RENOVA
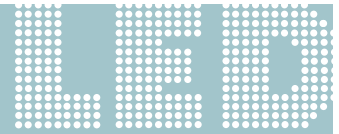
**Innovative Lighting Ideas
Energy Efficient Solutions**

category: **LED** Prefix: **KCN24**
Cynergy Series Retrofit Kit

project: fixture type: catalog #:   quantity:

The Cynergy Series LED Retrofit system has been developed to dramatically improve existing recessed troffer performance using Solid State Lighting (SSL) technologies. This retrofit series provides an attractive, energy efficient architectural look which has been specifically designed to upgrade existing fluorescent recessed troffer style fixtures. Comfortable, low glare, uniform lighting is attributed to this style of retrofit. Typical applications for this type of product are interior spaces where finished ceilings and walls exist. Applications Include:

- *Commercial/Corporate Office Spaces*
- *Retail Spaces, Public Spaces and Airports*
- *Schools, Colleges and Universities*
- *Hospitals, Government Facilities and Military Bases*

Cynergy Retrofit 2x4

RoHS Compliant

LED lighting facts®
A Program of the U.S. DOE

Philips Fortimo LEDs Provide High Quality White Light with a High CRI Index.

Philips Xitanium High Efficiency Drivers Offer Many Degrees of Control Over Lumen Output and Input Watts

High Light Tranmission Frosted Lens (Standard)

Precision Fabricated Frame Assembly (Air Return Slots are Optional) Custom Colors are Optional)

FEATURES

CONSTRUCTION

- Precision die-formed from 22 ga. cold rolled steel.
- Mechanically fastened/resistance welded for superior construction.
- Finish on all internal bracketry to be prepainted. high reflectance gloss white polyester powder coat enamel.
- Finish on all external cosmetic trim to be postpainted "textured" high reflectance white polyester powder coat enamel. Custom colors are available.
- Heavy gauge steel (NYC) is optional.

LEDs/OPTICS–Philips Fortimo LEDline provides high quality white light in terms of color rendition and color consistency and are part of the Fortimo future proof promise. The color consistency is comparable with conventional fluorescent lighting. LEDline boards provide:

- Increased energy efficiency
- Improved temperature management
- System compatible with all Xitanium drivers
- Module efficiency up to 140 lm/w
- Minimum color rendering index (CRI) of 80
- Available in 3000k, 3500k, 4000k, and 5000k color temperatures
- Lambertian beam shape (Optics) emitted from LEDs helps provide even illumination
- RoHS Compliant
- Conflict-free electronic components
- UL Class 2 Recognized for dry & damp location

Always consult factory for the latest developments & improvements concerning LEDs and optics.

DRIVERS–Philips Xitanium LED Electronic Drivers are system matched to the Fortimo LED boards to provide high-efficiency and reliablility. Some of the attributes include:

- 54 watt voltage output (max.)
- Robust construction provides protection against dust, moisture, and desctructive vibrations.
- Adjustable output (factory set) to "dial in" lumen output and input watts
- Three available options for dimming include:
  - Low voltage 0-10v Dimming (120v–277v)
  - Line Voltage Dimming (120v or 277v)
  - Step Dimming (120v–277v)
- RoHS Compliant
- Conflict-free electronic components
- UL Class 2 Recognized for dry & damp locations

LENS (Diffuser)

- Custom extruded profile for precision fit.
- Linear prisms designed for both visual appeal & control of lighting distribution.
- Extruded from 100% clear, virgin acrylic.
- Special formula high light transmission frosted acrylic polymer used for glare free shielding and high overall fixture efficiency.
- Consult factory for all available lens/diffuser options.

MOUNTING–Retrofit System is designed to be mounted in an existing recessed troffer. Please refer to installation instructions for proper fit and sizing.

ELECTRICAL

- Long-life LEDs and high-efficiency drivers provide superior quantity and quality of illumination for extended service life. Cynergy series is rated to deliver LM80 performance for 50,000+ hrs.
- Bi-level dimming option allows system to be switched to 50% power for compliance with common energy codes while maintaining fixture appearance.
- Ballast disconnect provided where required to comply with US & Canadian codes

CONTROLS

- Compatible with industry standard 0–10v Dimming, Step Dim, and Line Voltage Dimming controls. (Per driver type selection.)

