IMPEL

INNOVATOR

GEN II

Project Proposal

RCDRESEARCH

CONCEPT AND FUNDING

GENII EARTH LIGHT

PRESENTED BY:

STEVEN ROSENBERG

WWW.RCDRESEARCH.COM

OVERVIEW

Earthlight Quantum Lamp. Core technology is based in quantum physics and produces energy-efficient lighting. Data supported modeling proves energy efficiency and carbon emissions can be improved in the lighting industry. Complimentary Ebook is available at authors' website.

Highlighting consumer benefits, Rosenberg Cycle method enhances energy efficiency, and monetary related savings. The technology aims to revolutionize energy-efficient lighting, offering substantial benefits in terms of cost savings and environmental impact. Quantum Lighting Technology showcase a significant increase in efficiency compared to traditional lamps, with a 95% base efficiency improvement when replacing incandescent GPL. The second-generation tungsten lamps are exceptionally efficient, exceeding 97% with Rosenberg co-cycle solid state transformer.

The electrodynamic momentum ratio of the cycle is 1:8, this ratio is a unique characteristics of Quantum Lighting Technology. The purpose of the Rosenberg co-cycle method in energy efficiency is to transform a small fraction (2.2 Ms) of AC full wave. Notably this is minimizing heat production while vastly increasing light levels. Contributing to the overall efficiency and effectiveness of net zero goals, in the context of enhancing energy conversion into visible light, all the while minimizing wasted electrical and heat energy.

To identify inefficiencies, continuous data-driven monitoring is essential for optimizing the performance of energy systems. GenII smart meter computes all the relevant factors and data products of interest to building engineering. Real-time data and predictive models identify potential issues that impact the buildings performance.

Project Name	SOLVE FOR ZERO LIGHTING SOLUTION DEPLOY and VAlIDATE GE2/Neolight
Project Manager	STEVEN ROSENBERG BSC
Project Highlight	Rate Payer Gain Demonstration
Background	Quantum Electrodynamic lighting Solution A net zero solution. New science supported energy conservation. KWH charge is limited to .037 cents per KWH. Software upgraded meter calculates cost, Co2, therms, and Btu. The long term cost savings exceeds initial cost. Quantum

	Electrodynamic lighting recovers “lost” energy creating a rate payer gain.
Objectives	TECHNOLOGY Install and operate GenII system in a Hero X building. Use of ¼ cycle AC electric energy is new. Sine wave lossy energy recycling is not applicable to other appliances and is presently limited to lighting. Result is a 20% or better improvement in total building efficiency. Actual cost is reduced to ZERO. $0 per KWH energy efficiency compliments general energy policy. Neolight electronic lights are small form factor product. Gen2\Neolight A19 socket is low cost, 5k hour lamps are $2. 300 Lumens per watt as per DOE standard.
Target Audience	Residential and commercial Rate payers.

Project Specifics

Project Scope	Deployment Energy harvesting Gen2 system recovers energy resulting in engineering KWH hour .037cents. Rate payer cost is zero. Project scope is to fund the supply of new lighting products world wide to smart consumers and industry.
Project Review	TECHNOLOGY Sine wave lossy energy recycling is Neolight. Result is a 20% or better improvement in typical building lighting load efficiency. Pro upgrade involves bypass of existing Class1 kwh meter to achieve $0 per KWH goal. Relevant building code pertains to low voltage circuits under 35 volts. Gen2\Neolight lamp may be tax deductable. 5k hour lamps are $1.20. This results in a quick initial cost recovery. Luminaire fits any A19 socket.
Deliverables	• Low cost small form factor A19 type GPL lamps. US DOE 300 lumens per watt • basic and advanced installation • suitable for direct internet sales and pro installation • instant reduction in cost, Co^2 and therm • Grid decarbonizing
Explorations & Decision fact support	Decision crieria-Rate Payer Gain example Comparison of lights, 1,000 sqft 24/7.

Led 20w = 161.8kwh $40.5pm $484py cost 10yr= $4,840

Gen2 2.25w 20.16kwh $5pm. $60py cost 10yr= $600

$4,240 is approximate cost savings in a 10 year, 24/7 unit scenario by switching from led to GEN2 Qed lights.

$2,120,000 is saved when managing a 500 unit installation, over a 10 year period. Co2 and thermal emissions are summarily improved at electric power level GEN2 Qed lights absorb.

Carbon Foot print.
Reduces operating Co^2 and reduces therms. By nature of the advanced electronic/quantum design, monetary lighting cost becomes logically zero. Energy harvesting GenII system recovers this energy at .037cents per KWH hours, consumer actual cost for lighting is presently zero.

A dozen interior lights may not seem to be much in the way of cost and capital. In a unit's lifetime carbon foot print analysis, net zero factors become significant. 20% of electric cost is reduced 97% resulting in a significant improvement long term.

Project Timeline

Task or Deliverable	*Owner*	*Date Completed*	*Notes*
Rfq turn key production	Under contract	30-60 days from funding	
E-book www.rcdresearch.com/g2certs.pdf	Mr. Rosenberg	complete	
Electronic development	Mr. Rosenberg	complete	
Smart meter		complete	
Calculator software		complete	
Funding		pending	

Conclusion

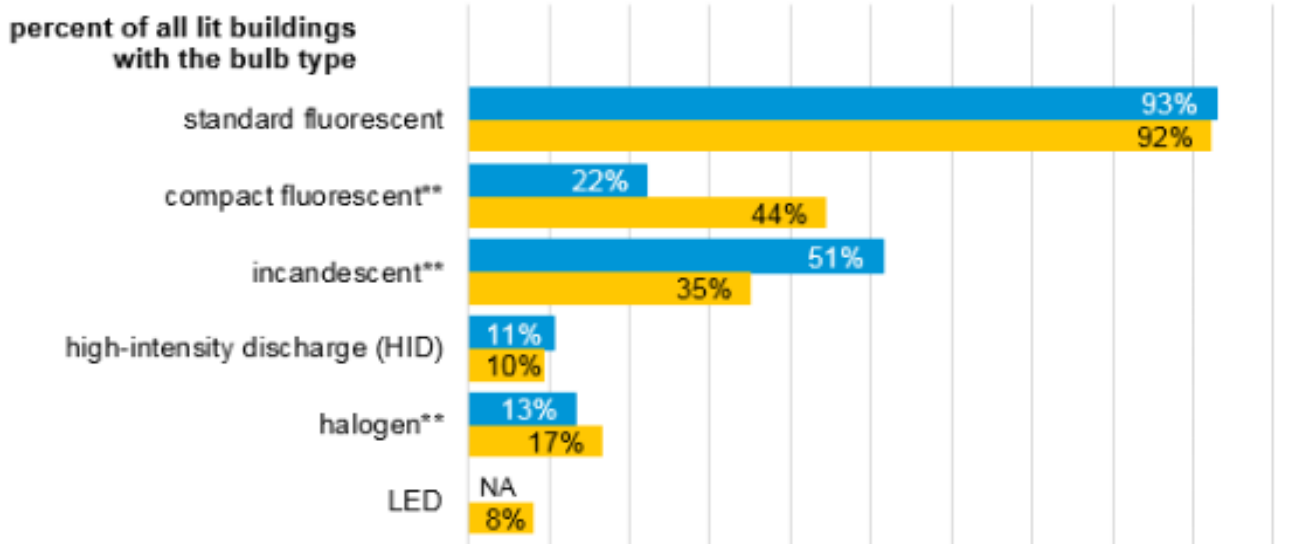
Project Outcomes	Use of GEN2/Neolight technology applied to building lighting operated by federal, State and municipalities delivers a cost improvement up to zero KWH cost. Product meets US DOE 300 lumens per watt standard. The intention of this proposal is to construct and operate a test facility, leading towards funding and distribution of the product. Production design is a 2x2 celling light fixture including lamp driver pc and 6 lamps at 14.5 Watts.

