

UL1598 CSA C22.2 No.250

HIGH-SAFETY LUMINAIRE SUPPORT SYSTEM

#### PRODUCT CATALOGUE

Petitioner Ensign Exhibit 1004 - 1 of 28

Poor lighting is one of the major causes of industrial accidents. But because simply changing a light bulb is a very labour-intensive and dangerous job, areas are often left dark.

**Swivelpole**<sup>™</sup> solves all your lighting maintenance and upgrade problems in one smart move. It's unique, globally patented swivel mechanism lets you lower – and rotate – a light fitting to a safe working level in minutes. No ladders, no scaffolding, and no fall arrest systems.

**Swivelpole**<sup>™</sup> can be built-in to new facilities, or easily retrofitted without welding so there's no need for hot work permits. And once fitted, you can change – or upgrade – to new lighting technology. To operate, all you need is a socket wrench.



# **Swivelpole**<sup>™</sup> lets you safely change a faulty light bulb in minutes, not hours.

#### Once installed, Swivelpole<sup>™</sup> saves time and money, year after year.

The **Swivelpole**<sup>™</sup> luminaire support system delivers cost savings throughout a project's lifecycle from specification to ongoing inspection and maintenance.

SPECIFICATION DETERMINATION

INTUITIVE PRODUCT DATA & CODING

MOUNTING SOLUTIONS FOR ALL APPLICATIONS REDUCES DESIGN COST WITH PROPRIETARY FITTINGS

ENGINEERED DRAWINGS READY TO SPECIFY

✓ REDUCES ENGINEERING COST

#### INSTALLATION TERMINATION

NO WELDING OR PAINTING REQUIRED **V** REDUCES LABOUR COST

NO HOT WORK PERMIT REQUIRED REDUCES PERMIT COST

EASY FITTING & TERMINATION OF ELECTRICAL EQUIPMENT REDUCES INSTALLATION COST INSPECTION MAINTENANCE

LESS ADMINISTRATION AND PERMITS **V** REDUCES ADMINISTRATION COST

NO NEED FOR ACCESS EQUIPMENT RENTAL **V** REDUCES EQUIPMENT COST

SUPPORTS HEALTH, SAFETY & ENVIRONMENT OBJECTIVES

✔ REDUCES POTENTIAL INJURIES & DOWN TIME COSTS

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\* Hazardous Areas

Australian and Canadian industry surveys conducted 2009, 2011 and 2012

Swivelpole<sup>™</sup> Product Catalogue 1 Petitioner Ensign Exhibit 1004 - 3 of 28

## **Innovative Swivel Mechanism**

Top section

Round

swivel plate

Base section swivel plate

Safety pin

#### The core of the **Swivelpole**<sup>™</sup> system is its unique globally patented swivel mechanism

**Swivelpole**<sup>™</sup>

- Incorporates a "clutch plate" design reducing the weight transfered to the operator.
- Allows one-person controlled lowering of the pole top section and luminaire.
- Pole top rotates on its axis so the luminaire comes to an upright maintenance position when lowered.
- Provides full mechanical protection of the cable within the Safe Swivel<sup>™</sup> joint. Suitable for SWA (Steel Wire Armoured) cable.
- Requires simple loosening of fasteners with no part to be removed for operation.
- Incorporates a safety locking pin for securing the pole top to a range of maintenance positions.
- Suitable for hazardous and corrosive environments.
- Structurally certified product.

#### Safe Swivel<sup>™</sup> joint orientation and path of motion

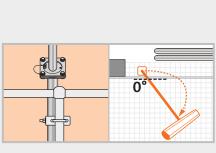
For the **Swivelpole**<sup>™</sup> to operate at its optimum performance it must be assembled and installed correctly.

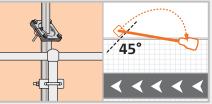
Correct installation means the walkway is not obstructed and the Swivelpole<sup>™</sup> clears adjacent infrastructure to the side of, or behind, the guardrail.

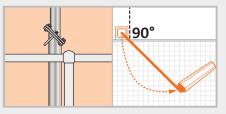
To achieve the correct installation you must consider both the luminaire mounting configuration and the orientation of the Safe Swivel<sup>™</sup> joint in relation to the guardrail.

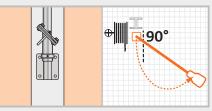
The orientation of the Safe Swivel<sup>™</sup> joint determines the path that the luminaire will follow as it is being lowered to the maintenance position.

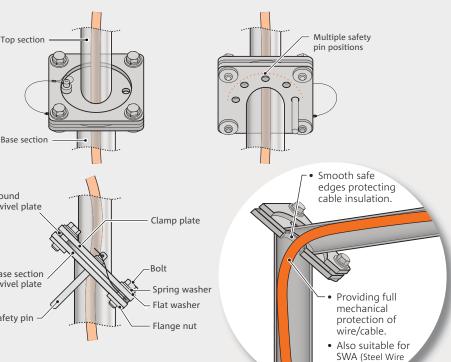
Adjusting the orientation of the Safe Swivel<sup>™</sup> joint in combination with the luminaire mount, allows flexibility in avoiding clash and obtaining the desired maintenance position.











#### Large luminaires parallel to guardrail

An orientation of 0° in relation to the guardrail avoids a potential clash with any infrastructure directly behind the Swivelpole<sup>™</sup>. This is the recommended orientation when luminaires are mounted parallel to the guardrail eq. LMK 2304.

Armoured)

cable.

#### Small luminaires perpendicular to guardrail

An orientation of 45° in relation to the guardrail (left or right) results in a maintenance position close to the guardrail with minimum obstruction to walkway. This is the recommended orientation when preventing clash with conveyors etc.

#### Large luminaires perpendicular to guardrail

An orientation of 90° in relation to the guardrail avoids clash with infrastructure to either the left or right side and behind the Swivelpole<sup>™</sup>. This is the recommended orientation when luminaires are mounted perpendicular to the guardrail eg. LMK 2301

#### To avoid adjacent obstructions

An orientation of 90° avoids clash with infrastructure to either the left or right side of the Swivelpole<sup>™</sup>. This is the recommended orientation for column or wall mounting.

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#### **TECHNICAL SPECIFICATIONS**

#### **STANDARD MATERIAL & FINISH**

Material: Finish:

Structural SteelHot-dip Galvanised (HG)

#### **OTHER MATERIALS & FINISHES**

- Stainless Steel (SS) grade 316
- Aluminium (AL)

Other commercially available finishes eg. powder coating can be supplied to suit specific applications and specifications.

#### DIMENSIONS

All dimensions are in imperial/metric (nominal) and may differ from published tables. **NPS** stands for nominal pipe size. **DN** stands for nominal size. **OD** stands for outside diameter.

