

LM-79

Test Report

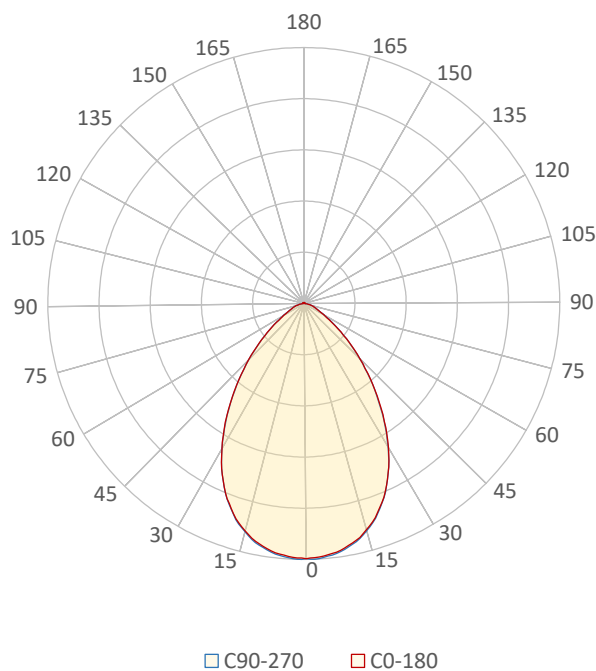
LM79-JADE-EXPO-3000K-CRI90-SPOT+ 70° beamshaper

General Discription

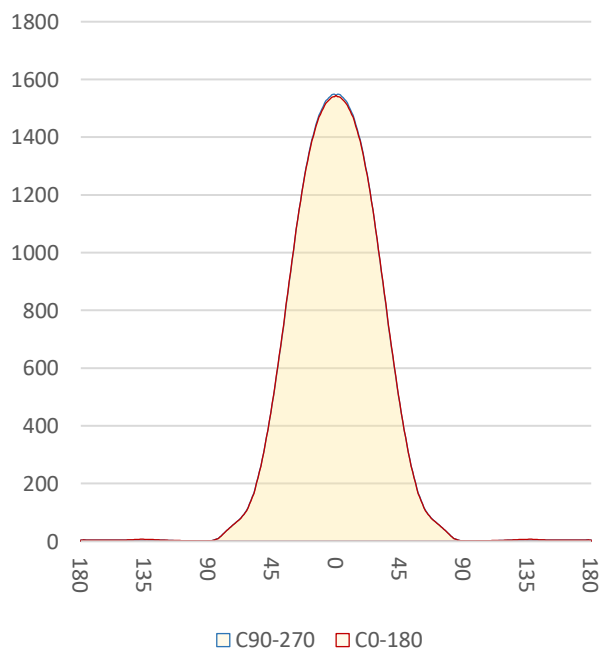
Item number	J-EX-X-3-1-30-90-1
Date and time	16-10-2017 13:41:52
CCT (Kelvin)	3089 K
Beam angle	72,7°
Luminous flux	2338 lm
Efficiency	85 lm/watt
Weighted energy	27,4 kWh/1000h
Power factor	0,94
CRI (RA)	92,0
Fidelity index Rf	Rf 90,9
Gammut index Rg	Rg 99,1
Peak	1549 cd



Polar diagram



Cartesian diagram



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

2017 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

LM-79

Test Report

LM79-JADE-EXPO-3000K-CRI90-SPOT+ 70° beamshaper

Beam details	1m	2m	3m	4m	5m																			
Lux*	1545 lx	386 lx	172 lx	97 lx	62 lx																			
*measured at center of beam																								
Footcandles*	143,5 fcd	35,9 fcd	15,9 fcd	9,0 fcd	5,7 fcd																			
Beam width (meter)	1,5 m	2,9 m	4,4 m	5,9 m	7,4 m																			
Beam width (Feet)	4,8 ft	9,7 ft	14,5 ft	19,3 ft	24,1 ft																			
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
1545lx	386lx	172lx	97lx	62lx	43lx	32lx	24lx	19lx	15lx	13lx	11lx	9lx	8lx	7lx	6lx	5lx	5lx	4lx	4lx					
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					
143,5fcd	35,9fcd	15,9fcd	9fcd	5,7fcd	4fcd	2,9fcd	2,2fcd	1,8fcd	1,4fcd	1,2fcd	1fcd	0,8fcd	0,7fcd	0,6fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,4fcd					
Intensities in 0° c-plane																								
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°					
1545	1528	1490	1421	1317	1179	1010	826	644	478	335	221	140	93	67	47	24	6	1	1					
100%	99%	96%	92%	85%	76%	65%	53%	42%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%					
Intensities in 90° c-plane																								
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°					
1545	1537	1497	1427	1321	1179	1007	820	640	476	335	223	142	94	68	47	24	7	2	1					
100%	99%	97%	92%	86%	76%	65%	53%	41%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%					
Intensities in 180° c-plane																								
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°					
1545	1528	1490	1421	1317	1179	1010	826	644	478	335	221	140	93	67	47	24	6	1	1					
100%	99%	96%	92%	85%	76%	65%	53%	42%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%					
Intensities in 270° c-plane																								
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°					
1545	1537	1497	1427	1321	1179	1007	820	640	476	335	223	142	94	68	47	24	7	2	1					
100%	99%	97%	92%	86%	76%	65%	53%	41%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
72,7°					117,9°					153,6°					92,7%					77,3%				