Recommendations	Professional installation required
Resources	• www.rcdresearch.com
Author	Steven Rosenberg stevenronline@gmail.com

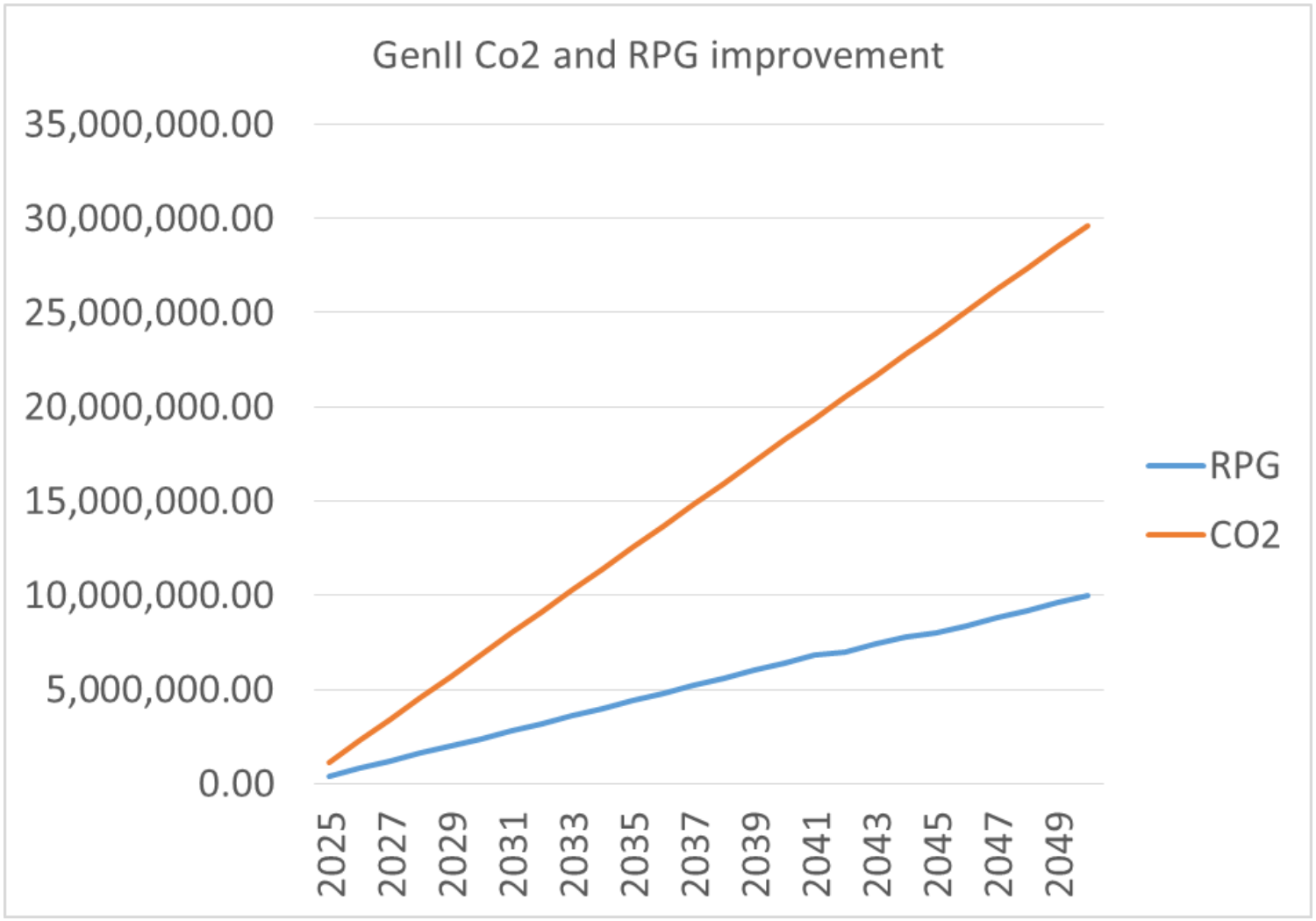
MARKET SHARE AVAILABLE FOR GENII FLOURESCENT REPLACEMENT PRODUCTS

Standard fluorescent lighting is by far the most commonly used type of lighting: 93% of commercial buildings that use lighting (lit buildings) use standard fluorescent lights, and 78% of lit floorspace is illuminated by standard fluorescents.

Figure 2: Fluorescent remains the dominant lighting type while compact fluorescent takes the place of incandescent

