

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

Performance Testing for Luminaires

MODEL NUMBER

E3SRF-LO8304A w/ E3SLB-OW

PROJECT NUMBER

G104622548

REPORT NUMBER

104622548CRT-011

ISSUE DATE

9/21/2021

REVISED DATE

None

TEST DATES

9/18/21 through 9/20/21

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104622548CRT-011

MODEL NUMBER(s)

E3SRF-LO8304A w/ E3SLB-OW

REPORT RENDERED TO:

VISUAL COMFORT AND COMPANY
7400 LINDER AVE
SKOKIE, IL 60077
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01154433-0.

TEST STANDARDS

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
ANSI NEMA ANSLG C78.377: 2017: Specifications of the Chromaticity of Solid State Lighting Products

In Charge of Testing:



Gerald Gray
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Lighting Division

Reviewer:



Kristie Ray
Team Lead, Engineering
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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2109100744-001-1	--	Housing w/PTB15W-0300-38-VCC	Production	9/10/2021
2	CRT2109100744-001-5	--	40° Lens	Production	9/10/2021
3	CRT2109100744-001-14	--	3000K 80CRI LED	Production	9/10/2021
4	CRT2109100744-001-19	--	Trim with Lens	Production	9/10/2021

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	E3SRF-LO8304A w/ E3SLB-OW	1,2,3,4

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	E3SRF-LO8304A w/ E3SLB-OW
Product Description:	E3 IC REMODEL-830-40DEG-NO LENS
LED Model No.:	Bridgelux® Gen 8 V10 Array Series
Driver Model No.:	PTB15W-0300-38-VCC
Light Source:	LED
CEC Product Type:	Inseparable

Criteria	Results
Light Output (lumens)	1028.2
Input Power (W)	11.01
Lumen Efficacy (lm/W)	93.4
Input Power Factor ()	0.987
Correlated Color Temperature (K)	3088
Color Rendering Index - Ra ()	82.8
Color Rendering Index - R9 ()	11.2
Duv ()	-0.0004
Chromaticity Coordinate (x)	0.430
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.248
Chromaticity Coordinate (v')	0.519

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral distribution for each EUT resulting in photometric and colorimetric data. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position inside the sphere and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	E3SRF-LO8304A w/ E3SLB-OW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

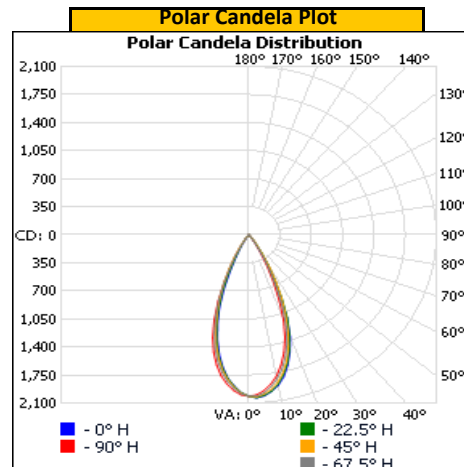
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.02	92.5	10.98	0.989

Light Output (lm)	Lumen Efficacy (lm/W)
1012.6	92.2

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	2014	2014	2014	2014	2014
5	2017	2009	1993	1978	1950
10	1905	1893	1866	1823	1786
15	1684	1665	1633	1581	1520
20	1356	1329	1283	1222	1138
25	839	872	862	741	652
30	408	428	457	346	288
35	114	150	167	119	91
40	30	39	61	35	27
45	6	8	16	7	5
50	0	0	1	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



