



LED Visible Spectrum Lighting

2022



relinc.com

VISIBLE SPECTRUM

Our Visible Spectrum LED lights are designed and built for high intensity, extreme frame rate >5 million frames per second scientific research cameras for the harshest environments on the planet.

REL has a decades-long tradition of manufacturing High Strain Rate Testing equipment for advanced materials research and understands the challenge of providing enough light to capture events on the microsecond time scale.



MANUFACTURED TO
ISO 9001:2015

WS1 - 16" RING LIGHT

3

WS2 - 14" LED HEXAGON

11

WS3 - 7.5" LED HEXAGON

17

WS4 - 2.5" SQUARE

25

POWER SUPPLIES

32

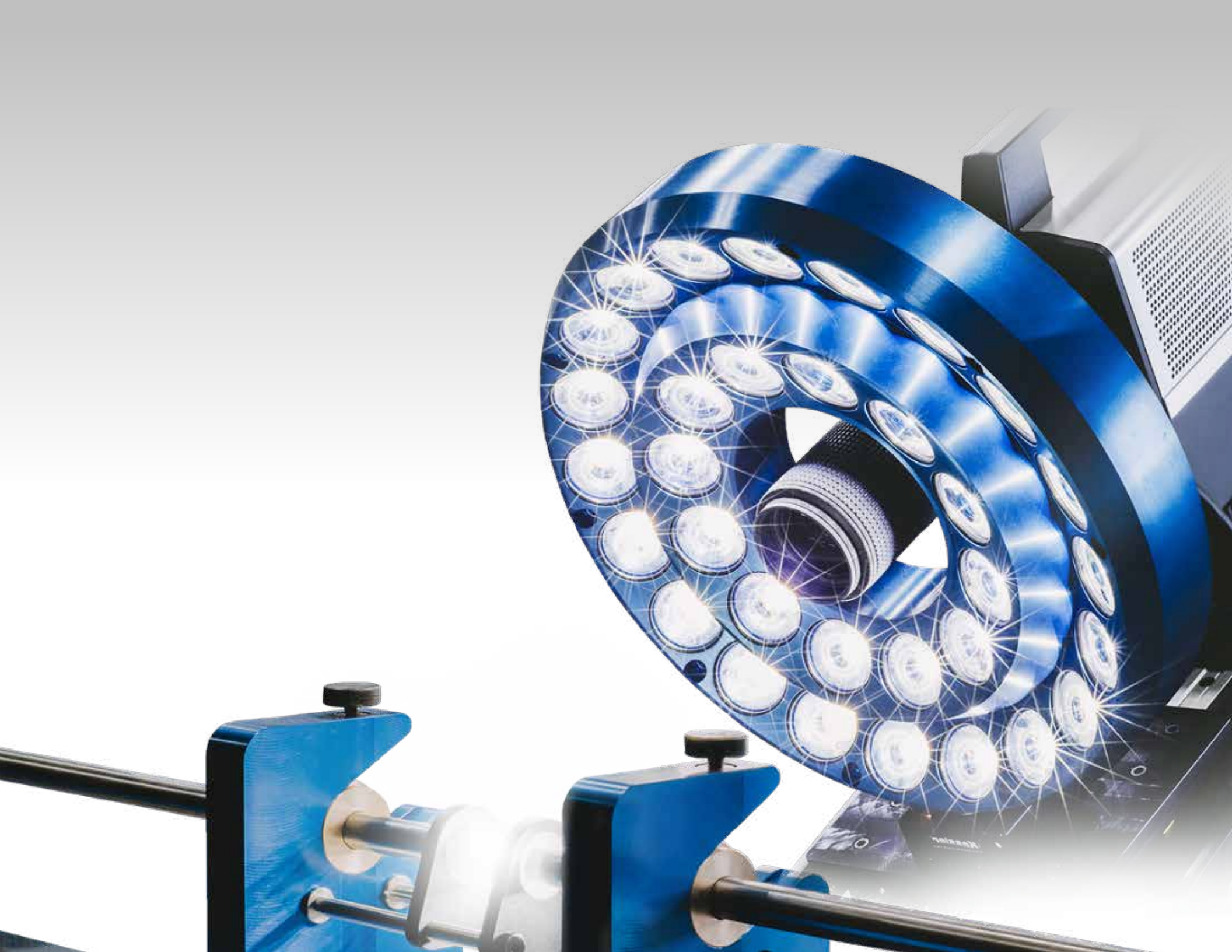
WS SERIES OUTPUT DATA

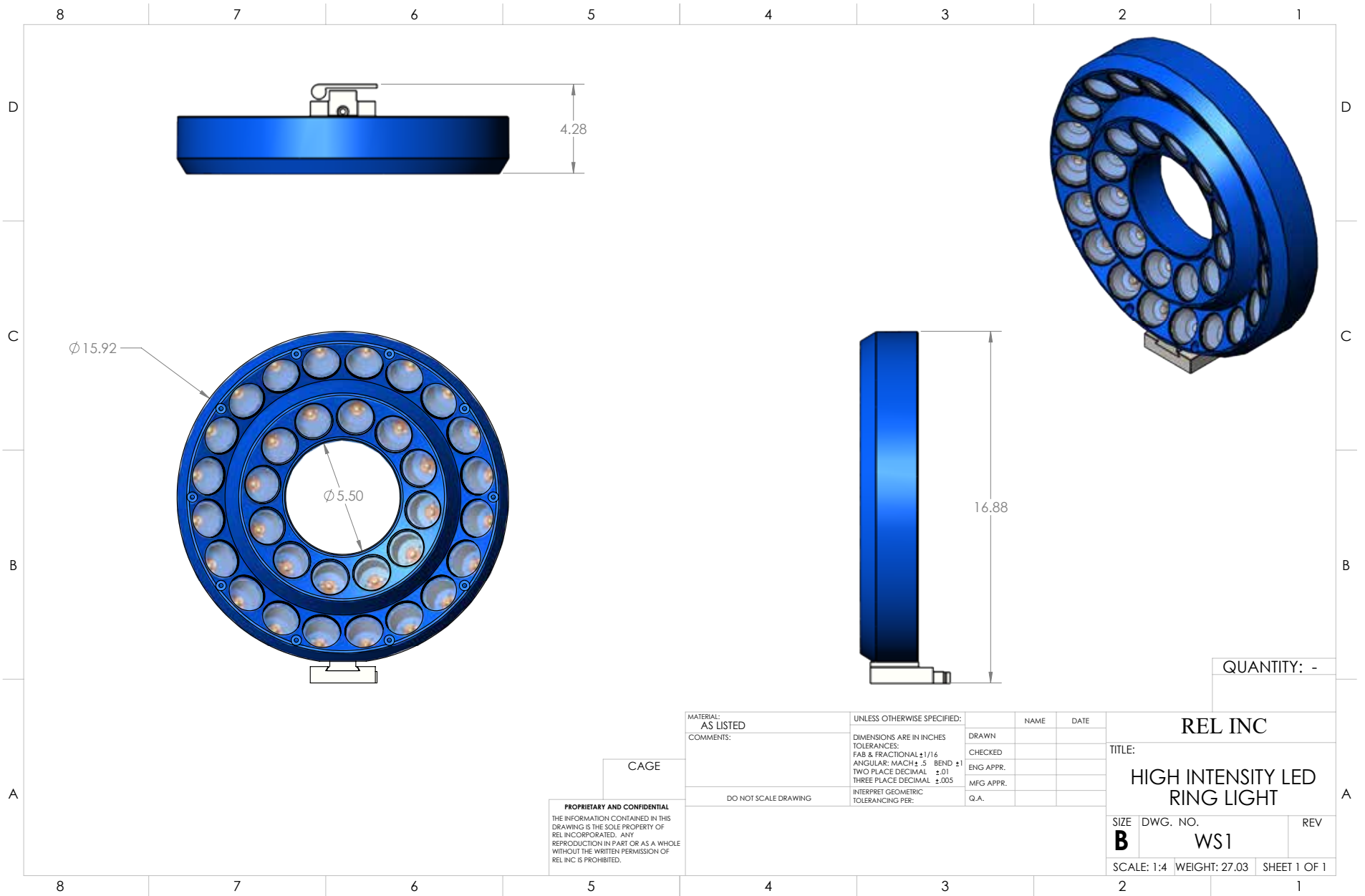
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WS1

16" LED RING





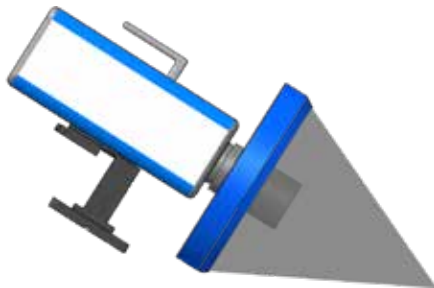
WS1

Finally, a reliable LED light for a 5 million fps camera. The visible spectrum WS1 allows the user to turn on and leave on during the test to avoid 'retesting due to triggering' that all experimentalists have experienced. This light focuses hundreds of watts of light power on an area of 1 in² at a fixed focal distance of 1 foot.

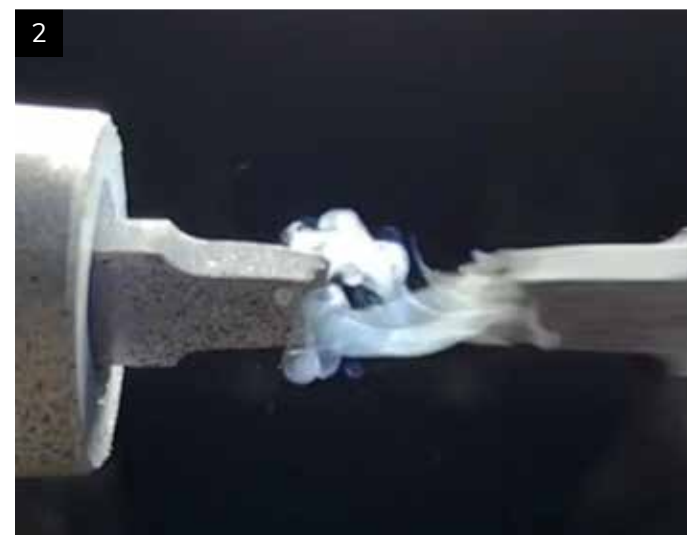
EQUIPMENT HIGHLIGHTS

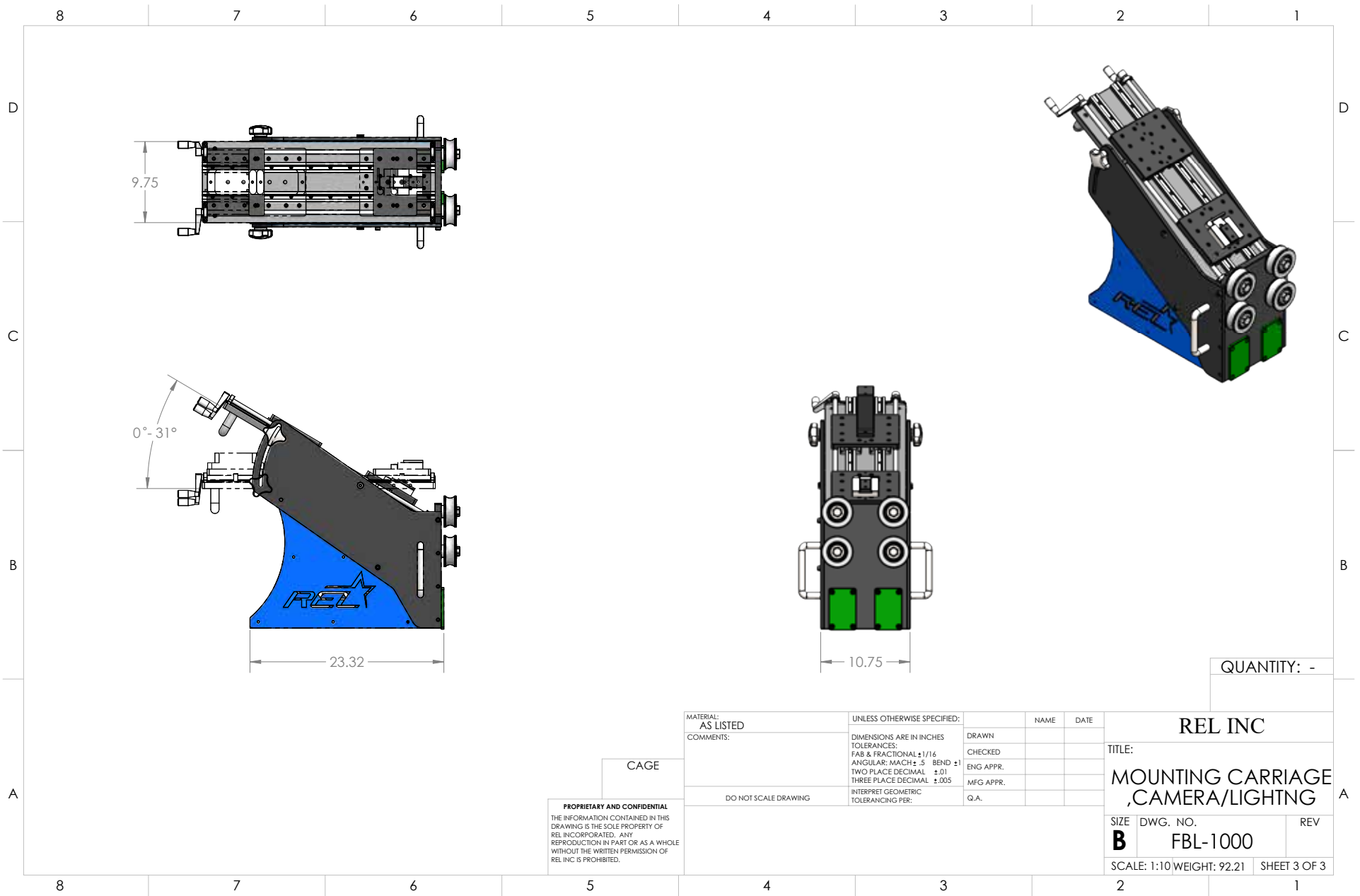
- ▲ High intensity fixed focal point light source (10 Mlux peak intensity)
- ▲ Illumination for up to 5M frames per second in many configurations
- ▲ 100% Duty Cycle at Maximum Output
- ▲ Low IR with minimal sample heating
- ▲ Precise dimming output control using hand held remote
- ▲ Tripod mounted and can work with any camera
- ▲ Durable and portable
- ▲ Dimensions: 16" OD x 6" ID x 2" Thick Ring
- ▲ Weight: 15 lbs.

BEAM PROFILE



1. CG2-100 Controller
2. Intense Lighting for capturing high speed events
3. WS1 used with REL's High Strain Rate Testing System





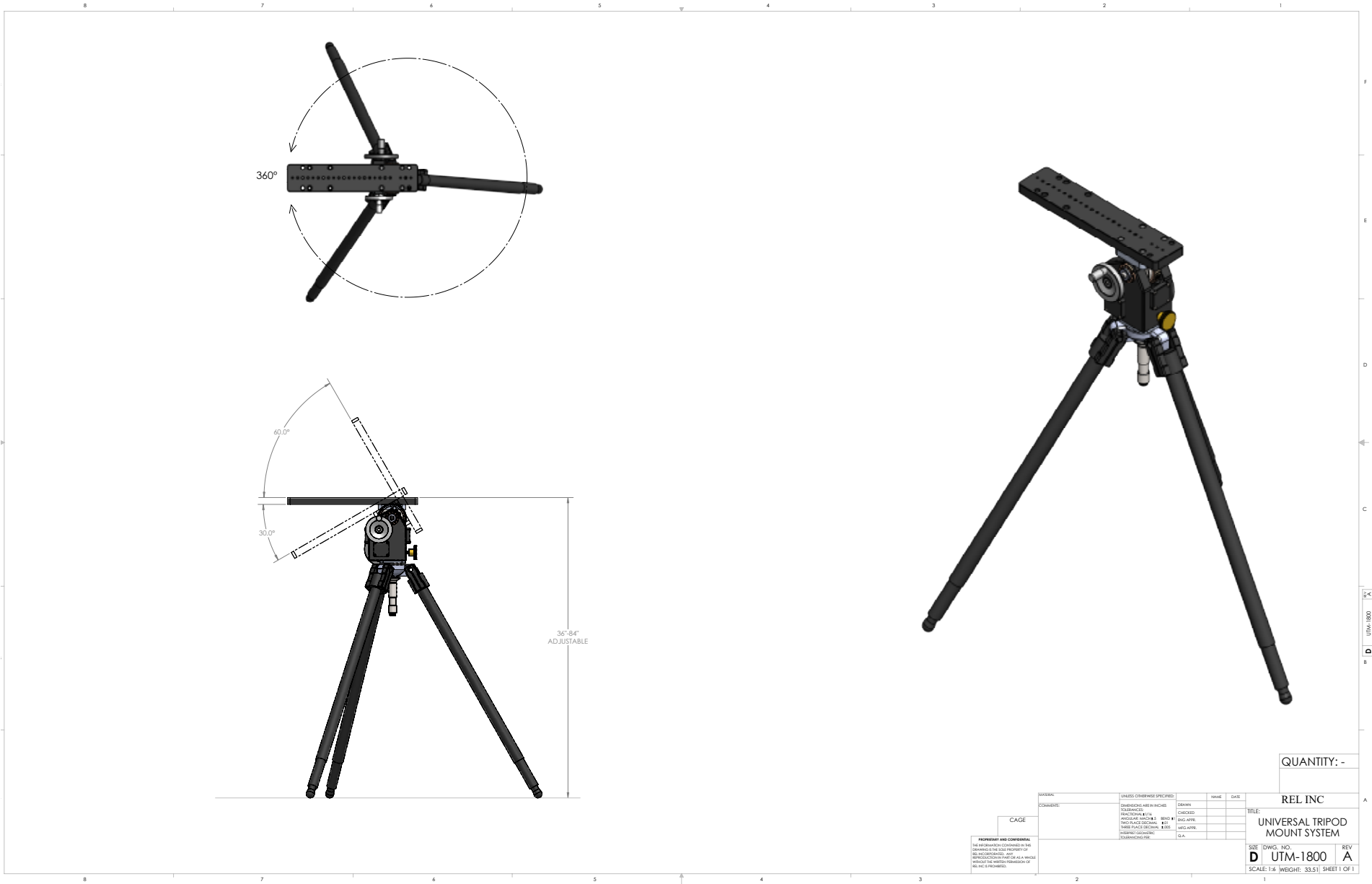
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				ENG APPR.		MOUNTING CARRIAGE		
				MFG APPR.		,CAMERA/LIGHTING		
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						B	FBL-1000	
						SCALE: 1:10	WEIGHT: 92.21	SHEET 3 OF 3

MOUNTING CARRIAGE (FBL-1000)

- ▲ Integrally mount your WS1 light and camera system to REL's SHPB base platform
- ▲ Rolling carriage allows for convenient positioning for high strain rate test events
- ▲ Dimensions: 36"x18"x28"
- ▲ Weight: 85 lbs.

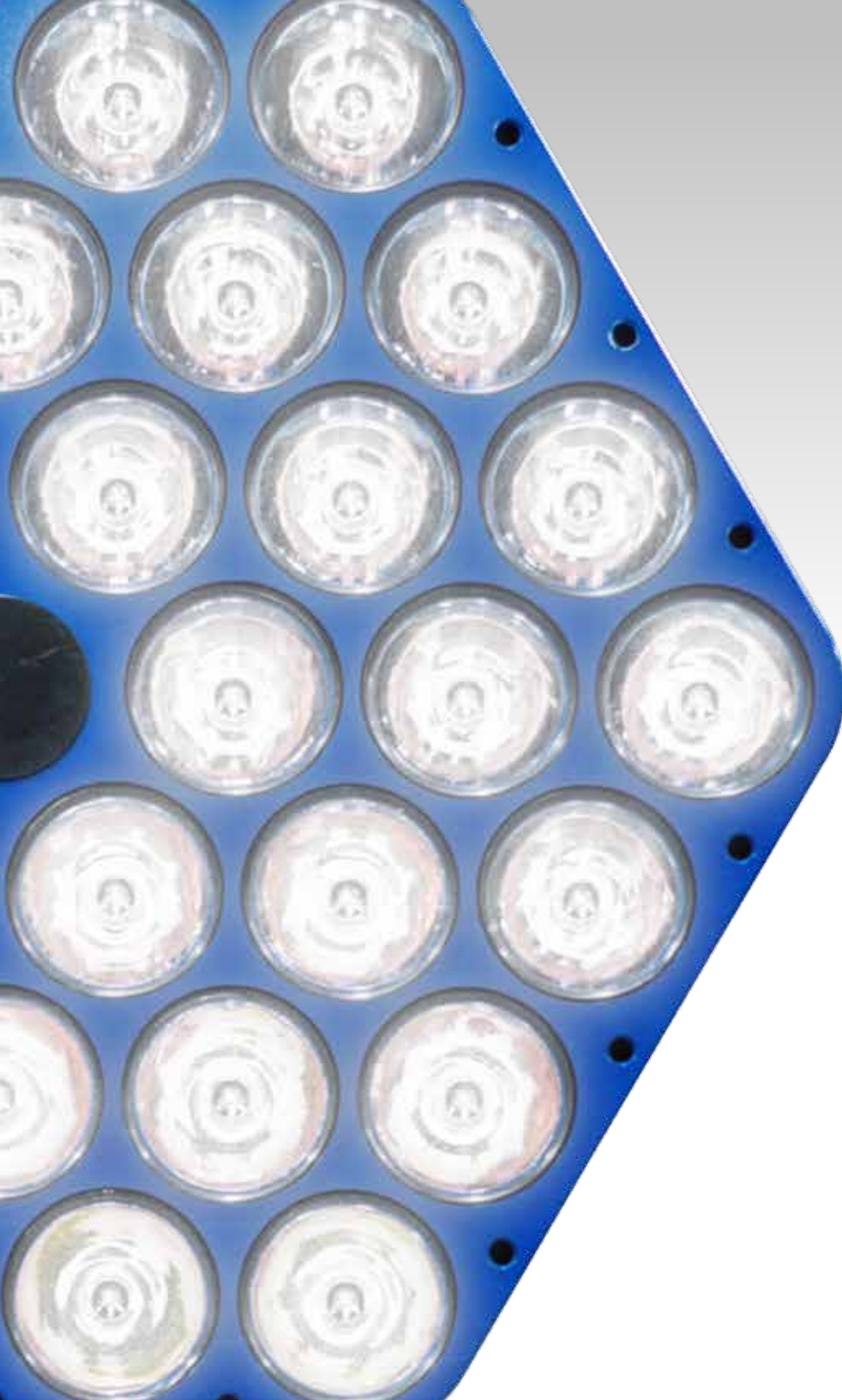




UNIVERSAL TRIPOD MOUNT (UTM-1800)

- ▲ Universal Tripod Mount System
- ▲ Support 250 pounds of lighting and camera gear
- ▲ 36"-84" adjustable height
- ▲ Machined geared housing for 90 degrees of tilt control and 360 degrees of pan control

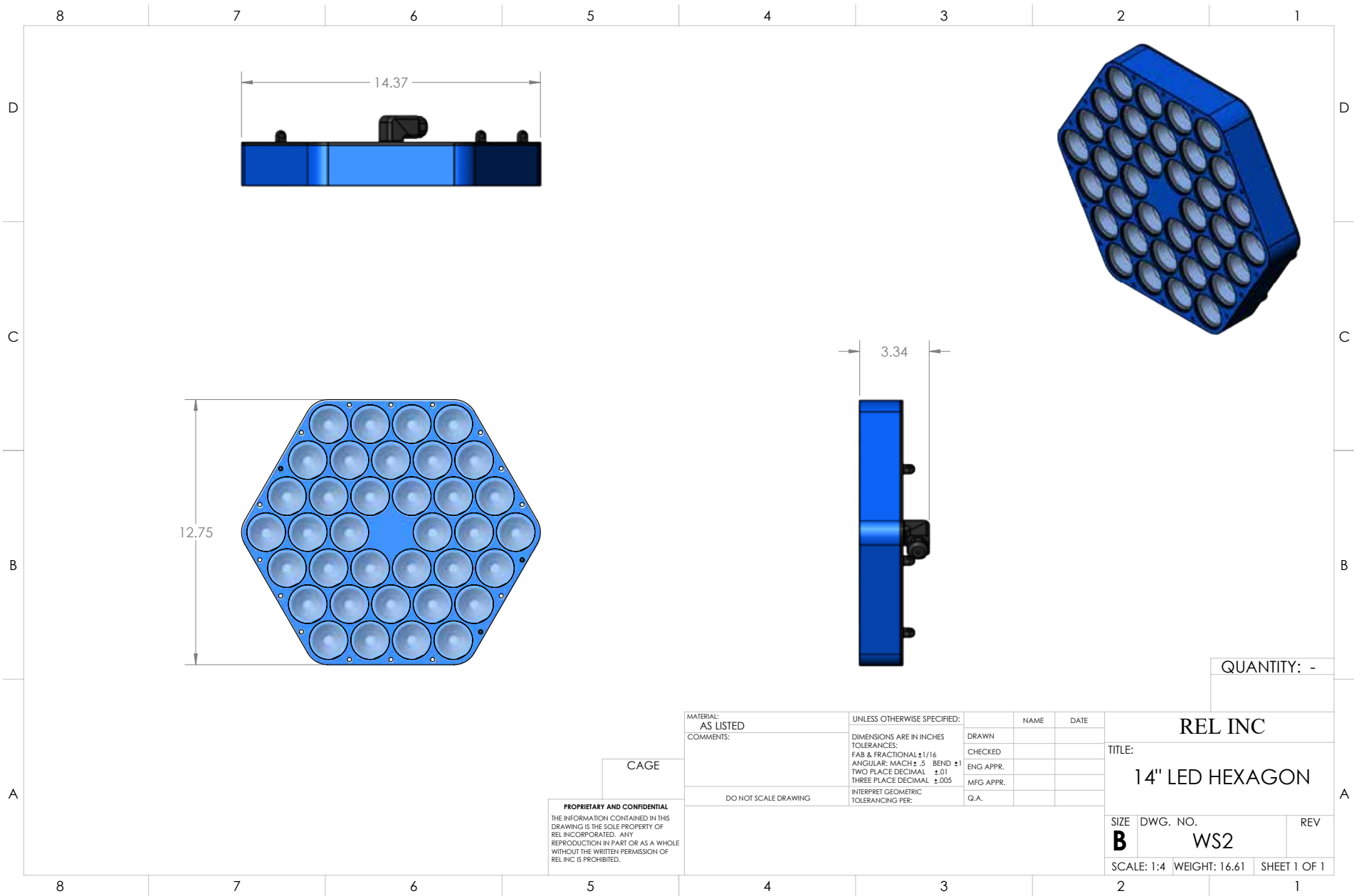




WS2

14" LED HEXAGON





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		ENG APPR.		SIZE DWG. NO. REV		
DO NOT SCALE DRAWING		MFG APPR.		B WS2		
		Q.A.		SCALE: 1:4 WEIGHT: 16.61 SHEET 1 OF 1		

QUANTITY: -

WS2

Our WS2-K4 was purpose-built for capturing energetic events at millions of frames per second from up to 100 feet away. This quartet of TIR lens adjustable focusing brilliance allows the user to focus light on the dynamic event from a safe distance.

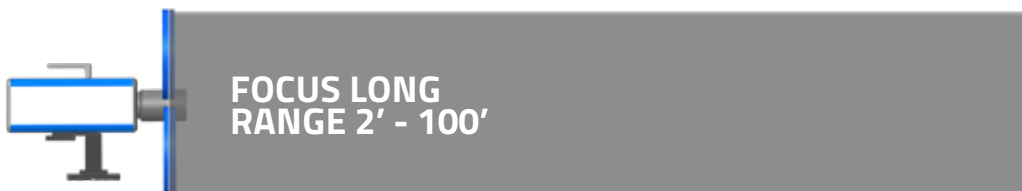
EQUIPMENT HIGHLIGHTS

- ▲ 150k lux (60k lumens) at 4m peak
- ▲ 600W continuous power
- ▲ 5 deg beam
- ▲ 0.3m spot at 4m
- ▲ 2400W continuous power
- ▲ Long range, up to 100' for safe recording of high energy events
- ▲ Runs at 2 kilowatts on a standard 120V circuit
- ▲ Up to 50' cord length
- ▲ Includes Magnetic Laser Alignment Sight for quick and accurate light beam focus

INTERFACES WITH

- ▲ Universal Tripod Mount (UTM-1800)

BEAM PROFILE



1. CG2-100 Controller
2. Magnetic Laser Alignment Sight
3. UTM-1800



WS2-K4

- ▲ 4-14" LED Hexagon 4 Degree Flood Light Modules
- ▲ 48 Volt Power Supply (PS2-48)
- ▲ Magnetic Laser Alignment Sight
- ▲ Universal Tripod Mount (UTM-1800)
- ▲ CG2-100 Controller and integration hardware
- ▲ Pelican case(s) for packaging



UNIVERSAL TRIPOD MOUNT (UTM-1800)

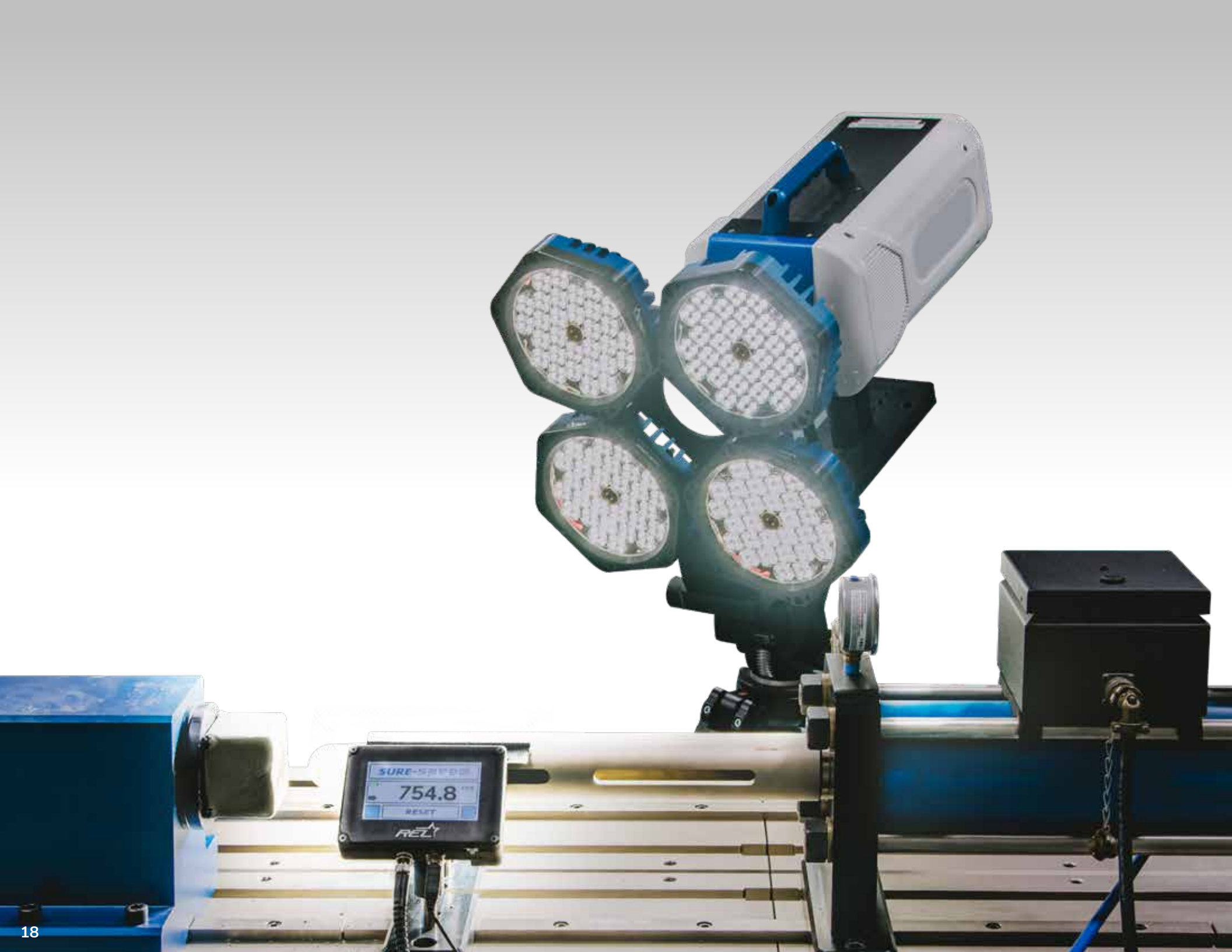
- ▲ Universal Tripod Mount System
- ▲ Support 250 pounds of lighting and camera gear
- ▲ 36"-84" adjustable height
- ▲ Machined geared housing for 90 degrees of tilt control and 360 degrees of pan control

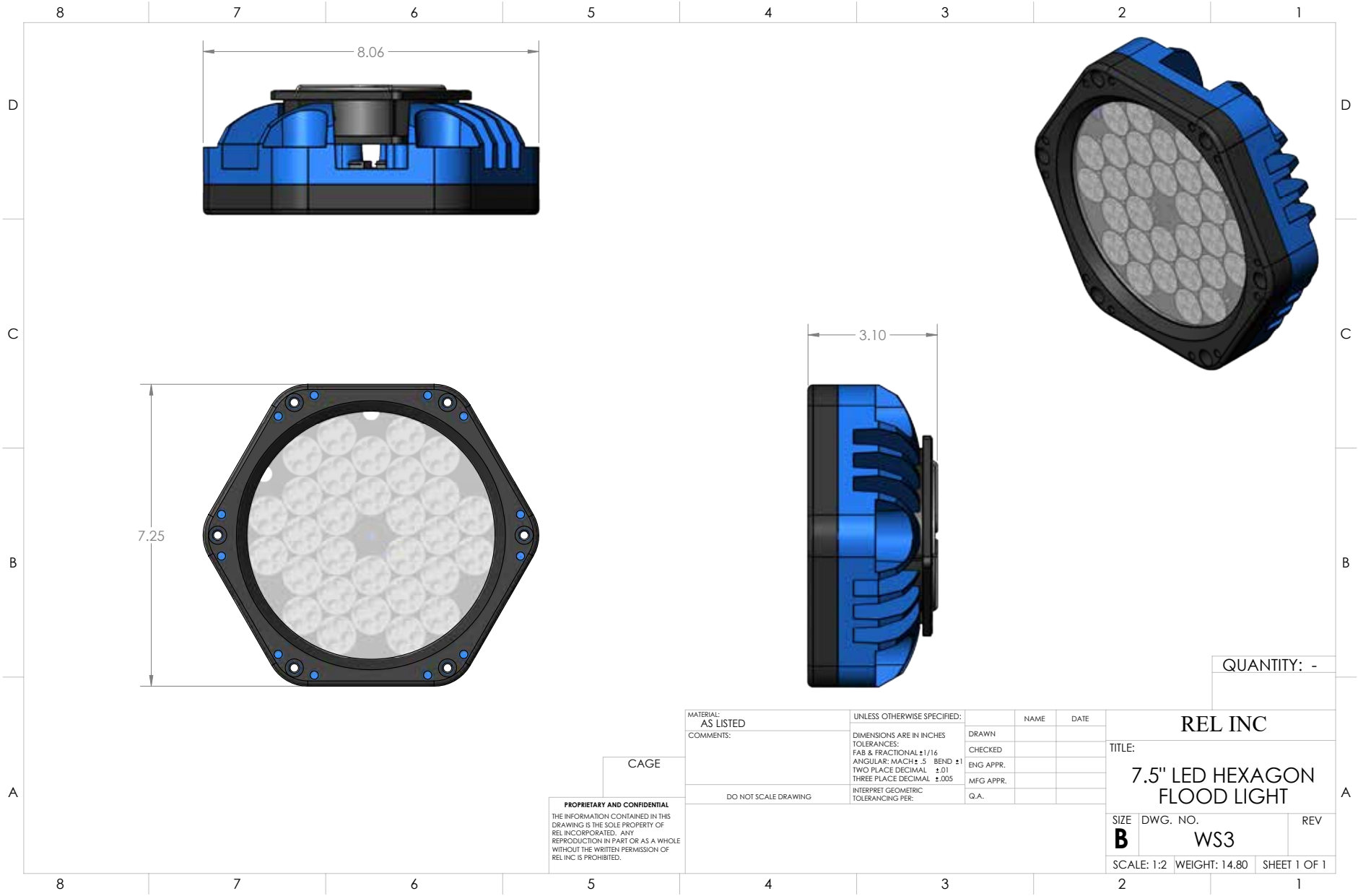




WS3

7.5" LED HEXAGON





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REL INC		
TITLE:		
7.5" LED HEXAGON FLOOD LIGHT		
SIZE B	DWG. NO. WS3	REV
SCALE: 1:2	WEIGHT: 14.80	SHEET 1 OF 1

QUANTITY: -

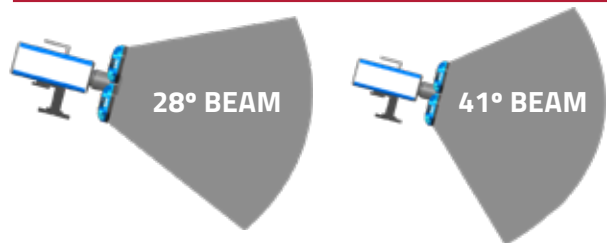
WS3

Our WS3 light module is the core of REL's Visible Spectrum LED floodlighting solutions. This unit packs an extraordinary amount of power and versatility into a compact, durable, machined, military-grade aluminum housing unit that can withstand the rigors of dynamic test labs. Flying debris welcome!

EQUIPMENT HIGHLIGHTS

- ▲ 9.2k lux (66k lumens) at 4m peak continuous capacity using the PS1 power supply
- ▲ 29.5k lux (211k lumens) at 4m peak burst capacity using the PS4 power supply with on WS3
- ▲ WS3-PS4-K4: 106k lux (760k lumens) at 4m peak burst capacity using the PS4 power supply with 4 - WS3'S
- ▲ Includes Magnetic Laser Alignment Sight for quick and accurate light beam focus
- ▲ Thermal shut off protection
- ▲ Tripod ready and featuring 1/4-20 machined holes for a variety of mounting options
- ▲ 1.9m FWHM spot at 4m
- ▲ Up to 50' cord length
- ▲ 28 deg beam (WS3) 41 deg beam (WS3-41)
- ▲ Dimensions: 7.25"W x 8"H
- ▲ Weight: 5.8 lbs.

BEAM PROFILE



1. Array features
2. CG2-100 Controller
3. Magnetic Laser Alignment Sight







WS3-PS4-K2

- ▲ 2 - 7.5" LED Hexagon 28 Degree Flood Light Modules
- ▲ 54 Volt, 4 Channel, 20kW output capacitive burst power supply w/ dimming
- ▲ CG2-100 Controller
- ▲ 0-10V Trigger and Fan Override
- ▲ Magnetic Laser Alignment Sight
- ▲ 2 - TRM-100 Tripod Kits
- ▲ Pelican case





WS3-K

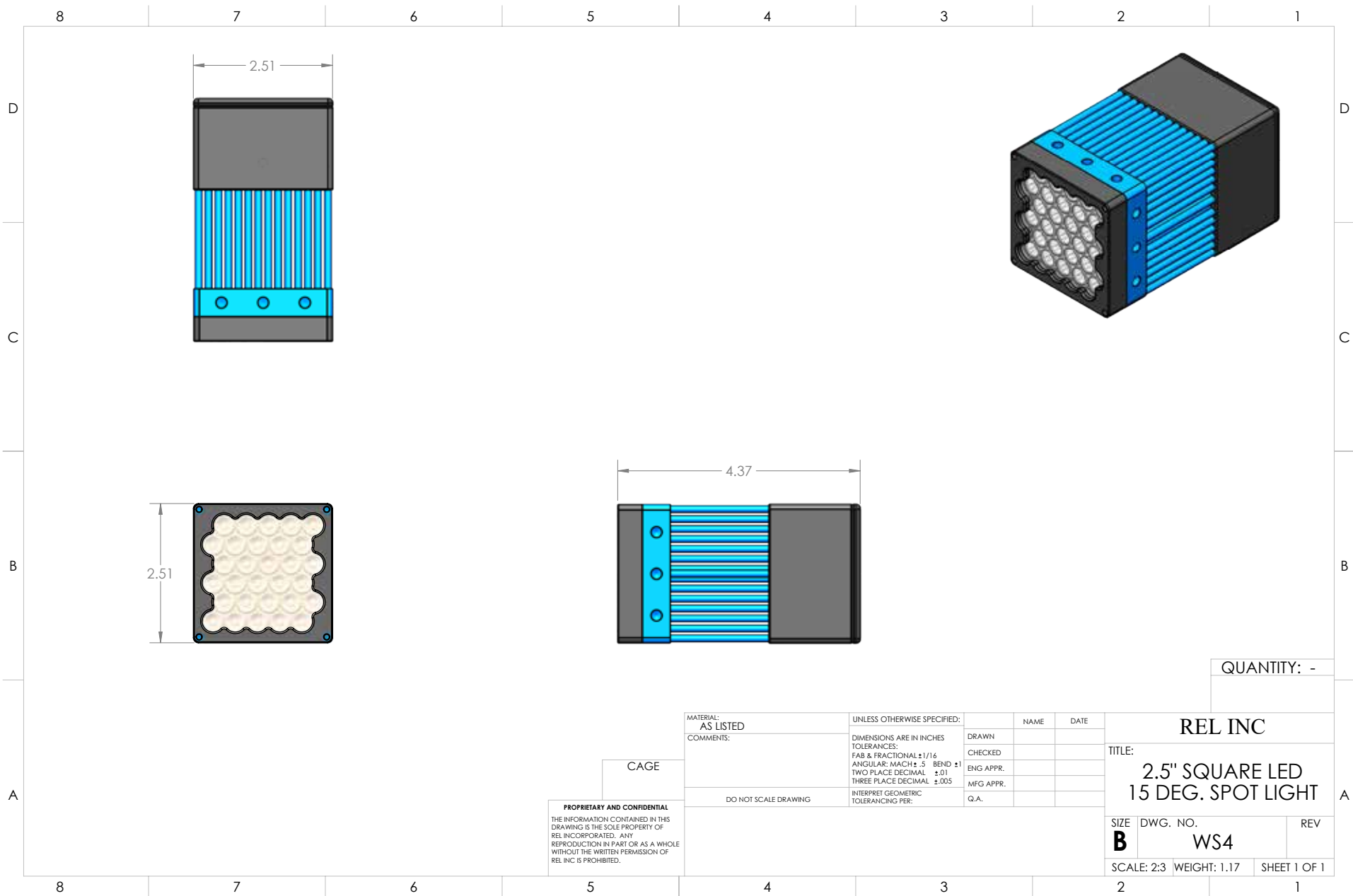
- ▲ 7.5" LED Hexagon 28 Degree Flood Light Module
- ▲ 54 Volt 600W continuous power supply
- ▲ TRM-100 Tripod Kit



WS4

2.5" LED SQUARE





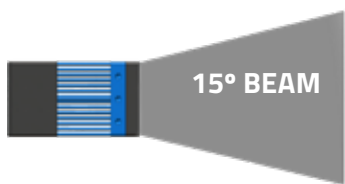
WS4

The WS4 light module is a compact and versatile high intensity light source for high speed video applications. Its high efficiency pin-fin fan-sink design allows for continuous duty light power densities that were previously only available with burst mode power supplies. This feature allows simplified on-off control while remaining compact and quiet. The WS4 light module has an assortment of standardized mounting points on each side that allows it to be used individually with common tripods and ram mounts, or linked together in larger patterns with custom mounts. With a standard beam angle of 15 deg with options for angles up to 60 deg and custom color emitters, the WS4 can be tuned or scaled to any application.

EQUIPMENT HIGHLIGHTS

- ▲ 225W continuous output
- ▲ 16,000 lumen
- ▲ 15 deg beam
- ▲ 40" spot at 4m
- ▲ 164k Candela
- ▲ 10.5k lux at 4m
- ▲ Dimensions: 2.5" x 2.5" x 4.24"
- ▲ Weight: 1.2 lbs.

BEAM PROFILE



1. Compact light for your high speed event
2. Dimming switch
3. Array features



WS4-K

- ▲ 2.5" LED square 15 deg spot light module
- ▲ PS5 225W power supply with dimming switch
- ▲ TRM-100 Tripod Kit
- ▲ 20' extension cord
- ▲ Pelican case



WS4-K2

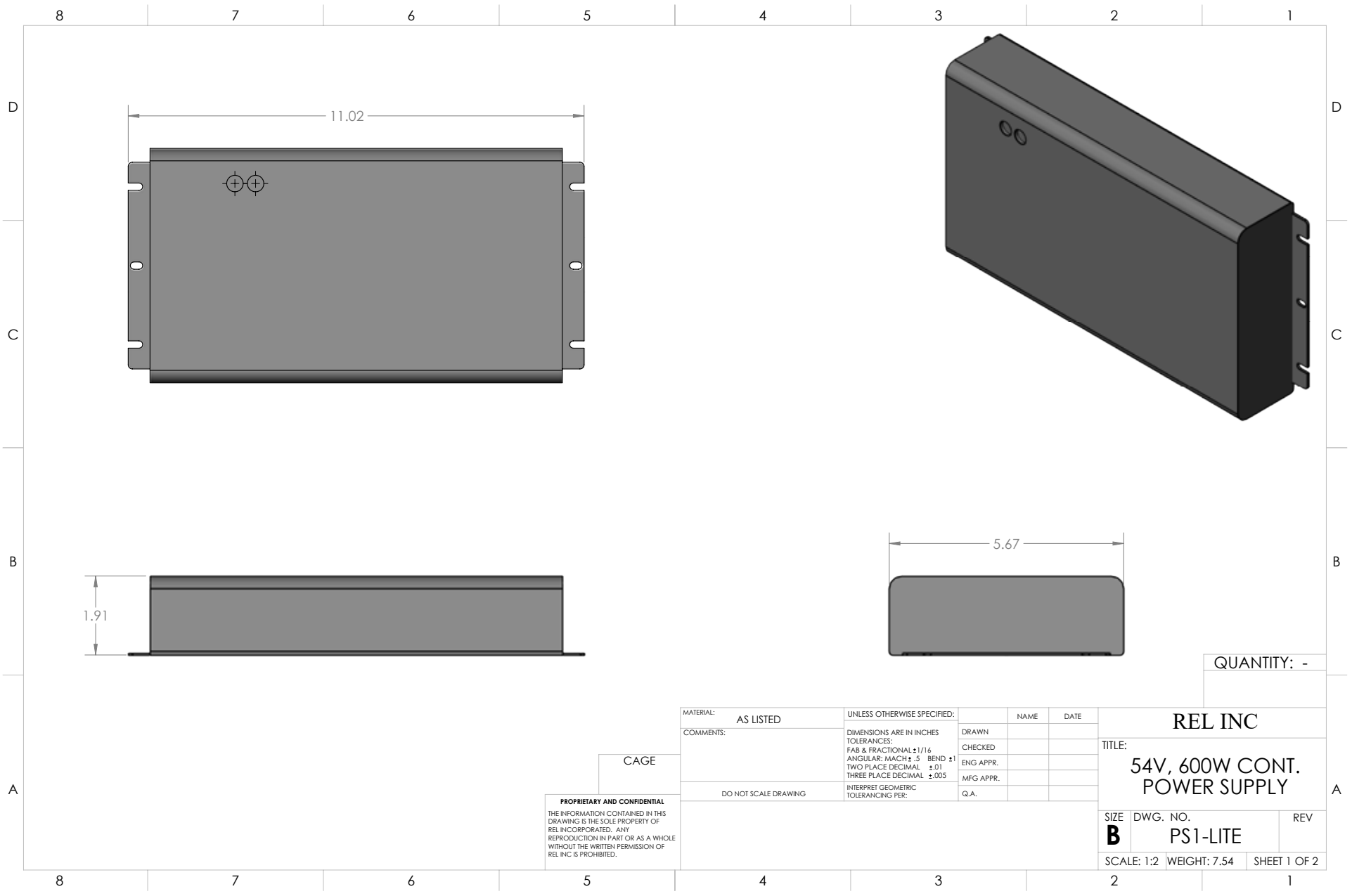
- ▲ 2 - 2.5" LED square 15 deg spot light modules
- ▲ 2 - PS5 225W power supplies with dimming switches
- ▲ 2 - TRM-100 Tripod Kits
- ▲ 2 - 20' extension cords
- ▲ Pelican case





POWER SUPPLIES





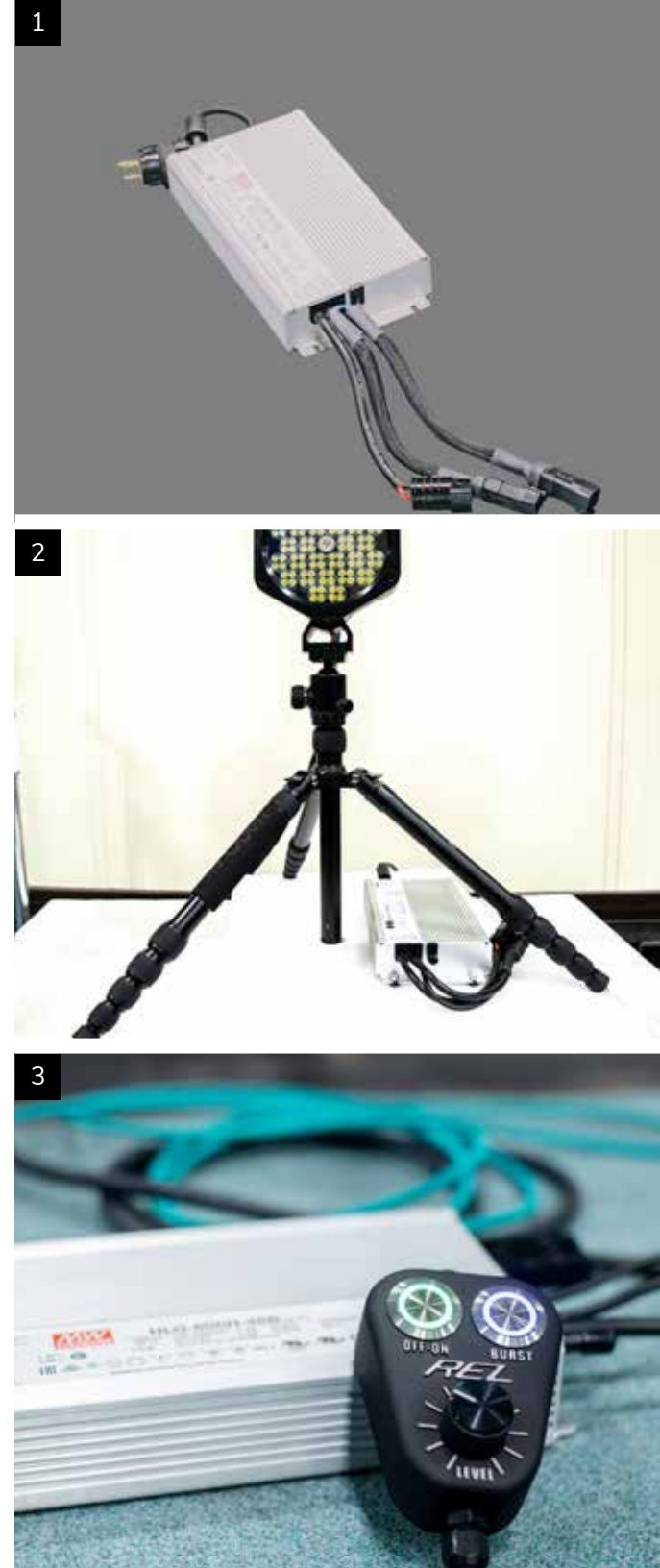
PS1-LITE

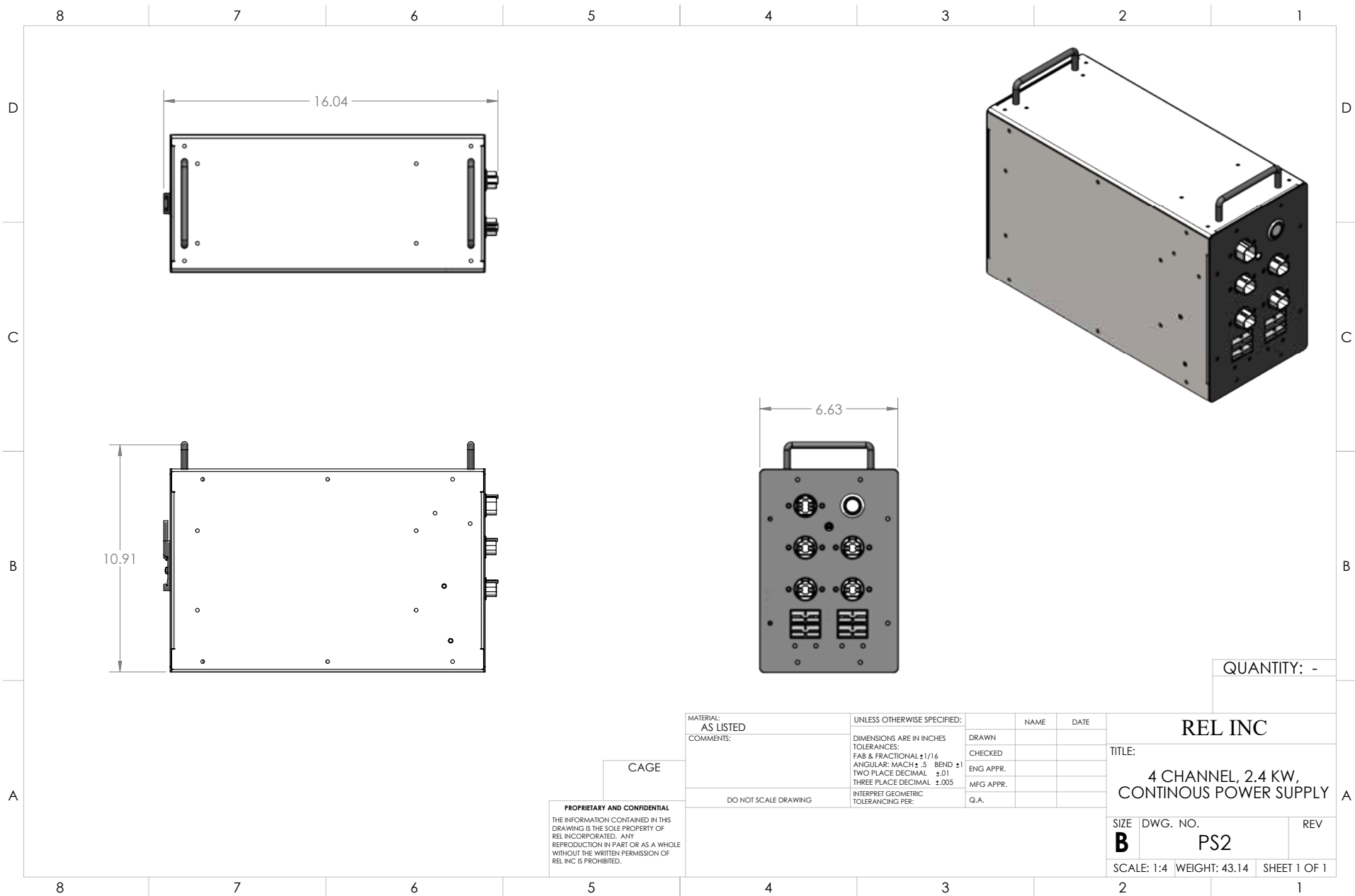
The PS1-LITE power supply is a continuous duty, flicker free, 54 Volt power supply for the WS3 LED light head. This power supply provides maximum power when plugged into a 120 Volt power supply. There is a dim switch included for light and camera setup purposes where full output is not desired. The PS1-LITE is available in multiple voltages depending on the REL Visible Spectrum LED lighting product chosen. The PS1-LITE-36 powers the WS1 and the PS1-LITE-48 powers the WS2.

HIGHLIGHTS

- ▲ Compact 7" x 6" x 2"
- ▲ 54 Volt 600W continuous power output
- ▲ On/Off control
- ▲ Used to power WS1 and WS3 modules

1. Compact power supply for your lighting needs
2. PS1-Lite paired with WS3
3. Dimming CG2-100 Controller





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		ENG APPR.		
		MFG APPR.		
		Q.A.		

DO NOT SCALE DRAWING

REL INC

TITLE:
4 CHANNEL, 2.4 KW,
CONTINUOUS POWER SUPPLY

SIZE	DWG. NO.	REV
B	PS2	

SCALE: 1:4	WEIGHT: 43.14	SHEET 1 OF 1
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QUANTITY: -

PS2

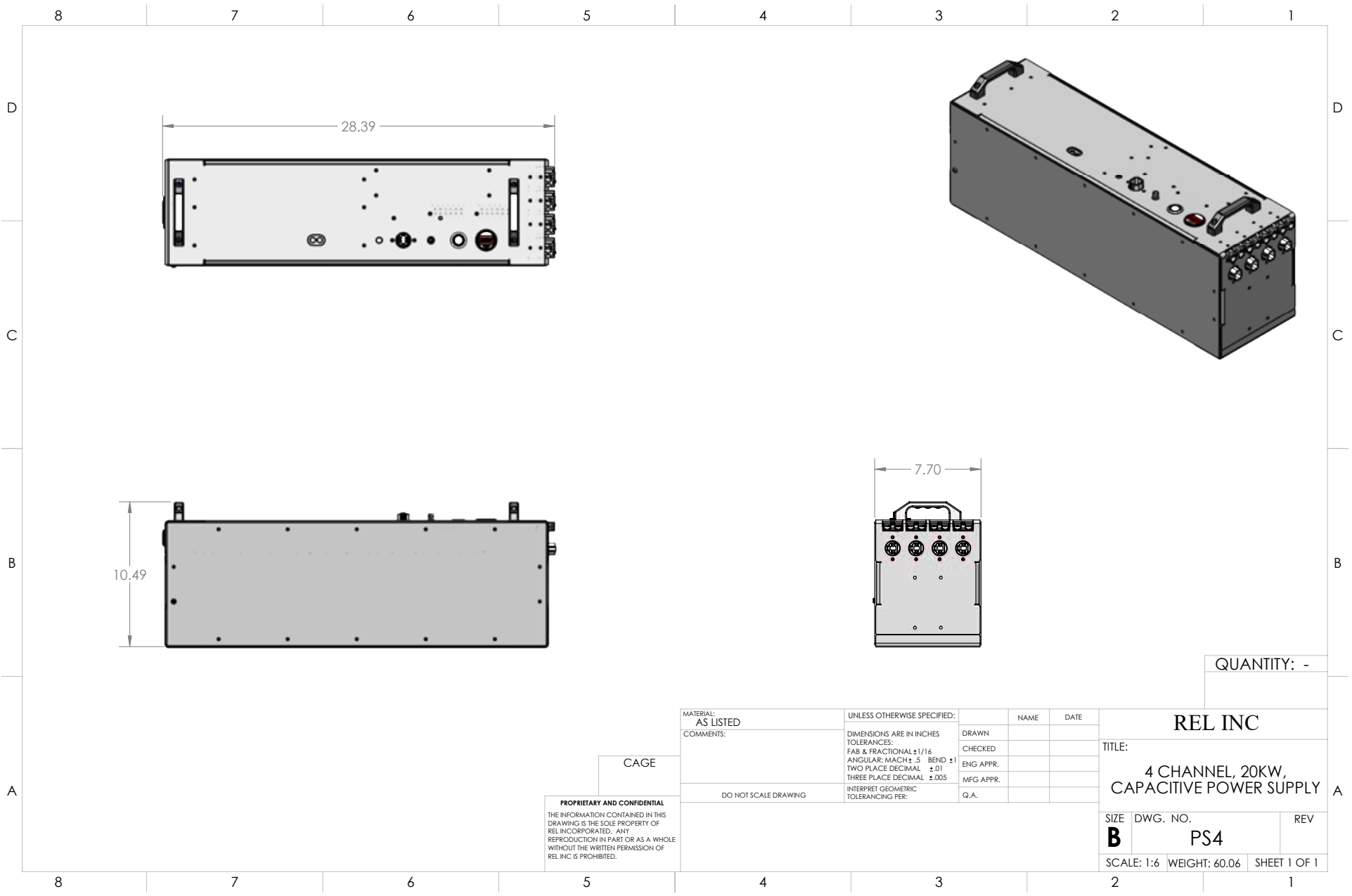
The PS2 power supply is a continuous duty, flicker free, 4 channel (this power supply will power 1 to 4 WS3 light heads) 54 Volt power supply for the WS3 LED light Head. This power supply provides maximum power when triggered while being plugged into a 120 Volt power supply and the dimmable controller is set all the way clockwise. This power supply can also be triggered by a 10 volt signal connected via BNC cable to the trigger port. The fan override switch will turn off the cooling fans for ultra-quiet operation. CAUTION: The duty cycle of the WS3 light head with the cooling fan override switch engaged drops to 20% attached to the PS2 power supply. The PS2 is also available in 48 Volts for the REL WS2 light head.

HIGHLIGHTS

- ▲ 54 Volt 2.4kW output with dimming CG2-100 Controller
- ▲ 4 Channels
- ▲ 0-10V Trigger and fan override
- ▲ Used to power WS3 Modules

1. Powers multiple lights
2. PS2 shown with 4 WS2 light modules
3. Dimming CG2-100 Controller





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		ENG APPR.		
		MFG APPR.		
		Q.A.		
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REL INC		
TITLE:		
4 CHANNEL, 20KW, CAPACITIVE POWER SUPPLY		
SIZE	DWG. NO.	REV
B	PS4	
SCALE: 1:6	WEIGHT: 60.06	SHEET 1 OF 1

PS4

The PS4 power supply is a capacitive burst, flicker free, 4 channel (this power supply will power 1 to 4 WS3 light heads) 54 Volt power supply for the WS3 LED light head. This power supply provides maximum power when triggered after being plugged into a 120 Volt power supply and the power supply is charged to 57 volts. Triggering can be accomplished by either sending a 10 volt signal via the BNC trigger port or by manually pressing the burst button. The fan override switch will turn off the cooling fans for ultra-quiet operation. CAUTION: The duty cycle of the WS3 light head with the cooling fan override switch engaged drops to 10% with the PS4 power supply.

HIGHLIGHTS

- ▲ 20kW output capacitive burst power supply
- ▲ 4 Channels
- ▲ 0-10V Trigger and fan override
- ▲ Dimming CG2-100 Controller
- ▲ Used to power WS3 Modules

-
1. Powers multiple lights
 2. PS4 shown with 4 WS3 light modules
 3. Dimming CG2-100 Controller





WS SERIES OUTPUT DATA

Kit-Model #	Power Supply (# of Lamps in Kit)	Lamp voltage	Power Output	Beam Angle	Candela	Lumen	Intensity	Spot Diameter	Distance
WS1-K	PS1-36V	36 Volts	600W	-	-	50k	10 M lux	25mm	300mm
WS2-K	PS1-48V	48 Volts	600W	4 Deg	2400k	60k	150 k lux	0.3m	4m
WS2-K4	PS2-48V	48 Volts	2400W	4 Deg	9600k	240k	600 k lux	0.3m	4m
WS3-K	PS1-LITE	54 Volts	600W	27 Deg	147k	66k	9.2 k lux	1.9m	4m
WS3-K2	PS2 (2xWS3)	54 Volts	1200W	27 Deg	294k	132k	18.4 k lux	1.9m	4m
WS3-K4	PS2 (4xWS3)	54 Volts	2400W	27 Deg	588k	264k	37 k lux	1.9m	4m
WS3-41-K	PS1-LITE	54 Volts	600W	41 Deg	58k	66k	3.6k lux	3.0m	4m
WS3-41-K2	PS2 (2xWS3)	54 Volts	1200W	41 Deg	116k	132k	7.2k lux	3.0m	4m
WS3-41-K4	PS2 (4xWS3)	54 Volts	2400W	41 Deg	232k	264k	14.4k lux	3.0m	4m
WS3-PS4-K	PS4	54 Volts	3.5kW	27 Deg	472k	211k	29.5k lux	1.9m	4m
WS3-PS4-K2	PS4 (2xWS3)	54 Volts	6kW	27 Deg	880k	394k	55k lux	1.9m	4m
WS3-PS4-K4	PS4 (4xWS3)	54 Volts	11kW	27 Deg	1696k	760k	106k lux	1.9m	4m
WS4-K	PS5	54 Volts	240W	15 Deg	164k	16k	10.5k lux	1.0m	4m





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