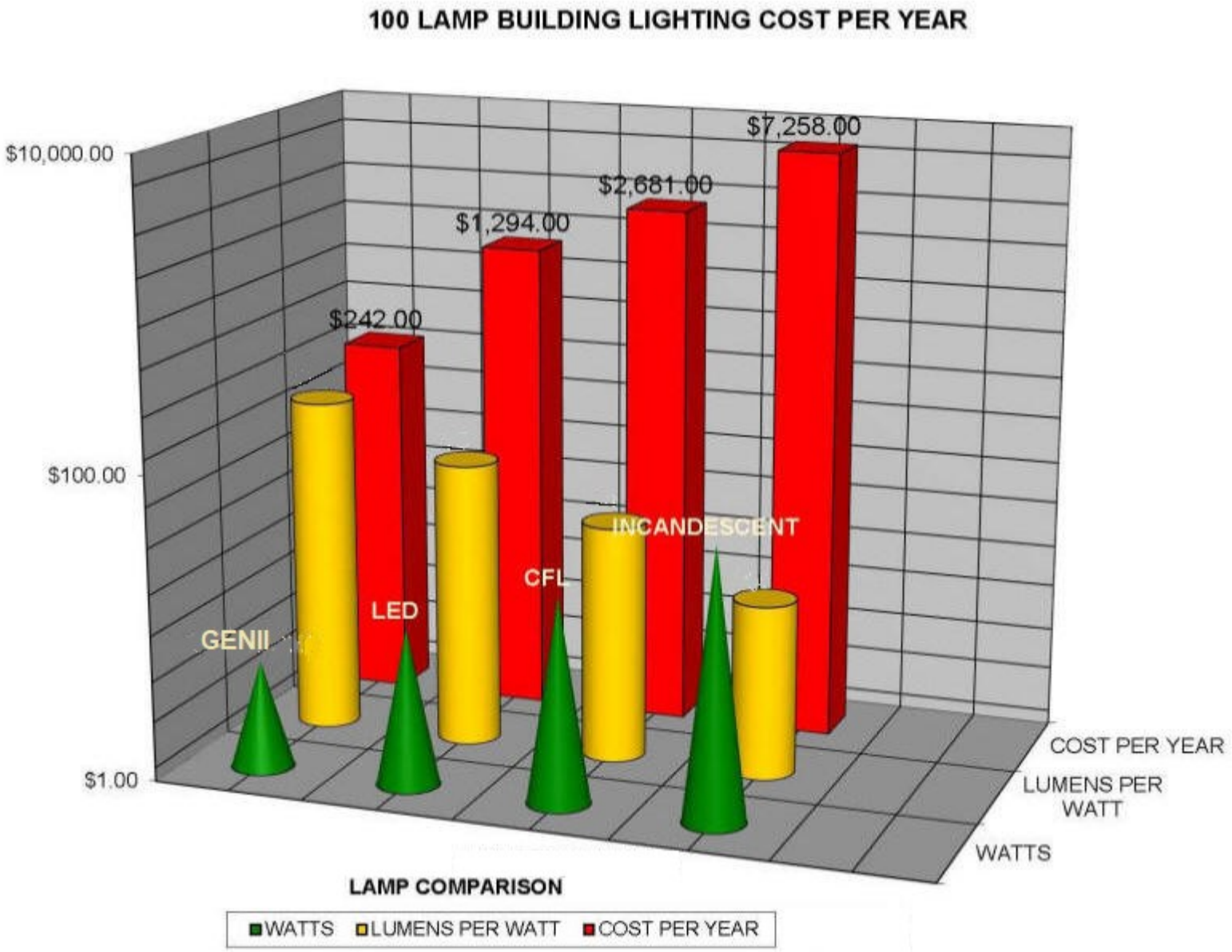


most recent MECS, in 2018, electricity consumption for facility lighting accounted for about 6% (53 billion kWh) of total electricity use at U.S. manufacturing facilities.



[Video presentation]

2 MS POWER MANAGEMENT SYSTEM COMPARED TO CLASSIC LUMINIERS



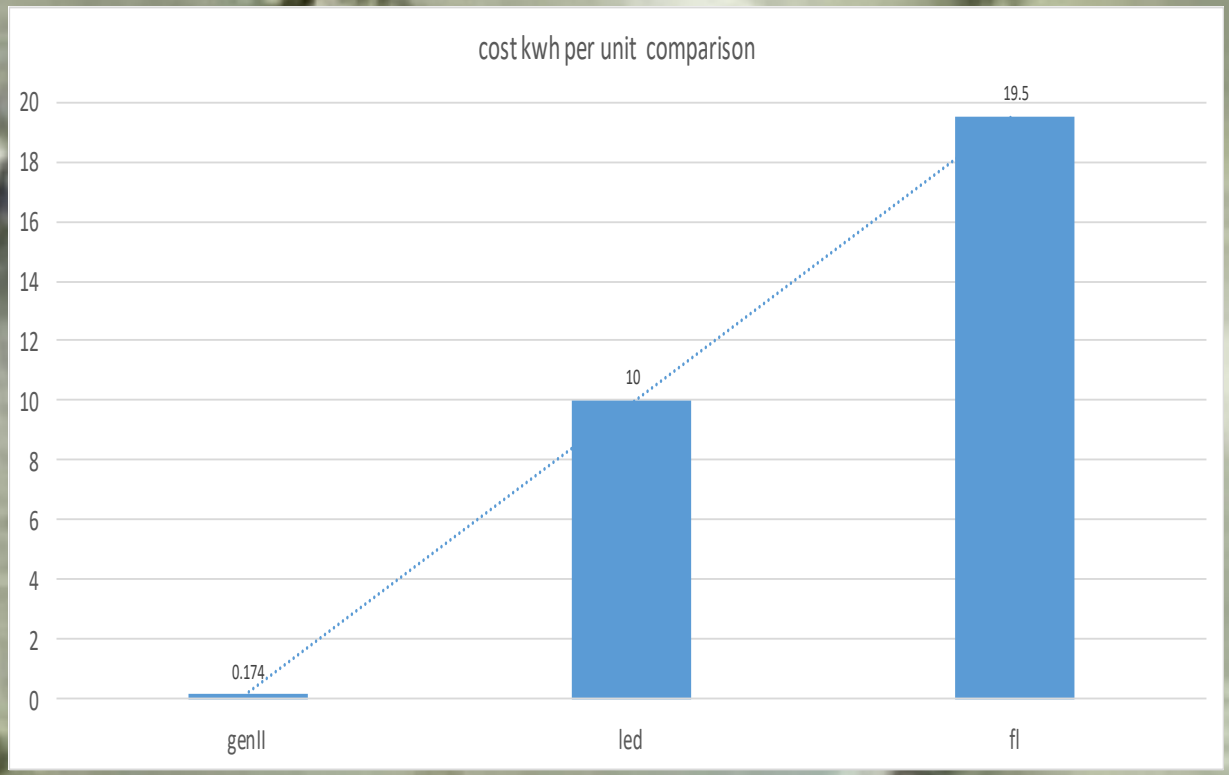
GENII QED LIGHT

RATE PAYER GAINS $330 PER MONTH KWH REDUCTION IN 3 THOUSAND SQ FT BUILDING SPACE.

CO2 AND THERMS ARE ALSO REDUCED.

