



# XLamp® XP-G4 White LEDs Term Testing Summary

January 30, 2025

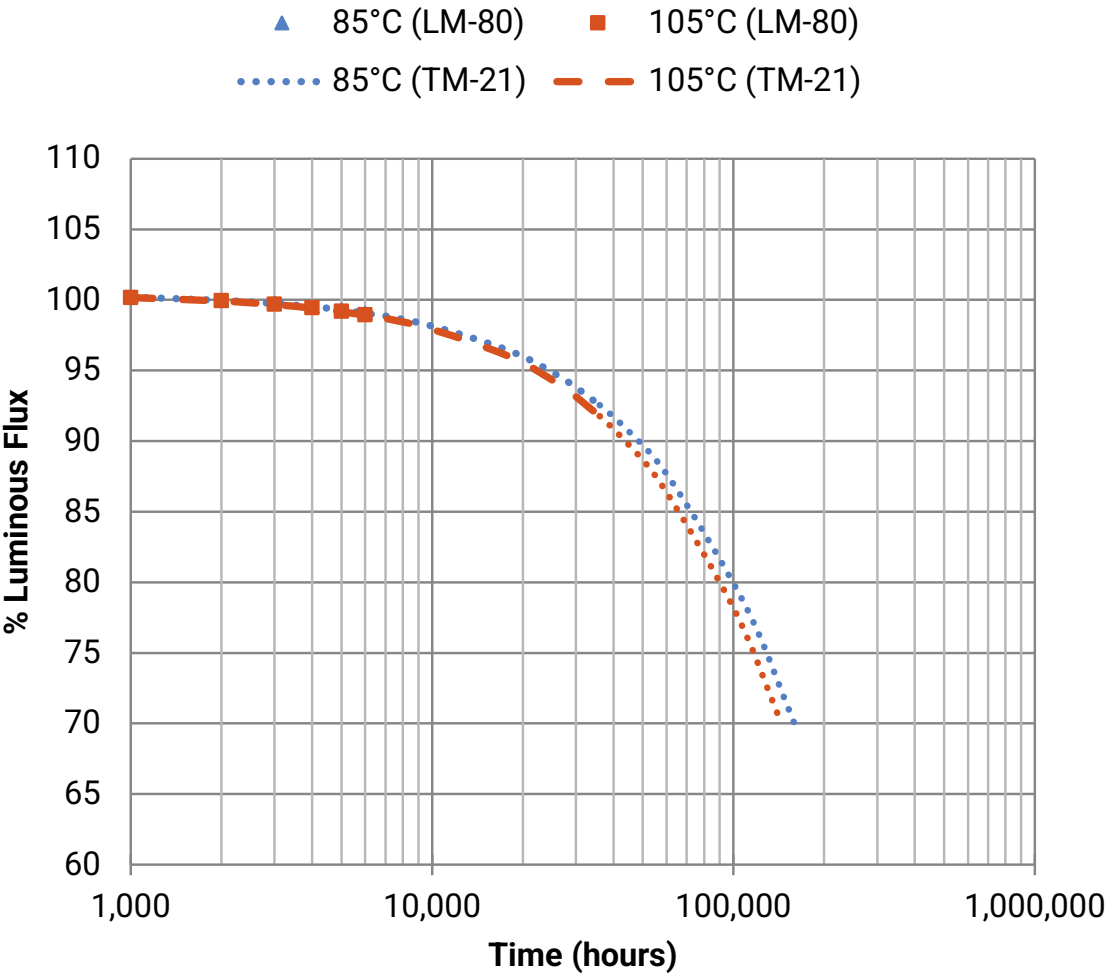


# XLamp® XP-G4 White Pro9™ LM-80 Summary

## XP-G4 White Pro9™

CCT	Current (A)	Tsp (°C)	Reported Lifetime (hrs)	
			L70	L90
2700K	0.700	85	>36,000	>36,000
	0.700	105	>36,000	>36,000
	1.000	85	>36,300	>36,300

