

# LM-79

## Test Report

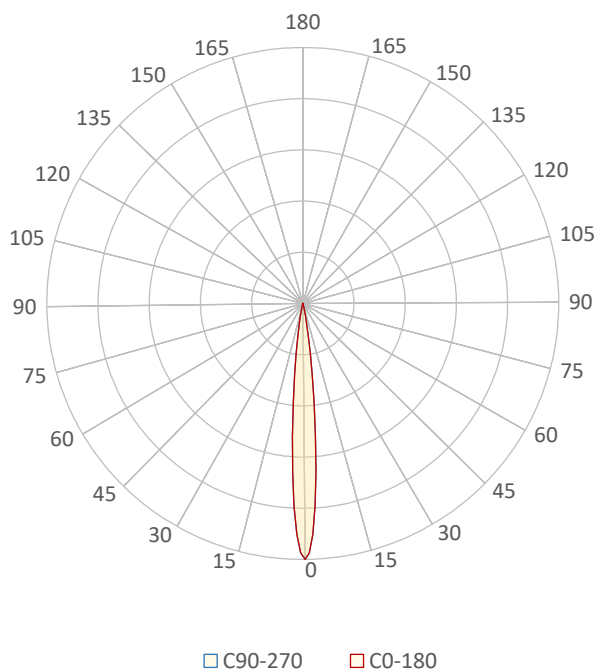
### LM79-JADE-ZOOM-HP-3000K-CRI90-SPOT

#### General Discription

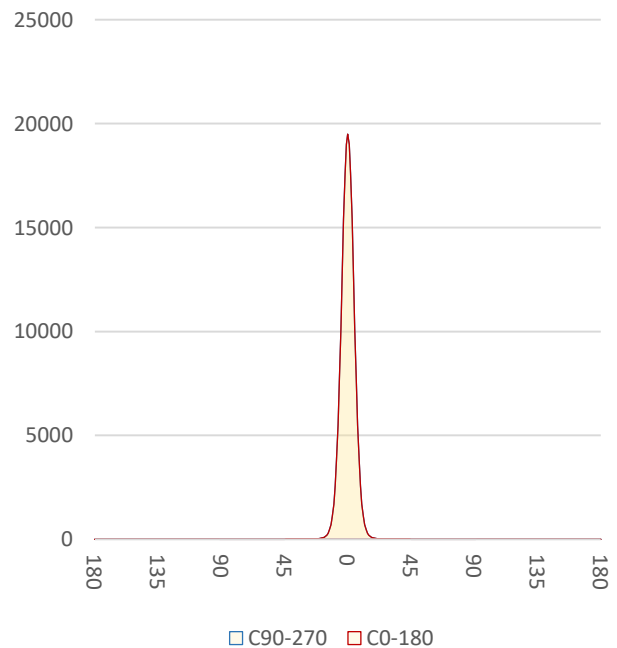
Item number	
Date and time	14-7-2021 12:10:55
CCT (Kelvin)	3020 K
Beam angle	10,3°
Luminous flux	780 lm
Efficiency	25 lm/watt
Weighted energy	31,6 kWh/1000h
Power factor	0,98
CRI (RA)	91,7
Fidelity index Rf	Rf 89,2
Gammut index Rg	Rg 103,3
Peak	19496 cd



Polar diagram



Cartesian diagram



**CLS LED BV**  
info@cls-led.com  
www.cls-led.com

2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website [www.cls-led.com/voorwaarden.pdf](http://www.cls-led.com/voorwaarden.pdf)

