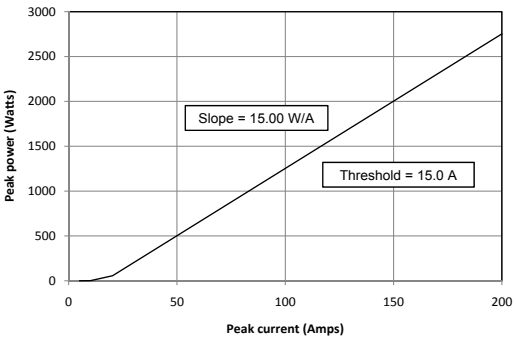
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

2400W QCW

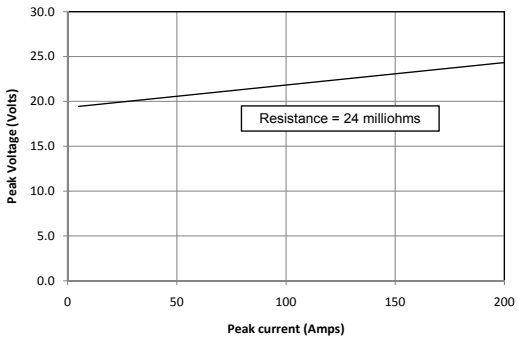
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

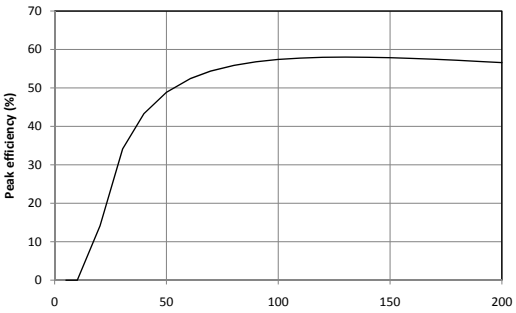
Power vs Current
9 Hz, 150 µsec, 25°C



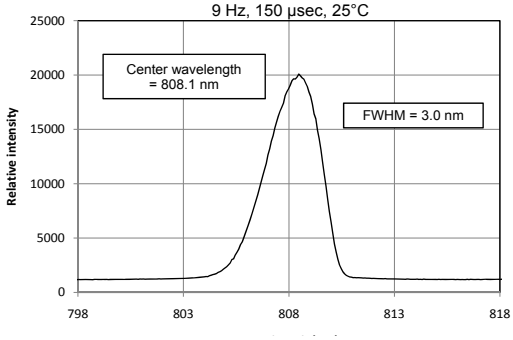
Voltage vs Current
9 Hz, 150 µsec, 25°C



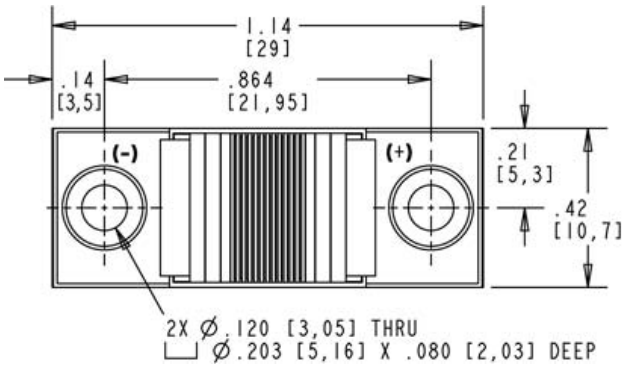
Efficiency vs Current
9 Hz, 150 µsec, 25°C

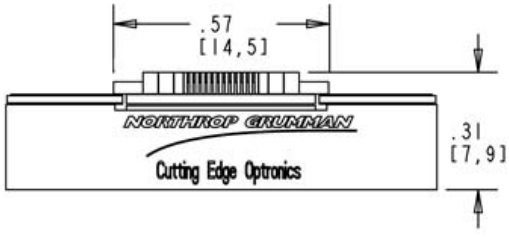


Wavelength Spectrum
2400 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS



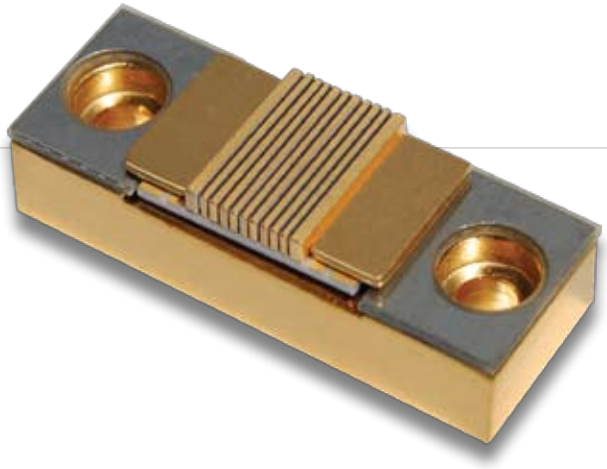


G PACKAGE

LASER DIODE ARRAY

3400W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P3400

17-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25°C Heat Sink	3400	W
Operating Current	3400W at 25°C Heat Sink	175	A
Threshold Current	25°C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	21.3	W/A
Electrical-Optical Efficiency	3400W at 25°C Heat Sink	57	%
Center Wavelength	3400W at 25°C Heat Sink	808	nm
Wavelength Tolerance	3400W at 25°C Heat Sink	+/-3	nm
Spectral Width	3400W at 25°C Heat Sink	2.5	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	0.034	Ω
Operating Voltage	25°C Heat Sink, 3400W	34.0	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.

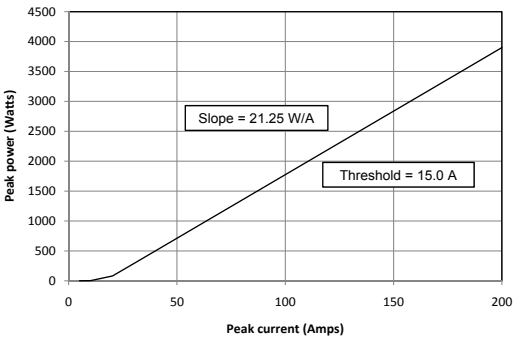
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

3400W QCW

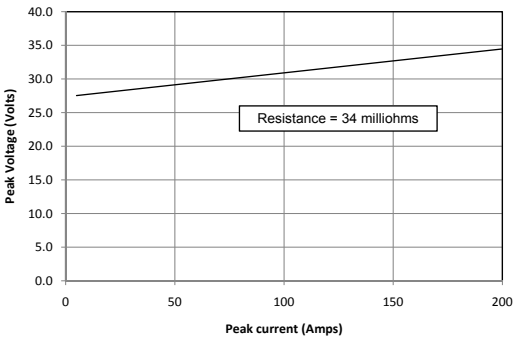
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

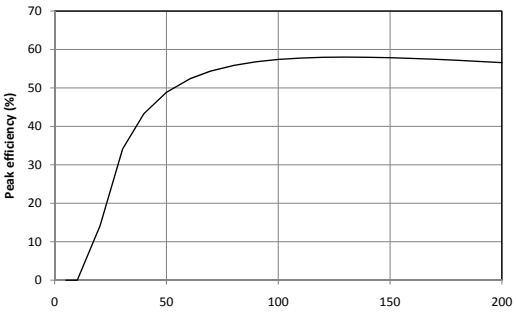
Power vs Current
9 Hz, 150 µsec, 25°C



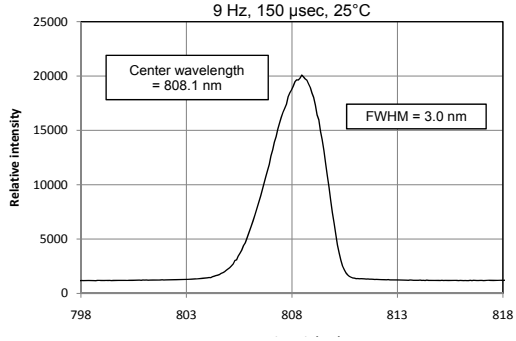
Voltage vs Current
9 Hz, 150 µsec, 25°C



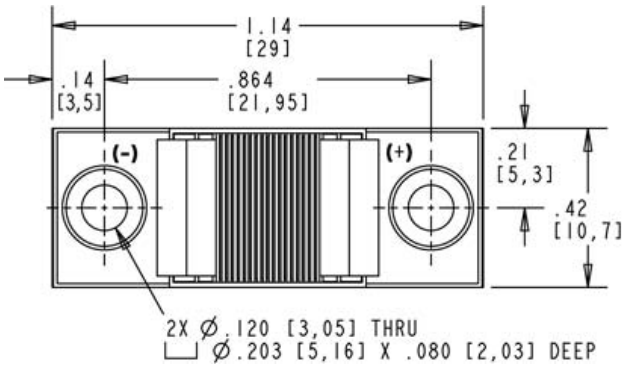
Efficiency vs Current
9 Hz, 150 µsec, 25°C