# XLamp® XP-G4 White Pro9™ TM-21 Lifetimes

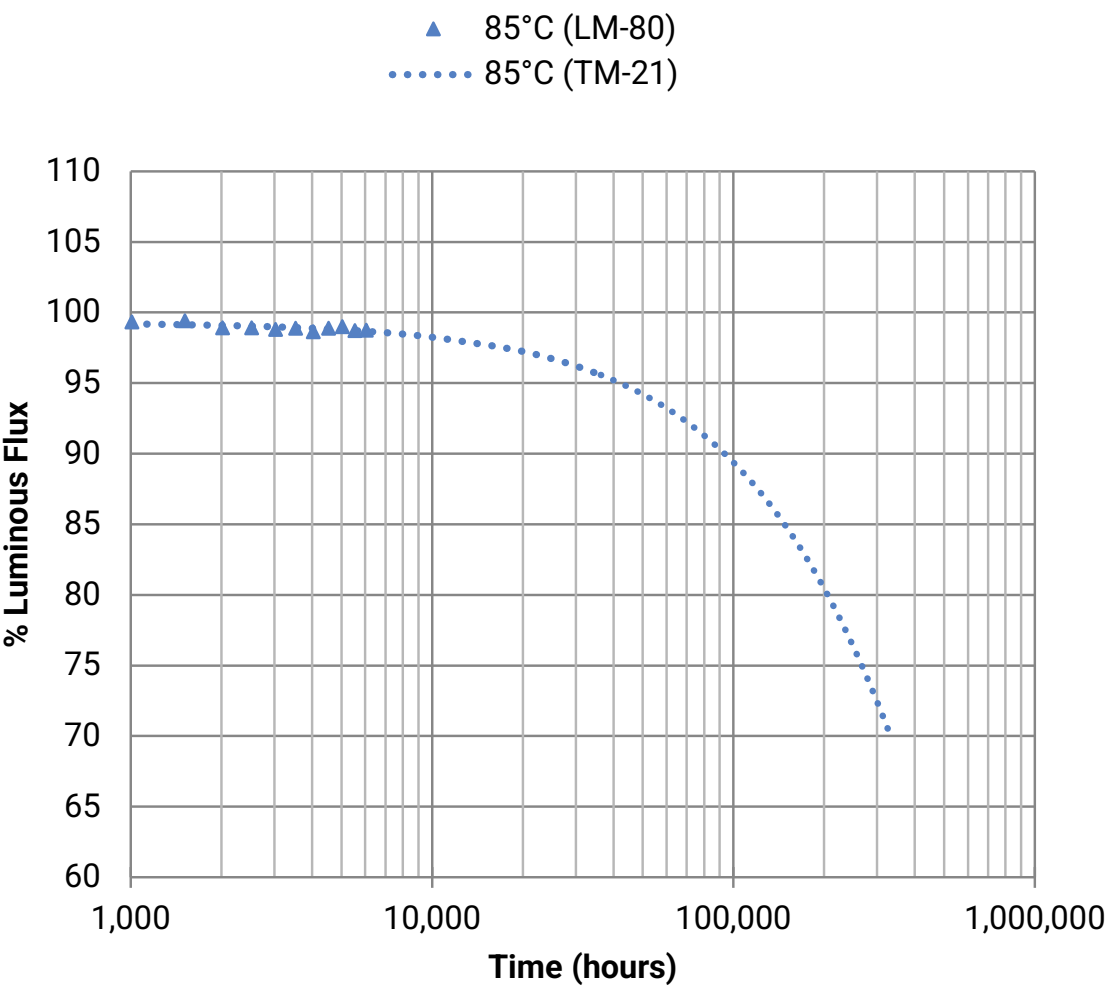


Current	700 mA	
Ta/Tsp	85°C	105°C
α	2.263E-06	2.500E-06
β	1.004	1.004
Duration	6,000 hrs	6,000 hrs
Calculated L90	48,400 hrs	43,800 hrs
Calculated L80	100,000 hrs	91,000 hrs
Calculated L70	>108,000 hrs	>108,000 hrs
Reported L90	> 36,000 hrs	> 36,000 hrs
Reported L80	> 36,000 hrs	> 36,000 hrs
Reported L70	> 36,000 hrs	> 36,000 hrs

**Notes:**

- These extrapolations are for informational purposes only and are not a warranty or a specification
- Extrapolated lifetimes are subject to change without notice

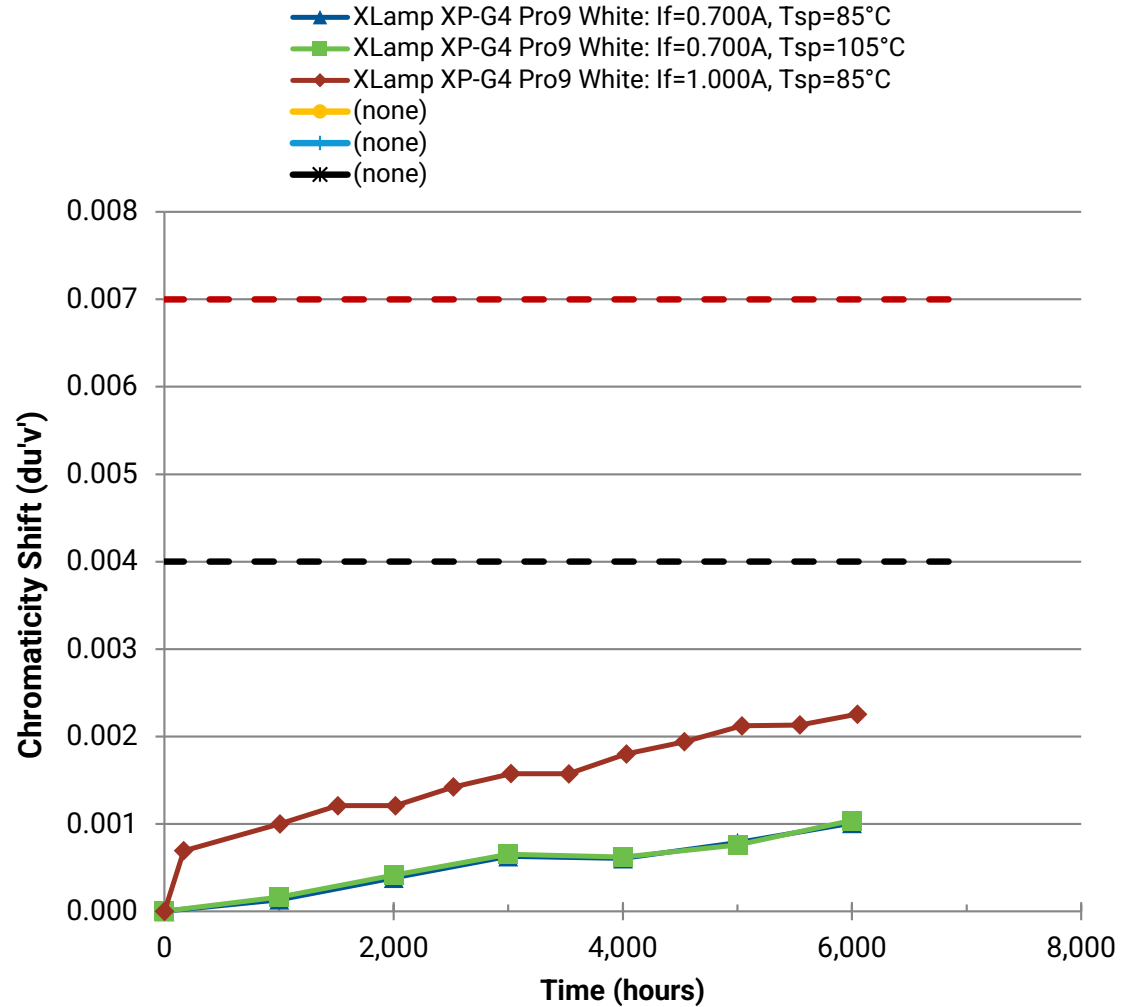
# XLamp® XP-G4 White Pro9™ TM-21 Lifetimes