# LM-79

## Test Report

### LM79-JADE-ZOOM-HP-3000K-CRI90-SPOT

Beam details	1m	2m	3m	4m	5m														
Lux*	19496 lx	4874 lx	2166 lx	1218 lx	780 lx														
*measured at center of beam																			
Footcandles*	1811,2 fcd	452,8 fcd	201,2 fcd	113,2 fcd	72,4 fcd														
Beam width (meter)	0,2 m	0,4 m	0,5 m	0,7 m	0,9 m														
Beam width (Feet)	0,6 ft	1,2 ft	1,8 ft	2,4 ft	3 ft														
<b>Beam intensities</b>																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
19496lx	4874lx	2166lx	1218lx	780lx	542lx	398lx	305lx	241lx	195lx	161lx	135lx	115lx	99lx	87lx	76lx	67lx	60lx	54lx	49lx
3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	19,7ft	23ft	26,2ft	29,5ft	32,8ft	36,1ft	39,4ft	42,7ft	45,9ft	49,2ft	52,5ft	55,8ft	59,1ft	62,3ft	65,6ft
1811,2fcd	452,8fcd	201,2fcd	113,2fcd	72,4fcd	50,3fcd	37fcd	28,3fcd	22,4fcd	18,1fcd	15fcd	12,6fcd	10,7fcd	9,2fcd	8fcd	7,1fcd	6,3fcd	5,6fcd	5fcd	4,5fcd
<b>Intensities in 0° c-plane</b>																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
19,5K	19,0K	17,6K	15,4K	12,8K	10,1K	7,6K	5,5K	3,8K	2,6K	1,7K	1,1K	0,7K	0,5K	0,3K	0,2K	0,1K	0,1K	0,1K	0,1K
100%	97%	90%	79%	66%	52%	39%	28%	19%	13%	9%	6%	4%	2%	1%	1%	1%	0%	0%	0%
<b>Intensities in 90° c-plane</b>																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
19,5K	19,0K	17,6K	15,4K	12,8K	10,1K	7,6K	5,5K	3,8K	2,6K	1,7K	1,1K	0,7K	0,5K	0,3K	0,2K	0,1K	0,1K	0,1K	0,1K
100%	97%	90%	79%	66%	52%	39%	28%	19%	13%	9%	6%	4%	2%	1%	1%	1%	0%	0%	0%
<b>Intensities in 180° c-plane</b>																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
19,5K	19,0K	17,6K	15,4K	12,8K	10,1K	7,6K	5,5K	3,8K	2,6K	1,7K	1,1K	0,7K	0,5K	0,3K	0,2K	0,1K	0,1K	0,1K	0,1K
100%	97%	90%	79%	66%	52%	39%	28%	19%	13%	9%	6%	4%	2%	1%	1%	1%	0%	0%	0%
<b>Intensities in 270° c-plane</b>																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
19,5K	19,0K	17,6K	15,4K	12,8K	10,1K	7,6K	5,5K	3,8K	2,6K	1,7K	1,1K	0,7K	0,5K	0,3K	0,2K	0,1K	0,1K	0,1K	0,1K
100%	97%	90%	79%	66%	52%	39%	28%	19%	13%	9%	6%	4%	2%	1%	1%	1%	0%	0%	0%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
10,3°		19,3°				25,7°				99,8%				99,3%					



**CLS LED BV**  
 info@cls-led.com  
 www.cls-led.com

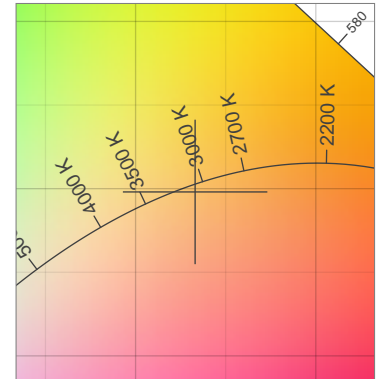
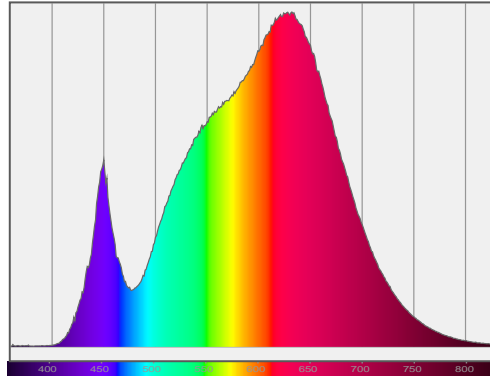
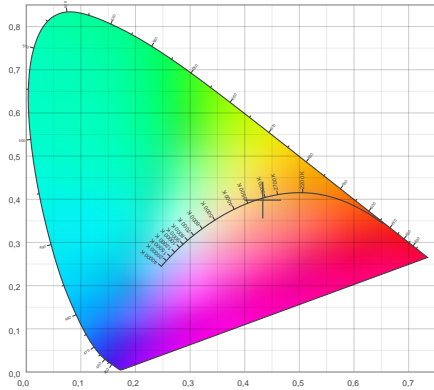
2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website [www.cls-led.com/voorwaarden.pdf](http://www.cls-led.com/voorwaarden.pdf)