LISTINGS & CERTIFICATIONS

- UL/CUL Listed for safety (1598)
- UL/CUL Listed for Dry/Damp Locations
- RoHS Compliant
- Lighting Facts (U.S. Department of Energy) Certified

QUALITY CONTROL–All retrofit components are designed, fabricated, assembled, tested, packaged and shipped from RENOVA's manufacturing facility. All retrofit components and kits are inspected and labeled prior to shipment.

WARRANTY–5-year limited warranty. Please refer to RENOVA's website at *www.renova.com/sales/ warranties* for the latest warranty terms and conditions.

*Note: Specifications subject to change without notice.

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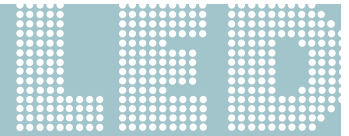
2' x 4'

KCN24 Retrofit Kit (Shown Installed)

KCN 2x4 Cross Section

24" O.C.

X"

⅞"

EXISTING FIXTURE HOUSING SHOWN

ORDERING GUIDE

L	-	KCN	24	-		-		-		-		-		-		-		-	
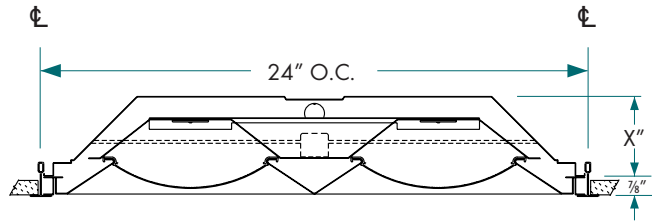
LIGHT SOURCE	PREFIX/ SERIES	SIZE	REFLECTOR MATERIAL	OPTICS (DISTRIBUTION)	LUMEN OUTPUT	DRIVER VOLTAGE	DRIVER TYPE	INPUT WATTS	COLOR TEMP.	OPTIONS
LED	Recessed Cynergy Series Retrofit Kit	2x4	**M** Miro4 (95% TR) **W** White Paint (91% TR) **X** White Optics (96% TR)	**F** - Focused **N** - Normal **S** - Spread *Normal is Standard	**L31** - (3100)* **L39** - (3900) **L44** - (4400) **L51** - (5100) **L53** - (5300)	**120** - 120v, 60 Hz **277** - 277v, 60 Hz **UNV** - 120v-277v, 60 Hz (Multi-Tap)	**54 DN** - 0-10v Dimming (Standard) **54 XR** - Line Voltage Dimming (120v) **54 XV** - Line Voltage Dimming (277v) **54 SN** - Step Dimming	**W28** - (28)* **W38** - (38) **W44** - (44) **W52** - (52) **W56** - (56)	**C30** - (3000K) **C35** - (3500K) **C40** - (4000K) **C50** - (5000K)	**AF** - Frosted Linear Prism Acrylic Lens (Standard) **AR** - Air Return Slots

SAMPLE ORDERING NUMBER

L-KCN24-WN-L31-UNV-54DN-W30-C30-AF

DLC DLC Listed
DLC Application Category #33
"Retrofit Kits for 2x4 Lumanires for Ambient Lighting of Interior Commercial Spaces"

NOTES:

Philips Xitanium Drivers have adjustable output capability. A wide range of input watts/lumen output can be adjusted up or down on all models to suit a particular application. Always consult factory for the latest information.

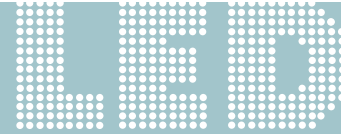Photometric data, IES files and all other information is available on request.

(Hg) **MERCURY-FREE**

(Hg) *PRIOR TO RETROFITTING THE EXISTING FLUORESCENT FIXTURE, PLEASE NOTE THE FOLLOWING:*
Fluorescent lamps contain small amounts of mercury. Such lamps are labeled "Contains Mercury" and / or with the symbol "Hg." Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org.

RENOVA products are constantly being improved; therefore the information shown is subject to change without notice. Always consult your lighting representative or RENOVA Lighting Systems, Inc. for the latest information.