Current	1000 mA
Ta/Tsp	85°C
$\alpha$	1.053E-06
$\beta$	0.9929
Duration	6,048 hrs
Calculated L90	93,300 hrs
Calculated L80	>109,000 hrs
Calculated L70	>109,000 hrs
Reported L90	> 36,300 hrs
Reported L80	> 36,300 hrs
Reported L70	> 36,300 hrs

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# XLamp® XP-G4 White Pro9™ LM-80 Color Shift



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# XLamp® XP-G4 Standard White LM-80 Summary

XP-G4 will continue using successor status, referencing existing XP-G3 White Standard data

## XP-G3 White Standard (for reference)

CCT	Current (A)	Tsp (°C)	Reported Lifetime (hrs)	
			L70	L90
3000K	0.700	85	>145k	>145k
	0.700	105	>103k	>103k
	0.700	120	>51.4k	39.6k
	1.050	85	>90.7k	>90.7k
	1.050	105	>72.6k	>72.6k
	1.500	85	>145k	>145k
	1.500	105	>60.5k	27.9k

## XP-G4 White Standard

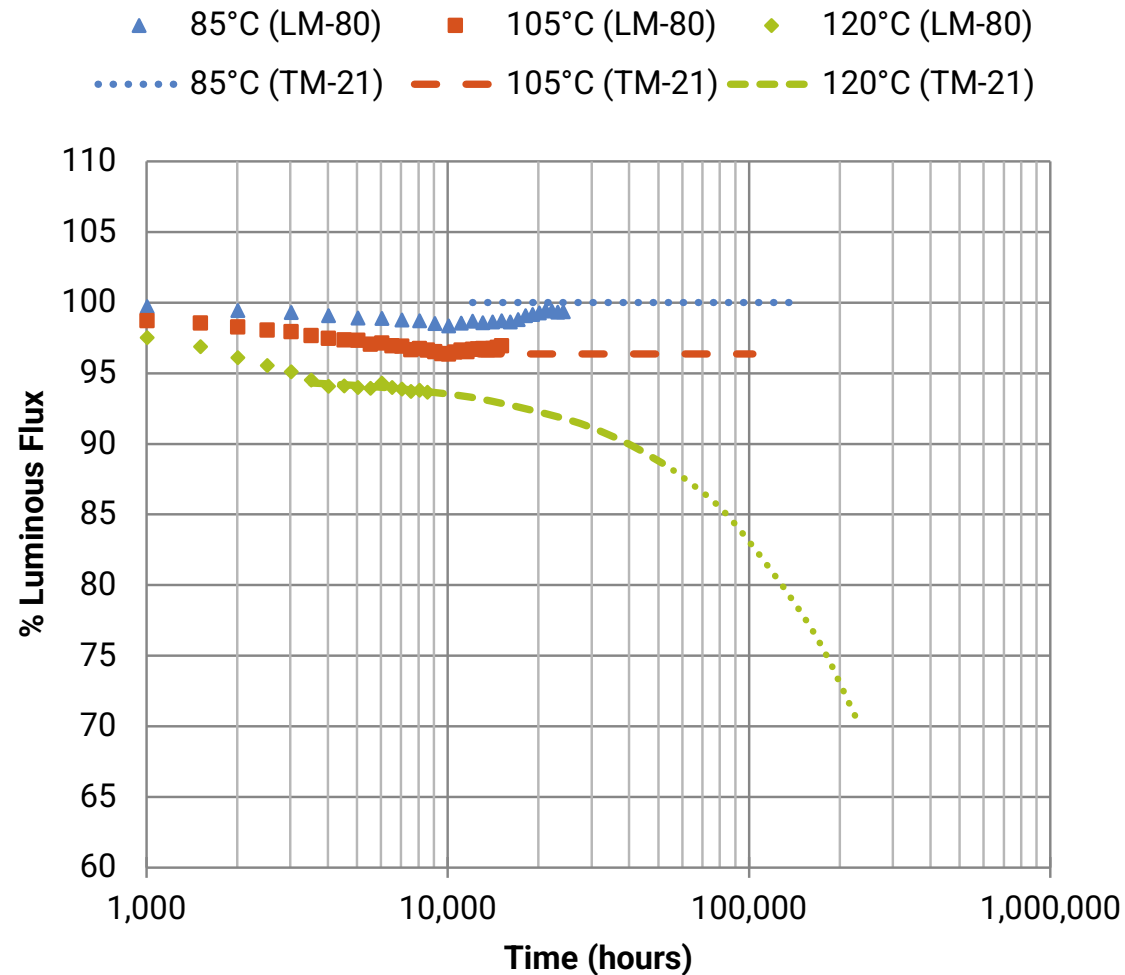
Current (A)	Tsp (°C)	Status
0.700	85	Successor 6K hrs
0.700	105	Successor 6K hrs
0.700	125	Successor 6K hrs
1.050	85	Successor 6K hrs
1.050	105	Successor 6K hrs
1.500	85	Successor 6K hrs
1.500	105	Successor 6K hrs