GENII CELLING FIXTURE

IMPEL INNOVATOR



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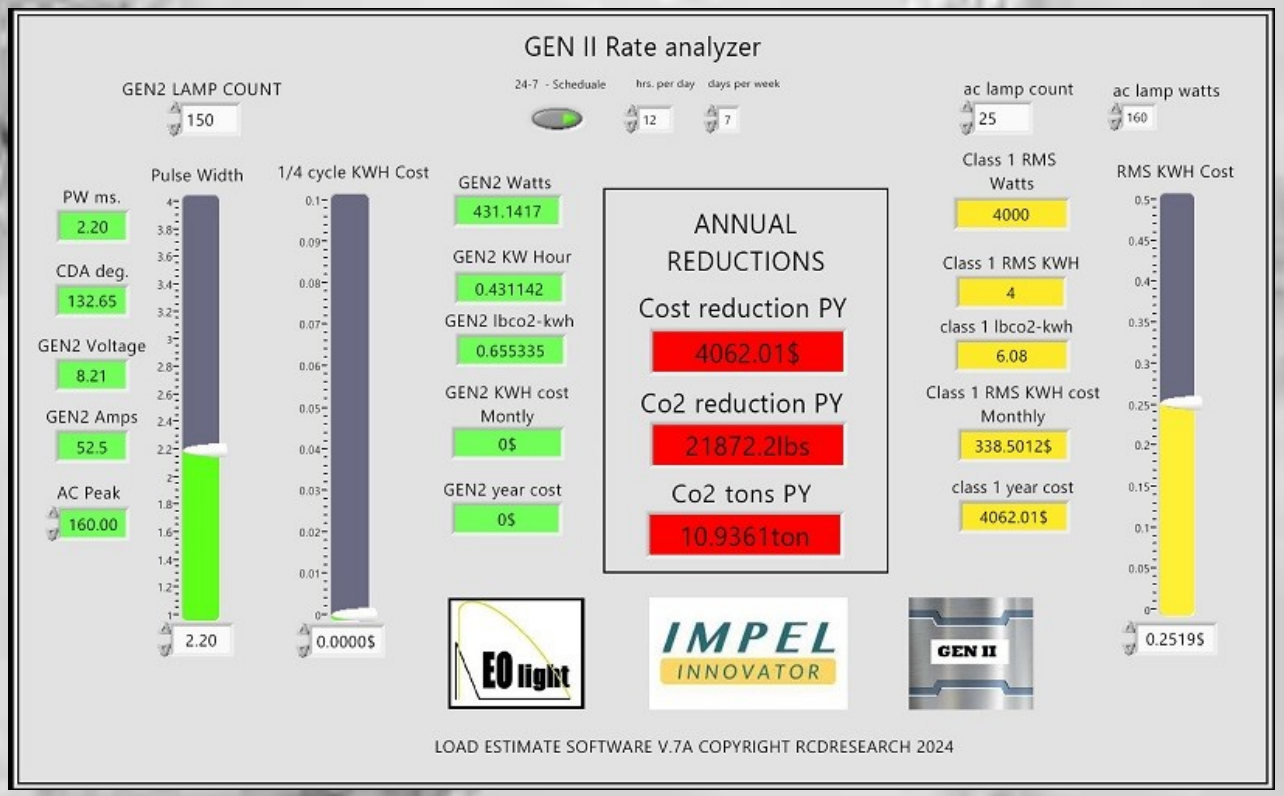
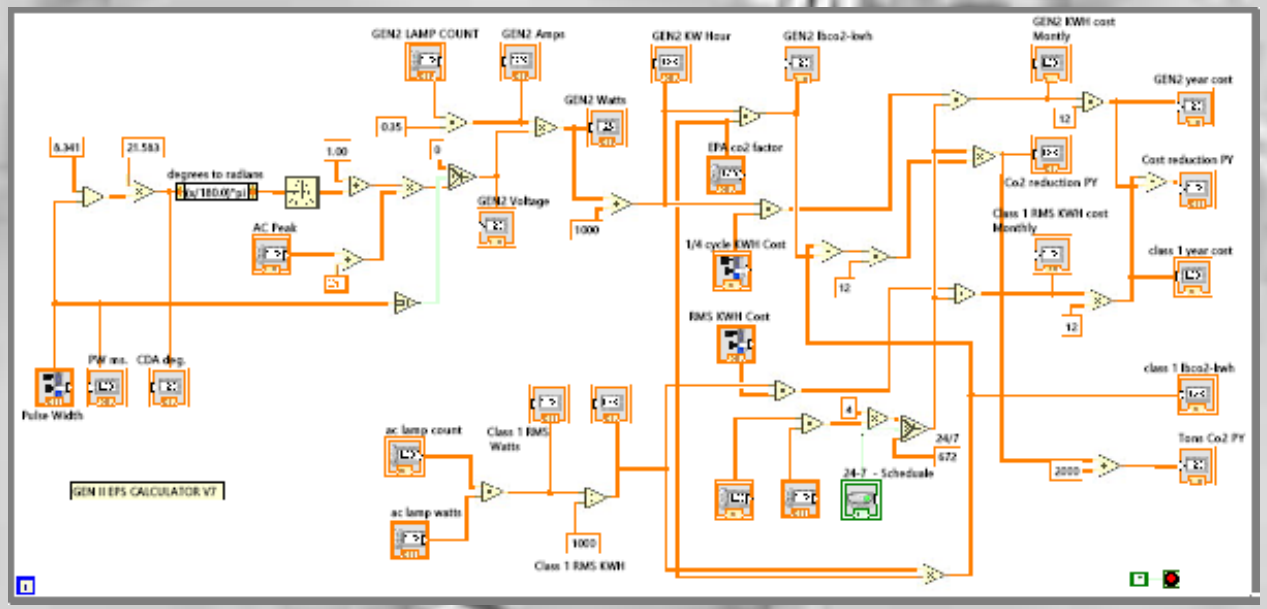
GENII RPG PRESENTATION FOR BETTER BUILDINGS

