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EIL-2 Modular Pulsed Laser Illuminator

(Preliminary Information)

Operational Features:

EIL-2 accommodates up to 12 Laser Diodes / Emitters (OSRAM or any TO-18 style)
Each Laser Diode has choice of vertical or horizontal mounting orientation
Each Laser Diode has approximately +/- 20 degrees of tilt adjustability
EIL-2 modules may be linked (arrayed) together for custom output power/patterns
Eight EIL-2 modules may be assembled into a complete ring illuminator
Pulse Repetition Frequency up to 15 kHz (standard), up to 100 kHz (custom)
TTL/CMOS compatible trigger input
Laser discharge voltage supply of 0 – 200Vdc
Bias voltage supply of 15Vdc @ < 20 mA (typical).

Connections and Signal Descriptions:

Interface Connector P1, 0.156 ctrs. 7 position header

Pin #	Signal
1	+15Vdc Bias Supply
2	Ground (common)
3	No connect
4	HV Power Supply (0-200Vdc)
5	No connect
6	Trigger Input
7	Ground (common)

P1 Signal Descriptions:

+15Vdc Bias Supply (Input, Pin #1) – +15Vdc bias supply to EIL-2 (or EIL-2 array).

HV Power Supply (Input, Pin #4) – High voltage discharge power supply (0 – 200Vdc) input to the EIL-2 (or EIL-2 array).

Trigger (Input, Pin #6) – TTL/CMOS compatible trigger input to the EIL-2 (or EIL-2 array).

Other Connections:

Array Interface Connectors, P2 & P3 0.1" ctrs. 12 position header

These headers have symmetrical pinouts to facilitate arraying EIL-2's in an arc/ring configuration or a semi-linear configuration.

Pin #	Signal
1	Ground (common)
3	Ground (common)
3	Trigger
4	Vbias
5	No connect
6	Vdischarge
7	Vdischarge
8	No connect
9	Vbias
10	Trigger
11	Ground (common)
12	Ground (common)

EIL-2 OPERATING SPECIFICATIONS:

Standard discharge configuration = 8 x 470pF capacitor bank, no series resistance

PARAMETER	MIN.	TYP.	MAX.	UNIT
Bias Supply Voltage	14	15	16	V dc
Bias Supply Current [1,2]		15		mA dc
HV Power Supply Voltage	15	50	200	V dc
HV Power Supply Average Current[1,2,6]	5	17	34	mA dc
Output Power (single ELD-93 laser diode), HV = 50Vdc		34		W (pk)
Output Power (single ELD-93 laser diode), HV = 100Vdc		70		W (pk)
Output Power (single ELD-93 laser diode), HV = 150Vdc[3]		98 [4]		W (pk)
Output Power (single ELD-93 laser diode), HV = 200Vdc[3]		119 [4]		W (pk)
Laser Pulse Width (standard configuration)		20		ns (fwhm)
Pulse Repetition Rate (continuous operation) [5]			15000	Hz
Trigger Pulse Amplitude (peak)	3.5	5	12	Vdc
Trigger Pulse Width (at 50% amplitude)	25	50	100	ns

NOTES:

