RENOVA

**Innovative Lighting Ideas
Energy Efficient Solutions**

Cynergy Retrofit 1x4

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)

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

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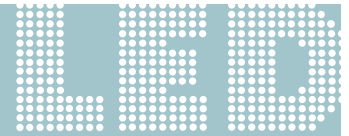
WARRANTY–5-year limited warranty. Please refer to RENOVA's website at www.renova.com/sales/warranties for the latest warranty terms and conditions.

*Note: Specifications subject to change without notice.

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LED

Illuminating ENGINEERING SOCIETY — Sustaining Member | c UL us LISTED | U.S. 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

1' x 4'

**KCN14 Retrofit Kit
(Shown Installed)**

KCN 1x4 Cross Section

12" O.C.

X"

⅞"

EXISTING FIXTURE HOUSING SHOWN

ORDERING GUIDE

L - **KCN** **14** - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐

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	1x4	**M** Miro4 (95% TR) **W** White Paint (91% TR) **X** White Optics (96% TR)	**F** - Focused **N** - Normal **S** - Spread *Normal is Standard	**L16** - (1600)* **L29** - (2900) **L36** - (3600) **L40** - (4000) **L46** - (4600) **L48** - (4800)	**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	**W15** - (15)* **W31** - (31) **W40** - (40) **W46** - (46) **W55** - (55) **W60** - (60)	**C30** - (3000K) **C35** - (3500K) **C40** - (4000K) **C50** - (5000K)	**AF** - Frosted Linear Prism Acrylic Lens (Standard) **AR** - Air Return Slots

SAMPLE ORDERING NUMBER

L-KCN14-WN-L29-UNV-54DN-W31-C30-AF

DLC Application Category #32
"Retrofit Kits for 1x4 Lumanires for Ambient Lighting of Interior Commercial Spaces"
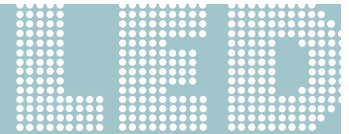
(Hg) **MERCURY-FREE**

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.

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.

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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1' x 4' Photometric Data for Catalog #:
L-KCN14-WN-L29-UNV-54DN-W31-C30-AF

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

- Integrating Sphere Test Report #99498
- Photometric Indoor Test Report #99496

Delivered Lumens	2,910
Efficacy (Lumens/Watt)	92.4
Power	31.48w
Voltage	120v
Power Factor	.984
THD	14.4%
CRI	81.5
CCT	3065K
LED Life	50,000+ hrs See TM-21 Data Sheet

Zonal Lumen Summary

Zone	Lumens	%Luminaire
0–30	843	29.72
0–40	1370	48.30
0–60	2342	82.57
0–90	2836	100.00
40–90	1466	51.70
60–90	494	17.43
90–180	0	0.00
0–180	2836	100.00

Intensity (Candlepower) Summary

Angle	Along	22.5	45.0	67.5	Across	Output Lumens
0	1089	1089	1089	1089	1089	
5	1093	1087	1082	1079	1081	105
10	1077	1071	1068	1067	1069	
15	1049	1045	1044	1045	1047	294
20	1009	1007	1009	1013	1017	
25	957	960	965	973	978	444
30	894	898	912	923	927	
35	821	828	846	861	867	527
40	741	749	772	789	794	
45	646	662	691	707	711	527
50	551	570	602	618	620	
55	452	476	511	522	522	445
60	361	383	421	424	415	
65	274	298	332	318	302	306
70	194	220	245	217	195	
75	126	150	163	130	114	151
80	70	89	91	68	58	
85	27	37	36	27	24	37
90	0	0	0	0	0	
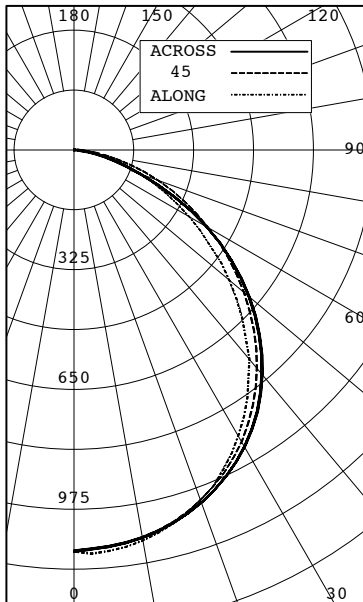
Coefficients of Utilizations (%)