# LM-79

## Test Report

# LM79-JADE-ZOOM-HP-3000K-CRI90-SPOT

### Color details

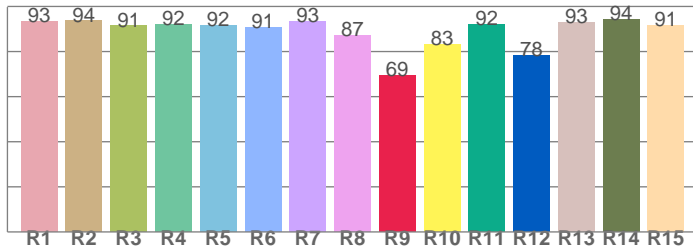


CIE 1931	x: 0,433	
3020 K	y: 0,398	

Spectra
---------

CIE 1931 ZOOM
$\Delta uv: -0,0019$

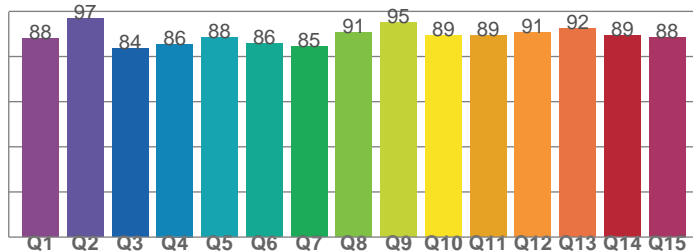
### CRI: 91,7 (R1-R8)



### CRI values, R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8
93,2	93,6	91,4	92,2	91,8	90,7	93,2	87,3
R9	R10	R11	R12	R13	R14	R15	
69,3	83,1	92,1	78,5	93,0	94,2	91,4	

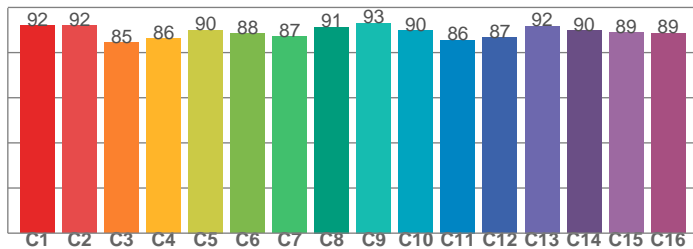
### CQS: 88,5



### CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
87,9	97,0	83,5	85,5	88,5	85,7	84,6	90,6
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,2	89,2	89,3	90,5	92,3	89,3	88,5	

### TM30: 89,2



### TM30 values, 16 binned values out of total of 99 values

C1	C2	C3	C4	C5	C6	C7	C8
91,9	91,9	84,5	86,3	90,0	88,4	87,0	91,3
C9	C10	C11	C12	C13	C14	C15	
93,2	89,7	85,6	86,6	91,7	89,8	88,8	

### Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	$\Delta uv$
3020 K	91,7	69,3	89,2	103,3	88,5	0,433	0,398	0,251	0,346	-0,0019



**CLS LED BV**  
 info@cls-led.com  
 www.cls-led.com

2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website [www.cls-led.com/voorwaarden.pdf](http://www.cls-led.com/voorwaarden.pdf)

