

# LM-79

## Test Report

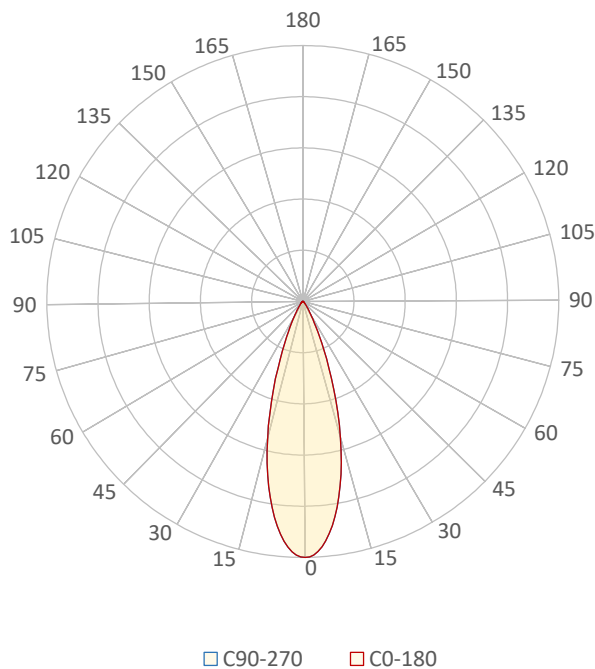
# LM79-QUARTZ-3000K-CRI90-MEDIUM

### General Description

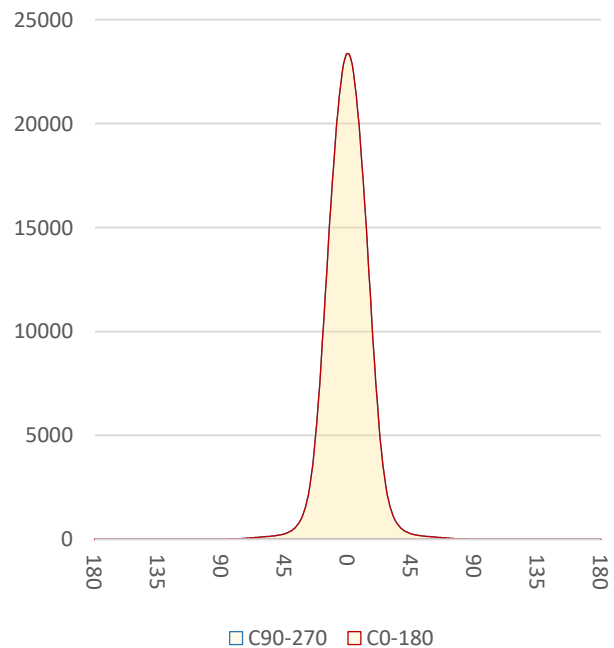
Item number	Q-X-X-3090-M
Date and time	30-9-2022 12:08:05
CCT (Kelvin)	3011 K
Beam angle	32,1°
Luminous flux	8172 lm
Efficiency	97 lm/watt
Weighted energy	83,9 kWh/1000h
Power factor	0,99
CRI (RA)	87,4
Fidelity index Rf	Rf 87,4
Gammut index Rg	Rg 95,6
Peak	23378 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m														
Lux*	23378 lx	5844 lx	2598 lx	1461 lx	935 lx														
<i>*measured at center of beam</i>																			
Footcandles*	2171,9 fcd	543,0 fcd	241,3 fcd	135,7 fcd	86,9 fcd														
Beam width (meter)	0,6 m	1,2 m	1,7 m	2,3 m	2,9 m														
Beam width (Feet)	1,9 ft	3,8 ft	5,7 ft	7,6 ft	9,4 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
23378lx	5844lx	2598lx	1461lx	935lx	649lx	477lx	365lx	289lx	234lx	193lx	162lx	138lx	119lx	104lx	91lx	81lx	72lx	65lx	58lx
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
2171,9fcd	543fcd	241,3fcd	135,7fcd	86,9fcd	60,3fcd	44,3fcd	33,9fcd	26,8fcd	21,7fcd	17,9fcd	15,1fcd	12,9fcd	11,1fcd	9,7fcd	8,5fcd	7,5fcd	6,7fcd	6fcd	5,4fcd
<b>Intensities in 0° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
23,4K	23,2K	22,5K	21,4K	19,9K	18,1K	16,2K	14,0K	11,8K	9,5K	7,5K	5,7K	4,2K	3,0K	2,2K	1,6K	1,2K	0,9K	0,7K	0,5K
100%	99%	96%	91%	85%	78%	69%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%
<b>Intensities in 90° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
23,4K	23,2K	22,5K	21,4K	19,9K	18,1K	16,2K	14,0K	11,8K	9,5K	7,5K	5,7K	4,2K	3,0K	2,2K	1,6K	1,2K	0,9K	0,7K	0,5K
100%	99%	96%	91%	85%	78%	69%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%
<b>Intensities in 180° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
23,4K	23,2K	22,5K	21,4K	19,9K	18,1K	16,2K	14,0K	11,8K	9,5K	7,5K	5,7K	4,2K	3,0K	2,2K	1,6K	1,2K	0,9K	0,7K	0,5K
100%	99%	96%	91%	85%	78%	69%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%
<b>Intensities in 270° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
23,4K	23,2K	22,5K	21,4K	19,9K	18,1K	16,2K	14,0K	11,8K	9,5K	7,5K	5,7K	4,2K	3,0K	2,2K	1,6K	1,2K	0,9K	0,7K	0,5K
100%	99%	96%	91%	85%	78%	69%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
32,1°		55,2°				74,2°				98,3%				95,6%					



