

A close-up, high-angle view of a black LED ring light. The ring is composed of many small, clear, spherical LED chips arranged in a circular pattern. The ring is illuminated from within, creating a bright white glow in the center. The background is a plain, light color.

# LED RING LIGHTS CATALOG



## ILLUMINATION MATTERS

TechniQuip's line of ring lights enable discovery. Designed for usability and enhanced performance, all of our ring lights are designed and built in Pleasanton, CA.

From LED and fiber optic illumination to full systems, TechniQuip believes illumination matters, partnering with OEMs in semiconductor, medical devices and microscopy applications to create high-performing solutions.



# LED RING QUICK SELECTION GUIDE



	PROLINE 438	PROLINE 344	SLIMLINE	PROLINE 466	PROLINE 866	PROLINE 882	PROMAX 882
INTERIOR DIAMETER	38	44	66	66	66	82	82
NUMBER OF LEDS	40	30	40	40	80	80	80
FOR MORE INFO SEE	PAGE 7	PAGE 8	PAGE 19-22	PAGE 9-10	PAGE 11-14	PAGE 15	PAGE 16
WHITE LIGHT OPTIONS	DAYLIGHT, COOL WHITE, WARM WHITE						
NARROW BAND OPTIONS	COLORS			COLORS, UV, NIR			
MINIMUM WORKING DISTANCE	58 MM	62 MM	62 MM	62 MM	75 MM	75 MM	5 MM
NUMBER OF CONTROLLED BANKS	0 / 4	0 / 3	1	0 / 4	8	8	8
NUMBER OF DIMMING ZONES	1	1	1	1	2	2	2
ELECTRO STATIC SAFE	OPTIONAL	OPTIONAL	OPTIONAL	N/A	OPTIONAL	OPTIONAL	OPTIONAL
RING HOUSING	HIGH STRENGTH ALUMINUM ALLOY		ADVANCED POLYMERS / METAL MOUNTING RING	HIGH STRENGTH ALUMINUM ALLOY			
CONTROLLER HOUSING	POLYMER						
POWER SUPPLY TYPE	WALL OR DESKTOP						
POWER CORDS	WIDE RANGE						

\* SOME COMBINATIONS NOT AVAILABLE FOR ALL MODELS. CONSULT APPROPRIATE PRICE LIST SECTION FOR DETAILS.

\* SHORTER WORKING DISTANCES POSSIBLE WHEN OUTFITTED WITH WIDE ANGLE LEDS.



# LED RING LIGHTS **PROLINE SERIES**

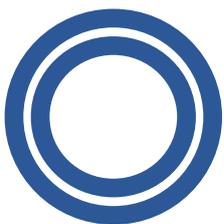
# PROLINE POWER

ProLine is microscope lighting for the professional. Precision engineered and machined metal housings keep the LEDs aligned and properly cooled for years of use. Simple and intuitive controls make the Series a logical extension of your microscope.



## DESIGNED BY PROFESSIONALS FOR PROFESSIONALS

- A Complete Line Ranging from 38 mm to 82 mm
- Separately Controllable Banks for Precise Effects
- Configurable for a Wide Range of Working Distances
- Configurable in UV, Colors, IR, Visible and Hybrids
- Electro-Static Safe Options
- Remote Controllable Options



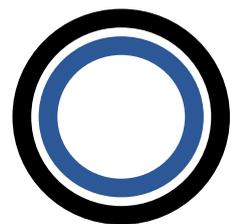
ALL LED QUADRANTS  
TURNED ON



OPPOSING  
QUADRANTS



OPPOSING  
HALVES



INNER OR OUTER  
QUADRANTS

# PROLINE 438



## 38 MM / 40 LEDS

The smallest diameter unit in the ProLine Series is the ProLine 438. This unit has a 38 mm inside diameter and is designed to fit onto zoom and fixed lenses commonly used for automated imaging.

## ULTRAVIOLET / COLORS

ProLine 438 can be outfitted with a wide range of different spectral options including ultraviolet.

## COMPACT CONTROLLER

Single Dimmer Control  
Available 0 or 4 Segment Control  
Available with Global Input Power Supply



## COMMON MODELS

ITEM	DESCRIPTION
P438DS4XXW	PROLINE 438, 38 MM, DAYLIGHT, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P438CS4XXW	PROLINE 438, 38 MM, COOL WHITE, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P438WS4XXW	PROLINE 40, 38 MM, WARM WHITE, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P438US4XXW	PROLINE 40, 38 MM, UV, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG

# PROLINE 344



## 44 MM / 30 LEDS

This unit has a 44 mm opening and is specifically designed to fit onto zoom and fixed optics commonly used for machine vision and automated imaging applications.



## CONTROLLER

Single Dimmer Control  
Available 0 or 3 Segment Control  
120 Degree Segment Control  
Available with Global Input Power Supply

## COMMON MODELS

ITEM	DESCRIPTION
P344DS3XXW	PROLINE 30, 44 MM, DAYLIGHT, STANDARD WORKING DISTANCE, 3 SEGMENTS, USA PLUG
P344CS3XXW	PROLINE 30, 44 MM, COOL WHITE, STANDARD WORKING DISTANCE, 3 SEGMENTS, USA PLUG
P344WS3XXW	PROLINE 30, 44 MM, WARM WHITE, STANDARD WORKING DISTANCE, 3 SEGMENTS, USA PLUG
P344US3XXW	PROLINE 30, 44 MM, COOL WHITE, STANDARD WORKING DISTANCE, 3 SEGMENTS, USA PLUG

# PROLINE 466



## 66 MM / 40 LEDS

The ProLine 40 is the workhorse of industrial microscopy. Featuring 40 powerful LED precision aligned in a machined housing for ideal shadow free illumination. Made In The USA.



## PROLINE 40 CONTROLLER

Single Dimmer Control  
Available 0 or 4 Segment Control  
90 Degree Segment Control  
Available with Global Input Power Supply

## COMMON MODELS

ITEM	DESCRIPTION
P466DS4XXW	PROLINE 40, 66 MM, DAYLIGHT, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P466CS4XXW	PROLINE 40, 66 MM, COOL WHITE, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P466WS4XXW	PROLINE 40, 66 MM, WARM WHITE, STANDARD WORKING DISTANCE, 4 SEGMENTS, USA PLUG
P466US4XXW	PROLINE 40, 66 MM, UV, STANDARD WORKING DISTANCE, 4 SEGMENT CONTROL

# PROLINE 466 UV

## ULTRAVIOLET

Ever since August Köhler and Moritz von Rohr pioneered the use of ultraviolet light in microscopy, scientists and other professionals have been deploying the technique to address a range of difficult imaging applications. We support this effort by making UV versions of many of our products, including the ProLine 466.



## COLOR (NARROW SPECTRUM)

ProLine 466, like most of our ProLine Series, can be fitted with LEDs that only emit in a narrow spectral band (color). Contact us with your requirements.