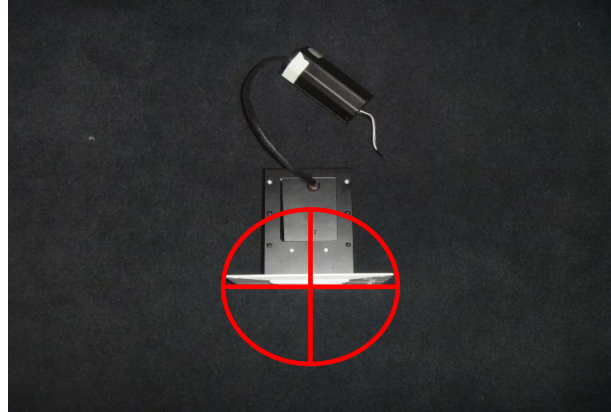
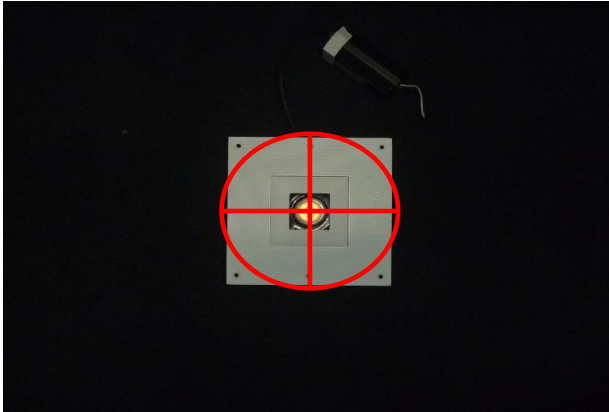
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ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
0.29	0.29	0.00
0°-180° H	90°-270° H	0°-180° V

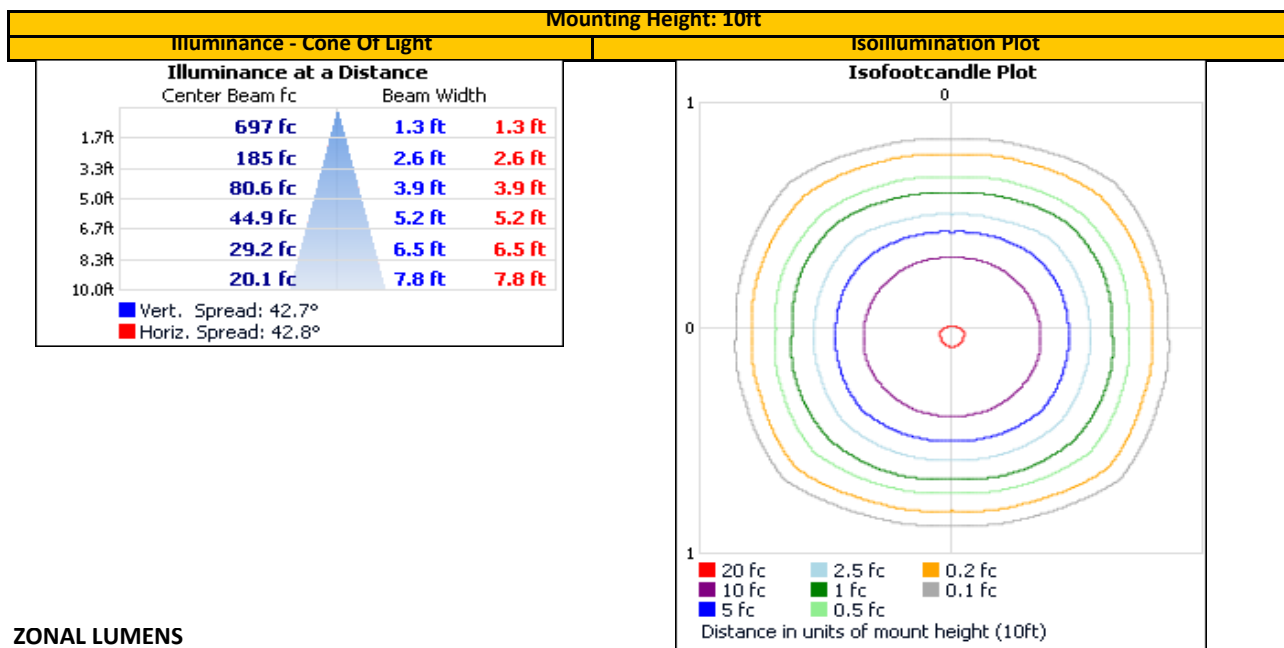
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary								
Zone			Zone					
Zone	Lumens	% Lum	Zone	Lumens	% Total	% Total		
0-30	918.2	90.7%	0-10	180.8	17.9%	90-100	0.0	0.0%
0-40	1,003.9	99.1%	10-20	415.8	41.1%	100-110	0.0	0.0%
0-60	1,012.6	100.0%	20-30	321.6	31.8%	110-120	0.0	0.0%
60-90	0.0	0.0%	30-40	85.7	8.5%	120-130	0.0	0.0%
70-100	0.0	0.0%	40-50	8.7	0.9%	130-140	0.0	0.0%
90-120	0.0	0.0%	50-60	0.0	0.0%	140-150	0.0	0.0%
0-90	1,012.6	100.0%	60-70	0.0	0.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	70-80	0.0	0.0%	160-170	0.0	0.0%
0-180	1,012.6	100.0%	80-90	0.0	0.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	E3SRF-LO8304A w/ E3SLB-OW	NA