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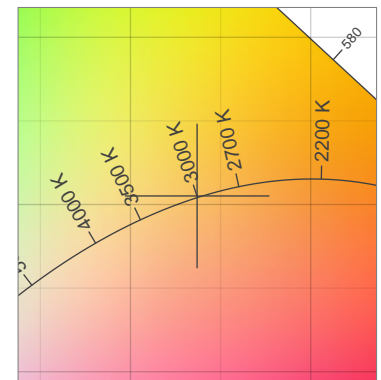
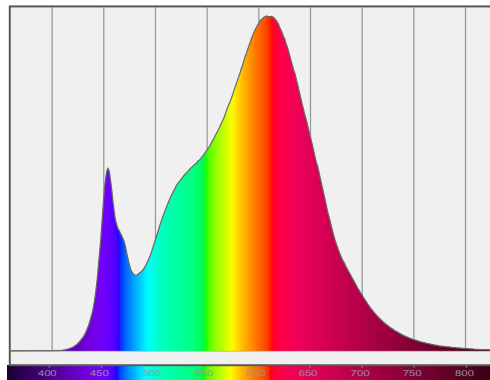
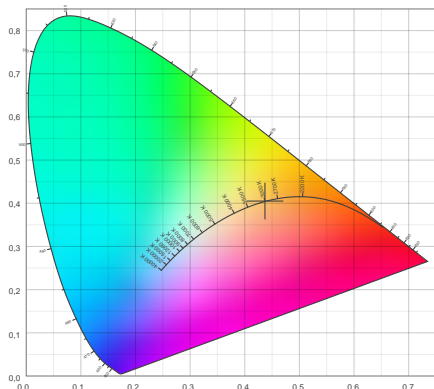
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### Color details



CIE 1931

x: 0,437



Spectra

CIE 1931 ZOOM

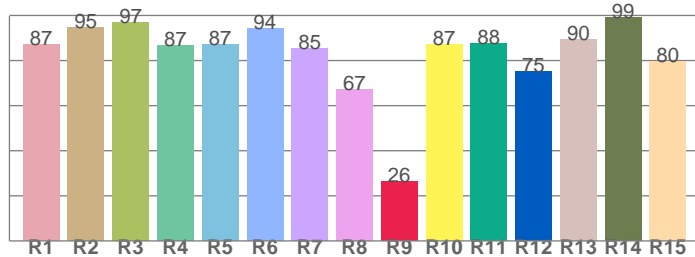
3011 K

y: 0,405

$\Delta uv: 0,0004$

**CRI: 87,4 (R1-R8)**

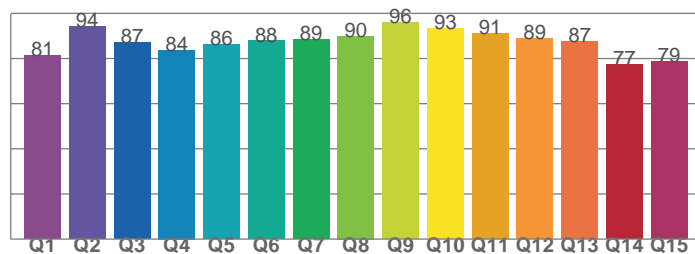
*CRI values, R1-R8 are used to calculate final CRI value*