# PROLINE 866 HDMI



## 66 MM / 80 LEDS

The ProLine 866 features 80 powerful and precision aligned LED's for shadow free illumination across a wide range of working distances. Dual dimmers and up to 8 separately controllable banks provide excellent control over the illumination. The proprietary controller is designed for durability and to provides a DC supply that eliminates flicker or strobing effects. An auto voltage sensing 100 - 240 VAC power supply is included. Made In The USA.



## KEY FEATURES

- HDMI Cable Between Ring and Controller
- Dual Dimmers
- 8 Separately Controllable Banks
- 90 degree Segment Control
- Auto Voltage Sensing Power Supply

## COMMON HDMI CABLE MODELS

ITEM	DESCRIPTION
P866DS8XXW	PROLINE 866, 66 MM, DAYLIGHT, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P866CS8XXW	PROLINE 866, 66 MM, COOL WHITE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P866WS8XXW	PROLINE 866, 66 MM, WARM WHITE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P866US8XXW	PROLINE 866, 66 MM, UV, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P866ZS8XXW-UV/D	PROLINE 866, 66 MM, UV / VISIBLE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, USA PLUG

# PROLINE 866 9-PIN



## COMMON 9-PIN CABLE MODELS

ITEM	DESCRIPTION
P866DS8XRW	PROLINE 866, 66 MM, DAYLIGHT, 9 PIN CABLE, STD WORKING DIST., 8 SEGMENTS, USA PLUG
P866CS8XRW	PROLINE 866, 66 MM, COOL WHITE, 9 PIN CABLE, STD WORKING DIST., 8 SEGMENTS, USA PLUG
P866WS8XRW	PROLINE 866, 66 MM, UV, 9 PIN CABLE, STD WORKING DIST., 8 SEGMENTS, USA PLUG
P866ZS8X-RW-UV/D	PROLINE 866, 66 MM, UV/VISIBLE, 9 PIN CABLE, STD WORKING DIST., 8 SEGMENTS, USA PLUG
P866ZS8XRW	PROLINE 80, 66 MM, WARM WHITE, 9 PIN CABLE, STD WORKING DIST., 8 SEGMENTS, USA PLUG

## KEY DIFFERENCE FROM P866-HDMI

The 9 Pin version of the Proline 866 comes with a tethered 9 pin cable. This is ideal for fixed applications having regular motion.

# PROLINE 866 ESD



## WHAT IS ESD?

ESD is the transfer of electric charge that occurs when two objects charged to a different potential are brought together. The resulting discharge can damage sensitive components in many industries giving rise to the need for “ESD SAFE” or “ESD Compliant” products.



## PROPRIETARY ESD SAFE COATINGS

ProLine ESD Safe models are carefully constructed by starting with an aluminum alloy that is precision machined. These parts are then subjected to a multi-step proprietary coating process that both protects the alloy and preserves surface electrical conductivity.

## PROLINE 80 66 MM I.D. RING HDMI MODELS

ITEM	DESCRIPTION
P866DS8EXW	PROLINE 866, 66 MM, DAYLIGHT, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, ESD, USA PLUG
P866CS8EXW	PROLINE 866, 66 MM, COOL WHITE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, ESD, USA PLUG
P866WS8EXW	PROLINE 866, 66 MM, WARM WHITE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, ESD, USA PLUG
P866US8EXW	PROLINE 866, 66 MM, UV, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, ESD, USA PLUG
P866Z-S8EXW-UV/V	PROLINE 866, 66 MM, UV / VISIBLE, HDMI, STD WORKING DISTANCE, 8 SEGMENTS, ESD, USA PLUG

# PROLINE 866 UV

## CREATE THE LIGHT YOU NEED

The true advantage of the ProLine 866 UV is its ability to be outfitted with a mix of visible and ultraviolet LEDs. The ability to switch rapidly from visible to UV increases the productivity and effectiveness of many types of inspection or imaging task.

## WE SPECIALIZE IN ULTRAVIOLET AND HYBRID CONFIGURATIONS

Many imaging applications benefit from being illuminated with ultraviolet light. Being able to switch from visible to uv and back quickly is a tremendous advantage offered by ProLine.

# PROLINE 882



## LONG WORKING DISTANCE

Choose this version for longer working distance 82 mm applications. Choose Promax for short working distance applications.



## 82 MM I.D. (3.23" I.D.) 80 LED'S

The Proline 80 Series is also available with an 82mm I.D. which makes it ideal for mounting on large diameter optics typically found on high end research stereo microscopes. The 82mm version is equipped with all of the same features and offerings found on the standard 66 mm version including a choice of Daylight, Cool White, Warm White, UV and ESD models. Made In the USA.

ITEM	DESCRIPTION
P882DS8XXW	PROLINE 80, 82 MM, DAYLIGHT, STANDARD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P882CS8XXW	PROLINE 80, 82 MM, COOL WHITE, STANDARD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P882WS8XXW	PROLINE 80, 82 MM, WARM WHITE, STANDARD WORKING DISTANCE, 8 SEGMENTS, USA PLUG
P882US8XXW	PROLINE 80, 82 MM, UV, STANDARD WORKING DISTANCE, 8 SEGMENTS, USA PLUG

# PROMAX 882 SERIES



## 82 MM / 80 LEDS

The ProMax 882 is uniquely designed to fit on specific large diameter / high magnification stereo microscopes. These requirements dictate an unusually thin wall and beam angles that provide illumination as close as 3 mm from the edge of the LED ring.

## SHORT WORKING DISTANCE

Choose this version for short working distance 82 mm applications. Choose Proline 882 for longer working distance applications.

## COMMON PROMAX MODELS

ITEM	DESCRIPTION
MAX882DW8XRW	PROMAX 80, 82 MM, DAYLIGHT, SHORT WORKING DISTANCE, 8 SEGMENTS, USA PLUG
MAX882UW8XRW	PROMAX 80, 82 MM, UV, STANDARD WORKING DISTANCE, 8 SEGMENTS, USA PLUG

