



# Samson S45

## INSTALLATION MANUAL

AVE-S45-001-IM

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## Part 0 Manual Administration

### 0.1 Document approval

This document has been established in accordance with an alternative procedure to DOA approved under EASA AP429.

This installation manual is applicable for part numbers:

- Samson Drop-In Landing AVE-S45MATSNA-TDA
- Samson Drop-In Taxi AVE-S45MATSNT-TDA
- Samson Drop-In Landing 28VAC 400Hz AVE-S45MATSNA-TDS
- Samson Drop-In Taxi 28VAC 400Hz AVE-S45MATSNT-TDS

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 Georg Hartl  
 Head of DO, Aveo Engineering Group, s.r.o.

### 0.2 Amendment Record procedure

The master copy of this document shall be kept electronically as a read only document under the control of Aveo Engineering Group, s.r.o. as Master Copy.

**ALL** amendments to this manual will initiate a raise of issue.

**ALL** raises of issue will be given a sequential Alphabetic Issue Ident sequentially from 01 to 99 in Table 01 - **Issue No:** Column– Initial Issue of Document will be “01”

**ALL** Issues of this document will be approved by Head of DO

Issue No.	Details	Date	Effected Pages
01	Initial Issue	01.Dec.2016	ALL

**Table 01: Document Amendment Record Table**

### 0.3 Effected Pages Procedure

ALL pages affected by ANY raise of issue of this manual will be listed in Table 01 - *Effected Pages* Column.

The reason(s) for ALL raise of issue and description of change due to raise of issue will be provided for ALL raises of issue in Table 01 - *Details* Column.

Changes from the previous issue are highlighted by **YELLOW HIGHLIGHTING** over new content. AND **YELLOW HIGHLIGHTING** AND CROSSING OUT of deleted content.

Example **(CROSSING OUT)**

# 1. PRODUCT INFO

Aveo Engineering introduces the exclusive next-generation Samson™ Drop-In PAR46 replacement for Legacy Lights.