# LM-79

## Test Report

# LM79-JADE-ZOOM-HP-3000K-CRI90-SPOT

### TM30 details

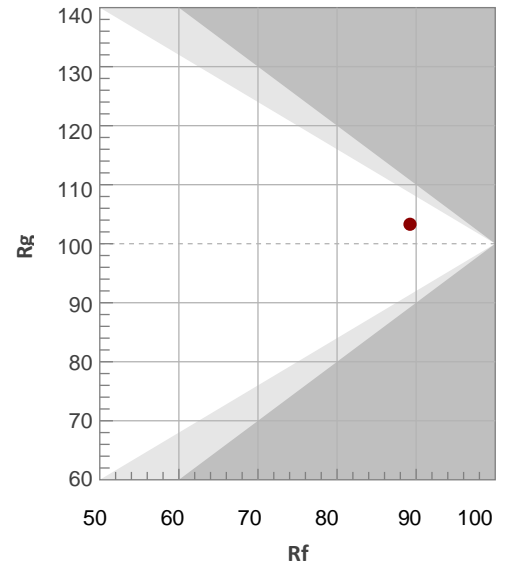
Rf 89,2

Fidelity index Rf

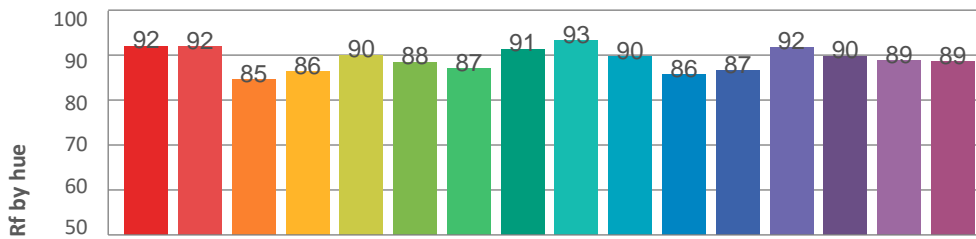
Rg 103,3

Gamut index Rg

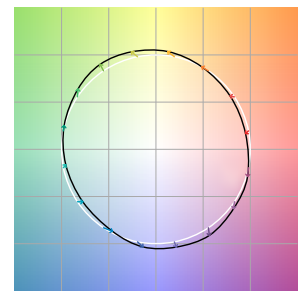
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	-2%
2	92	-3%	3%
3	85	0%	8%
4	86	4%	8%
5	90	6%	5%
6	88	8%	-1%
7	87	4%	-7%
8	91	0%	-6%
9	93	-3%	-3%
10	90	-5%	3%
11	86	-2%	10%
12	87	4%	7%
13	92	6%	1%
14	90	7%	-4%
15	89	3%	-6%
16	89	1%	-9%