#### MANUFACTURING STANDARDS

Country:	UNITED STATES	CANADA
Steel:	ASTM A36	G40.20-04/ G40.21-04 (R2009)
Welding:	AWS D1.1	W59-03 (R2008)
Galvanizing:	ASTM A123	CAN/CSA-G164

#### **CERTIFICATION & CLASSIFICATION**

Certification:	UNITED STATES	CANADA
Structural:	ANSI/AISC 360-05 ASCE/SEI 7-05	CSA S16-09 CSA S-37 NBC-05
Electrical:	3426-83 UL 1598	3426-03 CSA C22.2 No.250

All Swivelpole products in all available finishes are listed by CSA as Certified under Master Contract number 257018

#### DESIGN COMPLIANCE

The Swivelpole<sup>™</sup> product range has been developed to meet the design criteria of a range of site conditions, including cyclonic winds, corrosive and hazardous environments.

For additional information on our products and product configurations to suit your design compliance needs, please contact us at info@swivelpole.com.

Site engineers are responsible for determining the relevant design criteria, including design wind speed and to select the appropriate products from the Swivelpole<sup>™</sup> product range to meet this criteria.

#### MAXIMUM LUMINAIRE WEIGHT

Recommended: 44lbs (for one-person operation).

#### INFORMATION

#### SERVICE

From application review through to product recommendation, our network of sales and support staff are committed to assisting you every step of the way.

Email:	info@swivelpole.com
	sales@swivelpole.com

#### QUALITY ASSURANCE

All Swivelpole<sup>™</sup> products are manufactured and/or assembled to comply with a prescribed QMS based on ISO 9001 world standards.

#### PATENT

The Swivelpole product range is protected by patents and registered designs worldwide including U.S. Patent No 6957832 and European Patent No 1226387, and can only be sold and/or manufactured under licence granted by Swivelpole Patent Pty Ltd. All rights reserved.

#### COPYRIGHT

This document and all its contents is the property of Swivelpole Patent Pty Ltd and is protected by copyright worldwide. Unauthorised use and reproduction is strictly prohibited. All rights reserved.

#### WARRANTIES\*

1. All equipment and goods are warranted by the Seller to be free from defects in material and workmanship for five (5) years from the date of shipment.

THIS WARRANTY DOES NOT APPLY TO EQUIPMENT OR GOODS WHICH ARE MISUSED, ABUSED OR DAMAGED FROM INSTALLATION, OR NOT USED IN ACCORDANCE WITH SELLER'S INSTRUCTIONS. NORMAL WEAR OF EQUIPMENT OR GOODS ARE NOT INCLUDED IN THIS WARRANTY.

No responsibility will be taken for any modifications, alterations or additions to the standard product design. This includes exceeding recommended maximum weights for any fittings or exceeding the installed height.

 Equipment or goods not manufactured by the Seller but supplied through the Seller shall carry the warranty of the original manufacturer.

THE SELLER'S SOLE LIABILITY UNDER THIS WARRANTY SHALL BE LIMITED TO EITHER REPLACING OR REPAIRING WITHOUT CHARGE, AT ITS FACTORY OR ELSEWHERE AT ITS DISCRETION, ANY EQUIPMENT OR GOODS NOT MEETING THIS WARRANTY, OR AT SELLER'S OPTION, REFUNDING THE PURCHASE PRICE. THE SELLER SHALL IN NO EVENT BE LIABLE FOR ANY OTHER DIRECT OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND UNDER THIS CONTRACT OR OTHERWISE.

\* subject to change without notice

#### DISCLAIMER

The adequacy of the guardrail and supporting structure must be verified by a site approved engineer. Swivelpole Group Pty Ltd will accept no responsibility for failure due to inadequacy of the supporting structure or guardrail to which the Swivelpole™ is mounted.

Swivelpole Product Catalogue NEC V2-4. Printed March 2014.

# Swivelpole<sup>TT</sup> High-Safety Luminaire Support System

#### **APPLICATIONS:**

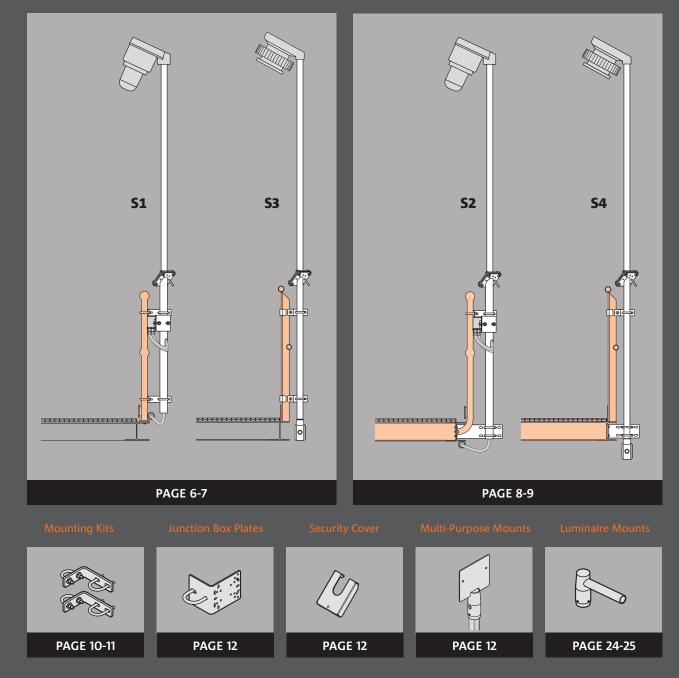
Walkway lighting, platforms, stairways, spiral stairways, conveyors

#### S Stanchion Mounted

- Stanchion mounting free of handrail
- Vertical installation on inclines such as conveyors



• Combined stanchion and structure mounting for reduced vibration and longer lamp life



4 CAD drawings available online: swivelpole.com

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#### **APPLICATIONS:**

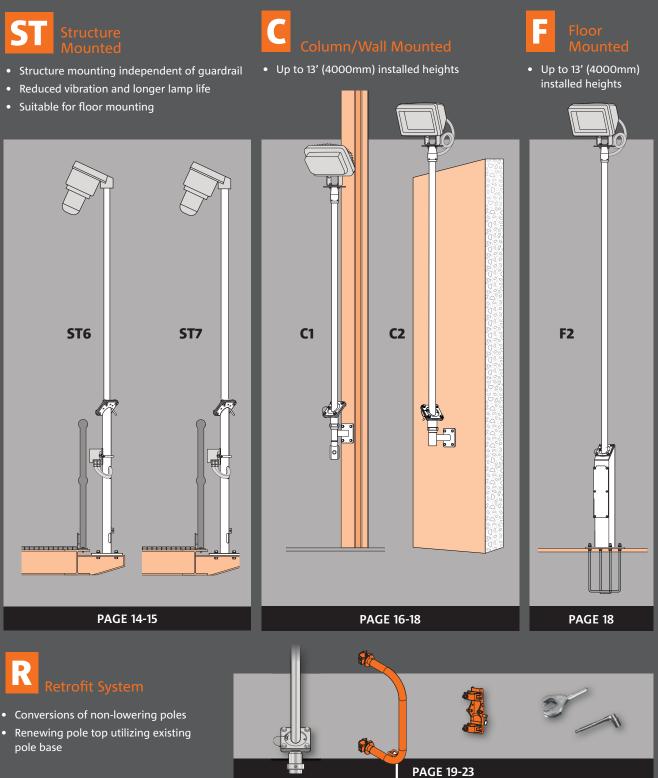
Walkway lighting, platforms, stairways, spiral stairways, conveyors

R

- Structure mounting independent of guardrail
- Reduced vibration and longer lamp life
- Suitable for floor mounting

Internal structures

#### Area and flood lighting



Swivelpole<sup>™</sup> Product Catalogue

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#### **Stanchion Mounted**



PAGE 10-11 Junction Box Plates PAGE 12

Mounting Kits

8

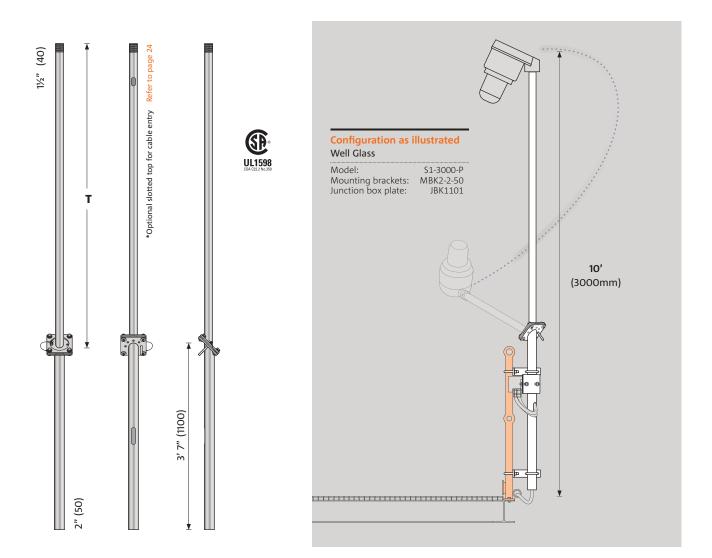
Luminaire Mounts PAGE 24-25

#### Applications

• Ideal for area lighting along industrial walkways, platforms, stairways, spiral stairways

#### Features & Benefits

- NPS 2" base section
- Stanchion mounting direct to guardrail
- Slotted base section for raised junction box, allowing safe and efficient installation and termination
- Inclined brackets, allow vertical installation on inclines such as conveyors etc



nstalled Height	Base Section				Top Se	ection	Product Code			
	NPS	DN	OD	Length	NPS	DN	OD	Length 'T'	Top Section Options	
8' (2400)	2"	50	60.3	3' 7" (1100)	1½"	40	48.3	<b>3' 11"</b> (1200)	Threaded	S1-2400-T
n		н		п		н	н	н	Plain, no slot	S1-2400-P
	н	"	"	п		"	"	н	Plain, slot options	S1-2400-PS/PSF
<b>10'</b> (3000)	2"	50	60.3	<b>3' 7"</b> (1100)	1½"	40	48.3	<b>5' 11"</b> (1800)	Threaded	S1-3000-T
н		н	н	н		н	н	н	Plain, no slot	S1-3000-P
"		п		н	н	н		н	Plain, slot options	S1-3000-PS/PSF

6 CAD drawings available online: swivelpole.com

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#### **Stanchion Mounted**



Mounting Kits
PAGE 10-11



Junction Box Plates
PAGE 12

Luminaire Mounts
PAGE 24-25

#### Applications

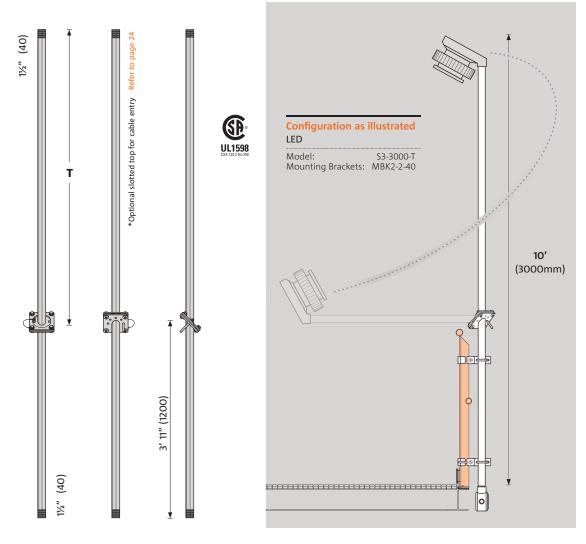
• Ideal for area lighting along industrial walkways, platforms, stairways, spiral stairways, roof tops

#### Features & Benefits

- NPS 1½" base section
- Threaded ends for fully enclosed wiring methods
- Designed for installation in accordance with NEC standards

#### Standard Installed Lengths

- 8' (2400mm)
- 10' (3000mm)



Ordering Inf	Ordering Information											
Installed Height Base Section Top Sect									Top Section			
		NPS	DN	OD	Length	NPS	DN	OD	Length 'T'			
8' (2400)		1½"	40	48.3	<b>3' 11"</b> (1200)	1½"	40	48.3	<b>3' 11"</b> (1200)	S3-2400-T		
<b>10'</b> (3000)		1½"	40	48.3	<b>3' 11"</b> (1200)	1½"	40	48.3	<b>5' 11"</b> (1800)	S3-3000-T		
NPS nominal pipe size DN nominal size OD outside diameter							All dimensions are in imperial/metric (nominal) and may differ from published table					

Swivelpole<sup>™</sup> Product Catalogue 7 Petitioner Ensign Exhibit 1004 - 9 of 28

#### **Stanchion & Structure** Mounted



**Junction Box Plates PAGE 12** 

**Mounting Kits** 

**PAGE 10-11** 



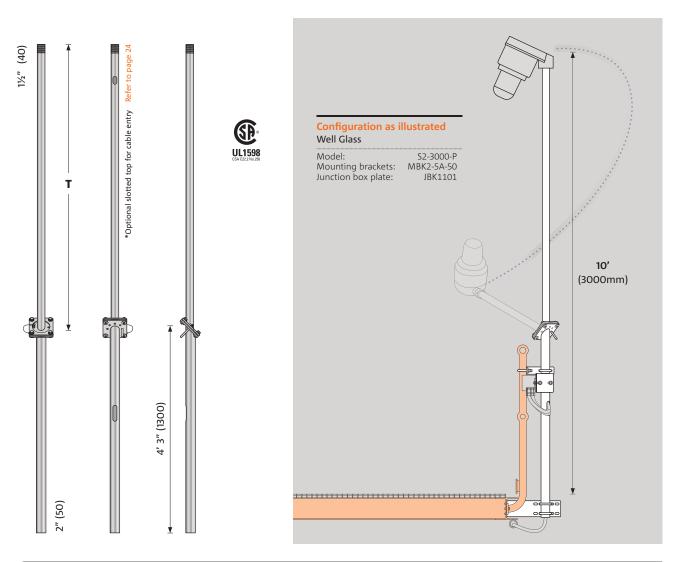
Luminaire Mounts PAGE 24-25

#### Applications

- Ideal for area lighting along industrial walkways, platforms, stairways, spiral stairways
- For areas subject to vibration, such as conveyor walkways

#### **Features & Benefits**

- NPS 2" base section
- Combined stanchion and structure mounting resulting in reduced vibration and longer lamp life
- Slotted base section for raised junction box, allowing safe and efficient installation and termination



#### Ordering Information Installed Height **Base Section** Product Code **Top Section** NPS Length 'T' Top Section Options NPS DN OD Length DN OD 8' (2400) 2" 50 60.3 4' 3" (1300) 1½" 40 48.3 3' 11" (1200) Threaded S2-2400-T н п п п н Plain, no slot S2-2400-P п п S2-2400-PS/PSF Plain, slot options Threaded 10' (3000) 2' 50 4' 3" (1300) 40 48.3 5' 11" (1800) S2-3000-T 60.3 11/2" п Plain, no slot S2-3000-P п ... ... ... ... Plain, slot options S2-3000-PS/PSF NPS nominal pipe size DN nominal size OD outside diameter All dimensions are in imperial/metric (nominal) and may differ from published table

CAD drawings available online: swivelpole.com 8

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#### Stanchion & Structure Mounted



Mounting Kits
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Junction Box Plates
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Luminaire Mounts
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#### Applications

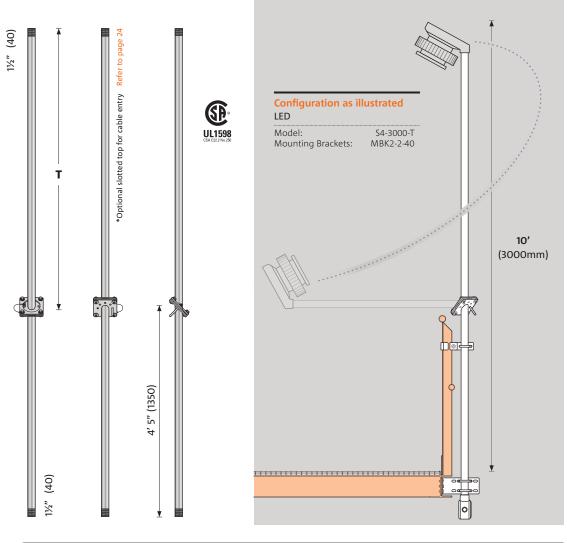
• Ideal for area lighting along industrial walkways, platforms, stairways, spiral stairways, roof tops

#### Features & Benefits

- NPS 1 ½" base section
- Threaded ends for fully enclosed wiring methods
- Combined stanchion and structure mounting resulting in reduced vibration and longer lamp life
- Designed for installation in accordance with NEC standards

#### Standard Installed Lengths

- 8' (2400mm)
- 10' (3000mm)

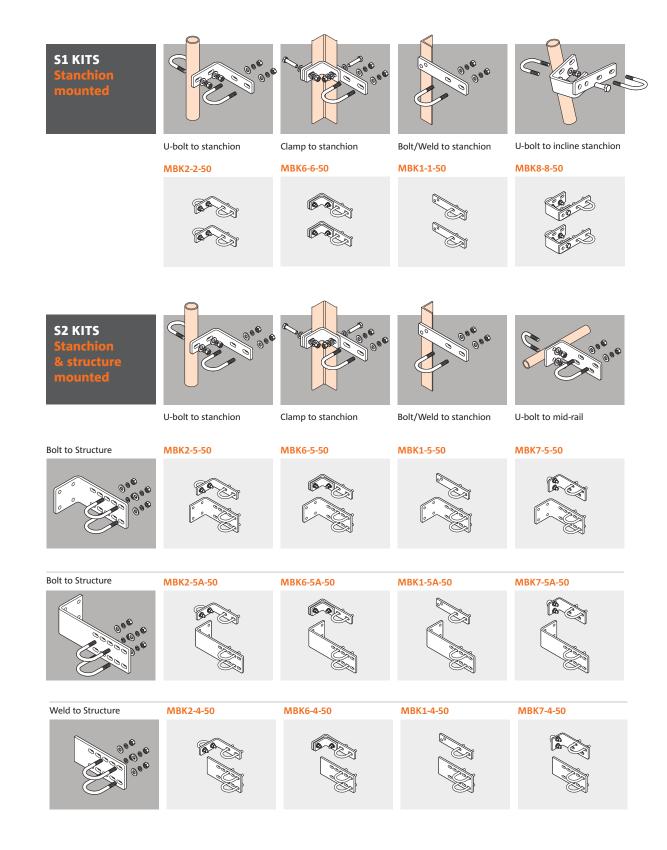


Ordering Ir	Ordering Information										
Installed He	ight	Base S	Section			Top Section				Product Code	
		NPS	DN	OD	Length	NPS	DN	OD	Length 'T'		
<b>8'</b> (2400)		1½"	40	48.3	<b>4' 5"</b> (1350)	1½"	40	48.3	<b>3' 11"</b> (1200)	S4-2400-T	
<b>10'</b> (3000)		1½"	40	48.3	<b>4' 5"</b> (1350)	1½"	40	48.3	<b>5' 11"</b> (1800)	S4-3000-T	
	NPS nomi	inal pipe si	ze DN n	ominal size	OD outside diameter	All dime	nsions ar	e in imper	ial/metric (nominal) and	may differ from published table	

# Mounting Kits Simple installation

The **Swivelpole**<sup>™</sup> versatile mounting kits allow adjustment in the orientation of the Safe Swivel<sup>™</sup> joint mechanism.

Adjusting the orientation of the Safe Swivel<sup>™</sup> joint in combination with the luminaire mount, allows flexibility in avoiding clash and obtaining the desired maintenance position (see page 2).



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# Mounting Kits Simple installation

**S3 KITS** 000 000 U-bolt to stanchion Clamp to stanchion Bolt/Weld to stanchion U-bolt to incline stanchion MBK2-2-40 MBK6-6-40 MBK1-1-40 MBK8-8-40 000 **S4 KITS** U-bolt to stanchion Clamp to stanchion Bolt/Weld to stanchion U-bolt to mid-rail Bolt to Structure MBK2-5-40 MBK6-5-40 MBK1-5-40 MBK7-5-40 Bolt to Structure MBK2-5A-40 MBK6-5A-40 MBK1-5A-40 MBK7-5A-40 Weld to Structure MBK2-4-40 MBK6-4-40 MBK1-4-40 MBK7-4-40

> Swivelpole<sup>™</sup> Product Catalogue 11 Petitioner Ensign Exhibit 1004 - 13 of 28

# **Junction Box Plates**

Simple installation and termination

Ordering Informati	on			
Suits models	U-bolt kit size	Offset mounted	Double, centre mounted	Double, offset mounted
S1, S2	NPS 2" (DN 50)	JBPK1101	JBPK1201	JBPK1301
"	н	JPBK 1100-UNI (blank)	-	-
ST6, ST7	NPS 2½" (DN 65)	JBPK1101-65	JBPK1201-65	JBPK1301-65
н	н	IPBK 1100-UNI-65 (blank)	_	

# Swivelpole<sup>™</sup>

# **Security Cover**

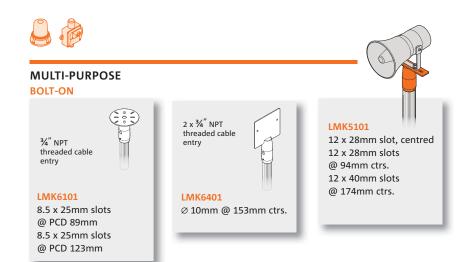
- Optional security covers available
- For use in public spaces where tamper proofing is required
- One size fits all models



# Swivelpole<sup>™</sup>

# Multi-purpose Mounts

- Alarms
- Antennas
- CCTV
- Gas Detectors
- Sirens
- Signals
- Windsocks



# Officially certified to withstand the world's strongest winds

There's no pole stronger than a **Swivelpole**<sup>™</sup>. They've been put through rigorous independent engineering simulations and analysis, including wind tunnel testing, to prove they will withstand the harshest conditions and even cyclonic winds over 200mph.

In fact, **Swivelpole**<sup>™</sup> is built so tough, it will easily outlast the life of a typical project or plant.

That is why it's been the luminaire support solution of choice in some of the world's most remote and challenging locations since 1999.



**Swivelpole**<sup>™</sup> Lowering Costs, Raising Standards

> Swivelpole<sup>™</sup> Product Catalogue 13 Petitioner Ensign Exhibit 1004 - 15 of 28



#### **Structure Mounted** Independent of the Guardrail



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21/2" (65)

0

1½" (40) (50)

ST6: ST7:

2"

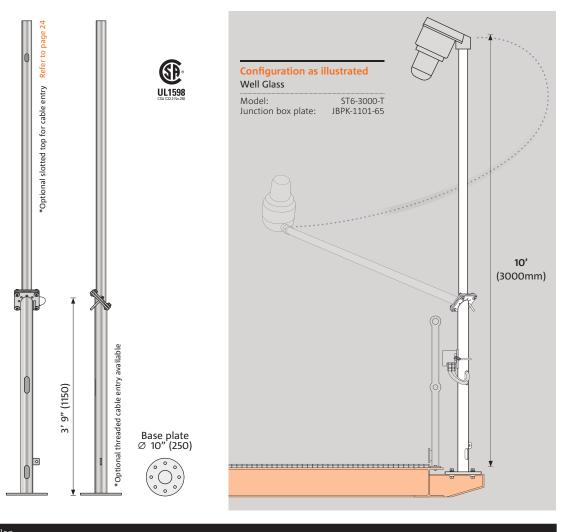


#### Applications

- Ideal for area lighting along industrial walkways, platforms, cooling towers
- Suitable for floor mounting

#### Features & Benefits

- NPS 21/2" base section for reduced vibration and longer lamp life
- ST6 NPS 11/2" top section
- ST7 NPS 2" top section for high wind regions
- Slotted base section for raised junction box
- Earth (ground) tab



Installed Height	Base S	Section			Top Se	ection	Product Code			
	NPS	DN	OD	Length	NPS	DN	OD	Length 'T'	Top Section Options	
<b>8'</b> (2400)	2½"	65	73	<b>3' 9"</b> (1150)	1½"	40	48.3	<b>3' 11"</b> (1200)	Threaded	ST6-2400-T
		"	"	н		"	"	"	Plain, no slot	ST6-2400-P
n	н	н	н	п	"	н	"	п	Plain, slot options	ST6-2400-PS/PSF
<b>10'</b> (3000)	2½"	65	73	<b>3' 9"</b> (1150)	1½"	40	48.3	<b>5' 11"</b> (1800)	Threaded	ST6-3000-T
n		"	"	п		"	"	"	Plain, no slot	ST6-3000-P
"		"	п	н	"	"	"		Plain, slot options	ST6-3000-PS/PSF
<b>8'</b> (2400)	2½"	65	73	<b>3' 9"</b> (1150)	2"	50	60.3	<b>3' 11"</b> (1200)	Plain, no slot	ST7-2400-P
п			п	н			"	н	Plain, slot options	ST7-2400-PS/PSF
<b>10'</b> (3000)	2½"	65	73	<b>3' 9"</b> (1150)	2"	50	60.3	<b>5' 11"</b> (1800)	Plain, no slot	ST7-3000-P
				н		"		н	Plain, slot options	ST7-3000-PS/PSF

14 CAD drawings available online: swivelpole.com

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# The **Swivelpole**<sup>™</sup> doesn't need to rely on the guardrail

The **Swivelpole**<sup>™</sup> ST series is mounted to the structure completely independent of the guardrail.

It keeps the guardrail free of obstructions and reduces vibration for longer lamp life.





# Mount **Swivelpole**<sup>™</sup> to an existing wall or column

The **Swivelpole**<sup>™</sup> C series allows you to mount to a wall or column to a height of 13' (4000mm).

It features a sturdy rightangle bracket which simply bolts to an existing structure – and which can also include an integral junction box.

It's ideal for mounting luminaires both inside and outside of structures and sub-stations.

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## **Column/Wall Mounted**



Security Cover PAGE 12

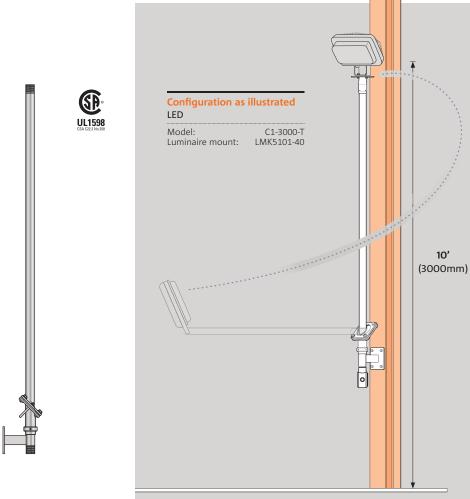
Luminaire Mounts PAGE 24-25

Applications

• Ideal for internal structure lighting, area lighting and sub-station walls

#### **Features & Benefits**

- Column or wall mounting
- C1: NPS 11/2" for pole height to 10' (3000mm)
- C2: NPS 2" for pole height to 13' (4000mm)

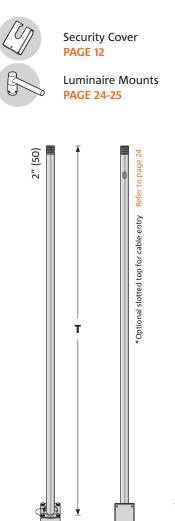


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	e, 1

Installed Height	Base S	Base Section					Top Section						
	NPS	DN	OD	Length	NPS	DN	OD	Length 'T'	Top Section Options				
<b>8'</b> (2400)	-	-	-	-	1½"	40	48.3	<b>3' 11"</b> (1200)	Threaded	С1-2400-Т			
п	"	"	"	п	"	"	"		Plain, no slot	С1-2400-Р			
п	n	"	н	п	"	"	"	п	Plain, slot options	C1-2400-PS/PSF			
<b>10'</b> (3000)	-	-	-	-	1½"	40	48.3	<b>5' 11"</b> (1800)	Threaded	С1-3000-Т			
п	"	"	"	н	"	"	"	"	Plain, no slot	С1-3000-Р			
п	"	"	"	н	"	"	"	"	Plain, slot options	C1-3000-PS/PSF			
<b>10'</b> (3000)	-	-	-	-	2"	50	60.3	<b>5' 11"</b> (1800)	Plain, no slot	С2-3000-Р			
п	"	"	"	н	"	"	"		Plain, slot options	C2-3000-PS/PSF			
<b>13'</b> (4000)	-	-	-	-	2"	50	60.3	<b>9' 2"</b> (2800)	Plain, no slot	С2-4000-Р			
п	н			н				"	Plain, slot options	C2-4000-PS/PSF			

Swivelpole<sup>™</sup> Product Catalogue 17 Petitioner Ensign Exhibit 1004 - 19 of 28

#### **Floor Mounted**



3, 3, ,

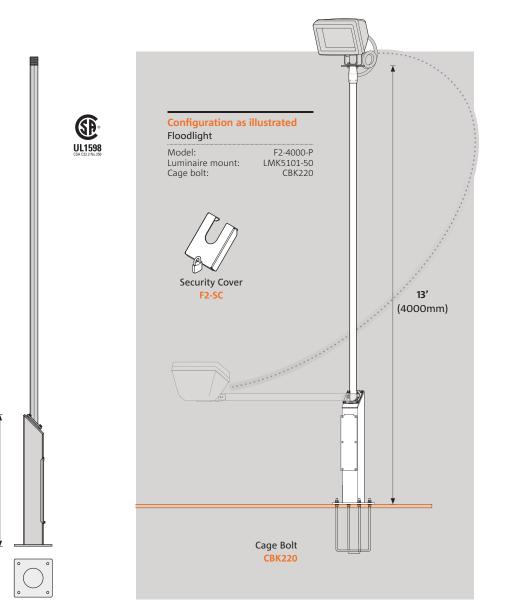
Base plate 111/2" x 111/2"

#### Applications

• Ideal for low level flood lighting on industrial platforms, cooling towers, switch yards, decks, laydown areas, car parks

#### **Features & Benefits**

- Floor mounting to 13' (4000mm)
- 3'3" square hollow section base
- Base access panel



Ordering Informat	Ordering Information									
Installed Height	Base Section		Top Se	ection				Product Code		
	SHS	Length	NPS	DN	OD	Length 'T'	Top Section Options			
<b>13'</b> (4000)	<b>6" x 6"</b> (150 x 150)	<b>3' 3"</b> (1000)	2"	50	60.3	<b>10'</b> (3000)	Plain, no slot	F2-4000-P		
п	н	н	н	"	"	"	Plain, slot options	F2-4000-PS/PSF		
NPS nominal pipe size DN nominal size OD outside diameter All dimensions are in imperial/metric (nominal) and may differ from p										

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# Swivelpole<sup>TT</sup> Retrofit System

# Turn your costs around with the **Swivelpole**<sup>™</sup> Retrofit System

On average, you can retrofit a non-lowering pole for under half the cost of changing a lamp using the traditional method (*from actual case studies*).

Once fitted with a Swivelpole<sup>™</sup> you can reduce your ongoing lighting maintenance costs by an average of **95%**.

**Retrofit Range** 



Retrofit

#### Applications

Allows replacement of faulty luminaires, upgrades to new lighting technology and replacement of corroded or oversized pole tops.

- Swivelpole<sup>™</sup> R1 Conversions reusing existing pole
- Swivelpole<sup>™</sup> R2, R3 Conversion renewing pole top while utilizing existing pole base

Swivelpole<sup>™</sup> Product Catalogue 19

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# **Retrofit Assist Kit**

For safe and efficient conversion of non-lowering light poles.

Depending on the preferred disconnection method, there are two pole conversion tool kits available.

The **Swivelpole**<sup>™</sup> Retrofit Assist Pole Conversion Tool clamps to and safely supports the light pole, which is then cold cut with a Ratchet Pipe Cutter, eliminating the need for hot work permits.

The luminaire can then be safely lowered using the swivel mechanism where disconnection is performed at the t-fitting (Retrofit Assist Kit 1) or alternatively by using the Mid Hinge (Retrofit Assist Kit 2) which allows lowering the luminaire without the need to disconnect.

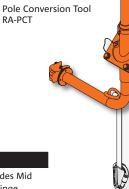
The **Swivelpole**<sup>™</sup> Retrofit – R1, R2 or R3 - then simply fastens onto the existing pole and the pole is ready for service.

All work takes place at platform level eliminating the risks of working at heights.

#### Tools recommended for installation of R1, R2 and R3 models

Ordering	Informat	ion		
To s	suit Pole S	ize	Retrofit Assist Kit 1	Includes Pole Conversion Tool
NPS	DN	OD	Ordering Code	Product Code
1¼"	32	42.4	RAK1-PCT-32	RA-PCT-32
1½"	40	48.3	RAK1-PCT-40	RA-PCT-40
2"	50	60.3	RAK1-PCT-50	RA-PCT-50

Retrofit Assist Kit 1 Pole Conversion Tool



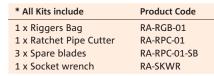


Retrofit Assist Kit 2*	
For disconnection at luminaire	

**Retrofit Assist Kit 1\*** 

For disconnection at junction box or T-fitting

Ordering	Informati	ion			
To suit Pc	ole Size		Retrofit Assist Kit 2	Includes Pole Conversion Tool	Includes Mid Hinge
NPS	DN	OD	Ordering Code	Product Code	Product Code
1¼"	32	42.4	RAK2-PCT-32	RA-MH-PCT-32	RA-MH-32
1½"	40	48.3	RAK2-PCT-40	RA-MH-PCT-40	RA-MH-40
2"	50	60.3	RAK2-PCT-50	RA-MH-PCT-50	RA-MH-50





Retrofit Assist – Interchangeable Pole Clamps

Kits come with the pole clamp sizes as indicated in the ordering code. Other sizes can be ordered to accommodate different pipe sizes.