## OPTIONS

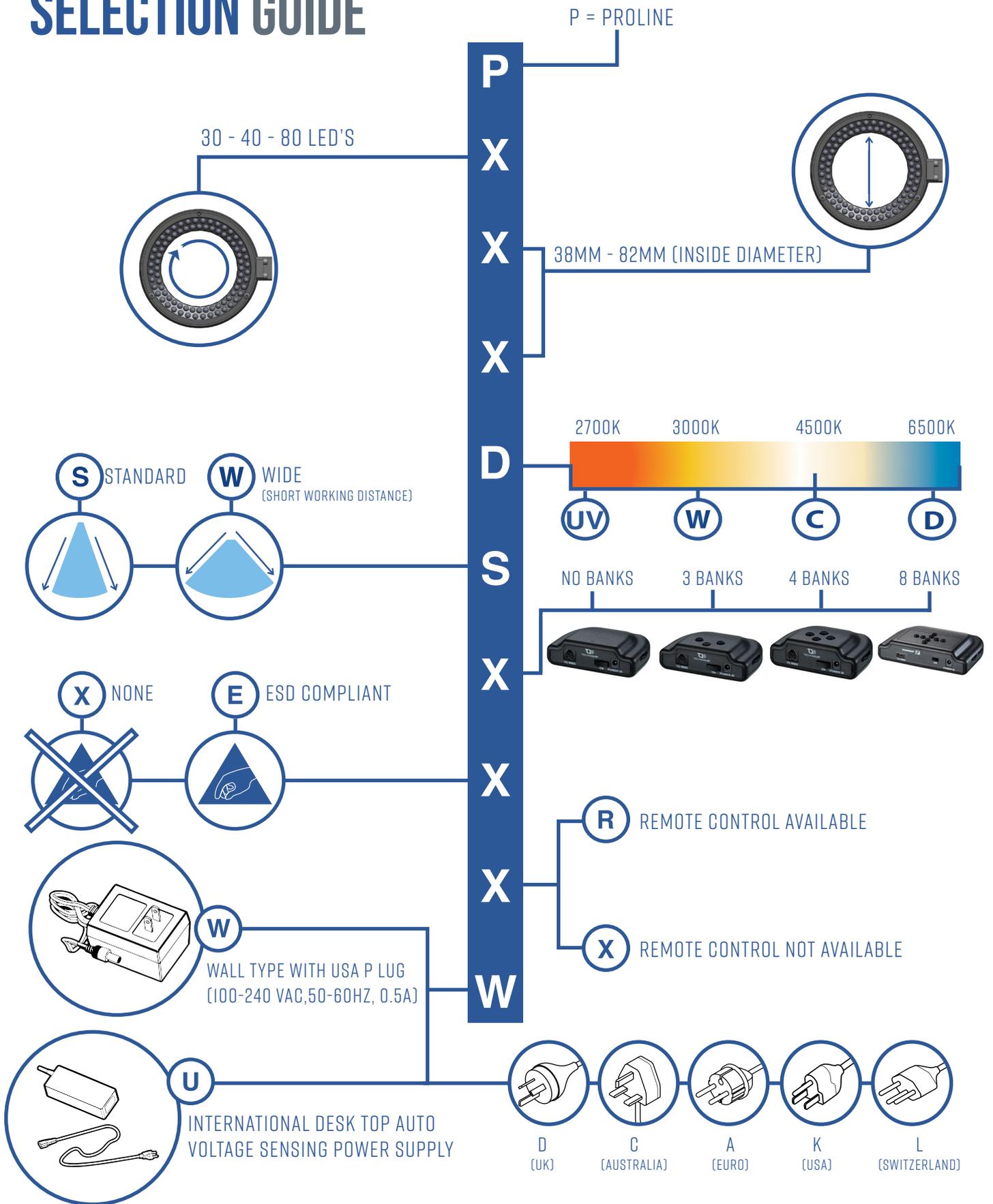
The ProMax 882 can be equipped with a range of LEDs but is most commonly outfitted with wide angle daylight LEDs. ProMax can be made in an ESD Safe configuration.



## THE "LOBSTER CLAW"

Every ProMax is fitted with a unique single point locking mechanism. This mechanism allows for rapid connection to the microscope. The ProMax 882 also comes with standard thumbscrews / set screws.

# PROLINE SERIES SELECTION GUIDE



# POLARIZER / ANALYZER KITS

# PROLINE



**POLARIZER KIT PROLINE 40**

## TYPICAL SETUP

Proline series polarizer / analyzer kits consist of several parts - an inner cone to hold the fixed polarizer in place and block stray light and a rotating analyzer assembly that fits underneath the led ring.

ITEM	FOR USE ON
P40-PLZR-KIT	PROLINE 466 SERIES
P80-PLZR-KIT	PROLINE 866 AND 882 SERIES



**POLARIZER KIT PROLINE 80**

# LED RING LIGHT SERIES SLIMLINE

## PERFORMANCE

Flicker-free focused illumination

## DURABILITY

Rugged housing and mount designed for years of use

## ADAPTABILITY

Full line of adapters, splash guards, diffusers and polarizers and analyzers



# SLIMLINE STANDARD / ESD

## COMMON MODELS

ITEM	DESCRIPTION
S466DSXXXW	SLIMLINE, 66 MM I.D., DAYLIGHT, STANDARD WORKING DISTANCE, USA PLUG
S466CSXXXW	SLIMLINE, 66 MM I.D. COOL WHITE, STANDARD WORKING DISTANCE, USA PLUG
S466WSXXXW	SLIMLINE, 66MM I.D., WARM WHITE, STANDARD WORKING DISTANCE, USA PLUG
S466DSXEXW	SLIMLINE, 66 MM I.D., DAYLIGHT, STANDARD WORKING DISTANCE, ESD, USA PLUG



### ESD COMPLIANT VERSION

The Slimline is available in an ESD compliant configuration which comes complete with a coiled tethered cord for direct connection to most ESD pads.



# SLIMLINE SERIES SELECTION GUIDE

S = SLIMLINE

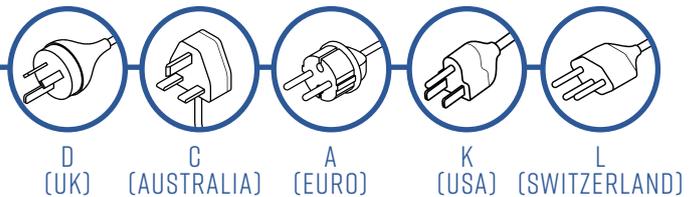
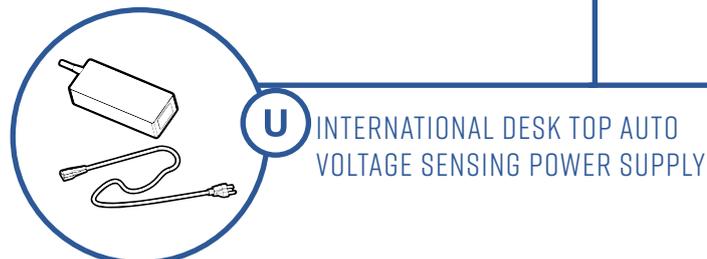
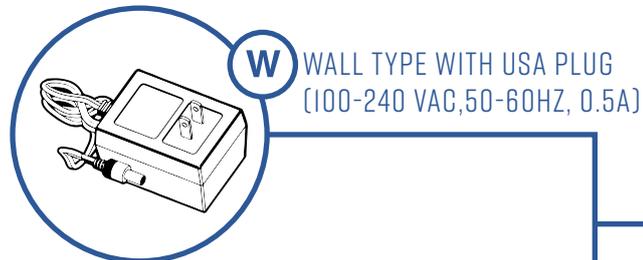
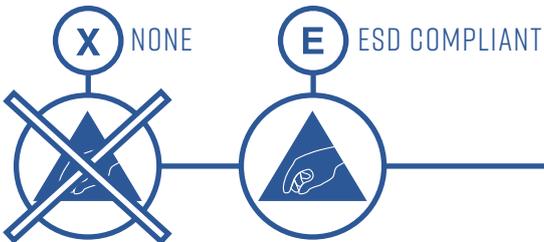
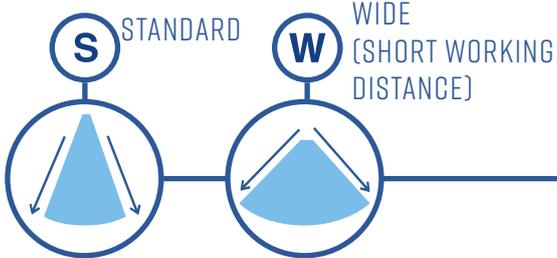
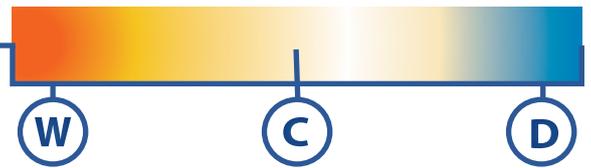