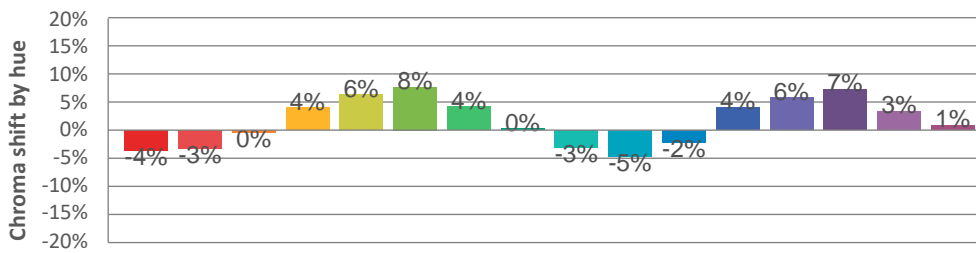
### Hue binH



### Color vector graphics



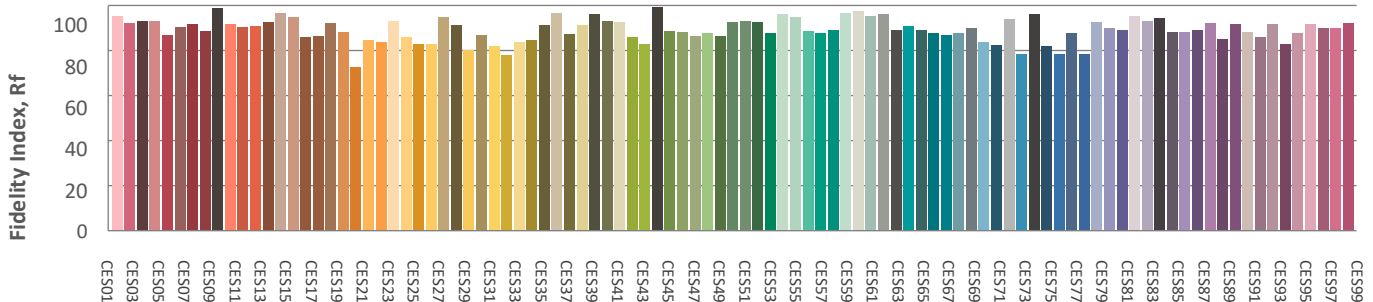
### Hue bin



### Color distortion graphics



### Color Evaluation Sample



CLS LED BV  
 info@cls-led.com  
 www.cls-led.com

2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website [www.cls-led.com/voorwaarden.pdf](http://www.cls-led.com/voorwaarden.pdf)

# LM-79

## Test Report

### LM79-JADE-ZOOM-HP-3000K-CRI90-SPOT

#### Glare Evaluation According to UGR

p Ceiling	70	70	50	50	30	70	70	50	50	30	
p Walls	50	30	50	30	30	50	30	50	30	30	
p Floor	20	20	20	20	20	20	20	20	20	20	
Room size X Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H	2H	-0,8	-0,6	-0,8	-0,5	-0,3	-0,8	-0,6	-0,8	-0,5	-0,3
	3H	-0,7	-0,3	-0,4	-0,1	0,0	-0,7	-0,3	-0,4	-0,1	0,0
	4H	-0,5	-0,1	-0,1	0,1	0,3	-0,5	-0,1	-0,1	0,1	0,3
	6H	-0,2	0,1	0,0	0,4	0,7	-0,2	0,1	0,0	0,4	0,7
	8H	0,0	0,3	0,3	0,6	1,0	0,0	0,3	0,3	0,6	1,0
	12H	0,4	0,7	0,8	1,1	1,5	0,4	0,7	0,8	1,1	1,5
4H	2H	-1,0	-0,5	-0,6	-0,3	-0,1	-1,0	-0,5	-0,6	-0,3	-0,1
	3H	-0,4	-0,1	-0,1	0,2	0,6	-0,4	-0,1	-0,1	0,2	0,6
	4H	-0,2	0,1	0,2	0,5	1,0	-0,2	0,1	0,2	0,5	1,0
	6H	0,1	0,5	0,6	0,8	1,2	0,1	0,5	0,6	0,8	1,2
	8H	0,5	0,8	1,0	1,2	1,5	0,5	0,8	1,0	1,2	1,5
	12H	1,2	1,4	1,7	1,8	2,3	1,2	1,4	1,7	1,8	2,3
8H	4H	-0,1	0,2	0,4	0,5	0,9	-0,1	0,2	0,4	0,5	0,9
	6H	0,4	0,6	0,9	1,0	1,6	0,4	0,6	0,9	1,0	1,6
	8H	1,0	1,1	1,5	1,7	2,3	1,0	1,1	1,5	1,7	2,3
	12H	2,0	2,1	2,6	2,6	3,2	2,0	2,1	2,6	2,6	3,2
12H	4H	-0,2	0,1	0,3	0,5	1,0	-0,2	0,1	0,3	0,5	1,0
	6H	0,5	0,7	1,0	1,2	1,8	0,5	0,7	1,0	1,2	1,8
	8H	1,2	1,3	1,8	1,8	2,4	1,2	1,3	1,8	1,8	2,4
Variation of the observer position for the luminaire distance S											
S = 1.0H	0,4 / -0,5					0,4 / -0,5					
S = 1.5H	1,2 / -0,9					1,2 / -0,9					
S = 2.0H	2,0 / -1,2					2,0 / -1,2					
Standard table	n/a					n/a					
Correction summand	n/a					n/a					
Corrected glare indices referring to 780lm total luminous flux											



**CLS LED BV**  
 info@cls-led.com  
 www.cls-led.com

2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website [www.cls-led.com/voorwaarden.pdf](http://www.cls-led.com/voorwaarden.pdf)