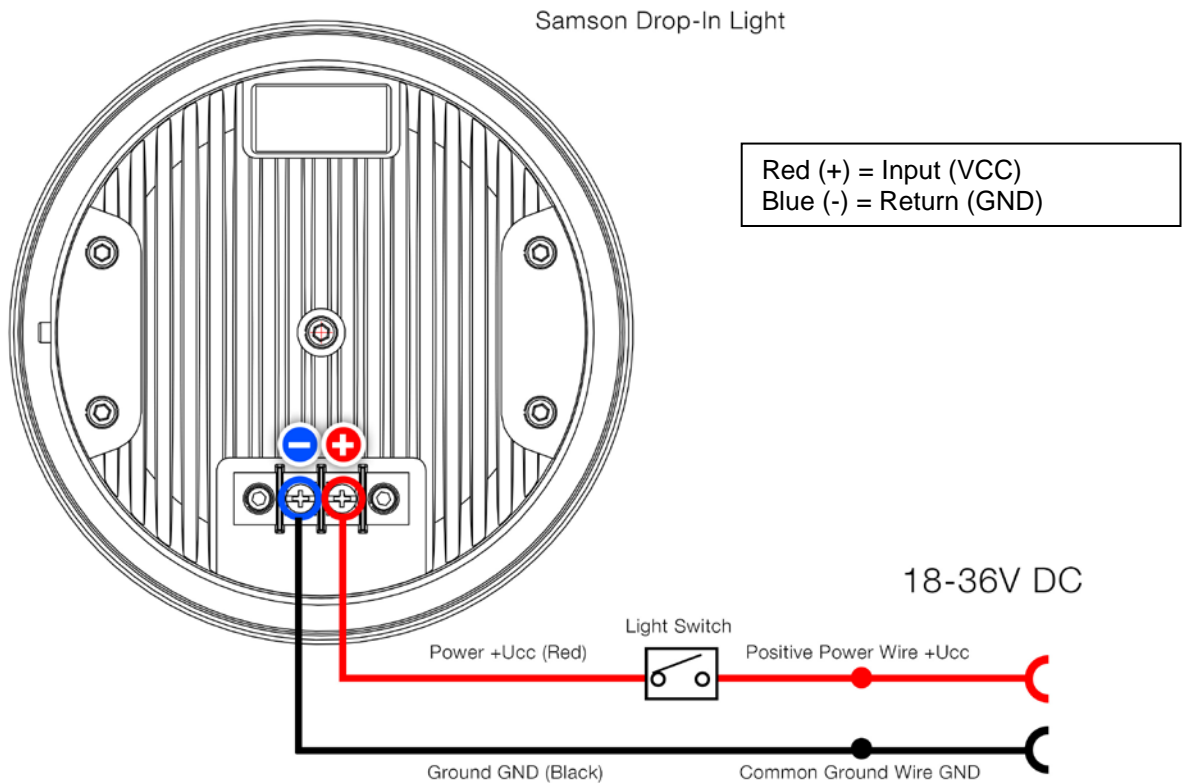
## Environmentally Friendly

The Samson uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally-friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a "green" aircraft light!

### MAIN FEATURES:

- FAA Approved chromacity
- Highly optimized optics including Aveo RockyReflector™ System
- Aveo PowerOptimizer™ advanced LED power supply and controller
- ON/OFF function only

# 2. WIRING



Recommended wire AWG size: **18**  
In case of AC light no polarity is to be considered.

### 3. TECHNICAL SPECIFICATION

#### *DC version*

**Light characteristics:** Landing Light / Taxi Light / PAR46 replacement

**Voltage range:** +18..+36 VDC

**Voltage protection:**

- a. Transcend voltage: 2 second +80V
- b. Under-voltage lockout: +18VDC, not more;
- c. Over-voltage lockout: +36VDC, not less.

**LED quantity:** 45pcs

**Performance:** a. Output current: 1.25A per LED

b. Output power: 168W

c. Input power: 200W +/- 5%

**Chromaticity:** Cool White, Color shade 1C0

**Intensity:** 328.000 cd peak, see annex 1, 2, 3, 4

**Viewing Angle:** 12° Landing (symetrical)

40° Taxi (asymetrical)

**Low temperature slope start:** -55°C

**Ambient temperature:** -55°C...+85°C

**Overheat protection:** Yes

**Device RTCA/DO160 qualified:**

- a. chapter 4, Temperature - Altitude, Category F2
- b. chapter 5, Temperature Variation, Category A
- c. chapter 6, Humidity, Category C
- d. chapter 7, Operational Shocks and Crash Safety, Category B
- e. chapter 8, Vibration, Category U, curves G, W
- f. chapter 9, Explosion proofness, Category H
- g. chapter 10, Waterproofness, Category R
- h. chapter 11, Fluids Susceptibility, Category F
- i. chapter 12, Sand and Dust, Category D
- j. chapter 13, Fungus resistance, Category F
- k. chapter 14, Salt spray, Category T
- l. chapter 15, Magnetic effects, Category Z
- m. chapter 16, Power Input, Category Z
- n. chapter 17, Voltage Spike, Category A
- o. chapter 18, Audio Frequency Conducted Susceptibility, Category Z
- p. chapter 19, Induced Signal Susceptibility, Category ZC
- q. chapter 20, Radio Frequency Susceptibility, Category T
- r. chapter 21, Emission of Radio Frequency Energy, Category H
- s. chapter 22, Lightning induced transient susceptibility test, Category A2E2X
- t. chapter 23, Lightning Direct Effects, Category 2A2A
- u. chapter 24, Icing, Category A
- v. chapter 25, Electrostatic Discharge (ESD), Category A
- w. chapter 26, Fire, Flammability, Category C

**Wiring:** N/A, Terminal Block – 2 contacts

Programmable Soft-Start, less than 50mS;

**Part number:** AVE-S45MATSNA-TDA Landing

AVE-S45MATSNT-TDA Taxi

**Serial number:** A00-YYMM-xxxxx

**Weight:** less than 1.93 pounds (874 g)

**Useful life:** not less than 30.000.0 aircraft flight hours.

**Dimension:** D=5.63 inch [143mm], H= 2.30 inch [58.4mm].

**AC version****Light characteristics:** Landing Light / Taxi Light / PAR46 replacement**Voltage range:** +27..+29 V AC @ 400Hz**Voltage protection:**

- a. Transcend voltage: 2 second +40VAC
- b. Under-voltage lockout: +26VAC, not more;
- c. Over-voltage lockout: +30VAC, not less.

**LED quantity:** 45pcs**Performance:** a. Output current: 0.85A per LED

b. Output power: 113W

c. Input power: 147,5W +/- 5%

**Chromaticity:** Cool White, Color shade 1C0**Intensity:** 240.000 cd peak, see annex 5, 6, 7, 8**Viewing Angle:** 12° Landing (symetrical)

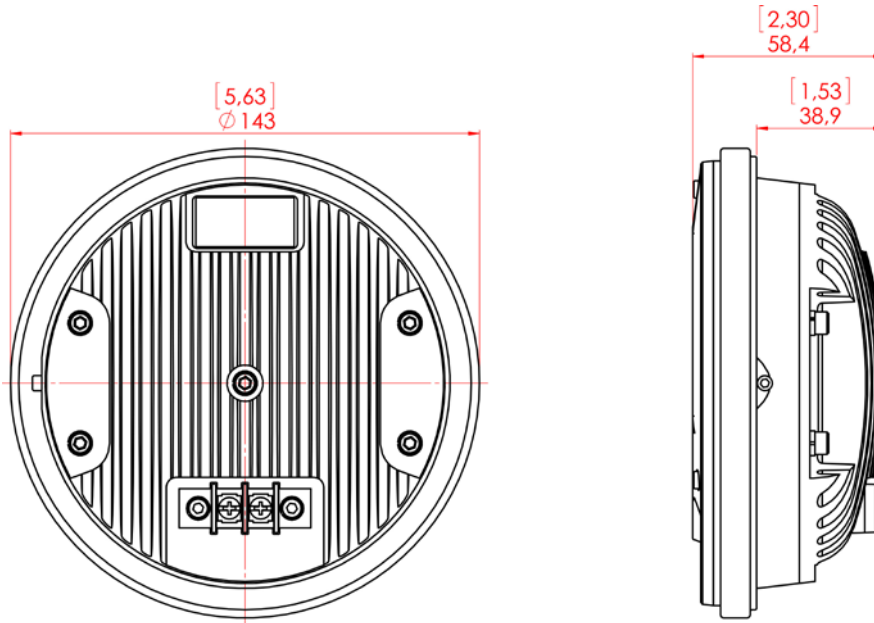
40° Taxi (asymetrical)

**Low temperature slope start:** -55°C**Ambient temperature:** -55°C...+85°C**Overheat protection:** Yes**Device RTCA/DO160 qualified:**

- a. chapter 4, Temperature - Altitude, Category F2
- b. chapter 5, Temperature Variation, Category A
- c. chapter 6, Humidity, Category C
- d. chapter 7, Operational Shocks and Crash Safety, Category B
- e. chapter 8, Vibration, Category U, curves G, W
- f. chapter 9, Explosion proofness, Category H
- g. chapter 10, Waterproofness, Category R
- h. chapter 11, Fluids Susceptibility, Category F
- i. chapter 12, Sand and Dust, Category D
- j. chapter 13, Fungus resistance, Category F
- k. chapter 14, Salt spray, Category T
- l. chapter 15, Magnetic effects, Category Z
- m. chapter 16, Power Input, Category Z
- n. chapter 17, Voltage Spike, Category A
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- v. chapter 25, Electrostatic Discharge (ESD), Category A
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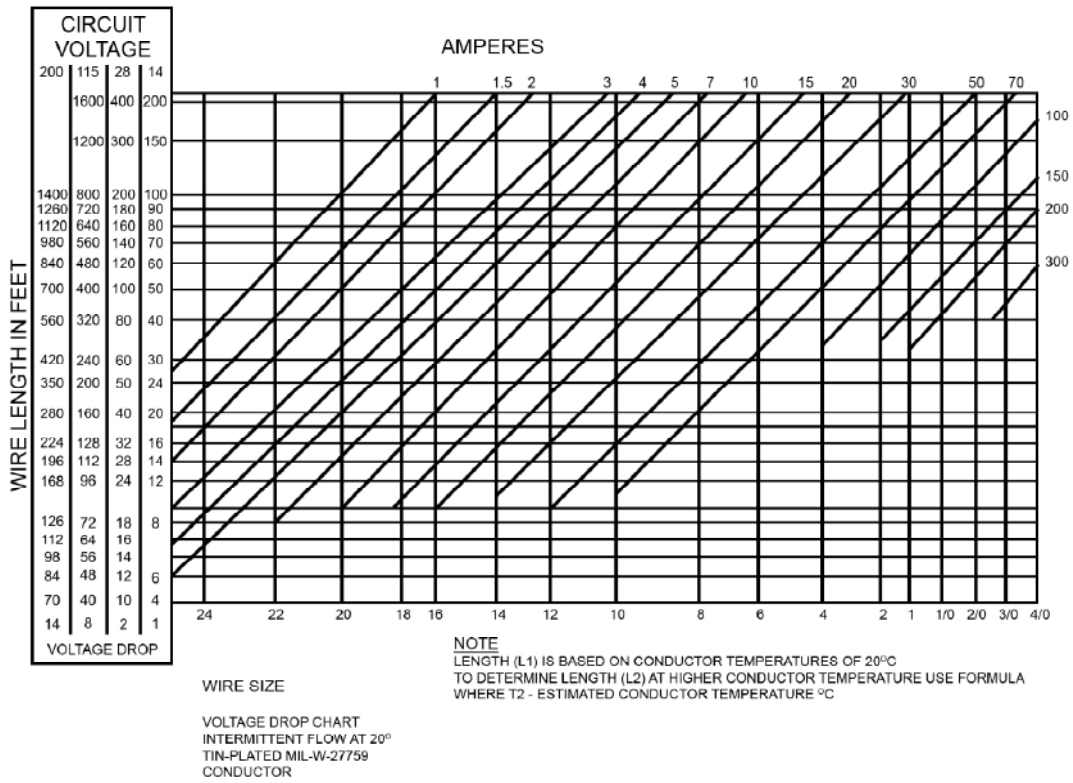
**Wiring:** N/A, Terminal Block – 2 contacts  
Programmable Soft-Start, less than 50mS;**Part number:** AVE-S45MATSNA-TDS Landing  
AVE-S45MATSNT-TDS Taxi**Serial number:** A00-YYMM-xxxxx**Weight:** less than 1.93 pounds (874 g)**Useful life:** not less than 30.000.0 aircraft flight hours.**Dimension:** D=5.63 inch [143mm], H= 2.30 inch [58.4mm].

## 4. TECHNICAL DRAWING



\*dimensions in mm [inches]

## 5. WIRING CHART



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## **6. CARE AND CLEANING OF YOUR AVEO ENGINEERING AVIATION LIGHTS**

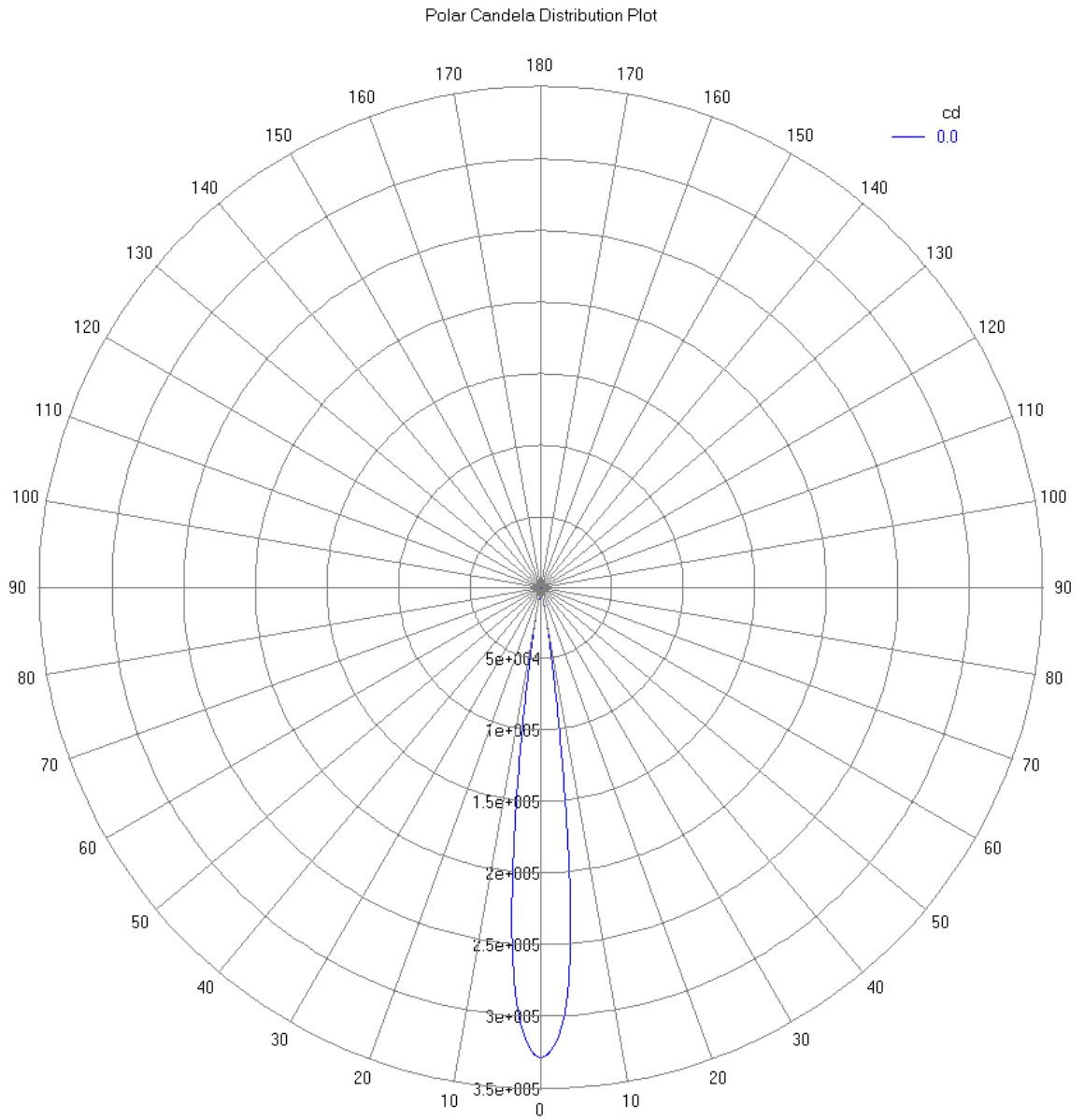
When you receive your Aveo Engineering Aviation Lights, they will have been factory polished and ready to install on the aircraft.

If the lights require a deeper cleaning, they should be polished with a quality lamb's wool sheet and can also be used for deeper polishing. Under no circumstances should any petroleum based product be used to clean the lights.