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IES Illuminating Engineering Society Sustaining Member · c UL us LISTED · Green Building Council Member · NEMA Member · NTMA National Tooling and Machining Association · SME Society of Manufacturing Engineers · ARRA Funding Compliant · Made in USA · VETERAN OWNED AND OPERATED

2′ x 4′ Photometric Data for Catalog #:
L-KCN24-WN-L44-UNV-54DN-W44-C30-AF

The following reports were used to compile the data listed below:

- Integrating Sphere Test Report #99558
- Photometric Indoor Test Report #99553

Delivered Lumens	4,438
Efficacy (Lumens/Watt)	99.9
Power	44.42w
Voltage	120v
Power Factor	.991
THD	10.8%
CRI	81.5
CCT	3064K
LED Life	50,000+ hrs (See TM-21 Data Sheet)

Zonal Lumen Summary

Zone	Lumens	%Luminaire
0–30	1282	29.47
0–40	2081	47.84
0–60	3566	81.97
0–90	4350	100.00
40–90	2269	52.16
60–90	784	18.03
90–180	0	0.00
0–180	4350	100.00

Intensity (Candlepower) Summary

Angle	Along	22.5	45.0	67.5	Across	Output Lumens
0	1668	1668	1668	1285	1668	
5	1664	1658	1658	1659	1660	160
10	1638	1632	1632	1635	1637	
15	1592	1588	1591	1596	1600	448
20	1528	1527	1534	1543	1548	
25	1447	1451	1466	1479	1484	674
30	1350	1359	1382	1403	1409	
35	1237	1252	1284	1311	1321	799
40	1111	1131	1173	1204	1214	
45	970	999	1050	1083	1094	801
50	823	859	918	952	963	
55	675	717	783	815	825	684
60	532	574	648	677	686	
65	402	446	519	537	532	486
70	285	328	396	383	361	
75	185	223	269	230	206	245
80	100	131	148	110	94	
85	38	52	49	33	29	53
90	0	0	0	0	0	

Coefficients of Utilizations (%)

Sq. Ft Room / Ceiling Height	90				80				70				50			30			10			0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	122	122	122	122	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	131	108	104	100	110	106	102	99	108	104	100	97	99	97	94	96	93	91	92	90	88	87
2	104	96	90	84	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	80	77	75
3	95	85	77	71	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	88	77	68	62	86	75	67.	61	84	74	67	61	72	65	60	69	64	59	67	62	59	56
5	82	69	60	53	79	68	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51	49
6	75	62	53	47	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	69	55	47	41	67	54	46	41	66	54	46	40	52	45	40	51	44	39	49	44	39	37
8	64	50	42	36	63	49	41	36	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	59	46	37	31	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	55	42	33	28	54	41	33	28	53	40	33	28	39	33	28	39	32	28	38	32	27	26