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	113	108	104	100	110	106	102	99	108	104	100	97	99	97	94	96	93	91	92	90	89	87
2	104	96	90	84	102	94	89	83	99	93	87	82	89	85	80	86	82	79	83	80	77	75
3	96	85	78	71	93	84	77	71	91	82	76	70	80	74	69	77	72	68	75	70	67	65
4	88	77	68	62	86	76	68	62	84	74	67	61	72	65	60	70	64	60	68	63	59	57
5	82	69	60	54	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	51	50
6	76	62	53	47	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43
7	69	56	47	41	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	39	38
8	64	50	42	36	63	50	42	36	61	49	41	36	48	41	36	47	40	35	45	40	35	33
9	60	46	37	32	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29
10	55	42	33	28	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

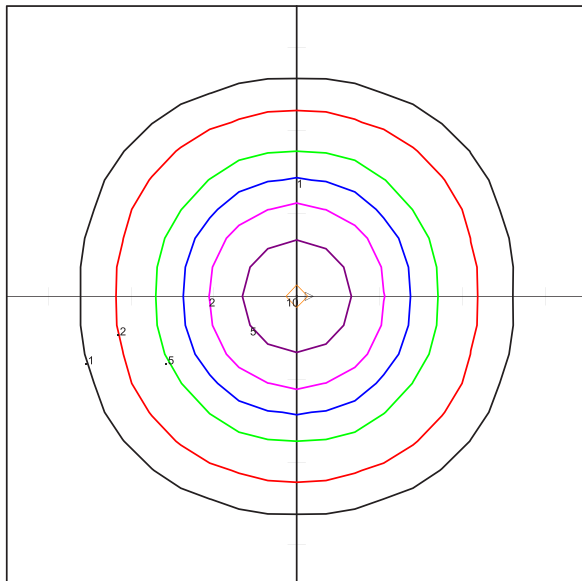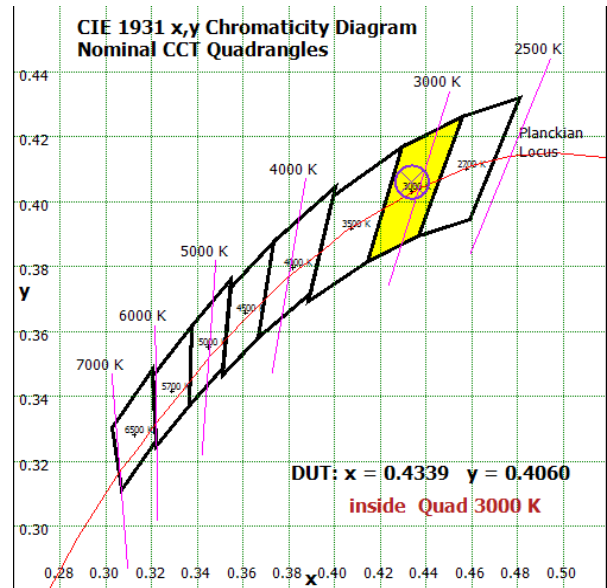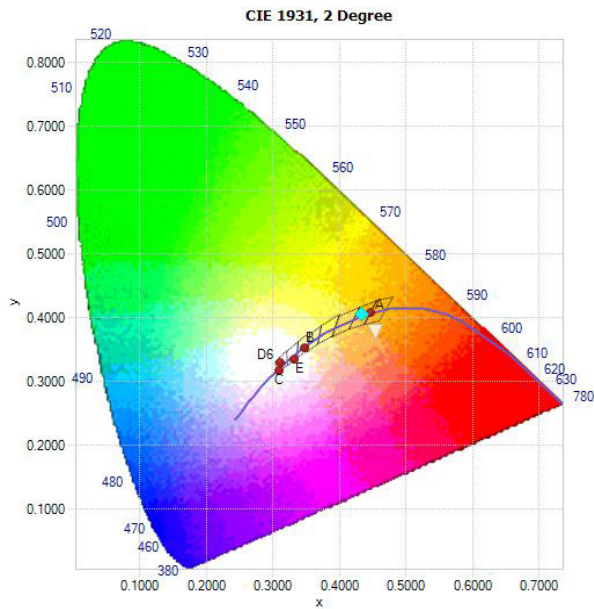Polar candlepower distribution diagram — ACROSS, 45, ALONG.