Ordering	Informat	ion						
To suit Po	ole Size		Ordering Code					
NPS	DN	OD	Pole Conversion Tool	Mid Hinge				
1¼"	32	42.4	RA-IPC-32	MH-IPC-32				
1½"	40	48.3	RA-IPC-40	MH-IPC-40				
2"	50	60.3	RA-IPC-50	MH-IPC-50				

**Note:** Tools are available for conversion of PVC coated poles.

#### 20 CAD drawings available online: swivelpole.com

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Retrofit Assist - Socket Wrench

#### Conversion re-using existing pole



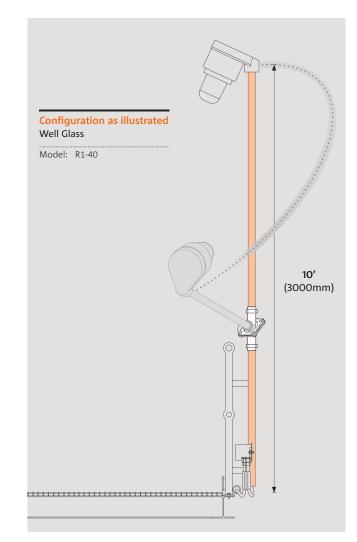
Retrofit Assist Kit PAGE 20

#### Applications

- To convert NPS 1½" and NPS 2" non-lowering poles to a Swivelpole<sup>™</sup>
- Allows replacement of faulty luminaires
- Allows the upgrade to new lighting design and technology

#### Features & Benefits

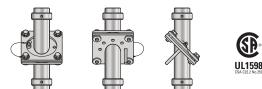
- Locking collars allow adjustment in orientation of the Safe Swivel<sup>™</sup> joint to avoid clash with infrastructure
- Retrofit Assist system allows safe and efficient installation eliminating the need for hot work permits
- Conversion takes place at platform level eliminating the risks of working at heights



Ordering Information	on						
Installed Height		Section			ection:		Product Code
	Suits existing pole size				existing p	ole size	
	NPS	DN	OD	NPS	DN	OD	
<b>10'</b> (3000)	1¼"	32	42.2	1¼"	32	42.2	R1-32
н	1½"	40	48.3	1½"	40	48.3	R1-40
н	2"	50	60.3	2"	50	60.3	R1-50
NPS nom	inal pipe size D	N nomin	al size OD outside dian	neter All dime	nsions ar	e in imperial/metric	(nominal) and may differ from published table

Note: Models available for PVC pole conversion. Inquiries to info@swivelpole.com

Swivelpole<sup>™</sup> Product Catalogue 21 Petitioner Ensign Exhibit 1004 - 23 of 28



Suits existing pole sizes NPS 1<sup>1</sup>/<sub>2</sub>" and NPS 2"

Renew pole top utilizing existing pole base



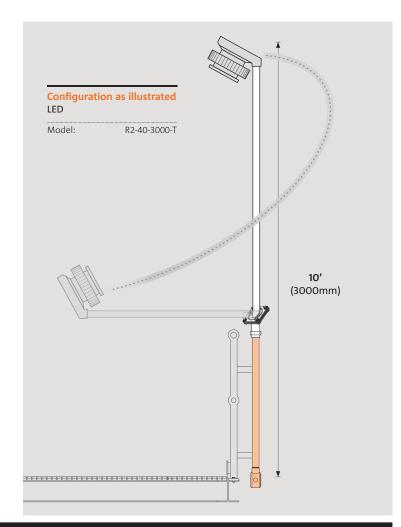
Suits existing pole sizes NPS 1¼" to NPS 2"

#### Applications

- To convert NPS 1¼" to NPS 2" non-lowering poles to a Swivelpole  $\ensuremath{``}$
- Allows replacement of faulty luminaires
- Allows the upgrade to new lighting design and technology
- Allows replacement of corroded or oversized pole tops

#### Features & Benefits

• Locking collars allow adjustment in orientation of the Safe Swivel<sup>™</sup> joint to avoid clash with infrastructure



Installed Height	Base Section: Suits existing pole siz			Top Sec	Top Section				Product Code	
	NPS	DN	OD	NPS	DN	OD	Length 'T'	Top Section Options		
<b>8'</b> (2400)	1¼"	32	42.2	1½"	40	48.3	<b>3'11</b> " (1200)	Threaded	R2-32-2400-T	
1	н					н		Plain, no slot	R2-32-2400-P	
1	н					н		Plain, slot options	R2-32-2400-PS/PS	
1	1½"	40	48.3	1½"	40	48.3	3' 11" (1200)	Threaded	R2-40-2400-T	
						"		Plain, no slot	R2-40-2400-P	
1	н	н			н	н	н	Plain, slot options	R2-40-2400-PS/P	
1	2"	50	60.3	1½"	40	48.3	3' 11" (1200)	Threaded	R2-50-2400-T	
I	н	н	н			н	"	Plain, no slot	R2-50-2400-P	
1	н				н	н	н	Plain, slot options	R2-50-2400-PS/PS	
<b>10'</b> (3000)	1¼"	32	42.2	1½"	40	48.3	5'11" (1800)	Threaded	R2-32-3000-T	
	н	н			н	н		Plain, no slot	R2-32-3000-P	
1	н				н	н	н	Plain, slot options	R2-32-3000-PS/PS	
1	1½"	40	48.3	1½"	40	48.3	5' 11" (1800)	Threaded	R2-40-3000-T	
ı	н					н	" ` `	Plain, no slot	R2-40-3000-P	
1	н	н				н	н	Plain, slot options	R2-40-3000-PS/P	
1	2"	50	60.3	1½"	40	48.3	5' 11" (1800)	Threaded	R2-50-3000-T	
	н	н				н	н	Plain, no slot	R2-50-3000-P	
	н	н			н	н	н	Plain, slot options	R2-50-3000-PS/P	

22 CAD drawings available online: swivelpole.com

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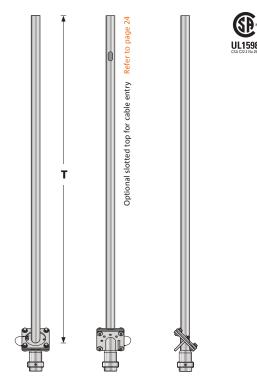
# Renew pole top utilizing existing pole base



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Luminaire Mounts PAGE 24-25



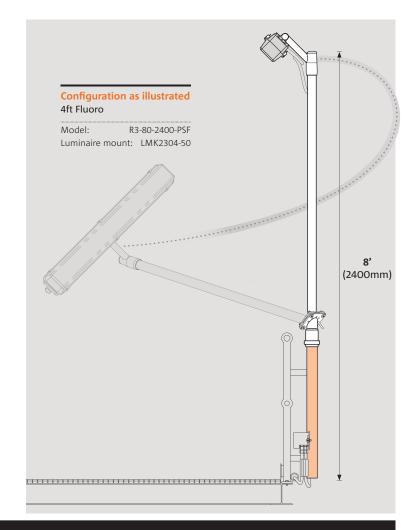
Suits existing pole sizes NPS 2<sup>1</sup>/<sub>4</sub>" and NPS 3"

#### Applications

- To convert NPS 2½" and NPS 3" non-lowering poles to a Swivelpole  $^{\scriptscriptstyle \bowtie}$
- Allows replacement of faulty luminaires
- Allows the upgrade to new lighting design and technology
- Allows replacement of corroded or oversized pole tops

#### Features & Benefits

• Locking collars allow adjustment in orientation of the Safe Swivel<sup>™</sup> joint to avoid clash with infrastructure