Polar plot legend:
ACROSS ——
45 - - - -
ALONG -·-·-
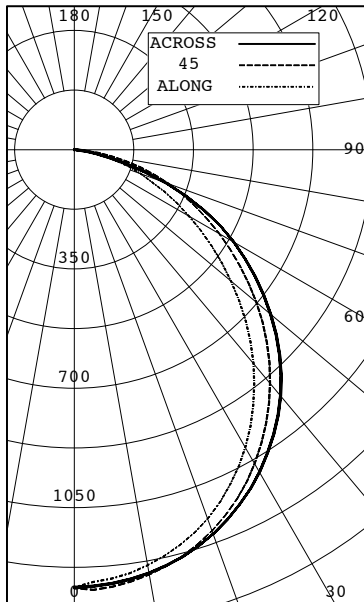
L-KCN24-WN-L44-UNV-54DN-W44-C30-AF
Independent Test Report #99553
Efficacy (Lumens/Watt): 99.9
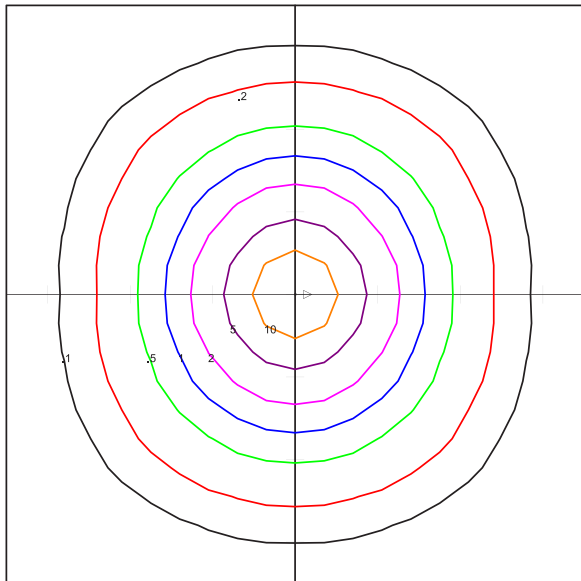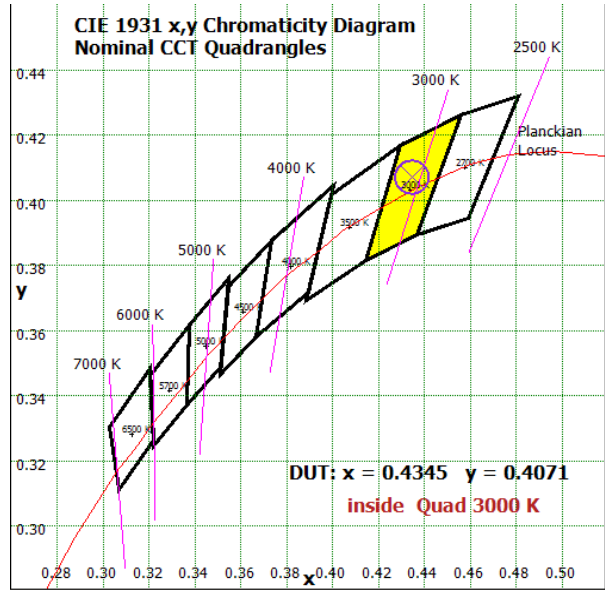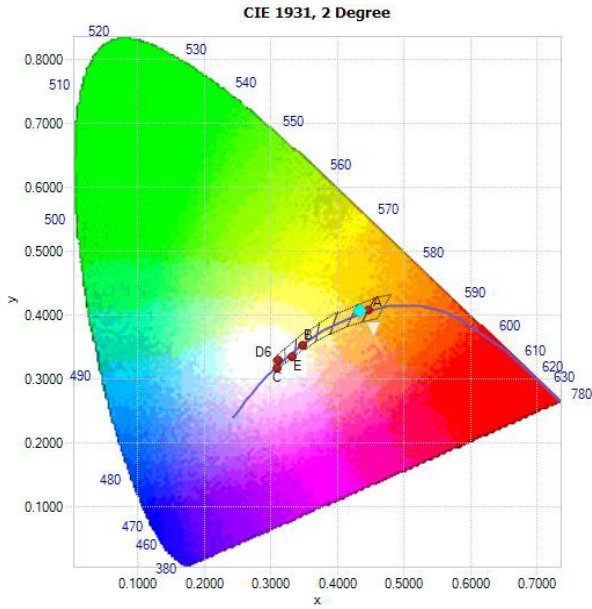Spacing/Mounting Height: 1.3
SC (Along): 1.2 SC (Across): 1.3

RENOVA
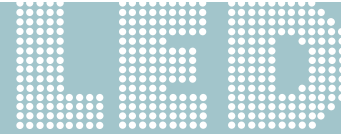
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Diagrams for Catalog #: L-KCN24-WN-L44-UNV-54DN-W44-C30-AF

CIE 1931, 2 Degree

CIE 1931 x,y Chromaticity Diagram
Nominal CCT Quadrangles

DUT: x = 0.4345   y = 0.4071

inside Quad 3000 K

Renova Lighting Systems Inc
L-KCN24-WN-Lxx-UNV-Wxx-Cxx-AF (Blue Rset)

Horizontal Footcandles
Scale: 1 Inch = 10 Ft.
Mounting Height = 10.00 Ft
Maximum Calculated Value = 16.68 Fc

CONE OF LIGHT

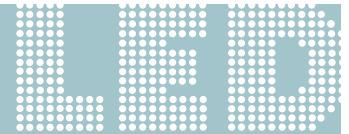| MOUNTING HEIGHT ABOVE WORK PLANE (FT)	INITIAL FC AT NADIR -FCN (FC)	.1*FCN (FC)	10% LIGHTED DIAMETER (FT)	.5*FCN (FC)	50% LIGHTED DIAMETER (FT)
1	1668.0	166.8	2.7	834.0	1.2
2	417.0	41.7	5.5	208.5	2.5
3	185.3	18.5	8.2	92.7	3.7
4	104.2	10.4	10.9	52.1	4.9
5	66.7	6.7	13.6	33.4	6.2
6	46.3	4.6	16.4	23.2	7.4
7	34.0	3.4	19.1	17.0	8.6
8	26.1	2.6	21.8	13.0	9.9

10% CONE ANGLE: 107.5 DEGREES
50% CONE ANGLE: 63.2 DEGREES

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Energy Efficient Solutions

category: **LED** Prefix: **KCN24**
Cynergy Series Retrofit Kit

LED

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L-KCN24WN-L31-UNV-54DN-W30-C30-AF

The U.S. Department of Energy's LED Lighting Facts® Program has verified product performance based on industry-standardized testing.