Note: no further LM-80 extensions are planned for XP-G4 White Standard LEDs

Current (A)	Tsp (°C)	TM-21 Reported Lifetime (hrs)	
		L90	L70
2.000	85	>36,000	>36,000
2.000	105	>36,000	>36,000
2.000	125	>36,000	>36,000



# XLamp® XP-G3 Standard White LEDs TM-21 Lifetimes

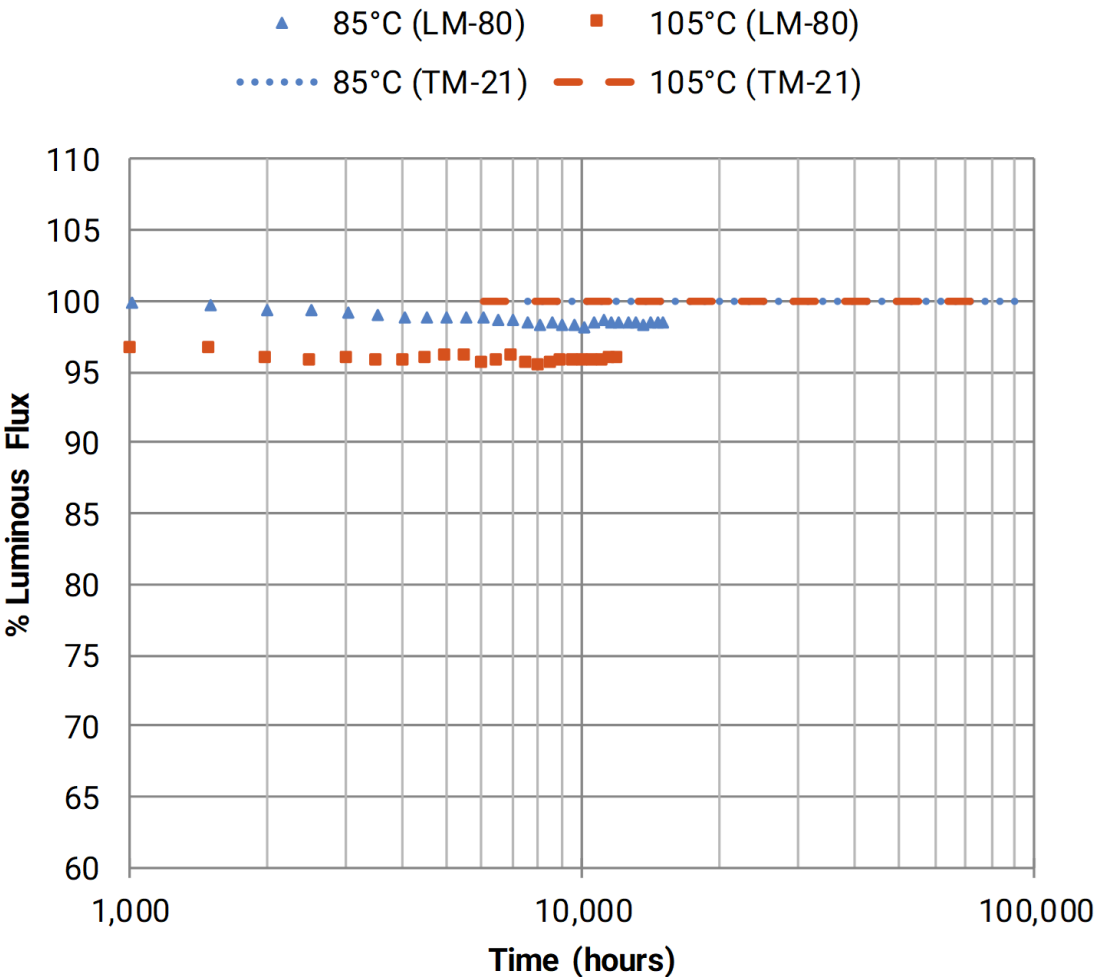


Current	700 mA		
Ta/Tsp	85°C	105°C	120°C
$\alpha$	-8.121E-07	-4.972E-07	1.297E-06
$\beta$	0.9913	0.9605	0.9474
Duration	24,192 hrs	17,136 hrs	8,568 hrs
Calculated L90	$\alpha < 0$	$\alpha < 0$	39,600 hrs
Calculated L80	$\alpha < 0$	$\alpha < 0$	130,000 hrs
Calculated L70	$\alpha < 0$	$\alpha < 0$	>154,000 hrs
Reported L90	>145,000 hrs	>103,000 hrs	39,600 hrs
Reported L80	>145,000 hrs	>103,000 hrs	> 51,400 hrs
Reported L70	>145,000 hrs	>103,000 hrs	> 51,400 hrs

