

## CREE X-Lamp 4550 LEDs (Royal Blue, Blue, & Green)

### 4550 LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b>	<b>Forward Current</b>
Typical    Maximum	Chart Calculation
4.0VDC      N/A	125mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH
Forward Voltage(vF)	Forward Current(iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	LED Driver Suggestion
4	0.125	1	1	1	4	0.125	0.5	L03U
4	0.125	2	1	2	8	0.125	1	L03U
4	0.125	3	1	3	12	0.125	1.5	L03U
4	0.125	4	1	4	16	0.125	2	L03U
4	0.125	5	1	5	20	0.125	2.5	L03U
4	0.125	6	1	6	24	0.125	3	L03U
4	0.125	7	1	7	28	0.125	3.5	L07U
4	0.125	8	1	8	32	0.125	4	L07U
4	0.125	9	1	9	36	0.125	4.5	L07U
4	0.125	1	2	2	4	0.25	1	L03U
4	0.125	2	2	4	8	0.25	2	L03U
4	0.125	3	2	6	12	0.25	3	L03U
4	0.125	4	2	8	16	0.25	4	L07U
4	0.125	5	2	10	20	0.25	5	L07U
4	0.125	6	2	12	24	0.25	6	L07U
4	0.125	7	2	14	28	0.25	7	L07U
4	0.125	8	2	16	32	0.25	8	LA1012
4	0.125	9	2	18	36	0.25	9	LA1012
4	0.125	1	3	3	4	0.375	1.5	L03U
4	0.125	2	3	6	8	0.375	3	L03U
4	0.125	3	3	9	12	0.375	4.5	L07U
4	0.125	4	3	12	16	0.375	6	L07U
4	0.125	5	3	15	20	0.375	7.5	LA1012
4	0.125	6	3	18	24	0.375	9	LA1012
4	0.125	7	3	21	28	0.375	10.5	LA1012
4	0.125	8	3	24	32	0.375	12	LA1012
4	0.125	9	3	27	36	0.375	13.5	LP1017
4	0.125	1	4	4	4	0.5	2	L03U
4	0.125	2	4	8	8	0.5	4	L07U
4	0.125	3	4	12	12	0.5	6	L07U
4	0.125	4	4	16	16	0.5	8	LA1012
4	0.125	5	4	20	20	0.5	10	LA1012
4	0.125	6	4	24	24	0.5	12	LA1012
4	0.125	7	4	28	28	0.5	14	LP1017
4	0.125	8	4	32	32	0.5	16	LP1017
4	0.125	9	4	36	36	0.5	18	LP1020
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp 4550 LEDs (Amber & Red)

### 4550 LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b> Typical 3.0VDC	<b>Forward Current</b> Chart Calculation 125mA
Maximum N/A	

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(I/F)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3	0.125	1	1	1	3	0.125	0.375	L03U
3	0.125	2	1	2	6	0.125	0.75	L03U
3	0.125	3	1	3	9	0.125	1.125	L03U
3	0.125	4	1	4	12	0.125	1.5	L03U
3	0.125	5	1	5	15	0.125	1.875	L03U
3	0.125	6	1	6	18	0.125	2.25	L03U
3	0.125	7	1	7	21	0.125	2.625	L03U
3	0.125	8	1	8	24	0.125	3	L03U
3	0.125	9	1	9	27	0.125	3.375	L07U
3	0.125	10	1	10	30	0.125	3.75	L07U
3	0.125	1	2	2	3	0.25	0.75	L03U
3	0.125	2	2	4	6	0.25	1.5	L03U
3	0.125	3	2	6	9	0.25	2.25	L03U
3	0.125	4	2	8	12	0.25	3	L03U
3	0.125	5	2	10	15	0.25	3.75	L07U
3	0.125	6	2	12	18	0.25	4.5	L07U
3	0.125	7	2	14	21	0.25	5.25	L07U
3	0.125	8	2	16	24	0.25	6	L07U
3	0.125	9	2	18	27	0.25	6.75	L07U
3	0.125	10	2	20	30	0.25	7.5	LA1012
3	0.125	1	3	3	3	0.375	1.125	L03U
3	0.125	2	3	6	6	0.375	2.25	L03U
3	0.125	3	3	9	9	0.375	3.375	L07U
3	0.125	4	3	12	12	0.375	4.5	L07U
3	0.125	5	3	15	15	0.375	5.625	L07U
3	0.125	6	3	18	18	0.375	6.75	L07U
3	0.125	7	3	21	21	0.375	7.875	LA1012
3	0.125	8	3	24	24	0.375	9	LA1012
3	0.125	9	3	27	27	0.375	10.125	LA1012
3	0.125	10	3	30	30	0.375	11.25	LA1012
3	0.125	1	4	4	3	0.5	1.5	L03U
3	0.125	2	4	8	6	0.5	3	L03U
3	0.125	3	4	12	9	0.5	4.5	L07U
3	0.125	4	4	16	12	0.5	6	L07U
3	0.125	5	4	20	15	0.5	7.5	LA1012
3	0.125	6	4	24	18	0.5	9	LA1012
3	0.125	7	4	28	21	0.5	10.5	LA1012
3	0.125	8	4	32	24	0.5	12	LA1012
3	0.125	9	4	36	27	0.5	13.5	LP1017
3	0.125	10	4	40	30	0.5	15	LP1017
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-C LEDs @ 350mA (White,Royal Blue,& Blue)

### XR-C LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b>	<b>Forward Current</b>
Typical 3.5VDC	Chart Calculation 350mA
Maximum 4.0VDC	

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(I/F)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3.5	0.35	1	1	1	3.5	0.35	1.225	L03U
3.5	0.35	2	1	2	7	0.35	2.45	L03U
3.5	0.35	3	1	3	10.5	0.35	3.675	L07U
3.5	0.35	4	1	4	14	0.35	4.9	L07U
3.5	0.35	5	1	5	17.5	0.35	6.125	L07U
3.5	0.35	6	1	6	21	0.35	7.35	LA1012
3.5	0.35	7	1	7	24.5	0.35	8.575	LA1012
3.5	0.35	8	1	8	28	0.35	9.8	LA1012
3.5	0.35	9	1	9	31.5	0.35	11.025	LA1012
3.5	0.35	10	1	10	35	0.35	12.25	LP1017
3.5	0.35	1	2	2	3.5	0.7	2.45	L03U
3.5	0.35	2	2	4	7	0.7	4.9	L07U
3.5	0.35	3	2	6	10.5	0.7	7.35	LA1012
3.5	0.35	4	2	8	14	0.7	9.8	LA1012
3.5	0.35	5	2	10	17.5	0.7	12.25	LA1012
3.5	0.35	6	2	12	21	0.7	14.7	LP1017
3.5	0.35	7	2	14	24.5	0.7	17.15	LP1017
3.5	0.35	8	2	16	28	0.7	19.6	LP1020
3.5	0.35	9	2	18	31.5	0.7	22.05	LP1025
3.5	0.35	10	2	20	35	0.7	24.5	LP1025
3.5	0.35	1	3	3	3.5	1.05	3.675	L07U
3.5	0.35	2	3	6	7	1.05	7.35	LA1012
3.5	0.35	3	3	9	10.5	1.05	11.025	LA1012
3.5	0.35	4	3	12	14	1.05	14.7	LP1017
3.5	0.35	5	3	15	17.5	1.05	18.375	LP1020
3.5	0.35	6	3	18	21	1.05	22.05	LP1025
3.5	0.35	7	3	21	24.5	1.05	25.725	LP1040
3.5	0.35	8	3	24	28	1.05	29.4	LP1040
3.5	0.35	9	3	27	31.5	1.05	33.075	LP1040
3.5	0.35	10	3	30	35	1.05	36.75	LP1040
3.5	0.35	1	4	4	3.5	1.4	4.9	L07U
3.5	0.35	2	4	8	7	1.4	9.8	LA1012
3.5	0.35	3	4	12	10.5	1.4	14.7	LP1017
3.5	0.35	4	4	16	14	1.4	19.6	LP1020
3.5	0.35	5	4	20	17.5	1.4	24.5	LP1025
3.5	0.35	6	4	24	21	1.4	29.4	LP1040
3.5	0.35	7	4	28	24.5	1.4	34.3	LP1040
3.5	0.35	8	4	32	28	1.4	39.2	LP1040
3.5	0.35	9	4	36	31.5	1.4	44.1	LP1090
3.5	0.35	10	4	40	35	1.4	49	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The Typical Voltage was used in these calculations.

**Note 3:** These charts and suggestions are for Reference Use Only.

**Note 4:** For further details contact your Magtech Account Manager to ensure and verify the best Magtech LED Driver Solution for your application and circuit configuration.

## CREE X-Lamp XR-C LEDs @ 500mA (White,Royal Blue,& Blue)

### XR-C LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b> Typical 3.6VDC	<b>Forward Current</b> Chart Calculation 500mA
Maximum N/A	

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(I/F)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3.6	0.5	1	1	1	3.6	0.5	1.8	L03U
3.6	0.5	2	1	2	7.2	0.5	3.6	L03U
3.6	0.5	3	1	3	10.8	0.5	5.4	L07U
3.6	0.5	4	1	4	14.4	0.5	7.2	LA1012
3.6	0.5	5	1	5	18	0.5	9	LA1012
3.6	0.5	6	1	6	21.6	0.5	10.8	LA1012
3.6	0.5	7	1	7	25.2	0.5	12.6	LP1017
3.6	0.5	8	1	8	28.8	0.5	14.4	LP1017
3.6	0.5	9	1	9	32.4	0.5	16.2	LP1017
3.6	0.5	10	1	10	36	0.5	18	LP1020
3.6	0.5	1	2	2	3.6	1	3.6	L07U
3.6	0.5	2	2	4	7.2	1	7.2	LA1012
3.6	0.5	3	2	6	10.8	1	10.8	LA1012
3.6	0.5	4	2	8	14.4	1	14.4	LP1017
3.6	0.5	5	2	10	18	1	18	LP1017
3.6	0.5	6	2	12	21.6	1	21.6	LP1025
3.6	0.5	7	2	14	25.2	1	25.2	LP1025
3.6	0.5	8	2	16	28.8	1	28.8	LP1040
3.6	0.5	9	2	18	32.4	1	32.4	LP1040
3.6	0.5	10	2	20	36	1	36	LP1040
3.6	0.5	1	3	3	3.6	1.5	5.4	L07U
3.6	0.5	2	3	6	7.2	1.5	10.8	LA1012
3.6	0.5	3	3	9	10.8	1.5	16.2	LP1017
3.6	0.5	4	3	12	14.4	1.5	21.6	LP1025
3.6	0.5	5	3	15	18	1.5	27	LP1040
3.6	0.5	6	3	18	21.6	1.5	32.4	LP1040
3.6	0.5	7	3	21	25.2	1.5	37.8	LP1040
3.6	0.5	8	3	24	28.8	1.5	43.2	LP1090
3.6	0.5	9	3	27	32.4	1.5	48.6	LP1090
3.6	0.5	10	3	30	36	1.5	54	LP1090
3.6	0.5	1	4	4	3.6	2	7.2	LA1012
3.6	0.5	2	4	8	7.2	2	14.4	LP1017
3.6	0.5	3	4	12	10.8	2	21.6	LP1025
3.6	0.5	4	4	16	14.4	2	28.8	LP1040
3.6	0.5	5	4	20	18	2	36	LP1040
3.6	0.5	6	4	24	21.6	2	43.2	LP1060
3.6	0.5	7	4	28	25.2	2	50.4	LP1090
3.6	0.5	8	4	32	28.8	2	57.6	LP1090
3.6	0.5	9	4	36	32.4	2	64.8	LP1090
3.6	0.5	10	4	40	36	2	72	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-C LEDs @ 350mA (Amber)

### XR-C LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

**Forward Voltage**  
 Typical    Maximum  
 2.2VDC    2.5VDC

**Forward Current**  
 Chart Calculation  
 350mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH
Forward Voltage(vF)	Forward Current(I/F)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	LED Driver Suggestion
2.2	0.35	1	1	1	2.2	0.35	0.77	L03U
2.2	0.35	2	1	2	4.4	0.35	1.54	L03U
2.2	0.35	3	1	3	6.6	0.35	2.31	L03U
2.2	0.35	4	1	4	8.8	0.35	3.08	L07U
2.2	0.35	5	1	5	11	0.35	3.85	L07U
2.2	0.35	6	1	6	13.2	0.35	4.62	L07U
2.2	0.35	7	1	7	15.4	0.35	5.39	L07U
2.2	0.35	8	1	8	17.6	0.35	6.16	L07U
2.2	0.35	9	1	9	19.8	0.35	6.93	L07U
2.2	0.35	10	1	10	22	0.35	7.7	LA1012
2.2	0.35	1	2	2	2.2	0.7	1.54	L03U
2.2	0.35	2	2	4	4.4	0.7	3.08	L07U
2.2	0.35	3	2	6	6.6	0.7	4.62	L07U
2.2	0.35	4	2	8	8.8	0.7	6.16	L07U
2.2	0.35	5	2	10	11	0.7	7.7	LA1012
2.2	0.35	6	2	12	13.2	0.7	9.24	LA1012
2.2	0.35	7	2	14	15.4	0.7	10.78	LA1012
2.2	0.35	8	2	16	17.6	0.7	12.32	LP1017
2.2	0.35	9	2	18	19.8	0.7	13.86	LP1017
2.2	0.35	10	2	20	22	0.7	15.4	LP1017
2.2	0.35	1	3	3	2.2	1.05	2.31	L03U
2.2	0.35	2	3	6	4.4	1.05	4.62	L07U
2.2	0.35	3	3	9	6.6	1.05	6.93	L07U
2.2	0.35	4	3	12	8.8	1.05	9.24	LA1012
2.2	0.35	5	3	15	11	1.05	11.55	LA1012
2.2	0.35	6	3	18	13.2	1.05	13.86	LP1017
2.2	0.35	7	3	21	15.4	1.05	16.17	LP1017
2.2	0.35	8	3	24	17.6	1.05	18.48	LP1020
2.2	0.35	9	3	27	19.8	1.05	20.79	LP1025
2.2	0.35	10	3	30	22	1.05	23.1	LP1025
2.2	0.35	1	4	4	2.2	1.4	3.08	L07U
2.2	0.35	2	4	8	4.4	1.4	6.16	L07U
2.2	0.35	3	4	12	6.6	1.4	9.24	LA1012
2.2	0.35	4	4	16	8.8	1.4	12.32	LP1017
2.2	0.35	5	4	20	11	1.4	15.4	LP1017
2.2	0.35	6	4	24	13.2	1.4	18.48	LP1020
2.2	0.35	7	4	28	15.4	1.4	21.56	LP1025
2.2	0.35	8	4	32	17.6	1.4	24.64	LP1025
2.2	0.35	9	4	36	19.8	1.4	27.72	LP1040
2.2	0.35	10	4	40	22	1.4	30.8	LP1040
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-C LEDs @ 700mA (Red-Orange & Red)

### XR-C LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b> Typical 2.4VDC	<b>Maximum</b> N/A	<b>Forward Current</b> Chart Calculation 700mA
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LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(I/F)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
2.4	0.7	1	1	1	2.4	0.7	1.68	L03U
2.4	0.7	2	1	2	4.8	0.7	3.36	L07U
2.4	0.7	3	1	3	7.2	0.7	5.04	L07U
2.4	0.7	4	1	4	9.6	0.7	6.72	L07U
2.4	0.7	5	1	5	12	0.7	8.4	LA1012
2.4	0.7	6	1	6	14.4	0.7	10.08	LA1012
2.4	0.7	7	1	7	16.8	0.7	11.76	LA1012
2.4	0.7	8	1	8	19.2	0.7	13.44	LP1017
2.4	0.7	9	1	9	21.6	0.7	15.12	LP1017
2.4	0.7	10	1	10	24	0.7	16.8	LP1017
2.4	0.7	1	2	2	2.4	1.4	3.36	L07U
2.4	0.7	2	2	4	4.8	1.4	6.72	L07U
2.4	0.7	3	2	6	7.2	1.4	10.08	LA1012
2.4	0.7	4	2	8	9.6	1.4	13.44	LP1017
2.4	0.7	5	2	10	12	1.4	16.8	LP1017
2.4	0.7	6	2	12	14.4	1.4	20.16	LP1025
2.4	0.7	7	2	14	16.8	1.4	23.52	LP1025
2.4	0.7	8	2	16	19.2	1.4	26.88	LP1040
2.4	0.7	9	2	18	21.6	1.4	30.24	LP1040
2.4	0.7	10	2	20	24	1.4	33.6	LP1040
2.4	0.7	1	3	3	2.4	2.1	5.04	L07U
2.4	0.7	2	3	6	4.8	2.1	10.08	LA1012
2.4	0.7	3	3	9	7.2	2.1	15.12	LP1017
2.4	0.7	4	3	12	9.6	2.1	20.16	LP1025
2.4	0.7	5	3	15	12	2.1	25.2	LP1025
2.4	0.7	6	3	18	14.4	2.1	30.24	LP1040
2.4	0.7	7	3	21	16.8	2.1	35.28	LP1040
2.4	0.7	8	3	24	19.2	2.1	40.32	LP1060
2.4	0.7	9	3	27	21.6	2.1	45.36	LP1060
2.4	0.7	10	3	30	24	2.1	50.4	LP1060
2.4	0.7	1	4	4	2.4	2.8	6.72	L07U
2.4	0.7	2	4	8	4.8	2.8	13.44	LP1017
2.4	0.7	3	4	12	7.2	2.8	20.16	LP1025
2.4	0.7	4	4	16	9.6	2.8	26.88	LP1040
2.4	0.7	5	4	20	12	2.8	33.6	LP1040
2.4	0.7	6	4	24	14.4	2.8	40.32	LP1060
2.4	0.7	7	4	28	16.8	2.8	47.04	LP1060
2.4	0.7	8	4	32	19.2	2.8	53.76	LP1060
2.4	0.7	9	4	36	21.6	2.8	60.48	LP1090
2.4	0.7	10	4	40	24	2.8	67.2	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-E LEDs @ 350mA

### XR-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

**Forward Voltage**  
 Typical    Maximum  
 3.3VDC    3.9VDC

**Forward Current**  
 Chart Calculation  
 350mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage (V <sub>F</sub> )	Forward Current (I <sub>F</sub> )	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3.3	0.35	1	1	1	3.3	0.35	1.155	L03U
3.3	0.35	2	1	2	6.6	0.35	2.31	L03U
3.3	0.35	3	1	3	9.9	0.35	3.465	L07U
3.3	0.35	4	1	4	13.2	0.35	4.62	L07U
3.3	0.35	5	1	5	16.5	0.35	5.775	L07U
3.3	0.35	6	1	6	19.8	0.35	6.93	L07U
3.3	0.35	7	1	7	23.1	0.35	8.085	LA1012
3.3	0.35	8	1	8	26.4	0.35	9.24	LA1012
3.3	0.35	9	1	9	29.7	0.35	10.395	LA1012
3.3	0.35	10	1	10	33	0.35	11.55	LA1012
3.3	0.35	1	2	2	3.3	0.7	2.31	L03U
3.3	0.35	2	2	4	6.6	0.7	4.62	L07U
3.3	0.35	3	2	6	9.9	0.7	6.93	LA1012
3.3	0.35	4	2	8	13.2	0.7	9.24	LA1012
3.3	0.35	5	2	10	16.5	0.7	11.55	LA1012
3.3	0.35	6	2	12	19.8	0.7	13.86	LP1017
3.3	0.35	7	2	14	23.1	0.7	16.17	LP1017
3.3	0.35	8	2	16	26.4	0.7	18.48	LP1020
3.3	0.35	9	2	18	29.7	0.7	20.79	LP1025
3.3	0.35	10	2	20	33	0.7	23.1	LP1025
3.3	0.35	1	3	3	3.3	1.05	3.465	L07U
3.3	0.35	2	3	6	6.6	1.05	6.93	L07U
3.3	0.35	3	3	9	9.9	1.05	10.395	LA1012
3.3	0.35	4	3	12	13.2	1.05	13.86	LP1017
3.3	0.35	5	3	15	16.5	1.05	17.325	LP1020
3.3	0.35	6	3	18	19.8	1.05	20.79	LP1025
3.3	0.35	7	3	21	23.1	1.05	24.255	LP1025
3.3	0.35	8	3	24	26.4	1.05	27.72	LP1040
3.3	0.35	9	3	27	29.7	1.05	31.185	LP1040
3.3	0.35	10	3	30	33	1.05	34.65	LP1040
3.3	0.35	1	4	4	3.3	1.4	4.62	L07U
3.3	0.35	2	4	8	6.6	1.4	9.24	LA1012
3.3	0.35	3	4	12	9.9	1.4	13.86	LP1017
3.3	0.35	4	4	16	13.2	1.4	18.48	LP1020
3.3	0.35	5	4	20	16.5	1.4	23.1	LP1025
3.3	0.35	6	4	24	19.8	1.4	27.72	LP1040
3.3	0.35	7	4	28	23.1	1.4	32.34	LP1040
3.3	0.35	8	4	32	26.4	1.4	36.96	LP1040
3.3	0.35	9	4	36	29.7	1.4	41.58	LP1090
3.3	0.35	10	4	40	33	1.4	46.2	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-E LEDs @ 700mA

### XR-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b> Typical 3.5VDC      Maximum N/A	<b>Forward Current</b> Chart Calculation 700mA
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LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH
Forward Voltage(VF)	Forward Current(IF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	LED Driver Suggestion
3.5	0.7	1	1	1	3.5	0.7	2.45	L03U
3.5	0.7	2	1	2	7	0.7	4.9	L07U
3.5	0.7	3	1	3	10.5	0.7	7.35	LA1012
3.5	0.7	4	1	4	14	0.7	9.8	LA1012
3.5	0.7	5	1	5	17.5	0.7	12.25	LP1017
3.5	0.7	6	1	6	21	0.7	14.7	LP1017
3.5	0.7	7	1	7	24.5	0.7	17.15	LP1020
3.5	0.7	8	1	8	28	0.7	19.6	LP1020
3.5	0.7	9	1	9	31.5	0.7	22.05	LP1025
3.5	0.7	10	1	10	35	0.7	24.5	LP1025
3.5	0.7	1	2	2	3.5	1.4	4.9	L07U
3.5	0.7	2	2	4	7	1.4	9.8	LA1012
3.5	0.7	3	2	6	10.5	1.4	14.7	LP1017
3.5	0.7	4	2	8	14	1.4	19.6	LP1020
3.5	0.7	5	2	10	17.5	1.4	24.5	LP1025
3.5	0.7	6	2	12	21	1.4	29.4	LP1040
3.5	0.7	7	2	14	24.5	1.4	34.3	LP1040
3.5	0.7	8	2	16	28	1.4	39.2	LP1040
3.5	0.7	9	2	18	31.5	1.4	44.1	LP1090
3.5	0.7	10	2	20	35	1.4	49	LP1090
3.5	0.7	1	3	3	3.5	2.1	7.35	L03U
3.5	0.7	2	3	6	7	2.1	14.7	LP1017
3.5	0.7	3	3	9	10.5	2.1	22.05	LP1025
3.5	0.7	4	3	12	14	2.1	29.4	LP1040
3.5	0.7	5	3	15	17.5	2.1	36.75	LP1040
3.5	0.7	6	3	18	21	2.1	44.1	LP1060
3.5	0.7	7	3	21	24.5	2.1	51.45	LP1090
3.5	0.7	8	3	24	28	2.1	58.8	LP1090
3.5	0.7	9	3	27	31.5	2.1	66.15	LP1090
3.5	0.7	10	3	30	35	2.1	73.5	LP1090
3.5	0.7	1	4	4	3.5	2.8	9.8	LA1012
3.5	0.7	2	4	8	7	2.8	19.6	LP1020
3.5	0.7	3	4	12	10.5	2.8	29.4	LP1040
3.5	0.7	4	4	16	14	2.8	39.2	LP1040
3.5	0.7	5	4	20	17.5	2.8	49	LP1060
3.5	0.7	6	4	24	21	2.8	58.8	LP1060
3.5	0.7	7	4	28	24.5	2.8	68.6	LP1090
3.5	0.7	8	4	32	28	2.8	78.4	LP1090
3.5	0.7	9	4	36	31.5	2.8	88.2	LP1090
3.5	0.7	10	4	40	35	2.8	98	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on CREE's LED Characteristics.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp XR-E LEDs @ 1000mA

### XR-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

<b>Forward Voltage</b> Typical    Maximum 3.7VDC    N/A	<b>Forward Current</b> Chart Calculation 1000mA
---------------------------------------------------------------	-------------------------------------------------------

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH
Forward Voltage(vF)	Forward Current(iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	LED Driver Suggestion
3.7	1	1	1	1	3.7	1	3.7	L07U
3.7	1	2	1	2	7.4	1	7.4	L07U
3.7	1	3	1	3	11.1	1	11.1	LA1012
3.7	1	4	1	4	14.8	1	14.8	LP1017
3.7	1	5	1	5	18.5	1	18.5	LP1020
3.7	1	6	1	6	22.2	1	22.2	LP1025
3.7	1	7	1	7	25.9	1	25.9	LP1040
3.7	1	8	1	8	29.6	1	29.6	LP1040
3.7	1	9	1	9	33.3	1	33.3	LP1040
3.7	1	1	2	2	3.7	2	7.4	LA1012
3.7	1	2	2	4	7.4	2	14.8	LP1017
3.7	1	3	2	6	11.1	2	22.2	LP1025
3.7	1	4	2	8	14.8	2	29.6	LP1040
3.7	1	5	2	10	18.5	2	37	LP1040
3.7	1	6	2	12	22.2	2	44.4	LP1060
3.7	1	7	2	14	25.9	2	51.8	LP1090
3.7	1	8	2	16	29.6	2	59.2	LP1090
3.7	1	9	2	18	33.3	2	66.6	LP1090
3.7	1	1	3	3	3.7	3	11.1	LA1012
3.7	1	2	3	6	7.4	3	22.2	LP1025
3.7	1	3	3	9	11.1	3	33.3	LP1040
3.7	1	4	3	12	14.8	3	44.4	LP1060
3.7	1	5	3	15	18.5	3	55.5	LP1060
3.7	1	6	3	18	22.2	3	66.6	LP1090
3.7	1	7	3	21	25.9	3	77.7	LP1090
3.7	1	8	3	24	29.6	3	88.8	LP1090
3.7	1	1	4	4	3.7	4	14.8	L07U
3.7	1	2	4	8	7.4	4	29.6	LP1040
3.7	1	3	4	12	11.1	4	44.4	LP1060
3.7	1	4	4	16	14.8	4	59.2	LP1060
3.7	1	5	4	20	18.5	4	74	LP1090
3.7	1	6	4	24	22.2	4	88.8	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE Multi-Chip MC-E LEDs @ 350mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Series