R1	R2	R3	R4	R5	R6	R7	R8
87,3	94,8	97,0	86,6	87,2	94,1	85,5	67,1
R9	R10	R11	R12	R13	R14	R15	
26,4	87,4	87,6	75,0	89,5	99,3	79,6	

**CQS: 86,3**

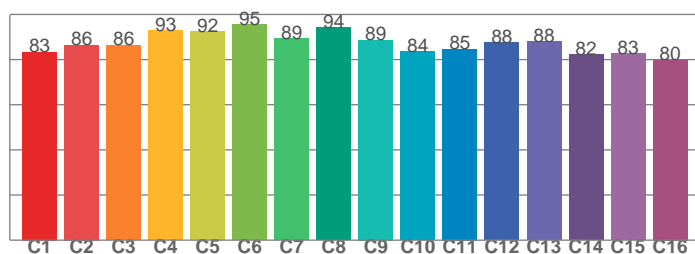
*CQS values*



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
81,3	94,2	87,0	83,8	86,3	87,8	88,6	90,0
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,0	93,3	91,1	89,0	87,5	77,3	78,8	

**TM30: 87,4**

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



C1	C2	C3	C4	C5	C6	C7	C8
83,4	86,5	86,4	92,9	92,3	95,4	89,3	94,3
C9	C10	C11	C12	C13	C14	C15	
88,6	83,6	84,7	87,5	88,1	82,1	82,6	

### 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	$\Delta uv$
3011 K	87,4	26,4	87,4	95,6	86,3	0,437	0,405	0,250	0,348	0,0004



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### TM30 details

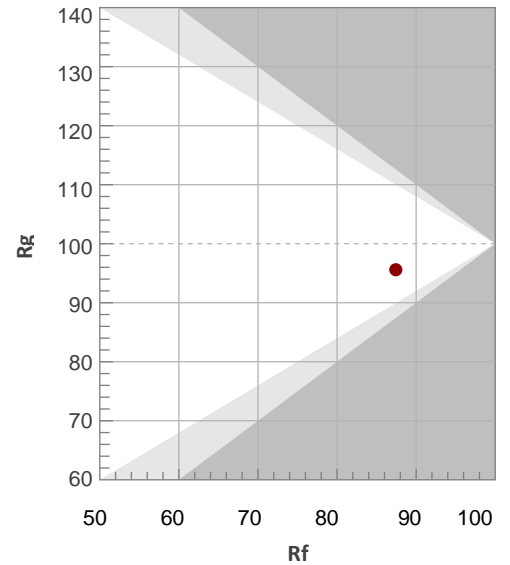
Rf 87,4

Fidelity index Rf

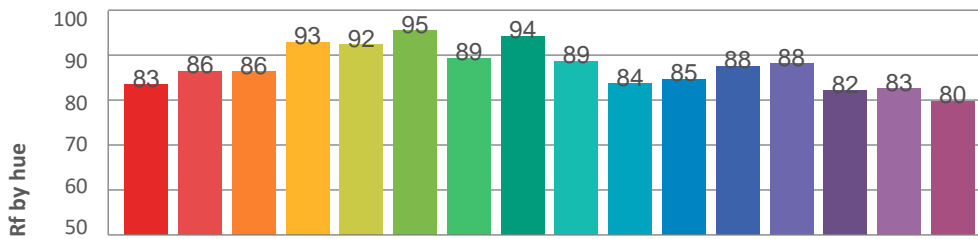
Rg 95,6

Gamut index Rg

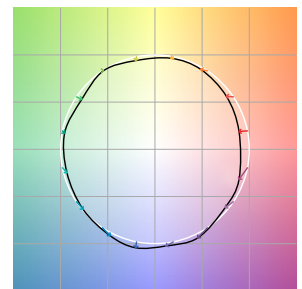
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	83	-9%	1%
2	86	-6%	5%
3	86	-3%	7%
4	93	-2%	2%
5	92	-4%	2%
6	95	-1%	-1%
7	89	-6%	-1%
8	94	-3%	2%
9	89	-4%	6%
10	84	-1%	10%
11	85	2%	11%
12	88	6%	0%
13	88	3%	-8%
14	82	3%	-14%
15	83	-4%	-10%
16	80	-6%	-14%



