



ARTEMIS BIOMEDICAL TECHNOLOGIES

Product Requirements for Laser Diodes and Array

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

For LD evaluation and for an experimental prototype, Artemis will need 2 sets of 24 laser diodes in SheauPacs (wavelengths 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.

Parameter	Value	Conditions / Notes
Center Wavelength [nm]	see table 2	at max current and ambient temperature
Min Optical Power [mW]	see table 2	
Optical Power Tolerance [%]	5	LD-LD of same wavelength at same current
Center Wavelength Allowance [nm]	± 2	
Center Wavelength Tolerance [nm]	± 0.05	LD-LD of same wavelength
Max Spectral Width (FWHM) [nm]	2	at max current and ambient temperature
Max Forward Current [A]	2	
Max Voltage Drop [V]	2	
Max Ambient Temp [°C] for operation	25	
Max Center Wavelength Shift [nm/°C]	0.15	at max current and ambient temperature
Min Pulse Width [μ s]	5	
Max Pulse Width [μ s]	1000	
Max Duty Cycle [%]	1.5	
Max Pulse Rise/Fall Time [ns]	100	
Package Type	SheauPac	
Fiber Type	nonpolarizing monomode	
Fiber Core Size [μ m]	50	
Fiber NA	0.22	
Fiber Length [m]	1	
Fiber Connector Type	FC/PC	
Package Type	?	Microlens array for collimation
Package Dimensions approx (W x L x H) [mm]	10 x 15 x 8	LDs will have emitters tied together
Number of LDs	64	LDs will be placed in wavelength sequential order
FAHM [°]	?	
Aging [yrs]	5	Δ FWHM < ?% at normal usage
Aging [yrs]	5	Δ FAHM < ?% at normal usage
Max Warm Up [s]	30	Firing sequence will be chosen to minimize heat build up
TEC	?	avoid if possible

Table 1



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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 2