SOFTWARE CALCULATOR RESULTS ARE $338 PER MONTH OR $4,060 PER YEAR RPG AT A PIZZA SHOP BUILDING of 3000 SQFT



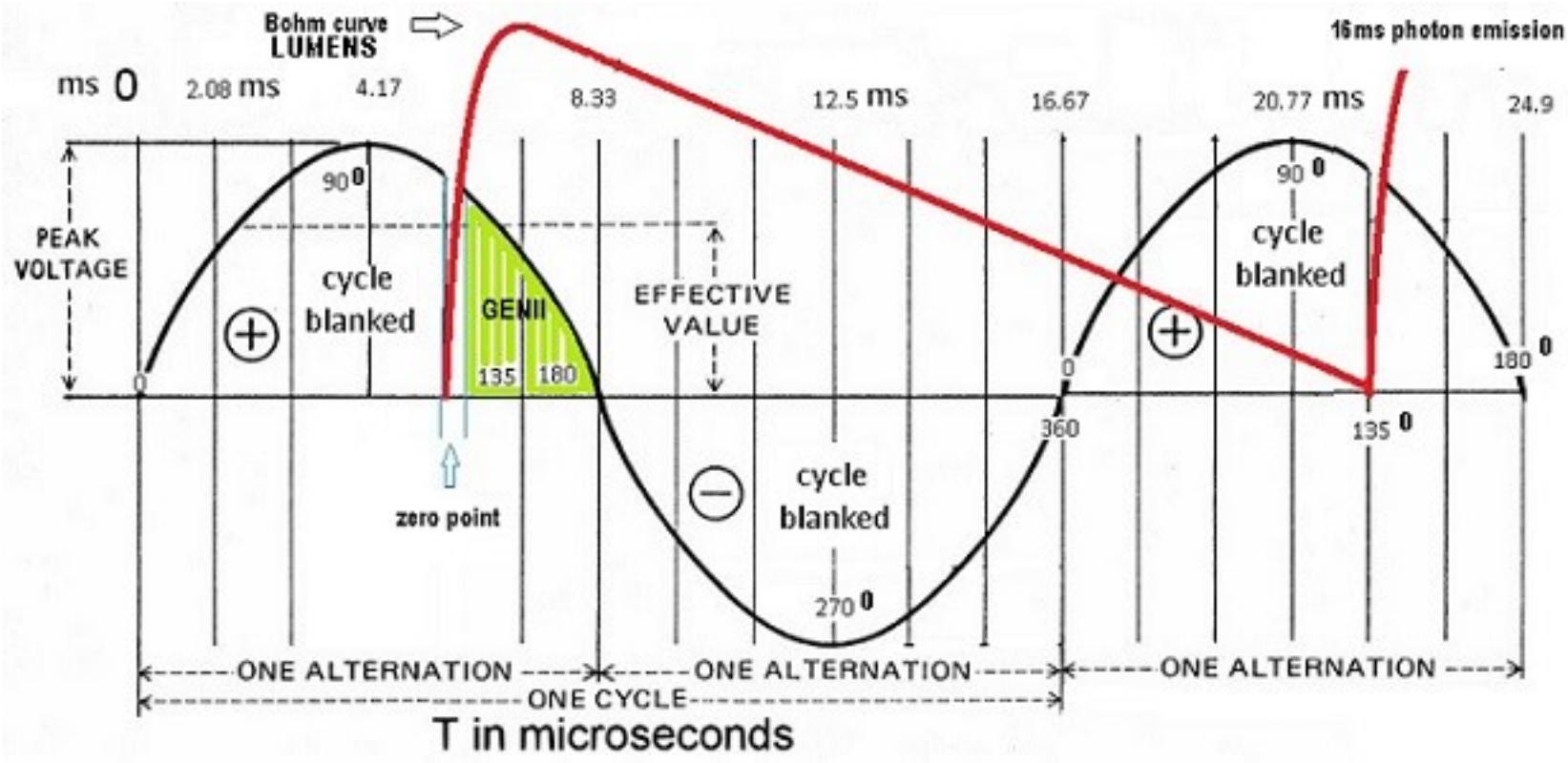


TECHNOLOGY REVIEW, LABVIEW G CODE PROGRAM DIAGRAM

QUANTUM ELECTRO DYNAMIC ENERGY MANAGEMENT EXPLAINED. EFFECTIVE ENERGY LOAD IS 2.2 MS. ELECTRO DYNAMIC LIGHT OUTPUT CURVE IN RED IS 16MS. INNOVATION EXHIBITS A 1:8 RATIO.

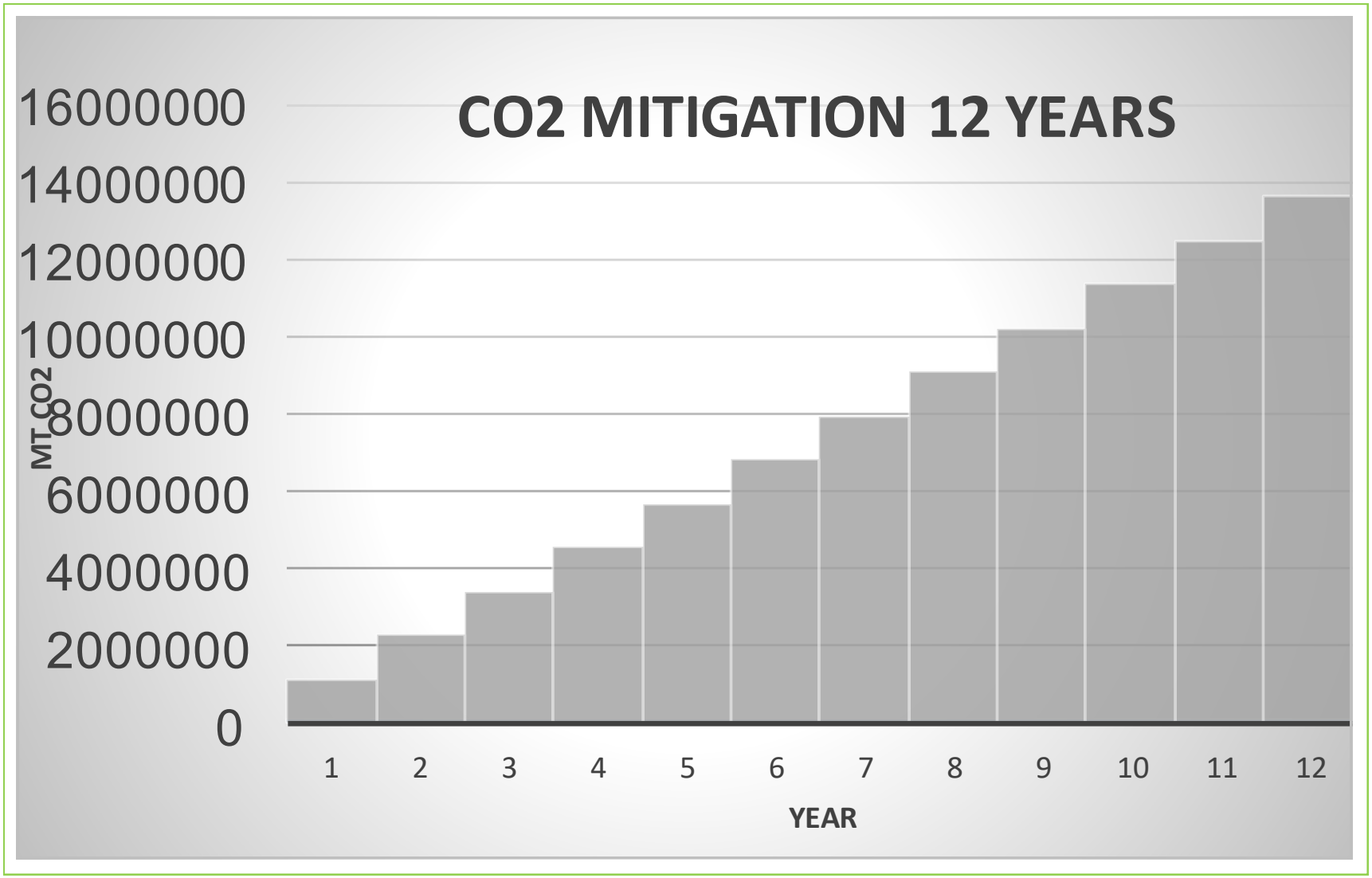
THEORY OF OPERATION IS;

MUON DECAY PRODUCTS , POSITRONS AND ELECTRONS, PRODUCE 500 PHOTONS PER FUSION EVENT.



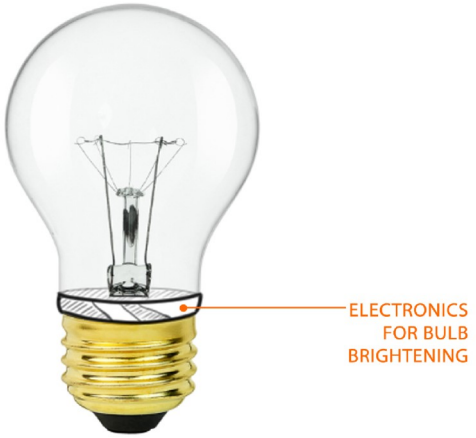
14 MTONS CO2 AVOIDED PER YEAR AFTER 12 YEARS OF

GENII FLOURESCENT FIXTURE RETROFIT COMMERCIAL DEPLOYMENT



INDUSTRIAL IDEATION SKETCH

GEN 2 NEO LIGHT



FEATURES

LIGHT BULB DESIGNED TO BE BRIGHTER BUT USE LESS ENERGY

LOOKS AND WORKS LIKE A STANDARD LIGHT BULB

FITS EXISTING BULB SOCKETS

MADE WITH HIGH-CLARITY EXTRA CLEAR GLASS

FULL SCALE, CONCEPTUAL MODEL FOR PRESENTATION AND DISPLAY

*This drawing is conceptual only. There has been no development, engineering, industrial design, or integration at this stage.

GENII AVAILABLE IN CLEAR AND FROSTED

GENII

Project Name: **GENII A19-24V-25W-CLR**

Location: AZ | Prepared By: S. ROSENBERG

General	
Status	Active
Watts	25
Volts	24V
Shape	A19
Filament	C-6
Base	Medium
ANSI Base	E26
Finish	CLEAR
CCT (Kelvin)	2700
Temperature	Warm White
GENII MS WATTS PER WATT	2.3
Lumens	120-300
Beam Spread	360
Dimmable	Yes Dimmable
Hours Rated	3000
Lamp Type	Type A
Technology	ROSENBERG CYCLE

Physical	
MOL	4.13
MOD	2.38

Additional Information
FOR USE ONLY WITH GENII LAMP DRIVER MODULE

Compliance	
Energy Star	YES
CEC Status	Lawful for sale in California
RoHS Compliant	Yes
SDS Sheet	Incandescent_Lamp

Notes: FOR USE WITH GENII LAMP DRIVER

SKU A19-24V-25W-CLR

NEOLIGHT LAMP RATINGS

INPUT VOLTAGE	120VAC 60HZ
GENII MAXIMUM ¼ CYCLE CURRENT	50-100 AMPS DC
GENII ¼ CYCLE VOLTAGE	8. TO 8.5 DC
GENII ¼ CYCLE CURRENT	.35 TO .5 DC
GENII ¼ CYCLE PEAK CURRENT	5.5 AMPS DC
GENII ¼ CYCLE PEAK VOLTAGE	122 VOLTS DC
GENII CURENT PULSE DURATION	2.1 MS
GENII CONDUCTION DELAY ANGLE	132 DEGREES
LUMENS (DIMMABLE)	600 +
LUMENS PER WATT	170-300

FOR MORE INFORMATION WWW.RCDRESEARCH.COM

GENII

Project Name: **GENII A19-24V-25W-FR**

Location: AZ | Prepared By: S. ROSENBERG

General	
Status	Active
Watts	25
Volts	24V
Shape	A19
Filament	C-6
Base	Medium
ANSI Base	E26
Finish	Frosted
CCT (Kelvin)	2700
Temperature	Warm White
CRI	100
Lumens	250
Beam Spread	360
Dimmable	Yes Dimmable
Hours Rated	3500
Lamp Type	Type A
Technology	Incandescent

Physical	
MOL	4.13
MOD	2.38

Additional Information	
Warranty	Avg. Rated Hour Limited

Compliance	
Energy Star	No
CEC Status	Lawful for sale in California
RoHS Compliant	Yes
SDS Sheet	Incandescent_Lamp

Notes: FOR USE WITH GENII LAMP DRIVER

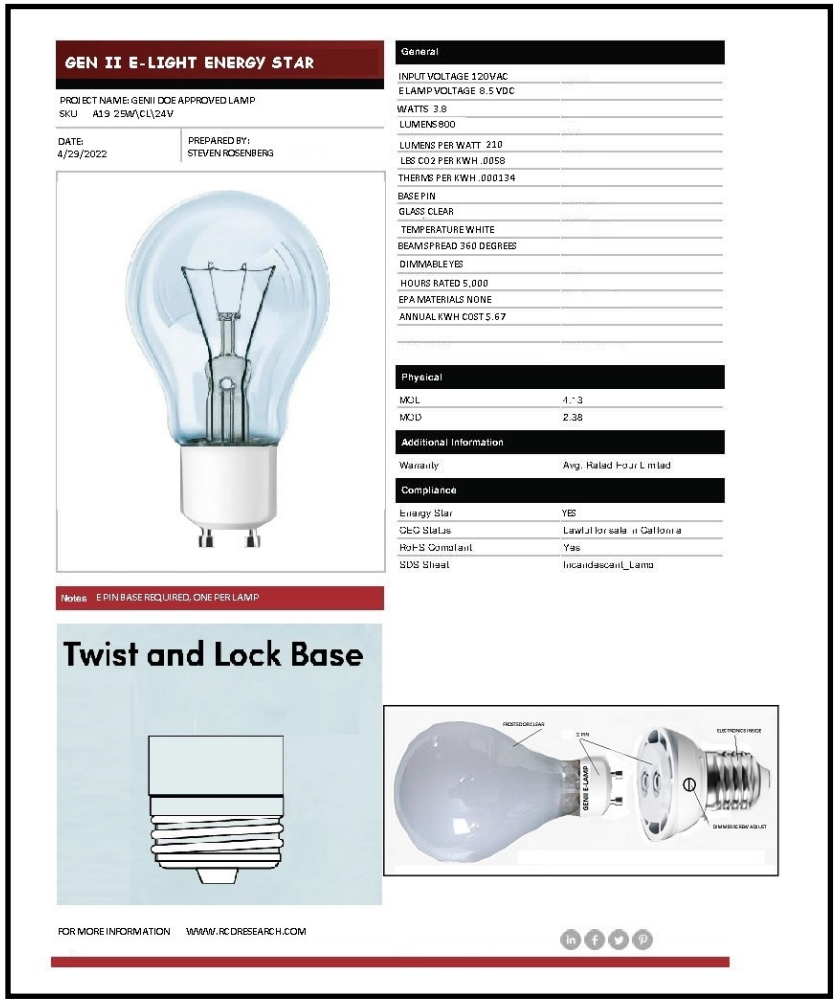
SKU A19-24V-25W- FR

NEOLIGHT LAMP RATINGS

INPUT VOLTAGE	120VAC 60HZ
GENII MAXIMUM ¼ CYCLE CURRENT	50-100 AMPS DC
GENII ¼ CYCLE VOLTAGE	8. TO 8.5 DC
GENII ¼ CYCLE CURRENT	.35 TO .5 DC
GENII ¼ CYCLE PEAK CURRENT	5.5 AMPS DC
GENII ¼ CYCLE PEAK VOLTAGE	122 VOLTS DC
GENII CURENT PULSE DURATION	2.1 MS
GENII CONDUCTION DELAY ANGLE	132 DEGREES
LUMENS (DIMMABLE)	600 +
LUMENS PER WATT	300

FOR MORE INFORMATION WWW.RCDRESEARCH.COM

2.4 WATTS 300 LUMENS PER WATT 1.8 LB CO2 PER HOUR



GEN II E-LIGHT ENERGY STAR

PROJECT NAME: GENII DOE APPROVED LAMP
SKU A19 25W/CL/24V

DATE: 4/29/2022
PREPARED BY: STEVEN ROSENBERG

General	
INPUT VOLTAGE 120VAC	
E LAMP VOLTAGE 8.5 VDC	
WATTS 3.8	
LUMENS 800	
LUMENS PER WATT 210	
LBS CO2 PER KWH .0058	
THERMS PER KWH .000134	
BASE PIN	
GLASS CLEAR	
TEMPERATURE WHITE	
BEAMSPREAD 360 DEGREES	
DIMMABLE YES	
HOURS RATED 5,000	
EPA MATERIALS NONE	
ANNUAL KWH COST $.67	

Physical	
MOL	4.13
MOD	2.38

Additional Information	
Warranty	Avg. Rated Hour Limited

Compliance	
Energy Star	YES
CEC Status	Lawful for sale in California
RoHS Compliant	Yes
SDS Sheet	Incandescent_Lamp