L-KCN14-WN-L29-UNV-54DN-W31-C30-AF
Independent Test Report #99496
Efficacy (Lumens/Watt): 92.4
Spacing/Mounting Height: 1.3
SC (Along): 1.2 SC (Across): 1.3
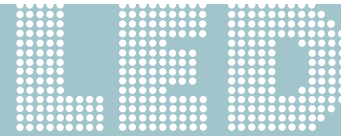
Diagrams for Catalog #: L-KCN14-WN-L29-UNV-54DN-W31-C30-AF

CIE 1931, 2 Degree

CIE 1931 x,y Chromaticity Diagram
Nominal CCT Quadrangles

DUT: x = 0.4339   y = 0.4060

inside Quad 3000 K

Renova Lighting Systems Inc
L-KCN14-WN-L29-UNV-W31-C30-AF (Red Rset)

Horizontal Footcandles
Scale: 1 Inch = 10 Ft.
Mounting Height = 10.00 Ft
Maximum Calculated Value = 10.89 Fc

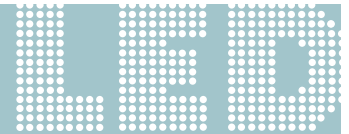CONE OF LIGHT

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	1089.0	108.9	2.7	544.5	1.2
2	272.2	27.2	5.5	136.1	2.5
3	121.0	12.1	8.2	60.5	3.7
4	68.1	6.8	10.9	34.0	5.0
5	43.6	4.4	13.6	21.8	6.2
6	30.2	3.0	16.4	15.1	7.4
7	22.2	2.2	19.1	11.1	8.7
8	17.0	1.7	21.8	8.5	9.9

10% CONE ANGLE: 107.5 DEGREES
50% CONE ANGLE: 63.7 DEGREES

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™

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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-KCN14-WN-L29-UNV-54DN-W31-C30-AF
www.lightingfacts.com/products

L-KCN14-WN-L36-UNV-54DN-W40-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-KCN14-WN-L36-UNV-54DN-W40-C30-AF
www.lightingfacts.com/products

L-KCN14-WN-L40-UNV-54DN-W46-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-KCN14-WN-L40-UNV-54DN-W46-C30-AF
www.lightingfacts.com/products

L-KCN14-WN-L36 Label

Light Output (Lumens)	3600
Watts	40
Lumens per Watt (Efficacy)	90
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

Registration Number: S69H-HUJJZO (12/11/2013)
Model Number: L-KCN14-WN-L36-UNV-54DN-W40-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling
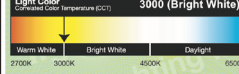
L-KCN14-WN-L40 Label

Light Output (Lumens)	4000
Watts	46
Lumens per Watt (Efficacy)	86
Color Accuracy — Color Rendering Index (CRI)	80

Light Color: 3000 (Bright White)

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

Registration Number: S69H-U7DZCI (12/11/2013)
Model Number: L-KCN14-WN-L40-UNV-54DN-W46-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN14-WN-L46-UNV-54DN-W55-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-KCN14-WN-L46-UNV-54DN-W55-C30-AF
www.lightingfacts.com/products

L-KCN14-WN-L46 Label

Light Output (Lumens)	4600
Watts	55
Lumens per Watt (Efficacy)	83
Color Accuracy — Color Rendering Index (CRI)	80

Light Color: 3000 (Bright White)

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

Registration Number: S69H-T8GLE6 (12/11/2013)
Model Number: L-KCN14-WN-L46-UNV-54DN-W55-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling

L-KCN14-WN-L48-UNV-54DN-W60-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-KCN14-WN-L48-UNV-54DN-W60-C30-AF
www.lightingfacts.com/products

L-KCN14-WN-L48 Label

Light Output (Lumens)	4800
Watts	60
Lumens per Watt (Efficacy)	80
Color Accuracy — Color Rendering Index (CRI)	80

Light Color: 3000 (Bright White)

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

Registration Number: S69H-YXORLP (12/11/2013)
Model Number: L-KCN14-WN-L48-UNV-54DN-W60-C30-AF
Type: Retrofit Kit - Troffer/Grid Ceiling