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

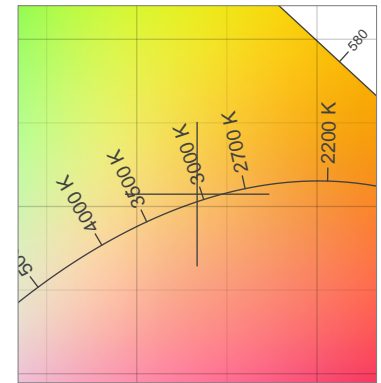
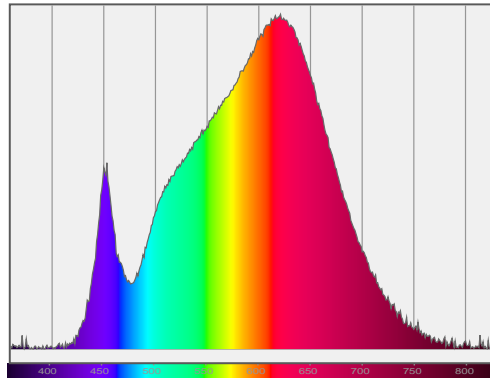
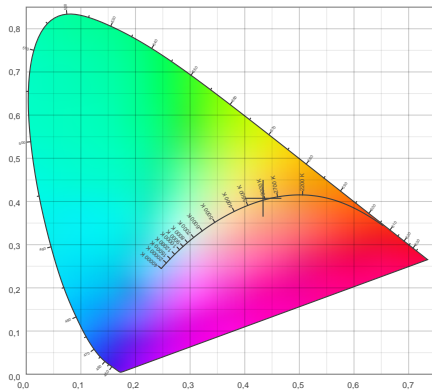
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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

LM-79

Test Report

LM79-JADE-EXPO-3000K-CRI90-SPOT+ 70° beamshaper

Color details



CIE 1931

x: 0,433



Spectra

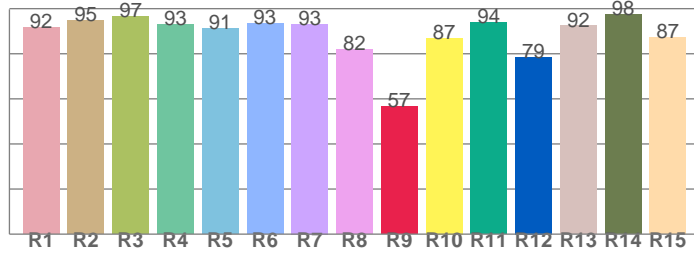
CIE 1931 ZOOM

3089 K

y: 0,407

Δuv : 0,0018

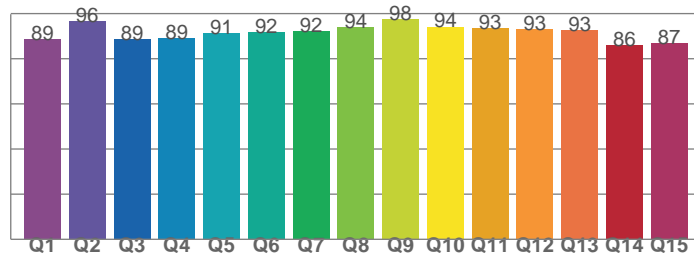
CRI: 92,0 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
91,8	94,6	96,6	93,0	91,3	93,4	93,2	82,0
R9	R10	R11	R12	R13	R14	R15	
56,7	86,9	93,8	78,5	92,4	97,5	87,3	