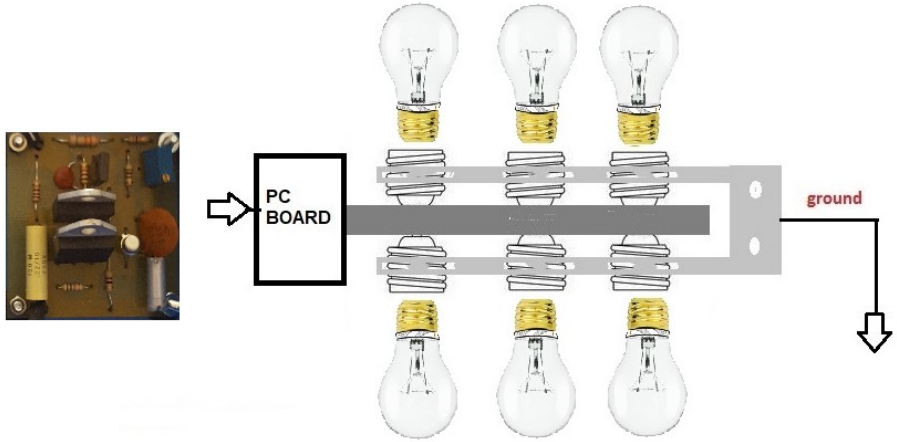
Notes: E PIN BASE REQUIRED, ONE PER LAMP