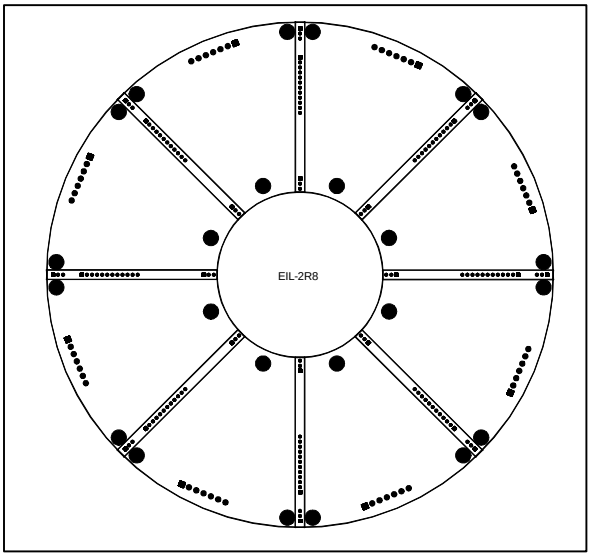
1. Dependent upon pulse rate, discharge voltage and capacitance bank. Shown for standard configuration @ 10kHz
2. Per module, standard configuration, maximum PRF
3. Forced air cooling may be beneficial or necessary for laser diodes.
4. Operating discharge voltage > 110Vdc exceeds OSRAM maximum current specification for SPL PL90-3 (ELD-93).
5. At any discharge voltage
6. Initial power-up in-rush current should be externally limited to less than 40mA per module.

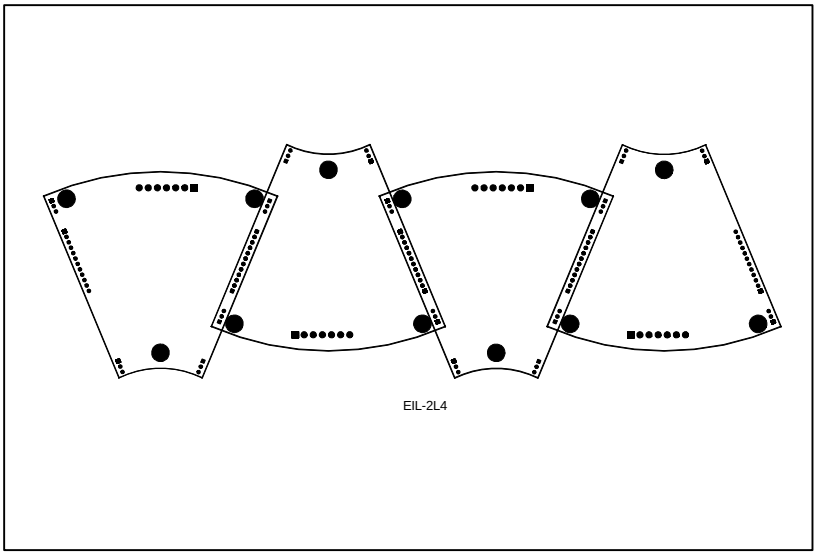
EIL-2 Ordering Options:

ORDERING CODES:

