



ARTEMIS BIOMEDICAL TECHNOLOGIES

Product Requirements for Laser Diodes and Array

Table 1 lists the desired center emission wavelengths and associated desired minimum power. Requirement specifications are summarized in Table 2.

For LD evaluation and for an experimental prototype, Artemis will need 2 sets of 24 laser diodes (wavelengths and package TBD). Delivery could be staggered but should start 3 months and be completed 6 months after signing of contract.

For engineering prototypes, Artemis will need 12 pieces of full 64 laser diode arrays (package TBD) 18 months after signing of contract.

For array evaluation, Artemis could accept arrays that are partially filled in a staggered delivery fashion, starting 6 months after signing of contract.

Ref No	Wavelength [nm]	Power [mW]	Ref No	Wavelength [nm]	Power [mW]
0	655	50	32	1570	300
1	1210	50	33	1578	300
2	1225	50	34	1586	300
3	1240	50	35	1594	300
4	1255	50	36	1602	300
5	1270	50	37	1610	300
6	1285	50	38	1618	300
7	1300	50	39	1633	300
8	1315	75	40	1648	300
9	1330	75	41	1663	300
10	1345	75	42	1671	300
11	1360	75	43	1679	75
12	1375	75	44	1687	75
13	1390	75	45	1695	75
14	1405	300	46	1703	75
15	1420	300	47	1711	75
16	1435	300	48	1719	75
17	1450	300	49	1727	75
18	1458	300	50	1735	75
19	1466	300	51	1743	75
20	1474	300	52	1751	75
21	1482	300	53	1759	75
22	1490	300	54	1767	75
23	1498	300	55	1775	50
24	1506	300	56	1783	50
25	1514	300	57	1791	50
26	1522	300	58	1799	50
27	1530	300	59	1807	50
28	1538	300	60	1815	50
29	1546	300	61	1823	50
30	1554	300	62	1838	50
31	1562	300	63	1846	50

Table 1



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Parameter	Value	Conditions / Notes
Center Emission Wavelength [nm]	see table 1	at max current
Min Optical Power [mW]	see table 1	at max current
Optical Power Tolerance [%]	5	emitter to emitter repeatability of same wavelength at same forward current
Center Emission Wavelength Allowance [nm]	±2	allowed deviation from value specified in table 2
Center Emission Wavelength Tolerance [nm]	±0.05	emitter to emitter repeatability of same wavelength
Max Spectral Width (FWHM) [nm]	2	at max current
Max Forward Current [A]	2	
Max Voltage Drop [V]	2	
Max Ambient Temp [°C] for operation	30	
Max Center Emission Wavelength Shift [nm/°C]	0.5	at temperature equilibrium
Max Center Emission Wavelength Shift Tolerance [nm/°C]	±0.05	emitter to emitter repeatability of same wavelength at temperature equilibrium
Min Pulse Width [μs]	5	
Max Pulse Width [μs]	1000	
Max Duty Cycle [%]	1.5	
Max Pulse Rise/Fall Time [ns]	100	
Package Type for Discrete Emitters	TBD	
Fiber Type	single mode	
Fiber Core Size [μm]	50	
Fiber NA	0.22	
Fiber Length [m]	1	
Fiber Connector Type	FC/PC	
Package Type for Array	TBD	With microlens array for collimation
Package Dimensions approximately (W x L x H) [mm]	10 x 15 x 8	To reduce pin count, cathodes or anodes should be tied together
Number of emitters	64	emitters will be placed in wavelength sequential order in array
FAHM [°]	TBD	
Aging [yrs]	5	DFWHM < TBD and DFAHM < TBD at normal usage
Max Warm Up Time [s] to rich thermal equilibrium	10	firing sequence will be optimized to reduce temperature rise
TEC/thermistor requirements	TBD	avoid if possible due to size/battery constraints

Table 2