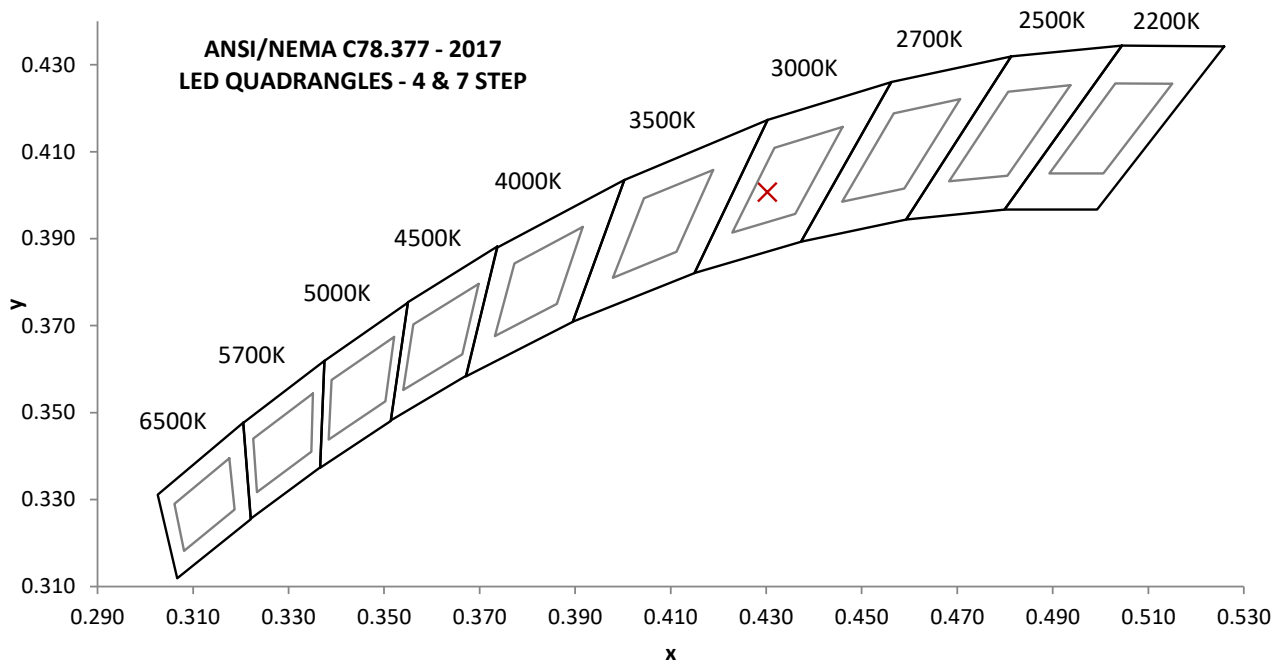
PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.00	93.0	11.01	0.987	11.29
277.00	44.7	11.21	0.905	14.91