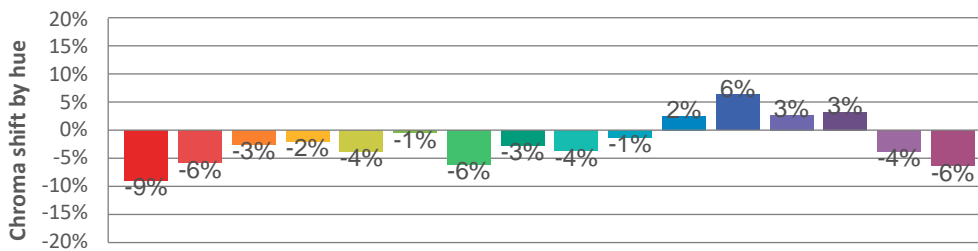
### Hue binH



### Color vector graphics



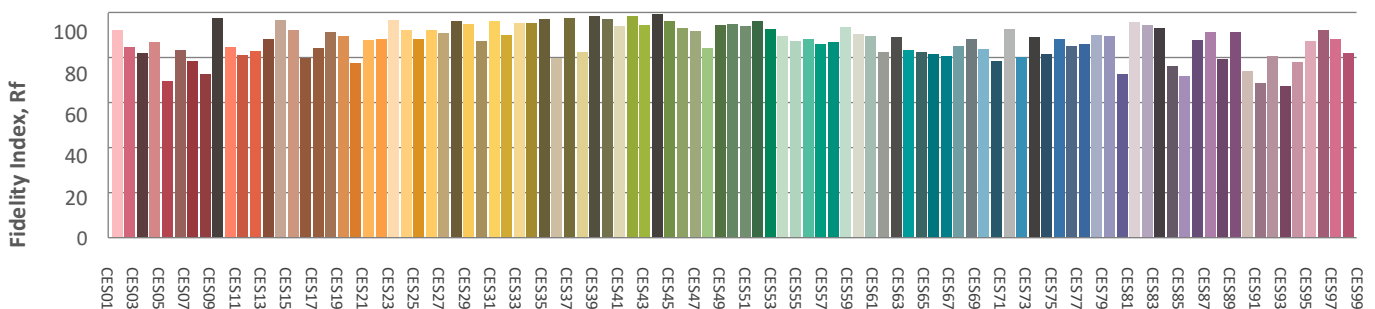
### Hue bin



### Color distortion graphics



### Color Evaluation Sample



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### 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	12,2	12,7	12,3	13,0	13,1	12,2	12,7	12,3	13,0	13,1
	3H	12,6	13,2	12,9	13,4	13,6	12,6	13,2	12,9	13,4	13,6
	4H	12,7	13,3	13,1	13,6	13,8	12,7	13,3	13,1	13,6	13,8
	6H	12,8	13,3	13,1	13,6	14,0	12,8	13,3	13,1	13,6	14,0
	8H	12,8	13,3	13,1	13,6	14,0	12,8	13,3	13,1	13,6	14,0
	12H	12,7	13,2	13,1	13,6	14,0	12,7	13,2	13,1	13,6	14,0
4H	2H	12,3	12,9	12,6	13,1	13,3	12,3	12,9	12,6	13,1	13,3
	3H	12,9	13,4	13,3	13,8	14,2	12,9	13,4	13,3	13,8	14,2
	4H	13,0	13,5	13,4	13,9	14,4	13,0	13,5	13,4	13,9	14,4
	6H	13,1	13,6	13,6	13,9	14,3	13,1	13,6	13,6	13,9	14,3
	8H	13,0	13,5	13,6	13,8	14,2	13,0	13,5	13,6	13,8	14,2
	12H	13,0	13,4	13,5	13,8	14,2	13,0	13,4	13,5	13,8	14,2
8H	4H	13,0	13,5	13,5	13,8	14,2	13,0	13,5	13,5	13,8	14,2
	6H	13,1	13,4	13,6	13,9	14,4	13,1	13,4	13,6	13,9	14,4
	8H	13,1	13,4	13,6	13,9	14,5	13,1	13,4	13,6	13,9	14,5
	12H	13,1	13,3	13,7	13,8	14,4	13,1	13,3	13,7	13,8	14,4
12H	4H	13,0	13,3	13,5	13,7	14,2	13,0	13,3	13,5	13,7	14,2
	6H	13,1	13,4	13,6	13,9	14,5	13,1	13,4	13,6	13,9	14,5
	8H	13,1	13,3	13,7	13,8	14,4	13,1	13,3	13,7	13,8	14,4
Variation of the observer position for the luminaire distance S											
S = 1.0H	2,5 / -1,4					2,5 / -1,4					
S = 1.5H	4,5 / -1,9					4,5 / -1,9					
S = 2.0H	6,1 / -2,9					6,1 / -2,9					
Standard table	n/a					n/a					
Correction summand	n/a					n/a					
Corrected glare indices referring to 8172lm total luminous flux											



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