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# XLamp® XP-G3 Standard White TM-21 Lifetimes



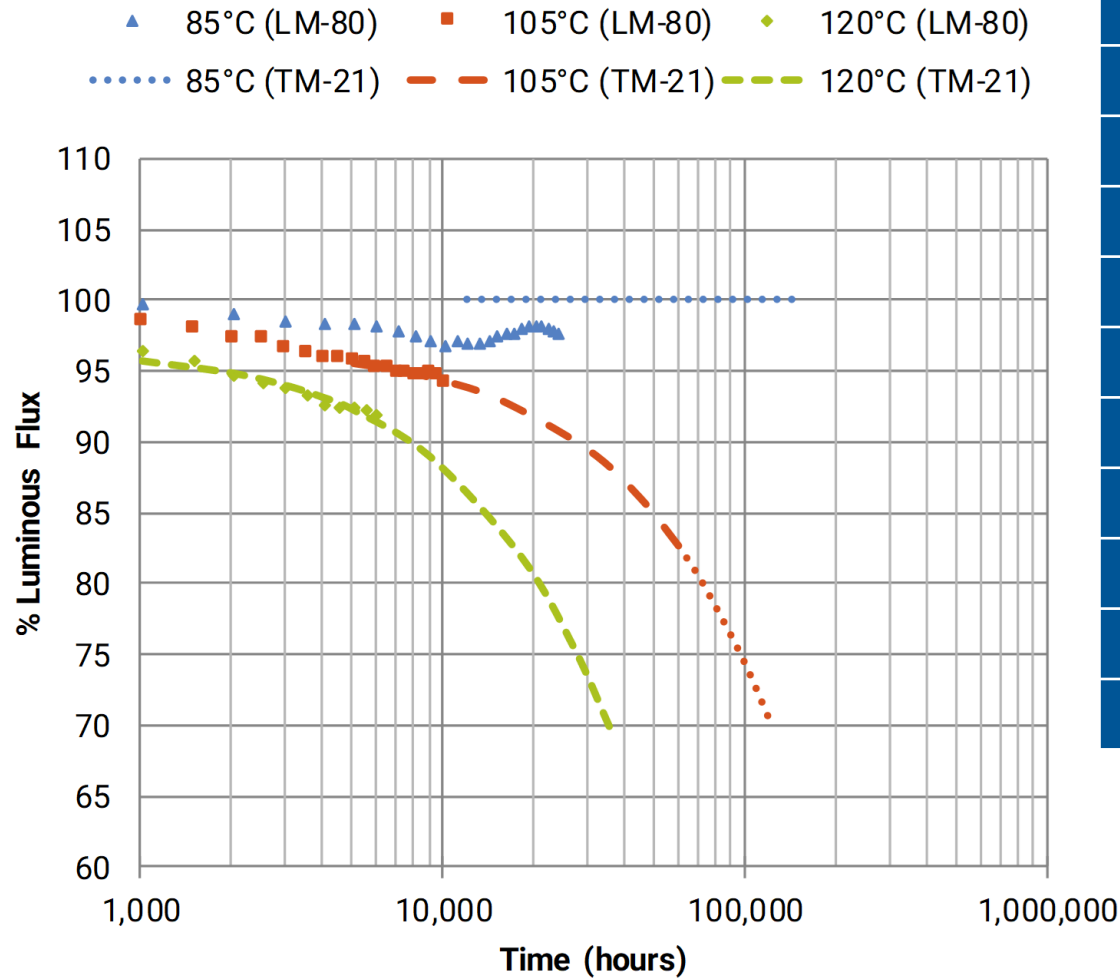
Current	1050 mA	
Ta/Tsp	85°C	105°C
$\alpha$	-1.882E-07	-3.926E-07
$\beta$	0.9814	0.9526
Duration	15,120 hrs	12,096 hrs
Calculated L90	$\alpha < 0$	$\alpha < 0$
Calculated L80	$\alpha < 0$	$\alpha < 0$
Calculated L70	$\alpha < 0$	$\alpha < 0$
Reported L90	> 90,700 hrs	> 72,600 hrs
Reported L80	> 90,700 hrs	> 72,600 hrs
Reported L70	> 90,700 hrs	> 72,600 hrs