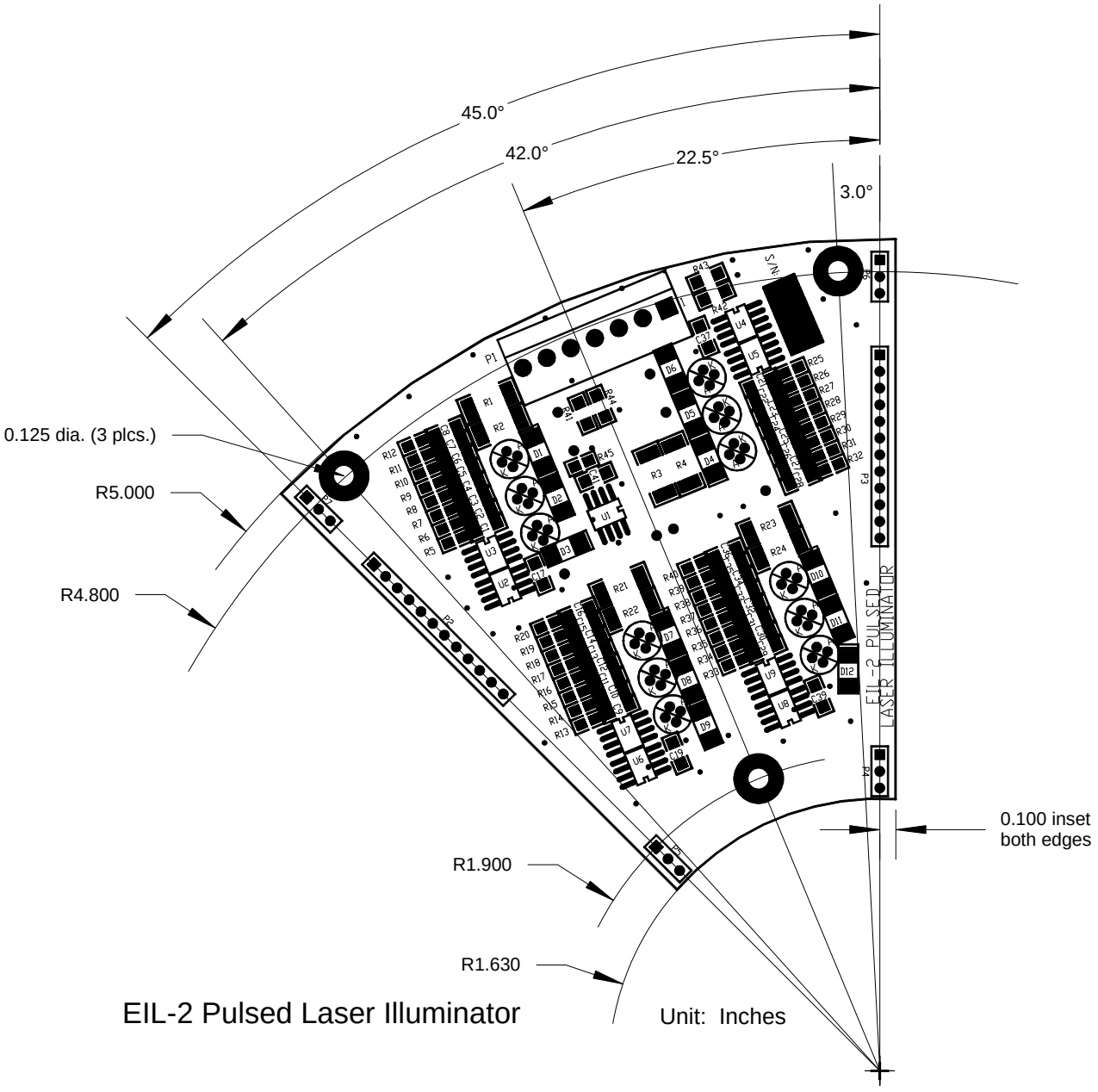
EIL-2	Single EIL-2 module with no Laser Diodes
EIL-2/n-85	Single EIL-2 module with “n” (1-12) ELD-85 Laser Diodes
EIL-2/n-90	Single EIL-2 module with “n” (1-12) ELD-90 Laser Diodes
EIL-2/n-93	Single EIL-2 module with “n” (1-12) ELD-93 Laser Diodes
EIL-2Rm	EIL-2 arc/ring of “m” (2-8) modules with no Laser Diodes
EIL-2Rm/n-85	EIL-2 arc/ring of “m” (2-8) modules with “n” (1-12) ELD-85
EIL-2Rm/n-90	EIL-2 arc/ring of “m” (2-8) modules with “n” (1-12) ELD-90
EIL-2Rm/n-93	EIL-2 arc/ring of “m” (2-8) modules with “n” (1-12) ELD-93
EIL-2Lm	EIL-2 linear array of “m” (2-8) modules with no Laser Diodes
EIL-2Lm/n-85	EIL-2 linear array of “m” (2-8) modules with “n” (1-12) ELD-85
EIL-2Lm/n-90	EIL-2 linear array of “m” (2-8) modules with “n” (1-12) ELD-90
EIL-2Lm/n-93	EIL-2 linear array of “m” (2-8) modules with “n” (1-12) ELD-93

EIL-2 Example Array Configurations:





EIL-2 Module Dimensional Illustration:



EIL-2 Pulsed Laser Illuminator

Unit: Inches