66MM - (INSIDE DIAMETER)

40 LED'S

**S**  
**4**  
**X**  
**X**  
**D**  
**S**  
**X**  
**X**  
**X**  
**W**

CORRECTED COLOR TEMPERATURE UV



RESERVED (NOT USED)

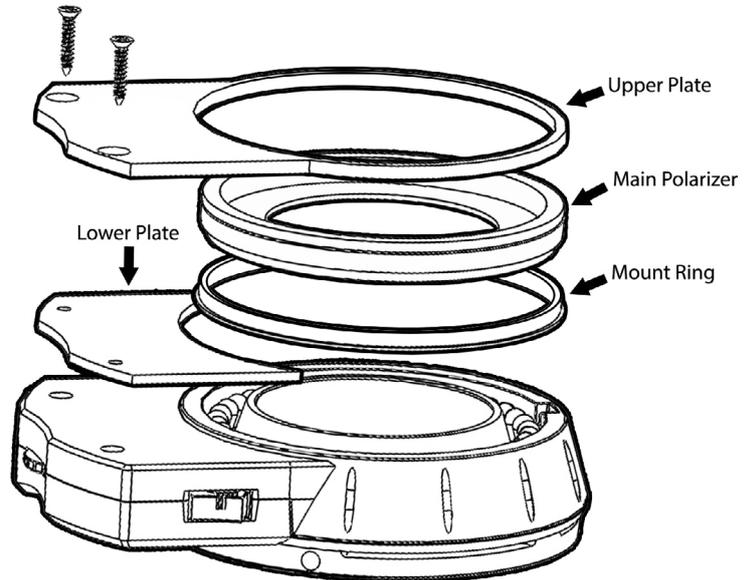
RESERVED (NOT USED)

# POLARIZER / ANALYZER KITS

# SLIMLINE



**POLARIZER KIT SLIMLINE**



INSTALLATION ON A SLIMLINE  
THE DIAGRAM BELOW SHOWS HOW  
TO INSTALL A POLARIZER / ANALYZER  
KIT ONTO A SLIMLINE SERIES LED RING  
LIGHT

S40-PLZR-KIT IS FOR USE  
ON SLIMLINE SERIES



## ASSESSORIES FOR LED RINGS

MADE IN USA

CE

### DIFFUSERS (FOR SOFTENING POINT OF LIGHT)

FITS ALL SLIMLINE SERIES	106-604-0044D
FITS ALLPROLINE 40 SERIES	106-600-0008
FITS ALL PROLINE 866 SERIES	106-625-0003

USA

CE

### SPLASH GUARDS (CLEAR LED COVERS)

FITS ALL SLIMLINE SERIES	106-604-0044
FITS ALL PROLINE 40 SERIES	106-600-0004
FITS ALL PROLINE 800 SERIES	106-600-0018

USA

CE

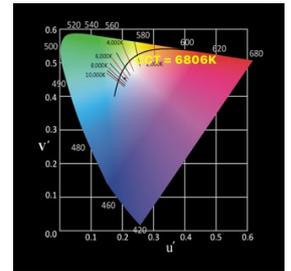
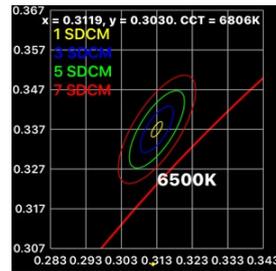
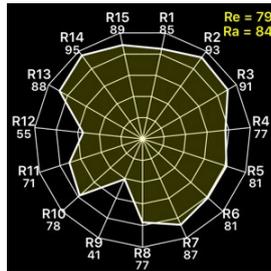
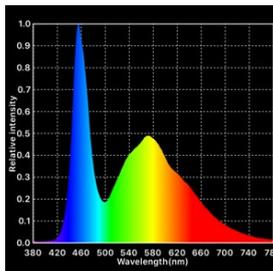
# PRECISION LEDS OPTIMIZE YOUR IMAGE

## SELECT THE LIGHT YOU PREFER

Humans vary quite a bit in how they perceive white light, some prefer warmer whites. Others want the maximum flux and bluish tint of daylight whites. We make it easy to configure your ring as you see fit. Colors, multi-spectral, SWIR (short wave infra-red) are all requirements we regularly meet. We can control to your exacting specifications. Share your specific requirements with us!

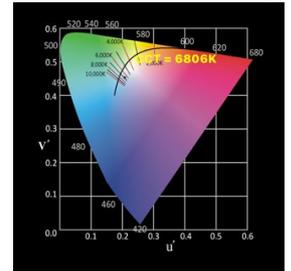
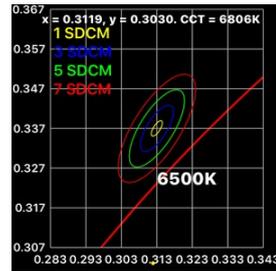
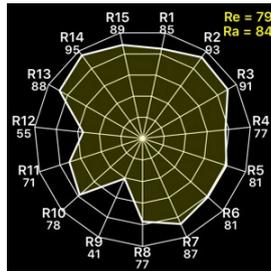
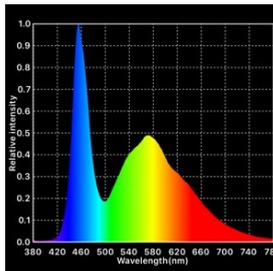
**TYPICAL CCT RANGE 5600 - 7500 / TYPICAL CRI 85 - TYPICAL CQS 74 - DOMINANT AT 458 NM**

DAYLIGHT WHITE  
[TYPICAL]