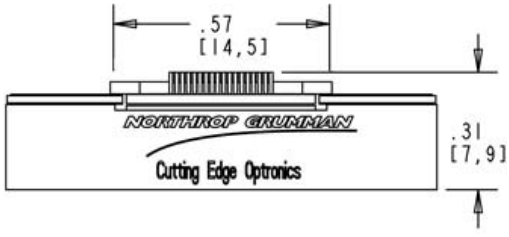


Wavelength Spectrum
3400 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS



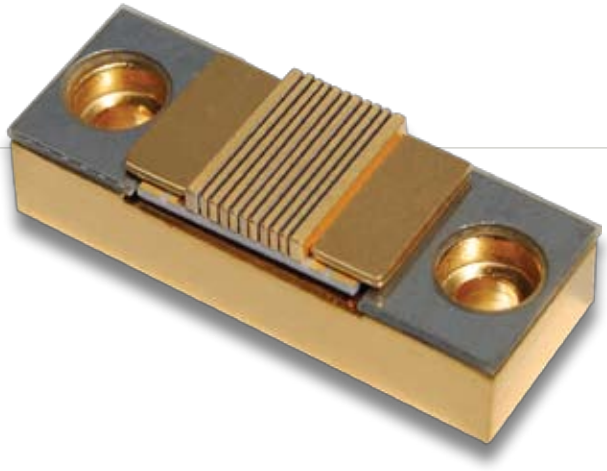


G PACKAGE

LASER DIODE ARRAY

4400W QCW

NORTHROP GRUMMAN



PART NUMBER: ARR180P4400

22-BAR STRETCH G 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
- G Package Also Available With Up To 26 Bars For A Maximum Output Power Of 5.2 kW

OPTICAL CHARACTERISTICS

Parameter	Conditions	Typical	Units
QCW Power Output	175A at 25˚C Heat Sink	4400	W
Operating Current	4400W at 25˚C Heat Sink	175	A
Threshold Current	25˚C Heat Sink	15	A
Slope Efficiency	25°C Heat Sink	27.5	W/A
Electrical-Optical Efficiency	4400W at 25˚C Heat Sink	57	%
Center Wavelength	4400W at 25˚C Heat Sink	808	nm
Wavelength Tolerance	4400W at 25˚C Heat Sink	+/-3	nm
Spectral Width	4400W at 25˚C Heat Sink	2.5	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	0.044	Ω
Operating Voltage	25˚C Heat Sink, 4400W	44.0	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.

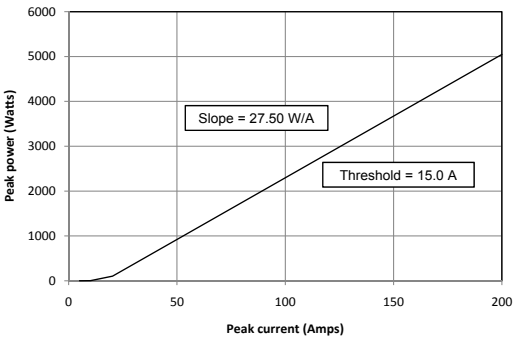
(3) Fast axis and slow axis lensing options are available for most NG-CEO heat exchanger designs.

4400W QCW

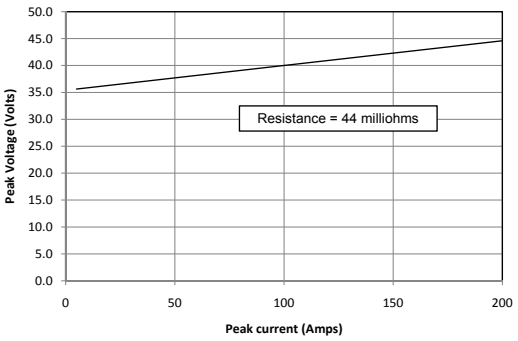
NORTHROP GRUMMAN

OPTICAL CHARACTERISTICS (SAMPLE)

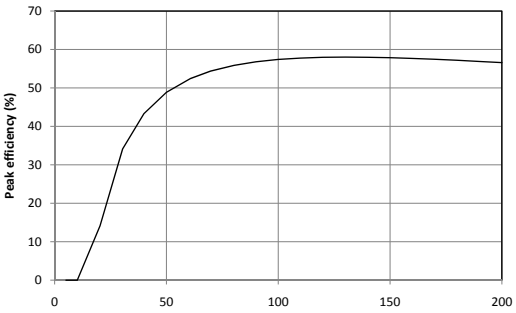
Power vs Current
9 Hz, 150 µsec, 25°C



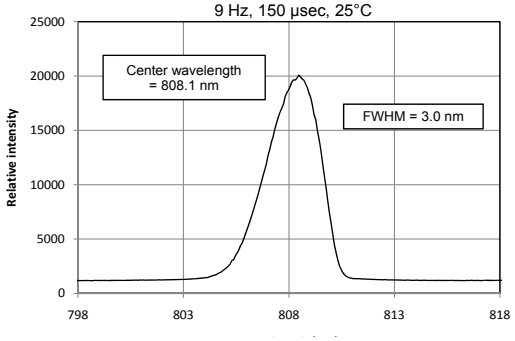
Voltage vs Current
9 Hz, 150 µsec, 25°C



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



Wavelength Spectrum
4400 W, 176.5 A,
9 Hz, 150 µsec, 25°C



MECHANICAL CHARACTERISTICS