For details, see: RENOVA Lighting Systems, Inc.
Model # L-KCN24-WN-L31-UNV-54DN-W30-C30-AF
www.lightingfacts.com/products

RENOVA Lighting Systems, Inc.
lighting facts®
A Program of the U.S. DOE

Light Output (Lumens)	3100
Watts	30
Lumens per Watt (Efficacy)	103
Color Accuracy Color Rendering Index (CRI)	80

Light Color Correlated Color Temperature (CCT): 3000 (Bright White)

Warm White — Bright White — Daylight
2700K 3000K 4500K 6500K

Warranty**	Yes

All results, except LED Lumen Maintenance, are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

** See www.lightingfacts.com/products for details.

Registration Number: S68H-ZRZTAO (12/11/2013)
Model Number: L-KCN24-WN-L31-UNV-54DN-W30-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN24-WN-L39-UNV-54DN-W38-C30-AF

The U.S. Department of Energy's LED Lighting Facts® Program has verified product performance based on industry-standardized testing.

For details, see: RENOVA Lighting Systems, Inc.
Model # L-KCN24-WN-L39-UNV-54DN-W38-C30-AF
www.lightingfacts.com/products

RENOVA Lighting Systems, Inc.
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Light Output (Lumens)	3900
Watts	38
Lumens per Watt (Efficacy)	102
Color Accuracy Color Rendering Index (CRI)	80

Light Color Correlated Color Temperature (CCT): 3000 (Bright White)

Warm White — Bright White — Daylight
2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: S68H-E7MIYJ (12/11/2013)
Model Number: L-KCN24-WN-L39-UNV-54DN-W38-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN24-WN-L44-UNV-54DN-W44-C30-AF

The U.S. Department of Energy's LED Lighting Facts® Program has verified product performance based on industry-standardized testing.

For details, see: RENOVA Lighting Systems, Inc.
Model # L-KCN24-WN-L44-UNV-54DN-W44-C30-AF
www.lightingfacts.com/products

RENOVA Lighting Systems, Inc.
lighting facts®
A Program of the U.S. DOE

Light Output (Lumens)	4400
Watts	44
Lumens per Watt (Efficacy)	100
Color Accuracy Color Rendering Index (CRI)	80

Light Color Correlated Color Temperature (CCT): 3000 (Bright White)

Warm White — Bright White — Daylight
2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: S68H-OOEX71 (12/11/2013)
Model Number: L-KCN24-WN-L44-UNV-54DN-W44-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN24-WN-L51-UNV-54DN-W52-C30-AF

The U.S. Department of Energy's LED Lighting Facts® Program has verified product performance based on industry-standardized testing.

For details, see: RENOVA Lighting Systems, Inc.
Model # L-KCN24-WN-L51-UNV-54DN-W52-C30-AF
www.lightingfacts.com/products

RENOVA Lighting Systems, Inc.
lighting facts®
A Program of the U.S. DOE

Light Output (Lumens)	5100
Watts	52
Lumens per Watt (Efficacy)	98
Color Accuracy Color Rendering Index (CRI)	80

Light Color Correlated Color Temperature (CCT): 3000 (Bright White)

Warm White — Bright White — Daylight
2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: S68H-PCOCX6 (12/11/2013)
Model Number: L-KCN24-WN-L51-UNV-54DN-W52-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN24-WN-L53-UNV-54DN-W56-C30-AF

The U.S. Department of Energy's LED Lighting Facts® Program has verified product performance based on industry-standardized testing.

For details, see: RENOVA Lighting Systems, Inc.
Model # L-KCN24-WN-L53-UNV-54DN-W56-C30-AF
www.lightingfacts.com/products

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Light Output (Lumens)	5300
Watts	56
Lumens per Watt (Efficacy)	94
Color Accuracy Color Rendering Index (CRI)	80

Light Color Correlated Color Temperature (CCT): 3000 (Bright White)

Warm White — Bright White — Daylight
2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: S68H-OKCBO4 (12/11/2013)
Model Number: L-KCN24-WN-L53-UNV-54DN-W56-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling