

## EXECUTIVE SUMMARY

The LED Evolution NT10 60 degree down light uses 4 XT-E LEDs. The luminaire produces 733 lumens at a 4243K CCT, while consuming 9.66W of power. With an optical efficiency of nearly 84% the luminaire delivers 75.87 lumens per watt.

Cree Services' TEMPO21 Evaluation process is a thorough multi-point evaluation and analysis of a customer's lighting product. Cree Application Engineering personnel perform a battery of thermal, electrical, mechanical and photometric tests and provide a comprehensive report that includes all relevant data necessary to confirm the performance of the product.

In addition to this standard set of tests, products will also be reviewed against appropriate ENERGY STAR® criteria, TM-21 LED Lifetime estimates, and LM-79 conformant tests where applicable. Table 1 below provides a quick summary of the test data. Additional detailed test results are covered in the following pages.

Criteria	Result
Total Luminous Flux (lm)	733
Power (W)	9.66
Tsp and Tj (°C) <sup>1</sup>	56.5 / 58.5
Power Factor	0.904
Lumens per Watt (LPW)	75.87
Optical Efficiency (%)	84
Driver Efficiency (%)	86
CCT (K)	4243
CRI (Ra)	72
Chromaticity (x-coord)	0.3594
Chromaticity (y-coord)	0.3636
LED Lumen Maintenance <sup>2</sup>	Projected L <sub>70</sub> : 427,000
	Reported L <sub>70</sub> : 66,300
ENERGY STAR®	Not Applicable

Table 1: Summary of Test Results

<sup>1</sup> Measured at ambient temperature of 23°C.

<sup>2</sup> Per IES TM-21-2011

## Executive Summary

The NT10 Downlight (40° Lens) uses 4 XT-Es LEDs. The lamp produces 612.9 lumens while consuming 9.66 watts of power. The luminaire delivers 63.35 lumens per watt with a color temperature of 2859K.

Criteria	Result
Total Luminous Flux (lm)	612.9
Power (W)	9.66
Power Factor	0.9029
Lumens per Watt (LPW)	63.35
Input Current (mA)	51.88
Input Voltage (Vac)	230.1
Input Frequency (hz)	50
CCT (K)	2859
CRI(Ra)	73.2
Chromaticity (x-coord.)	0.4450
Chromaticity (y-coord.)	0.4030
Time to Stabilize (minutes)	54

*Table 1: Summary of Test Results*

## Executive Summary

The NT10 Downlight (5x2 Lens) uses 4 XT-Es LEDs. The lamp produces 594.5 lumens while consuming 9.66 watts of power. The luminaire delivers 61.5 lumens per watt with a color temperature of 2842K.

Criteria	Result
Total Luminous Flux (lm)	594.5
Power (W)	9.66
Power Factor	0.9039
Lumens per Watt (LPW)	61.5
Input Current (mA)	52
Input Voltage (Vac)	230.1
Input Frequency (hz)	50
CCT (K)	2842
CRI(Ra)	73.1
Chromaticity (x-coord.)	0.4466
Chromaticity (y-coord.)	0.4040
Time to Stabilize (minutes)	53

Table 1: Summary of Test Results

## Executive Summary

The NT10 Downlight (4250K 40 deg Lens) uses 4 XT-Es LEDs. The lamp produces 724 lumens while consuming 9.66 watts of power. The luminaire delivers 74.94.2 lumens per watt with a color temperature of 4661K.

Criteria	Result
Total Luminous Flux (lm)	724
Power (W)	9.66
Power Factor	0.9074
Lumens per Watt (LPW)	74.94
Input Current (mA)	52.01
Input Voltage (Vac)	230.1
Input Frequency (hz)	50
CCT (K)	4661
CRI(Ra)	72.7
Chromaticity (x-coord.)	0.3552
Chromaticity (y-coord.)	0.3587
Time to Stabilize (minutes)	53

Table 1: Summary of Test Results

## Executive Summary

The NT10 Downlight (4250K 5x2 Lens) uses 4 XT-Es LEDs. The lamp produces 692.9 lumens while consuming 9.66 watts of power. The luminaire delivers 71.7 lumens per watt with a color temperature of 4592K.

Criteria	Result
Total Luminous Flux (lm)	692.9
Power (W)	9.66
Power Factor	0.9133
Lumens per Watt (LPW)	71.7
Input Current (mA)	52.26
Input Voltage (Vac)	230.1
Input Frequency (hz)	50
CCT (K)	4592
CRI(Ra)	72.7
Chromaticity (x-coord.)	0.3574
Chromaticity (y-coord.)	0.3602
Time to Stabilize (minutes)	51

Table 1: Summary of Test Results