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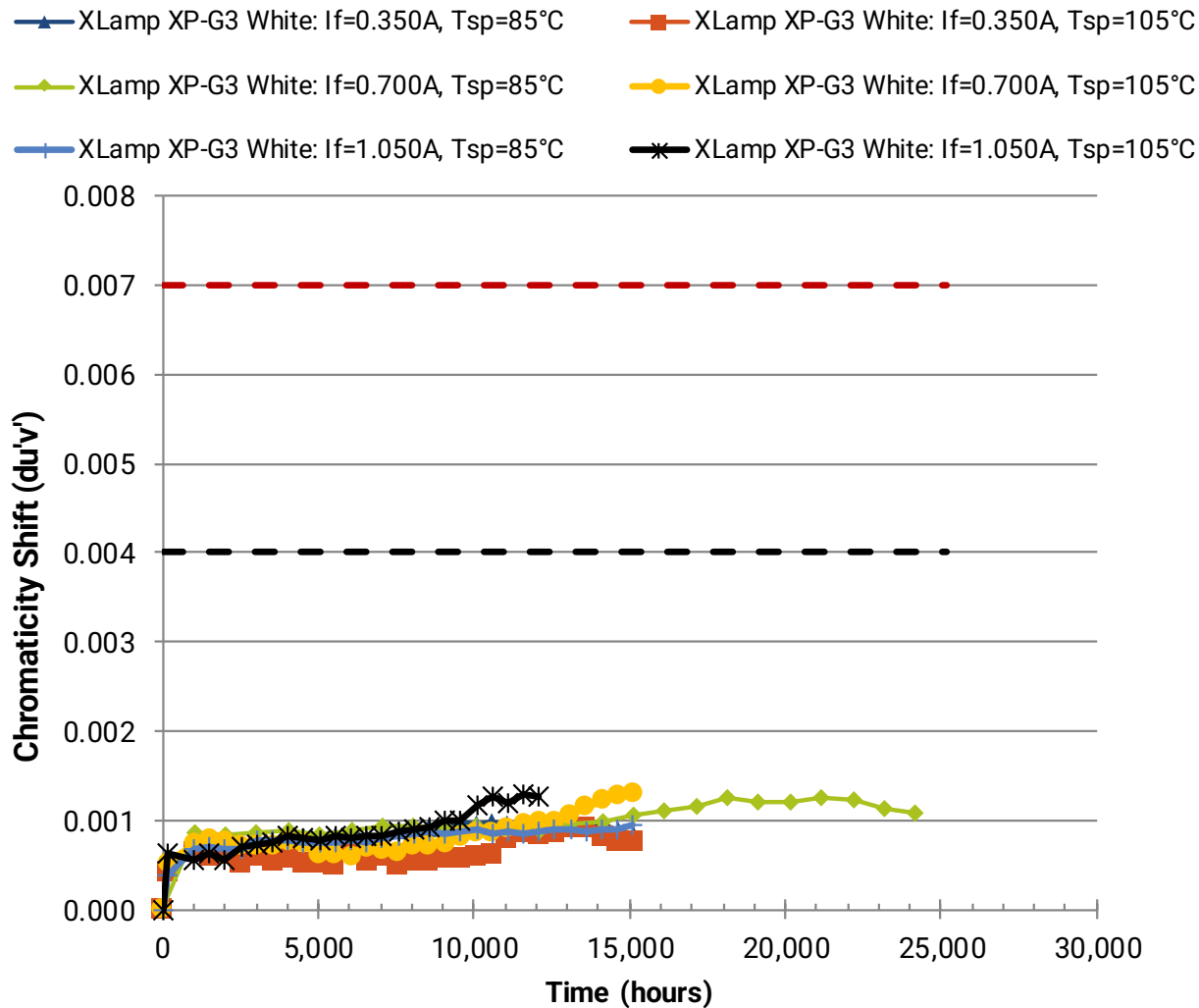


Current	1500 mA		
Ta/Tsp	85°C	105°C	120°C
$\alpha$	-8.766E-07	2.620E-06	9.077E-06
$\beta$	0.9612	0.9683	0.9663
Duration	24,192 hrs	10,080 hrs	6,048 hrs
Calculated L90	$\alpha < 0$	27,900 hrs	7,830 hrs
Calculated L80	$\alpha < 0$	72,900 hrs	20,800 hrs
Calculated L70	$\alpha < 0$	124,000 hrs	35,500 hrs
Reported L90	>145,000 hrs	27,900 hrs	7,830 hrs
Reported L80	>145,000 hrs	> 60,500 hrs	20,800 hrs
Reported L70	>145,000 hrs	> 60,500 hrs	35,500 hrs

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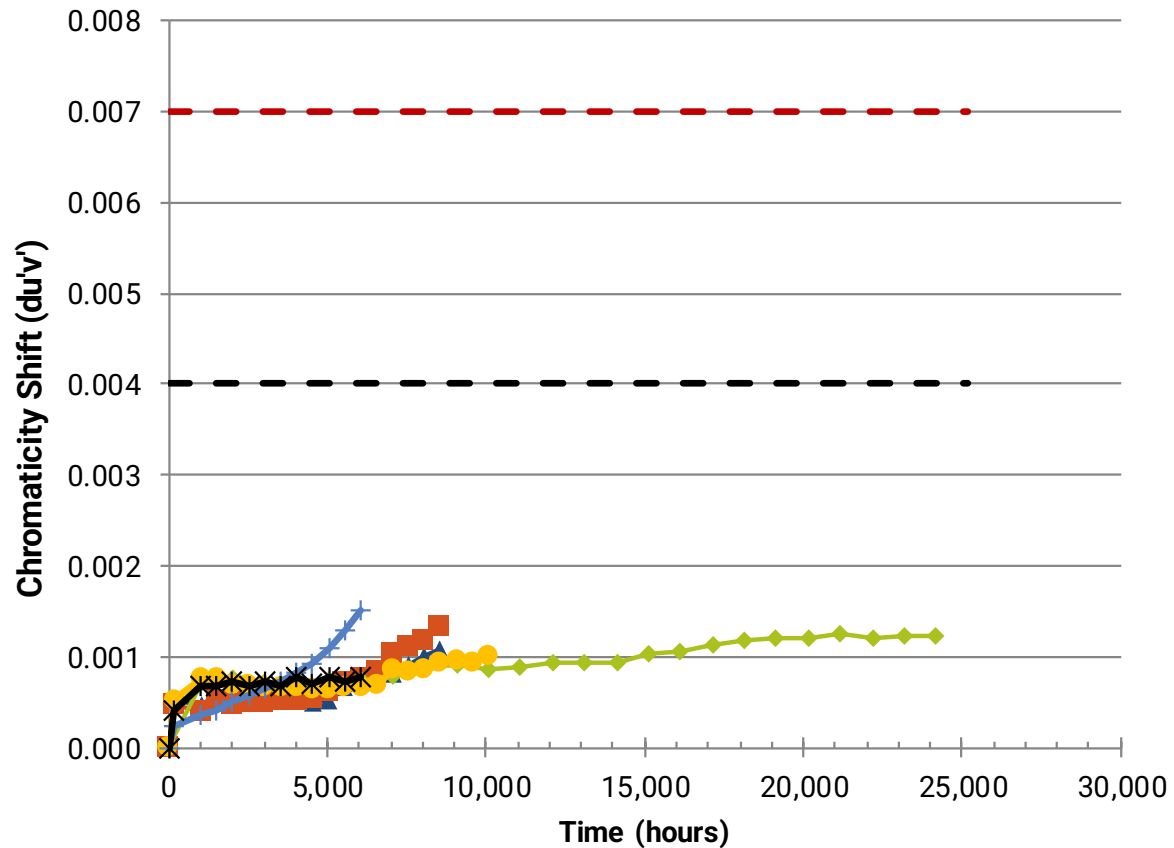
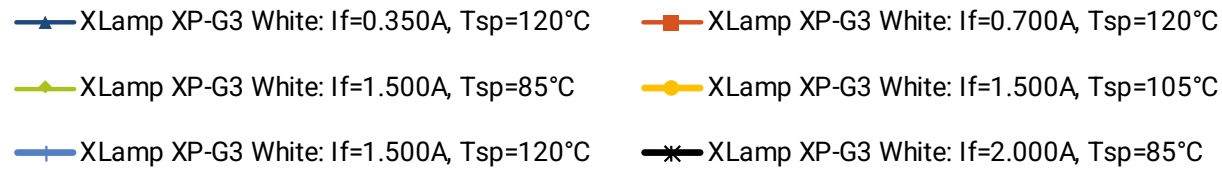
# XLamp® XP-G3 Standard White LM-80 Color Shift



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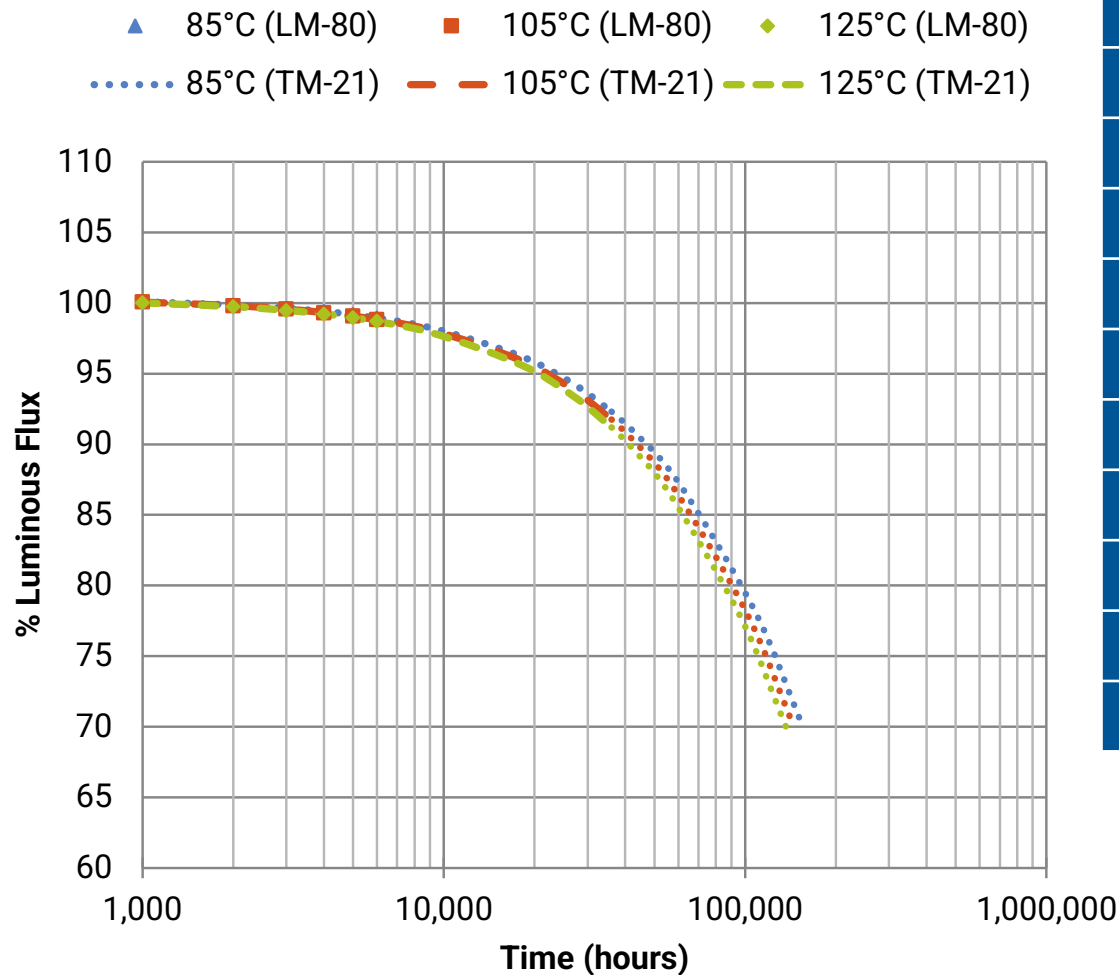
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# XLamp® XP-G4 Standard White TM-21 Lifetimes