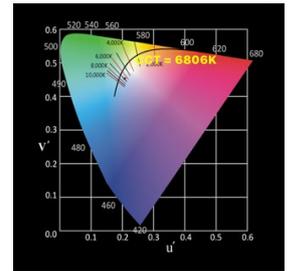
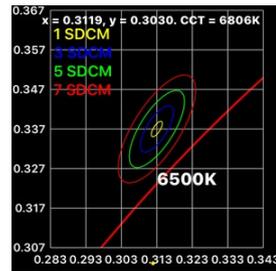
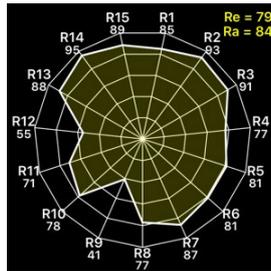
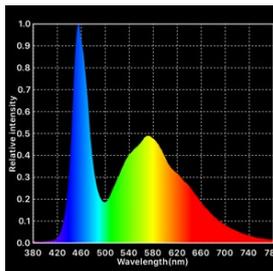
**TYPICAL CCT RANGE 3800 -4600 / TYPICAL CRI 78 - TYPICAL CQS 74 - DOMINANT AT 471 NM**

COOL WHITE  
[TYPICAL]



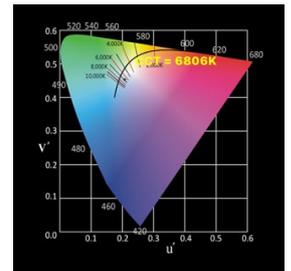
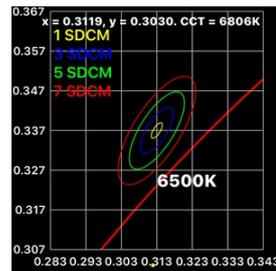
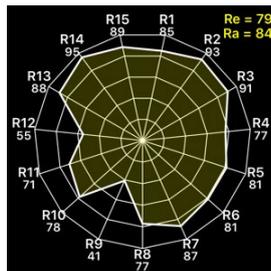
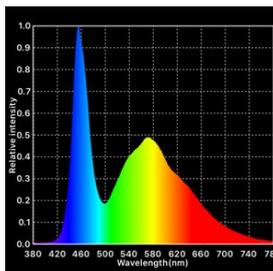
**TYPICAL CCT RANGE 2500 - 3175 / TYPICAL CRI 85 - TYPICAL CQS 86 - DOMINANT AT 592 NM**

WARM WHITE  
[TYPICAL]



**TYPICAL CCT RANGE 5600 - 7500 / TYPICAL CRI 84 - TYPICAL CQS 77 - DOMINANT AT 455 NM**

WIDE ANGLE  
[TYPICAL]

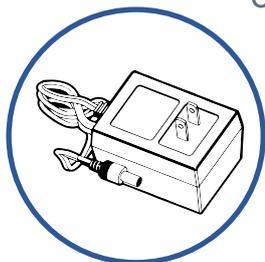


# OPTIONS

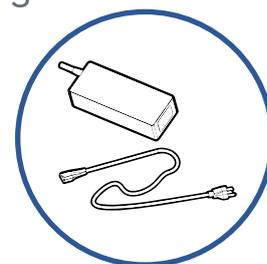
## POWER CONVERTERS AND CABLES

### SELECT APPROPRIATE POWER SUPPLY

If you are in the USA the W version is a low cost simple option can comes with the USA standard 2 prong plug.

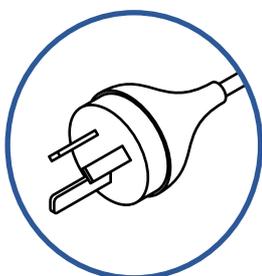


If you are in other countries select the U version.



### IF YOU SELECT THE “U” POWER SUPPLY, SELECT A POWER CABLE

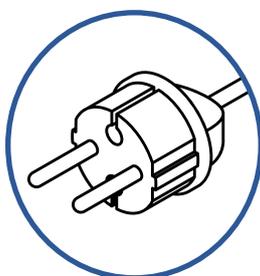
See common options above - call us for others.



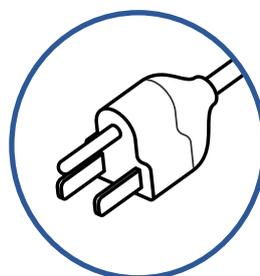
D  
(UK)



G  
(AUSTRALIA)



A  
(EURO)



K  
(USA)



L  
(SWITZERLAND)

### NEED A SPARE OR REPLACEMENT?

ITEM	DESCRIPTION
POWER SUPPLY LED W	REGULATED WALL MOUNT 115V USA POWER SUPPLY, 24V DC, 0.75A
POWER SUPPLY LED U	UNIVERSAL INTERNATIONAL DESKTOP POWER CONVERTER (SPECIFY CORD SET)

# QUICK STUDY

## CROSS POLARIZATION MICROSCOPY

### REFLECTED LIGHT CAN CREATE IMAGING PROBLEMS WITH CERTAIN SPECIMENS

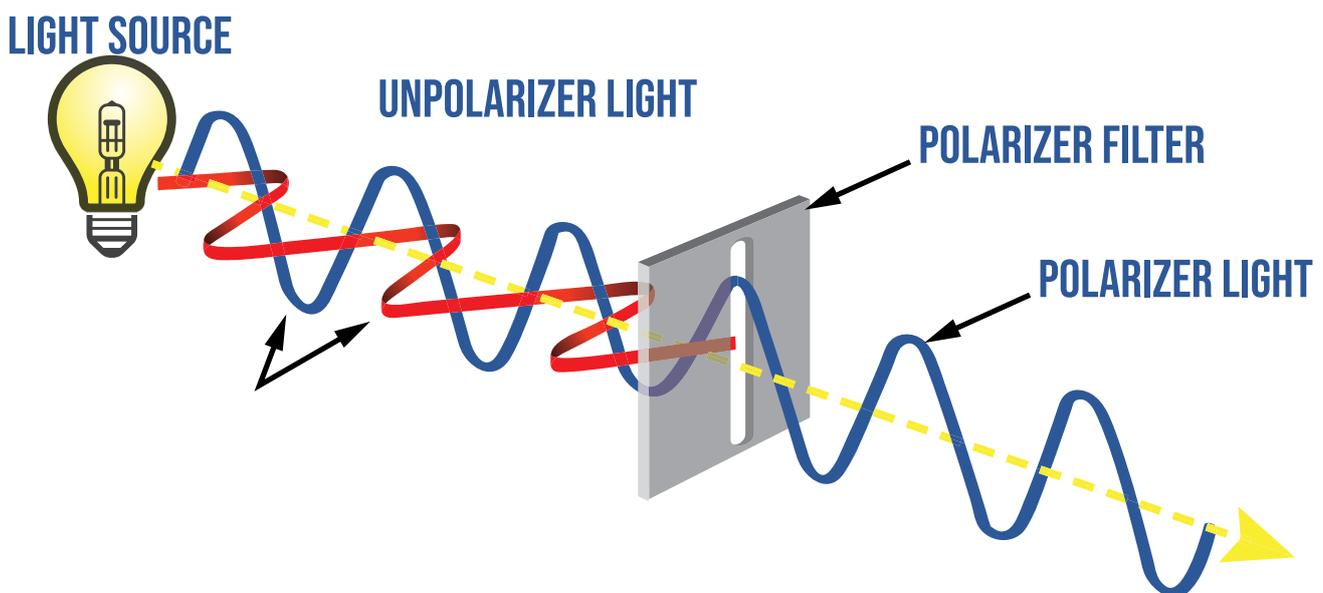
Highly reflective specimens such as machined metals, PC boards with surface mount devices, semiconductor die and wafers, biomedical items (stents, metal mesh, etc) often present imaging problems. Specimens such as these often contain a few very reflective points that are “washed out” due to this high degree of reflection.

### WHAT IS NEEDED?

The ideal solution is to deploy a method of reducing the glare from the “hot spots”. Cross polarization with a polarizer / analyzer kit is one method of accomplishing this.

### WHAT IS POLARIZATION?

Unpolarized light can be thought of as a wave that oscillates in all directions. Passing light through either a circular polarizer or linear polarizer eliminates some of the degrees of freedom.



## **WHAT IS CROSS POLARIZATION?**

When already polarized light is passed through a second polarizing material, additional degrees of freedom are eliminated. At the extreme two polarizers can be used to extinguish 100% of the light. In a typical application one of the polarizing elements is rotated by hand until the intensity of the “hot spots” is sufficiently reduced so as to enable proper imaging in those locations.

## **LIMITATIONS OF THIS TECHNIQUE**

When a polarizer filter has been installed in the microscope approximately one half of the light present will pass as polarized light and the remaining light will be blocked (attenuated) from passing through the microscope optics. This accounts for a significant loss of illumination when using a polarizer/analyzer system. The output of the light source to be used should be chosen with this in mind.

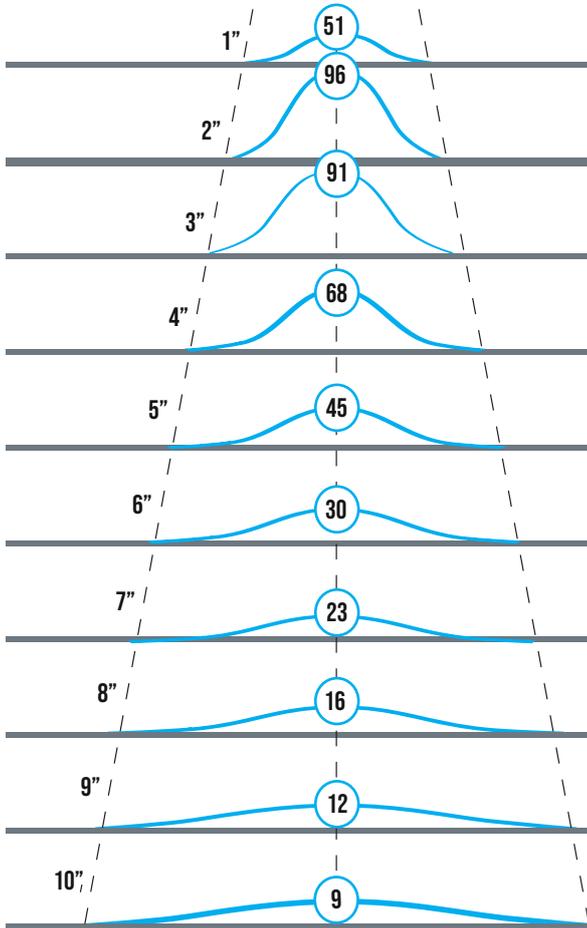
Furthermore, the technique is not selective in the x-y plane in that it can be sometimes be difficult to minimize glare in one location without also reducing intensity in nearby locations. However, as a general rule the use of polarizer / analyzer kits for microscopy is well established and considered one of the main techniques for dealing with excessive glare.

## **TECHNIQUIP POLARIZER / ANALYZER KITS**

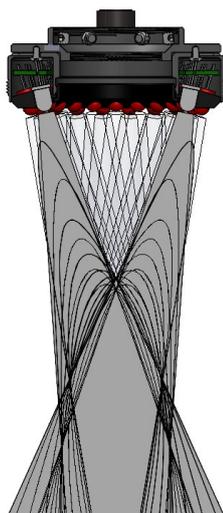
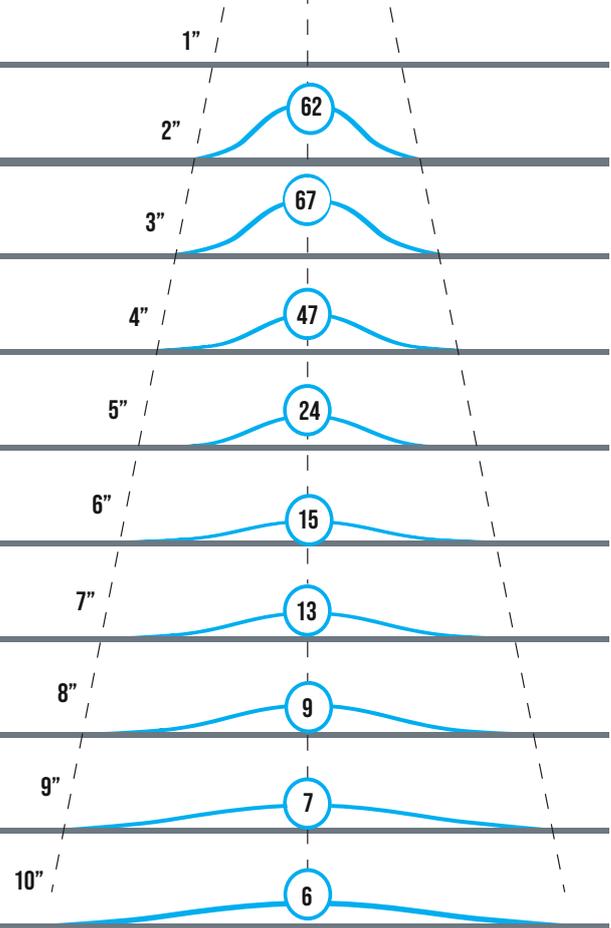
TechniQuip offers a number of polarizer / analyzer kits for use on microscopes shown on the pages following.

# SMALL DIAMETER SOLUTIONS 38 AND 44 MM DIAMETERS

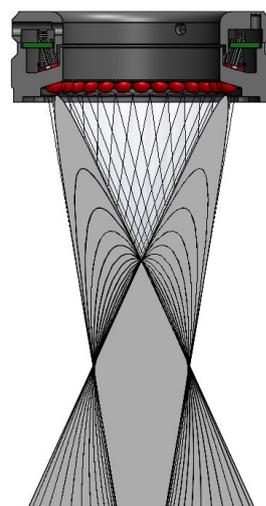
**PROLINE 438 (38 MM)**



**PROLINE 344 (44 MM)**



USE SWD LEDs FOR WORKING DISTANCES CLOSER THAN 2.25"