**Forward Voltage**  
 Typical      Maximum  
 3.2VDC      3.9VDC

**Forward Current**  
 Chart Calculation  
 350mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
12.8	0.35	1	1	1	12.8	0.35	4.48	L07U
12.8	0.35	2	1	2	25.6	0.35	8.96	LA1012
12.8	0.35	1	2	2	12.8	0.7	8.96	LA1012
12.8	0.35	2	2	4	25.6	0.7	17.92	LP1017
12.8	0.35	1	3	3	12.8	1.05	13.44	LP1017
12.8	0.35	2	3	6	25.6	1.05	26.88	LP1040
12.8	0.35	1	4	4	12.8	1.4	17.92	LP1020
12.8	0.35	2	4	8	25.6	1.4	35.84	LP1040
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE Multi-Chip MC-E LEDs @ 700mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Series

**Forward Voltage**  
 Typical      Maximum  
 3.5VDC      N/A

**Forward Current**  
 Chart Calculation  
 700mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
14	0.7	1	1	1	14	0.7	9.8	LA1012
14	0.7	2	1	2	28	0.7	19.6	LP1025
14	0.7	1	2	2	14	1.4	19.6	LP1025
14	0.7	2	2	4	28	1.4	39.2	LP1040
14	0.7	1	3	3	14	2.1	29.4	LP1040
14	0.7	2	3	6	28	2.1	58.8	LP1090
14	0.7	1	4	4	14	2.8	39.2	LP1060
14	0.7	2	4	8	28	2.8	78.4	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp MC-E LEDs @ 350mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Parallel

Forward Voltage  
 Typical    Maximum  
 3.2VDC    3.9VDC

Forward Current  
 Chart Calculation  
 350mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(vF)	Forward Current(iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3.2	1.4	1	1	1	3.2	1.4	4.48	L07U
3.2	1.4	2	1	2	6.4	1.4	8.96	LA1012
3.2	1.4	3	1	3	9.6	1.4	13.44	LP1017
3.2	1.4	4	1	4	12.8	1.4	17.92	LP1020
3.2	1.4	5	1	5	16	1.4	22.4	LP1025
3.2	1.4	6	1	6	19.2	1.4	26.88	LP1040
3.2	1.4	7	1	7	22.4	1.4	31.36	LP1040
3.2	1.4	8	1	8	25.6	1.4	35.84	LP1040
3.2	1.4	9	1	9	28.8	1.4	40.32	LP1090
3.2	1.4	10	1	10	32	1.4	44.8	LP1090
3.2	1.4	1	2	2	3.2	2.8	8.96	LA1012
3.2	1.4	2	2	4	6.4	2.8	17.92	LP1017
3.2	1.4	3	2	6	9.6	2.8	26.88	LP1040
3.2	1.4	4	2	8	12.8	2.8	35.84	LP1040
3.2	1.4	5	2	10	16	2.8	44.8	LP1060
3.2	1.4	6	2	12	19.2	2.8	53.76	LP1060
3.2	1.4	7	2	14	22.4	2.8	62.72	LP1090
3.2	1.4	8	2	16	25.6	2.8	71.68	LP1090
3.2	1.4	9	2	18	28.8	2.8	80.64	LP1090
3.2	1.4	10	2	20	32	2.8	89.6	LP1090
3.2	1.4	1	3	3	3.2	4.2	13.44	LP1017
3.2	1.4	2	3	6	6.4	4.2	26.88	LP1040
3.2	1.4	3	3	9	9.6	4.2	40.32	LP1060
3.2	1.4	4	3	12	12.8	4.2	53.76	LP1060
3.2	1.4	5	3	15	16	4.2	67.2	LP1090
3.2	1.4	6	3	18	19.2	4.2	80.64	LP1090
3.2	1.4	7	3	21	22.4	4.2	94.08	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp MC-E LEDs @ 700mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Parallel