Installed Height	Base Sec	tion: Suits e	kisting pole size	Top Sec	Top Section				Product Code		
	NPS	DN	OD	NPS	DN	OD	Length 'T'	Top Section Options			
8' (2400)	2½"	65	76.0	2"	50	60.3	<b>3' 11"</b> (1200)	Plain, no slot	R3-65-2400-P		
п	"	"	п	"	"	"	"	Plain, slot options	R3-65-2400-PS/PS		
	3"	80	89.0	2"	50	60.3	<b>3' 11"</b> (1200)	Plain, no slot	R3-80-2400-P		
п			п			"	"	Plain, slot options	R3-80-2400-PS/PS		
<b>10'</b> (3000)	2½"	65	76.0	2"	50	60.3	<b>5' 11"</b> (1800)	Plain, no slot	R3-65-3000-P		
п			п			"	"	Plain, slot options	R3-65-3000-PS/PS		
	3"	80	89.0	2²"	50	60.3	<b>5' 11"</b> (1800)	Plain, no slot	R3-80-3000-P		
"	н						н	Plain, slot options	R3-80-3000-PS/PS		

Swivelpole<sup>™</sup> Product Catalogue 23 Petitioner Ensign Exhibit 1004 - 25 of 28

# **Luminaire Mounts**

To suit all models

#### FLUORESCENT, LED END ENTRY



#### LMK1101 8" ( 200mm) spigots

1" (DN25) (OD 33.7mm)

#### LMK2101 8" ( 200mm) spigot 1¼" (DN32) (OD 42.4mm)



LMK1201 8" ( 200mm) spigots 90° offset 1" (DN25) (OD 33.7mm)

#### LMK1202 8" ( 200mm) spigots 120° offset 1" (DN25) (OD 33.7mm)

#### LMK1203

8" ( 200mm) spigots 180° offset 1" (DN25) (OD 33.7mm)



LMK1204 170/432mm spigots 1" (DN25) (OD 33.7mm)



FLUORESCENT CLAMP-ON



LMK2301\* 4' (1200mm) chs boom 1¼" (DN32) (OD42.4mm)

#### LMK2302 2'3" (700mm) chs boom 1¼" (DN32) (OD42.4mm))



LMK2304 3' (920mm) chs cross-arm 1¼" (DN32) (OD42.4mm)



Ø 10.5mm @ 705mm ctrs. Ø 10.5mm @ 548mm ctrs. 3' 3" (1000mm) shs boom (30 × 30 × 2mm)

#### LMK3304\*

Ø 10.5mm @ 548mm ctrs. Ø 10.5mm @ 700mm ctrs. Ø 10.5mm @ 800mm ctrs. 4' 3" (1300mm) shs boom (30 × 30 × 2mm)

#### LMK3305\*

Ø 10.5mm @ 400mm ctrs. Ø 10.5mm @ 500mm ctrs. 2' 5" (750mm) shs boom (30 × 30 × 2mm)

\* 25lbs recommended maximum luminaire weight (for one-man operation): LMK2301 / 3301 / 3304 / 3305



# BULKHEAD



LMK4101





LMK4301 Ø 10.5mm @ 290 × 150mm

LMK4102 Ø 9.0mm @ 168 × 205mm

Ø 10.5mm @ 290 × 150mm

LMK4103 Ø 11.0mm @ 200 × 180mm

LMK4104 Ø 7.0mm @ 200 × 142mm

LMK4105 ∅ 10.0mm @ 420 × 160mm LMK4303 Ø 10.5mm @ 168 × 204mm

Ø 10.5mm @ 200 × 180mm

LMK4304

LMK4302

Ø 10.5mm @ 420 × 160mm



LMK4201 ∅ 10.5mm @ 290 × 150mm

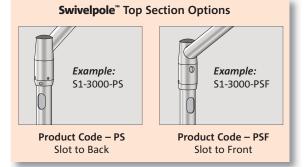
<mark>LMK4202</mark> ∅ 9.0mm @ 168 × 205mm



LMK4401 Ø 9.0mm @ 204 × 168mm

LMK4402 Ø 10.0mm @ 290 × 150mm

LMK4403 Ø 9.0mm @ 168 × 204mm



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44lbs recommended maximum luminaire weight (for one-person operation).

# **Luminaire Mounts**

To suit all models



#### FLOODLIGHT BOLT-ON / SCREW-IN



LMK5101 12 x 28mm slot, centred 12 x 28mm slots @ 94mm ctrs. 12 x 40mm slots

@ 174mm ctrs.



LMK5201 Ø 12mm, centre thread Ø 18mm @ 480mm ctrs.



#### MULTI-PURPOSE BOLT-ON



LMK6101 8.5 x 25mm slots @ PCD 89mm 8.5 x 25mm slots @ PCD 123mm



LMK6401 Ø 10mm @ 153mm ctrs.



#### WELL-GLASS BOLT-ON / SCREW-ON



LMK7101 10 x 15mm slots @ 112 x 112mm



LMK7301 1½" BSP threaded top

LMK7302 1½" NPT threaded top

LMK7303 1¼" BSP threaded top

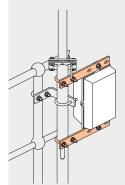
LMK7304 1¼" NPT threaded top

#### ACCESSORIES





#### LMK8011 Mounting bracket to suit extra equipment.



Mounted to Swivelpole<sup>™</sup> base for:

- External lighting ballast
- Instrument and control panels



### Swivelpole<sup>™</sup> Product Catalogue 25 Petitioner Ensign Exhibit 1004 - 27 of 28



# Join industry leaders worldwide and specify Swivelpole<sup>™</sup>

# Oil & Gas | Mining & Metal | Power Generation Heavy Engineering | Water & Waste | Infrastructure

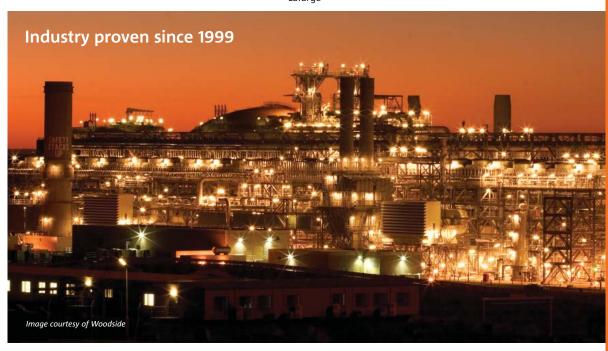
Design Firms
ABB
Aker
AMEC
Aurecon
Ausenco
Bechtel
Black & Veatch
Calibre
CBI
Fluor
Foster Wheeler
Fyfe
Hatch Group
Jacobs Engineering

KBR KJV Lycopodium Minerva Mustang Engineering Onyx Saipem Sedgman Shaw Group Sinclair Knight Merz SNC Lavalin Technip Udhe Shedden Worley Parsons

End Users Alcoa Apache **BHP** Billiton ΒP Caltex Canexus **Cenovus Energy** Chevron Clough **Conoco Philips** CSBP Dow Chemical Exxon Mobil FMG Highland Valley Copper Imperial Oil Incitec Pivot Lafarge

Marathon Oil MEG Energy Mosaic **Neptune Terminals** Nickel West Orica **Origin Energy** Osum Potash Corp Rio Tinto Sandvik Sasol Shell Suncor Syncrude Woodside Xstrata

# **Swivelpole**



Lowering Costs, Raising Standards swivelpole.com

INTERNATIONALLY PATENTED

**UL1598** CSA C22.2 No.250

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