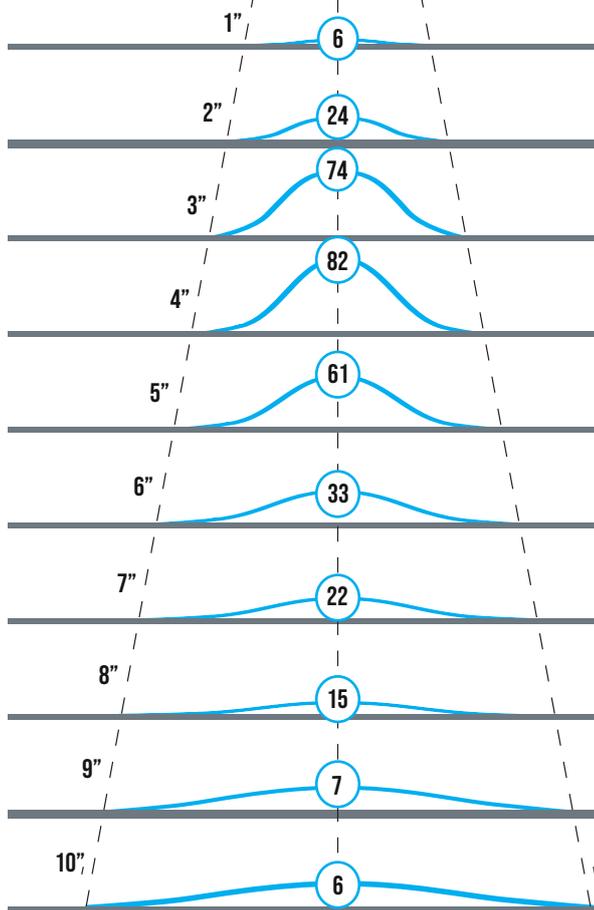


USE SWD LEDs FOR WORKING DISTANCES CLOSER THAN 2.5"

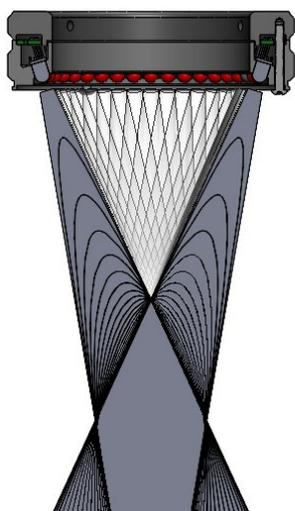
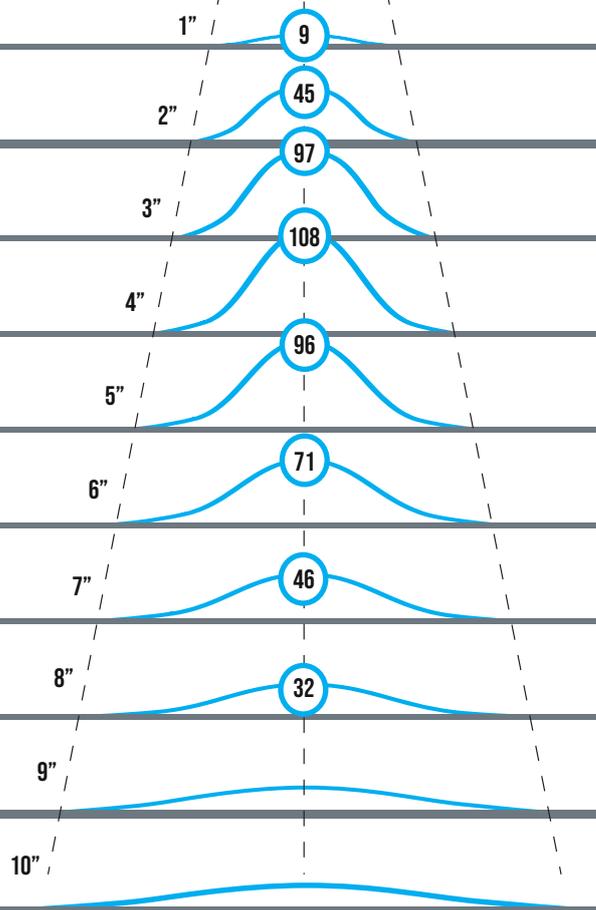
**A** — Peak Illuminance (Klux)

# 66 MM / 40 LED SOLUTIONS PROLINE 40 AND SLIMLINE 40

**PROLINE 466**



**SLIMLINE**



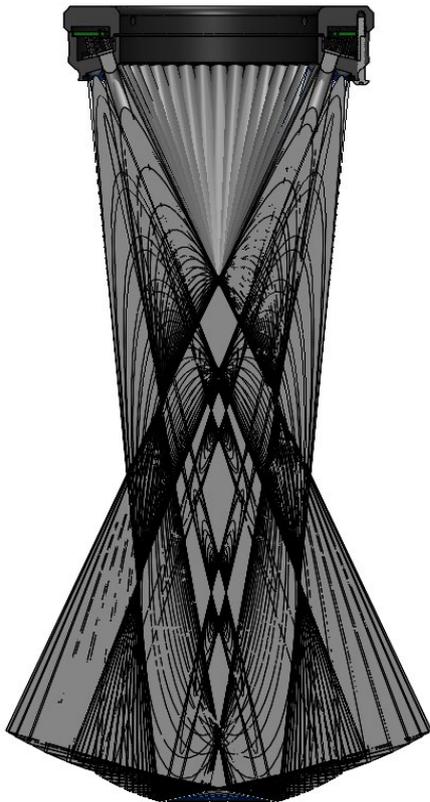
USE SWD LEDS FOR WORKING DISTANCES CLOSER THAN 2.5"



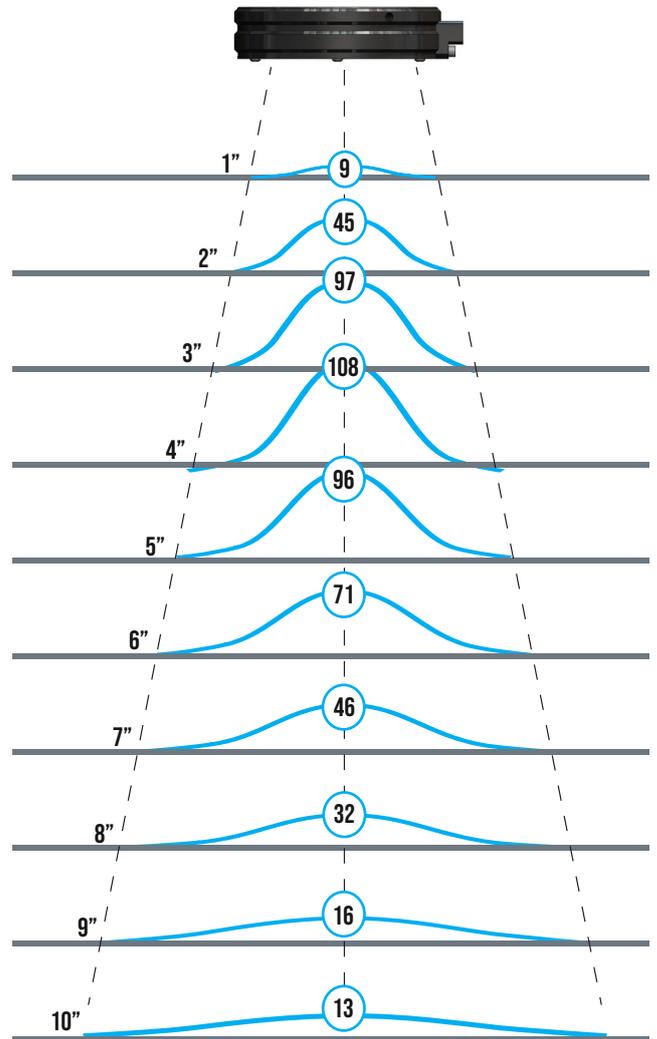
USE SWD LEDS FOR WORKING DISTANCES CLOSER THAN 2.5"