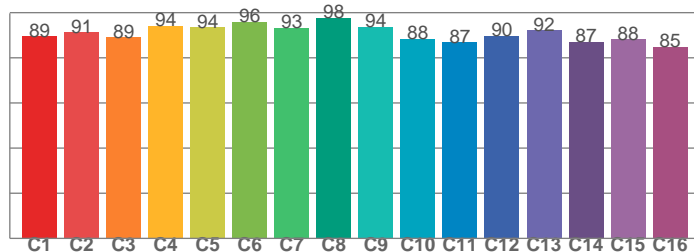
CQS: 91,0



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
88,5	96,5	88,7	89,0	91,4	91,6	92,1	93,8
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,6	94,1	93,5	93,1	92,6	86,1	86,9	

TM30: 90,9



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

C1	C2	C3	C4	C5	C6	C7	C8
89,5	91,2	89,0	94,0	93,5	95,9	93,3	97,7
C9	C10	C11	C12	C13	C14	C15	
93,8	88,5	86,8	89,7	92,1	87,1	88,1	

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	Δuv
3089 K	92,0	56,7	90,9	99,1	91,0	0,433	0,407	0,247	0,348	0,0018



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

2017 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

LM-79

Test Report

LM79-JADE-EXPO-3000K-CRI90-SPOT+ 70° beamshaper

TM30 details

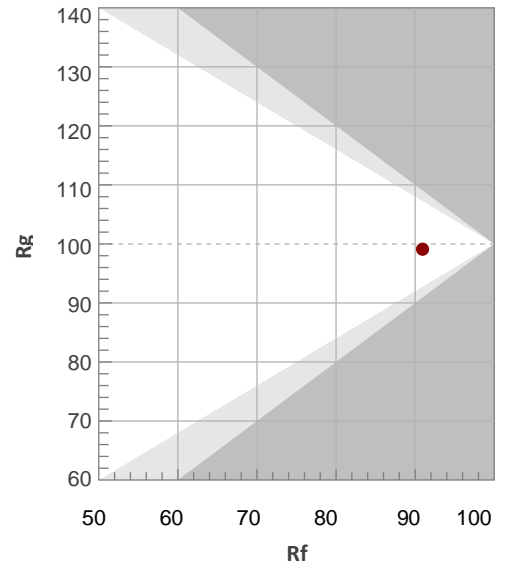
Rf 90,9

Fidelity index Rf

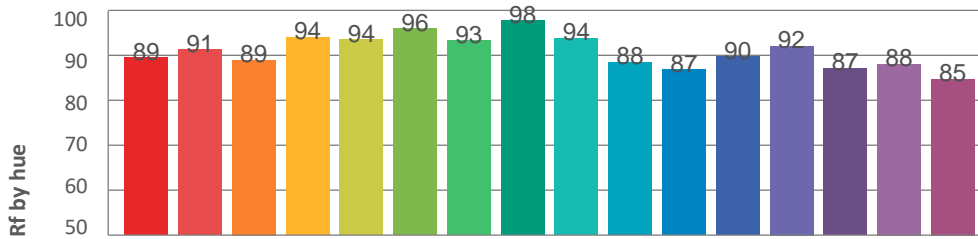
Rg 99,1

Gamut index Rg

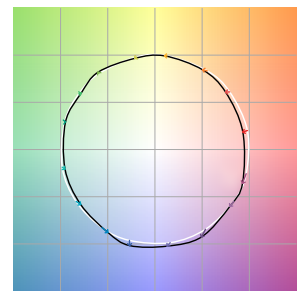
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	89	-5%	-1%
2	91	-4%	2%
3	89	-2%	5%
4	94	0%	3%
5	94	-1%	3%
6	96	2%	0%
7	93	-2%	-2%
8	98	-1%	0%
9	94	-3%	2%
10	88	-2%	5%
11	87	1%	8%
12	90	5%	1%
13	92	3%	-4%
14	87	4%	-8%
15	88	-1%	-7%
16	85	-2%	-11%