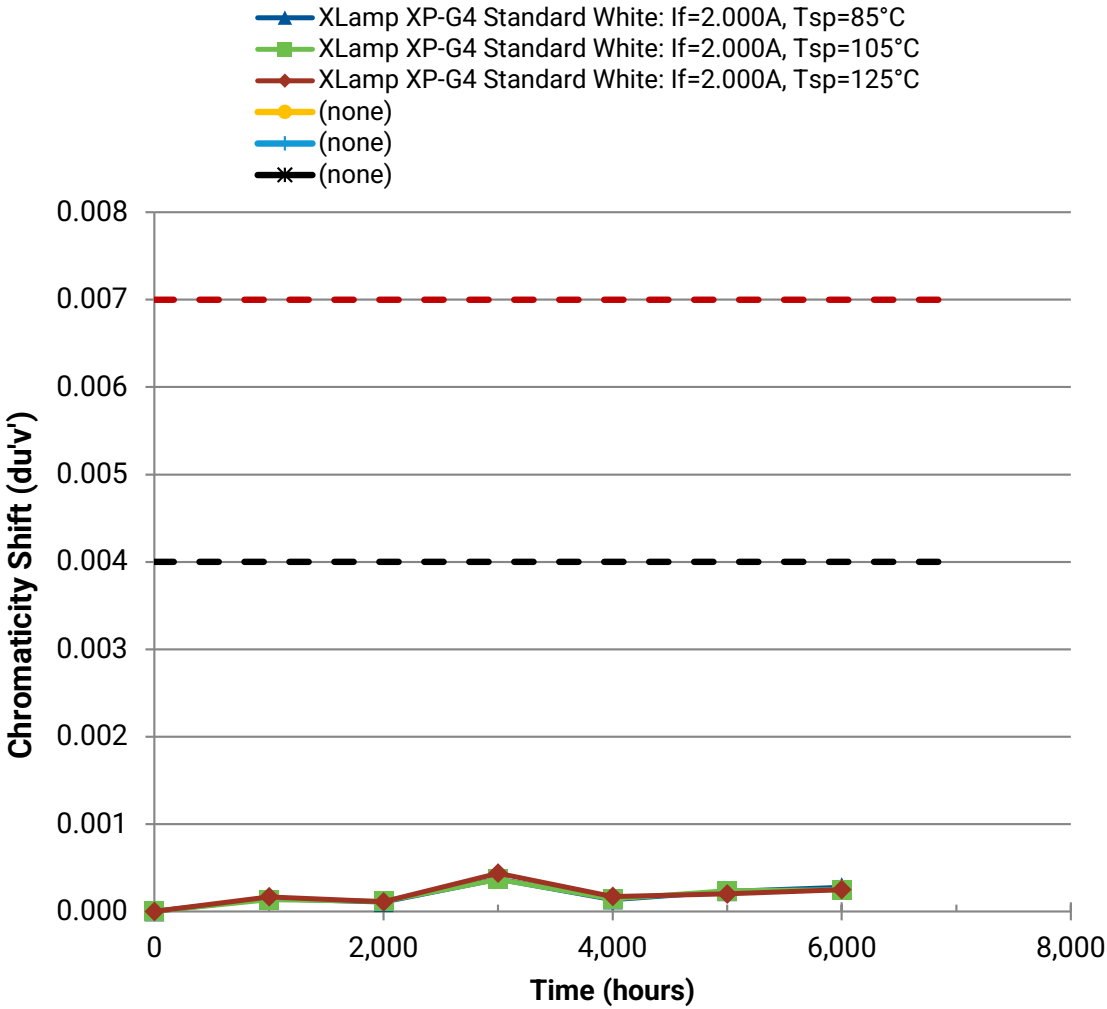


Current	2000 mA		
Ta/Tsp	85°C	105°C	125°C
$\alpha$	2.317E-06	2.479E-06	2.634E-06
$\beta$	1.003	1.003	1.003
Duration	6,000 hrs	6,000 hrs	6,000 hrs
Calculated L90	46,900 hrs	43,700 hrs	41,000 hrs
Calculated L80	97,800 hrs	91,300 hrs	85,700 hrs
Calculated L70	>108,000 hrs	>108,000 hrs	>108,000 hrs
Reported L90	> 36,000 hrs	> 36,000 hrs	> 36,000 hrs
Reported L80	> 36,000 hrs	> 36,000 hrs	> 36,000 hrs
Reported L70	> 36,000 hrs	> 36,000 hrs	> 36,000 hrs

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