# 66 MM / 80 LED SOLUTION PROLINE 866

DATA SHOWN IS  
FOR DAYLIGHT LEDS



## PROLINE 866



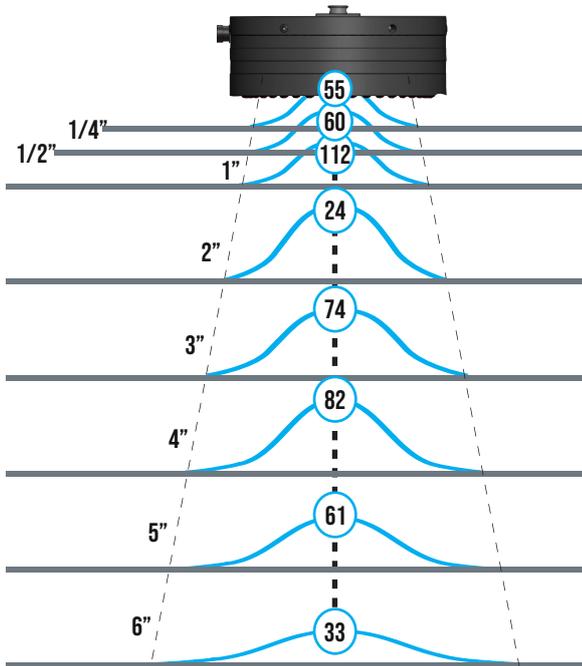
USE SWD LEDS FOR WORKING  
DISTANCES CLOSER THAN 3.0"

## TWIN CONE DESIGN

ProLine 866 and ProLine 882 have twin LED cones - the inner and outer cones are inclined at different angles to maximize the range of available working distances and provide superior illumination at critical working distances. This feature also allows for hybrid solution (such as visible / ultraviolet)

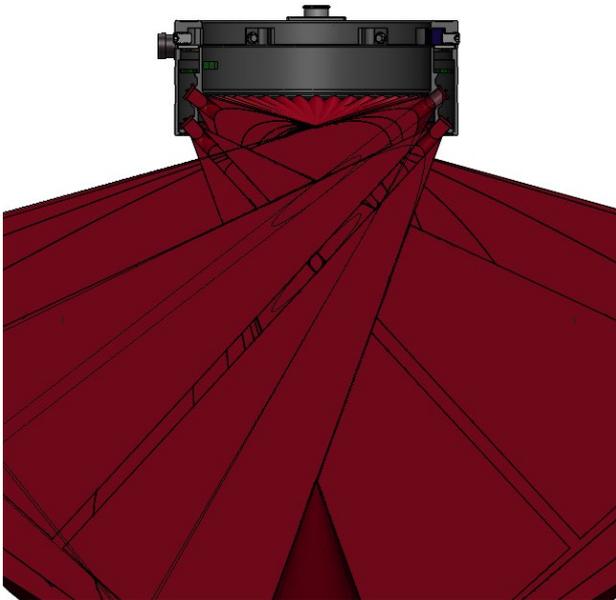
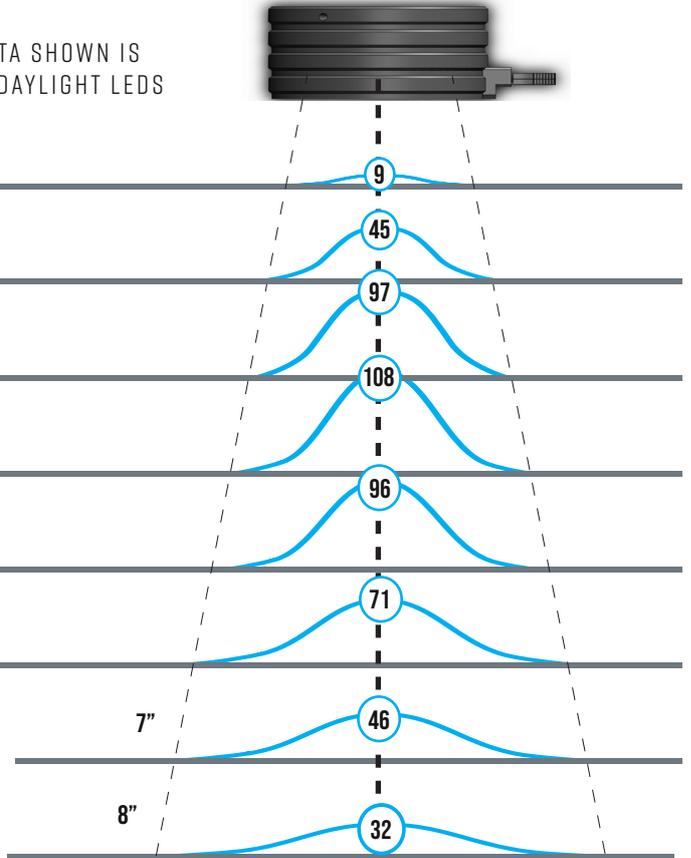
# 82 MM SOLUTIONS FOR BOTH SHORT AND LONG WORKING DISTANCES

## PROMAX 882

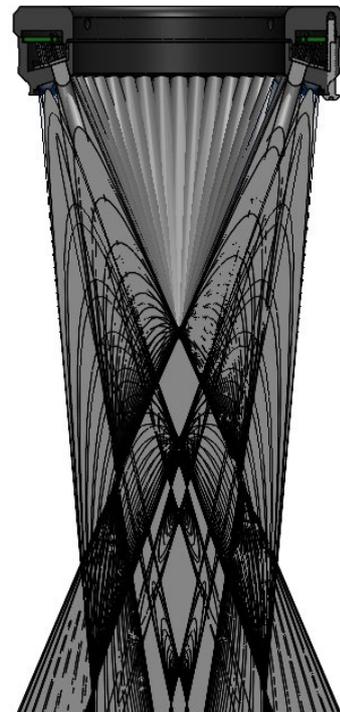


DATA SHOWN IS FOR DAYLIGHT LEDS

## PROLINE 882



ideal for short working distance applications  
(NOTE HOW BEAMS CROSS AT LONGER WORKINGS CREATING DARK SPOT)



ideal for long working distance applications



[WWW.TECHNIQUIP.COM](http://WWW.TECHNIQUIP.COM)

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