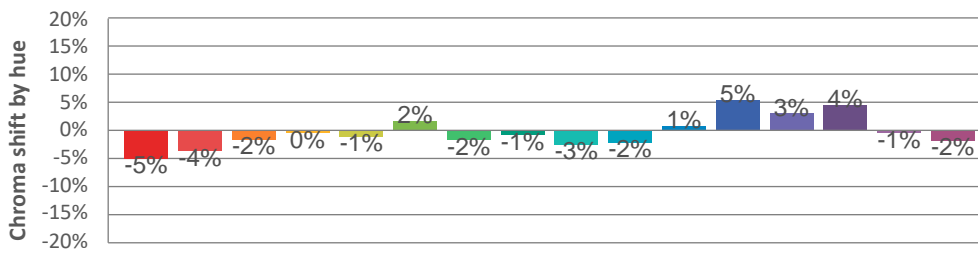
Hue binH



Color vector graphics



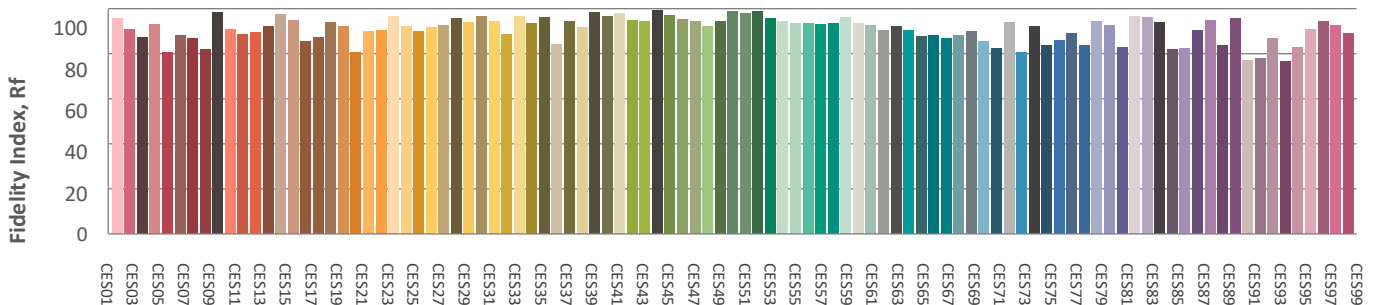
Hue bin



Color distortion graphics



Color Evaluation Sample



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

2017 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

LM-79

Test Report

LM79-JADE-EXPO-3000K-CRI90-SPOT+ 70° beamshaper

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	27,5	28,5	27,8	28,7	29,0	27,5	28,5	27,8	28,7	29,0
	3H	27,9	28,8	28,2	29,0	29,3	27,9	28,8	28,2	29,0	29,3
	4H	28,1	28,9	28,4	29,2	29,5	28,1	28,9	28,4	29,2	29,5
	6H	28,2	29,0	28,6	29,3	29,6	28,2	29,0	28,6	29,3	29,6
	8H	28,2	28,9	28,6	29,2	29,6	28,2	28,9	28,6	29,2	29,6
	12H	28,2	28,9	28,6	29,2	29,5	28,2	28,9	28,6	29,2	29,5
4H	2H	27,7	28,5	28,0	28,8	29,1	27,7	28,5	28,0	28,8	29,1
	3H	28,2	28,9	28,6	29,2	29,6	28,2	28,9	28,6	29,2	29,6
	4H	28,5	29,1	28,9	29,4	29,8	28,5	29,1	28,9	29,4	29,8
	6H	28,7	29,2	29,1	29,6	30,0	28,7	29,2	29,1	29,6	30,0
	8H	28,7	29,2	29,1	29,6	30,0	28,7	29,2	29,1	29,6	30,0
	12H	28,7	29,1	29,1	29,5	30,0	28,7	29,1	29,1	29,5	30,0
8H	4H	28,6	29,0	29,0	29,4	29,9	28,6	29,0	29,0	29,4	29,9
	6H	28,8	29,2	29,3	29,6	30,1	28,8	29,2	29,3	29,6	30,1
	8H	28,8	29,2	29,3	29,6	30,1	28,8	29,2	29,3	29,6	30,1
	12H	28,8	29,1	29,3	29,6	30,1	28,8	29,1	29,3	29,6	30,1
12H	4H	28,5	29,0	29,0	29,4	29,8	28,5	29,0	29,0	29,4	29,8
	6H	28,8	29,1	29,3	29,6	30,1	28,8	29,1	29,3	29,6	30,1
	8H	28,8	29,1	29,3	29,6	30,1	28,8	29,1	29,3	29,6	30,1

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,6 / -1,0	+0,6 / -1,0
S = 1,5H	+1,4 / -2,0	+1,4 / -2,0
S = 2,0H	+2,7 / -2,7	+2,7 / -2,7
Standard table	BK02	BK02
Correction summand	10,8	10,8

Corrected glare indices referring to 2338lm total luminous flux



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

2017 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