Twist and Lock Base

FOR MORE INFORMATION WWW.RCDRESEARCH.COM

THE DECARBONIZER SAVES $330 PM

FLOURESCENT LAMP ELIMINATOR
14.5 WATTS



HOME DECARBONIZE

PRODUCT CONCEPT

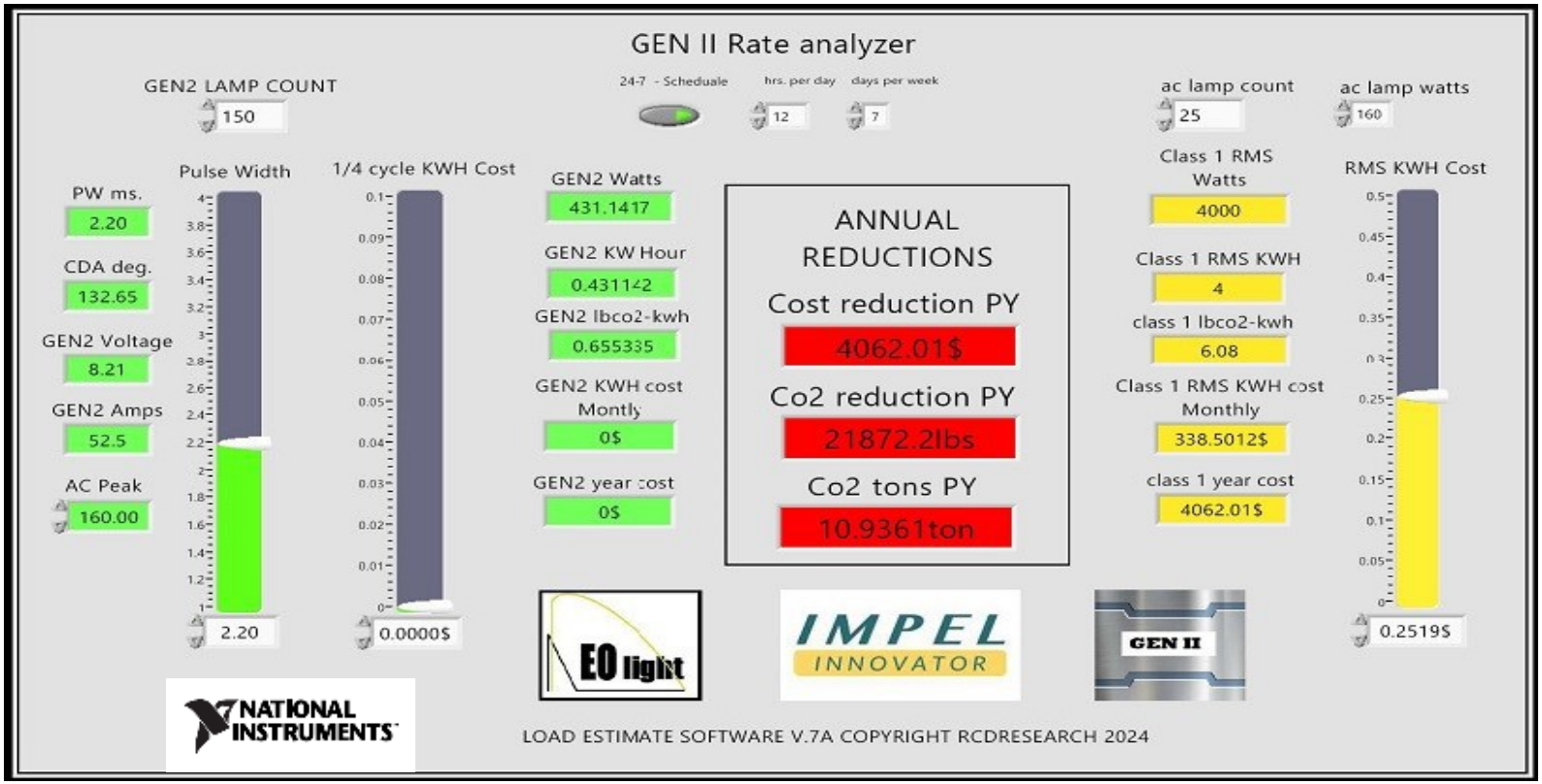
AVAILABLE FOR LICENSING

COMMERCIAL RATE PAYER GAIN EXAMPLE

25 CELING TROFFERS REPLACED WITH

GENII SAVES $4,000 PER YEAR

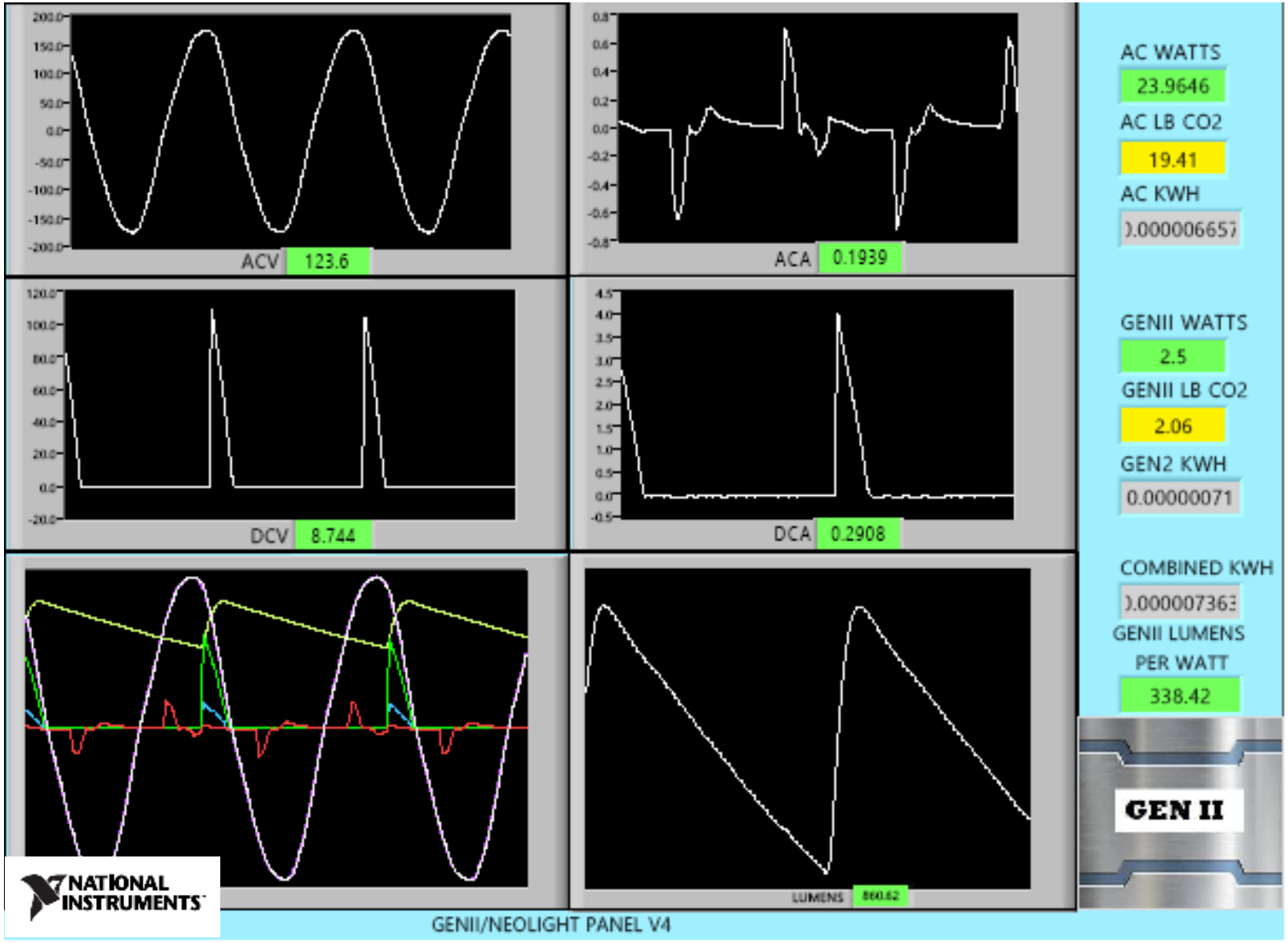
ELIMINATES 10 TONS OF CO2



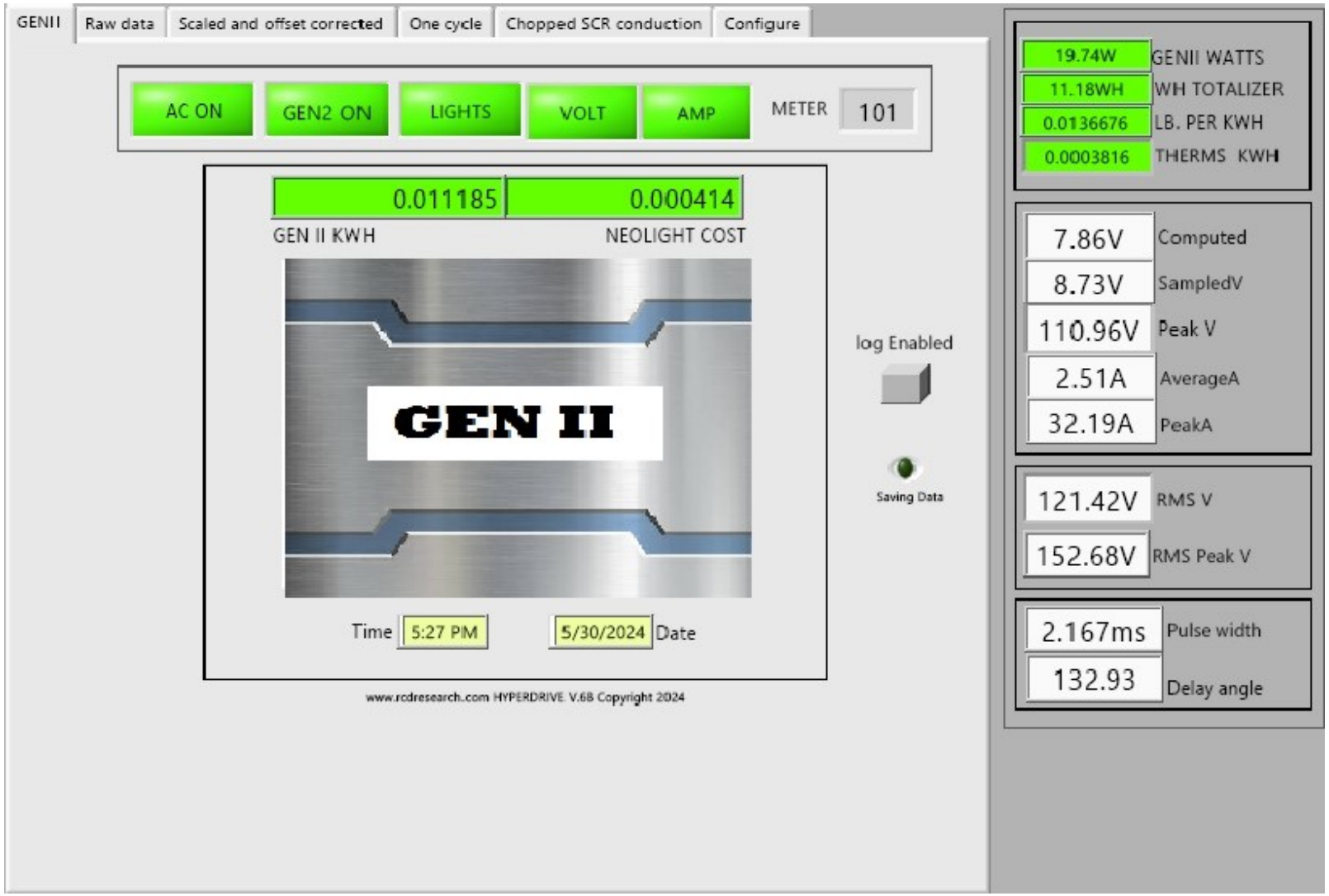
CALCULATOR BUILT WITH NATIONAL INSTRUMENTS LABVIEW SOFTWARE

HI TECH COMPARITOR LED 20W VS GENII 2.2W

23W VS 2.5 W 2LB CO2 VS 19.4 LBS CO2



GENII KWH METER MEASURES 2MS POWER, COST, AND CO2



NATIONAL INSTRUMENTS

PRO BUILDING EQUIPMENT

PRECISE MEASUREMENT— CARBON ACCOUNTING ONBOARD

Patents and software copyrights awarded to Mr. Rosenberg

PATENTS AND COPYRIGHTS

USS Patent No. 5,463,307
USS Patent No. 8,260,695
Copyright No.TXu-1-820-558
Copyright No.TXu-1-857-798
Copyright No.TXu-1-816-767

PUBLICATION

Popular Electronics 1997
popular electronics

SUPPORTING INSTITUTIONS

AMERICAN UNIVERSITY
RUTGERS UNIVERSITY
NASA
UCBERKLEY IMPEL PROGRAM
DOE L-PRIZE
UNIVERSITY OF ARIZONA

EARTH LIGHT