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
1028.2	93.4	3088	82.8	11.2

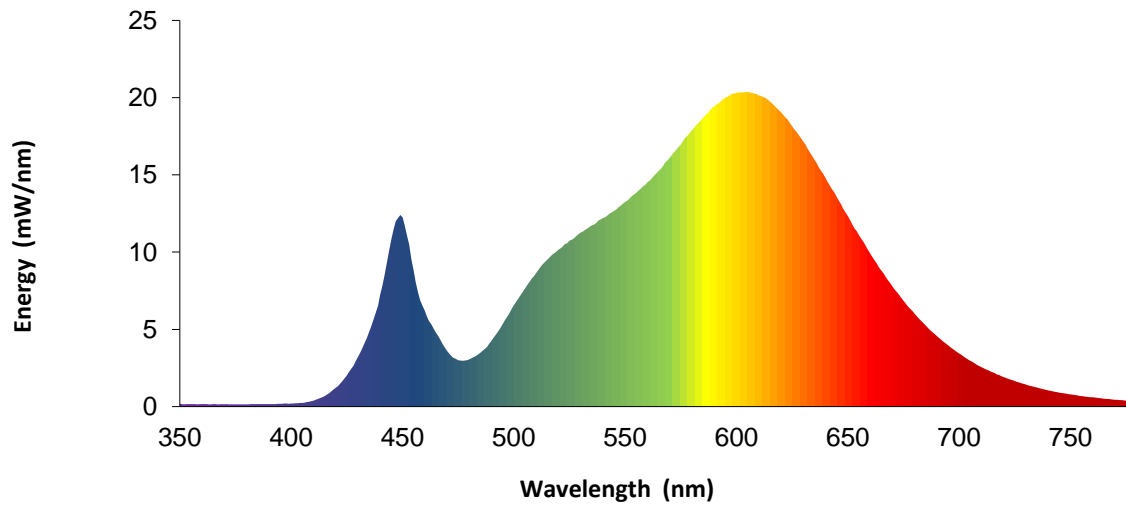
Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0004	0.430	0.401	0.248	0.519



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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.2		460	6.2		570	16.1		680	6.0
355	0.2		465	4.8		575	17.0		685	5.3
360	0.2		470	3.6		580	17.9		690	4.6
365	0.2		475	3.0		585	18.7		695	4.0
370	0.2		480	3.1		590	19.4		700	3.4
375	0.1		485	3.5		595	20.0		705	3.0
380	0.2		490	4.3		600	20.3		710	2.6
385	0.2		495	5.3		605	20.4		715	2.2
390	0.2		500	6.5		610	20.1		720	1.9
395	0.2		505	7.6		615	19.8		725	1.7
400	0.2		510	8.6		620	19.1		730	1.4
405	0.2		515	9.5		625	18.1		735	1.2
410	0.4		520	10.2		630	17.2		740	1.1
415	0.7		525	10.7		635	16.0		745	0.9
420	1.2		530	11.3		640	14.8		750	0.8
425	2.0		535	11.7		645	13.6		755	0.7
430	3.2		540	12.2		650	12.4		760	0.6
435	4.8		545	12.7		655	11.1		765	0.5
440	7.2		550	13.3		660	9.9		770	0.4
445	10.8		555	13.8		665	8.8		775	0.4
450	12.2		560	14.5		670	7.8		780	0.3
455	8.8		565	15.3		675	6.9		---	---