Forward Voltage  
 Typical    Maximum  
 3.5VDC    N/A

Forward Current  
 Chart Calculation  
 700mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage (vF)	Forward Current (iF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
3.5	2.8	1	1	1	3.5	2.8	9.8	LA1012
3.5	2.8	2	1	2	7	2.8	19.6	LP1020
3.5	2.8	3	1	3	10.5	2.8	29.4	LP1040
3.5	2.8	4	1	4	14	2.8	39.2	LP1040
3.5	2.8	5	1	5	17.5	2.8	49	LP1060
3.5	2.8	6	1	6	21	2.8	58.8	LP1060
3.5	2.8	7	1	7	24.5	2.8	68.6	LP1090
3.5	2.8	8	1	8	28	2.8	78.4	LP1090
3.5	2.8	9	1	9	31.5	2.8	88.2	LP1090
3.5	2.8	10	1	10	35	2.8	98	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp MC-E LEDs @ 350mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Series-Parallel 2x2

Forward Voltage  
 Typical      Maximum  
 3.2VDC      3.9VDC

Forward Current  
 Chart Calculation  
 350mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage (V <sub>F</sub> )	Forward Current (I <sub>F</sub> )	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
6.4	0.7	1	1	1	6.4	0.7	4.48	L07U
6.4	0.7	2	1	2	12.8	0.7	8.96	LA1012
6.4	0.7	3	1	3	19.2	0.7	13.44	LP1017
6.4	0.7	4	1	4	25.6	0.7	17.92	LP1020
6.4	0.7	5	1	5	32	0.7	22.4	LP1025
6.4	0.7	1	2	2	6.4	1.4	8.96	LA1012
6.4	0.7	2	2	4	12.8	1.4	17.92	LP1017
6.4	0.7	3	2	6	19.2	1.4	26.88	LP1040
6.4	0.7	4	2	8	25.6	1.4	35.84	LP1040
6.4	0.7	5	2	10	32	1.4	44.8	LP1090
6.4	0.7	1	3	3	6.4	2.1	13.44	LP1017
6.4	0.7	2	3	6	12.8	2.1	26.88	LP1040
6.4	0.7	3	3	9	19.2	2.1	40.32	LP1060
6.4	0.7	4	3	12	25.6	2.1	53.76	LP1090
6.4	0.7	5	3	15	32	2.1	67.2	LP1090
6.4	0.7	1	4	4	6.4	2.8	17.92	LP1020
6.4	0.7	2	4	8	12.8	2.8	35.84	LP1040
6.4	0.7	3	4	12	19.2	2.8	53.76	LP1060
6.4	0.7	4	4	16	25.6	2.8	71.68	LP1090
6.4	0.7	5	4	20	32	2.8	89.6	LP1090
<b>VDC</b>	<b>mA</b>				<b>VDC</b>	<b>mA</b>	<b>Watts</b>	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.

## CREE X-Lamp MC-E LEDs @ 700mA

### MC-E LED Basic Electronic Characteristics for LED Circuit and Driver Calculations

#### MC-E LED Multichip, Configured 4 LEDs in Series-Parallel 2x2

Forward Voltage  
 Typical    Maximum  
 3.5VDC    N/A

Forward Current  
 Chart Calculation  
 700mA

LED Characteristics		LED Circuit Configuration			Driver Requirements			MAGTECH LED Driver Suggestion
Forward Voltage(VF)	Forward Current(IF)	# of LEDs in Series	# of Parallels	Total LEDs	Output Voltage	Output Current	Output Power	
7	1.4	1	1	1	7	1.4	9.8	LA1012
7	1.4	2	1	2	14	1.4	19.6	LP1020
7	1.4	3	1	3	21	1.4	29.4	LP1025
7	1.4	4	1	4	28	1.4	39.2	LP1040
7	1.4	5	1	5	35	1.4	49	LP1090
7	1.4	1	2	2	7	2.8	19.6	LP1020
7	1.4	2	2	4	14	2.8	39.2	LP1040
7	1.4	3	2	6	21	2.8	58.8	LP1060
7	1.4	4	2	8	28	2.8	78.4	LP1090
7	1.4	5	2	10	35	2.8	98	LP1090
7	1.4	1	3	3	7	4.2	29.4	LP1040
7	1.4	2	3	6	14	4.2	58.8	LP1060
7	1.4	3	3	9	21	4.2	88.2	LP1090
VDC	mA				VDC	mA	Watts	

**Note 1:** These characteristics, configurations, and suggestions are based on **CREE's LED Characteristics**.

**Note 2:** The **Typical Voltage** was used in these calculations.

**Note 3:** These charts and suggestions are for **Reference Use Only**.

**Note 4:** For further details contact your **Magtech Account Manager** to ensure and verify the best **Magtech LED Driver Solution** for your application and circuit configuration.