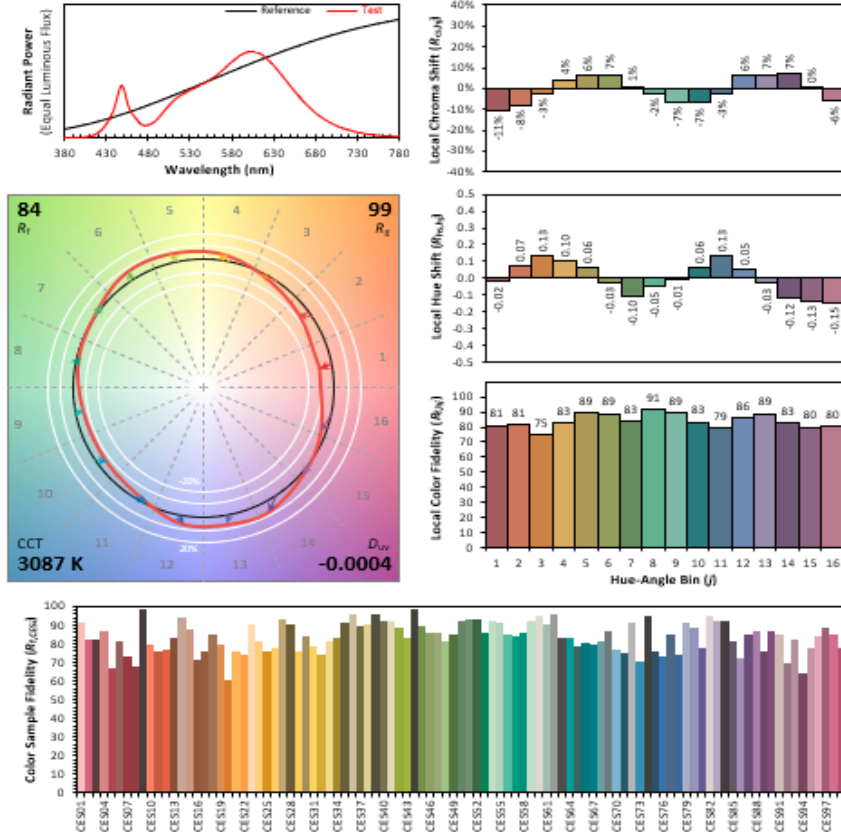
Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

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ANSI/IES TM-30-18 Color Rendition Report

Source: LED
Date: 9/21/2021

Manufacturer VISUAL COMFORT AND COMPANY
Model: E3SRF-L08304A w/ E3SLB-OW



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

α **0.4302**
 β **0.4006**
 α' **0.2477**
 β' **0.5190**

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 11

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Elgar AC Power Supply	CW1251	---	VBV	VBV
2	Sorenson DC Power Supply	XFR 150-8	---	VBV	VBV
3	Traceable Hygrothermometer	4800	L206	2/12/2021	2/12/2022
4	Yokogawa Power Analyzer	WT1600	E474	6/15/2021	6/15/2022
5	Fluke Thermometer	53 II	D587	2/5/2021	2/5/2022
6	3M Integrating Sphere Spectrometer System	CDS 2600	---	9/3/2021	12/3/2021
7	Fisher Scientific Stopwatch	14-649-9	N1132	3/26/2021	3/26/2022
8	LSI High Speed Mirror Goniophotometer	6440	---	8/16/2021	11/16/2021
9	Elgar AC Power Supply	CW1251	---	VBV	VBV
10	Yokogawa Power Analyzer	WT210	E464	5/11/2021	5/11/2022
11	Traceable Hygrothermometer	4800	L204	2/21/2021	2/21/2022
12	Sorenson DC Power Supply	XG 150-10	---	VBV	VBV
13	Omega Thermometer	DPI8-C24	M263	3/23/2021	3/23/2022
14	Bosch Distance Laser	Pro GLM 20	L211	3/3/2021	3/3/2022
15	M-D Building Products Digital Level	Smart Tool	L112	5/26/2021	5/26/2022
16	Tape Measure	Powerlock	N1342	3/11/2019	3/11/2022

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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