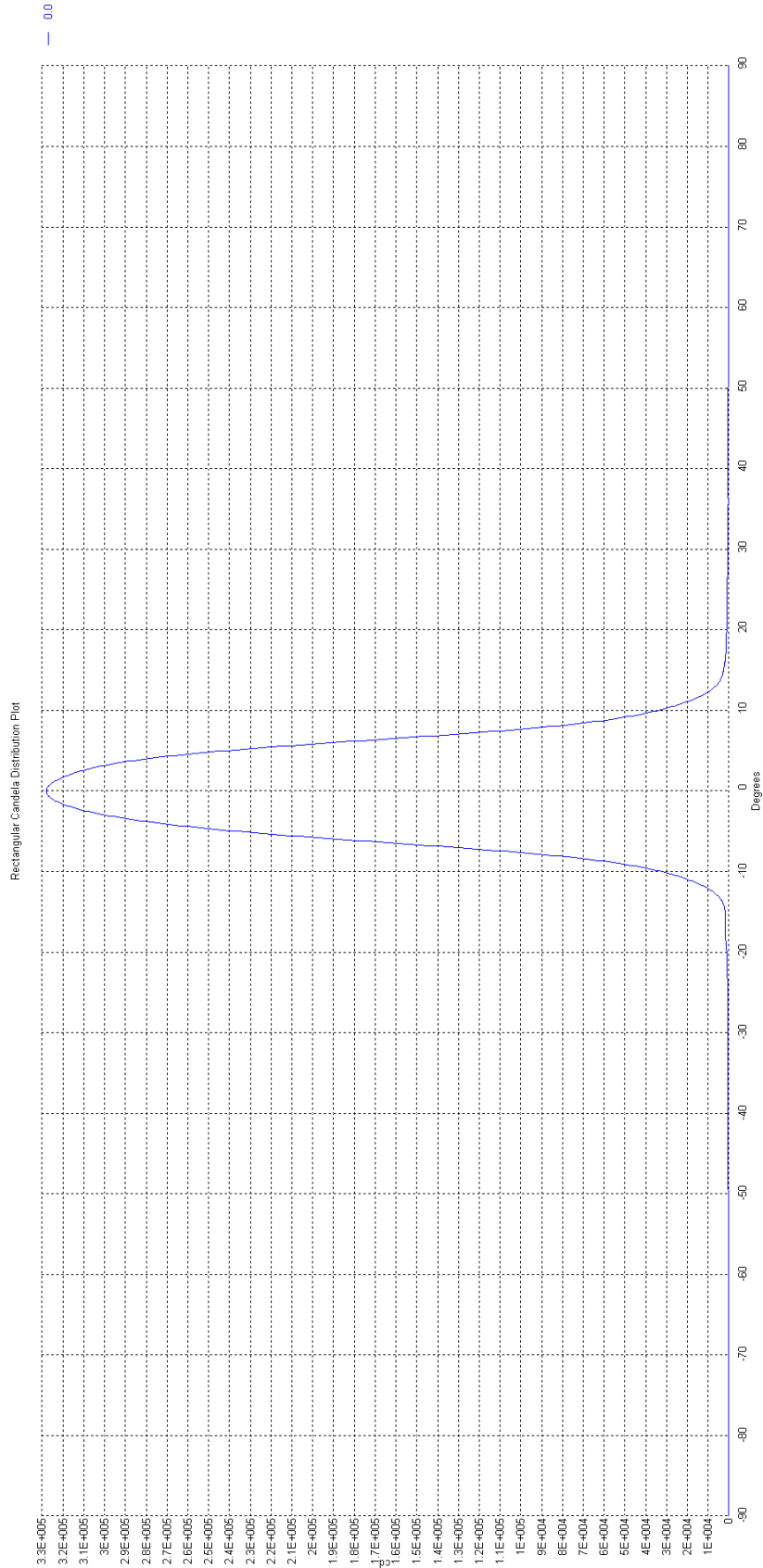
# Annex 1

- Samson Drop-In Landing DC - Polar Candela Distribution



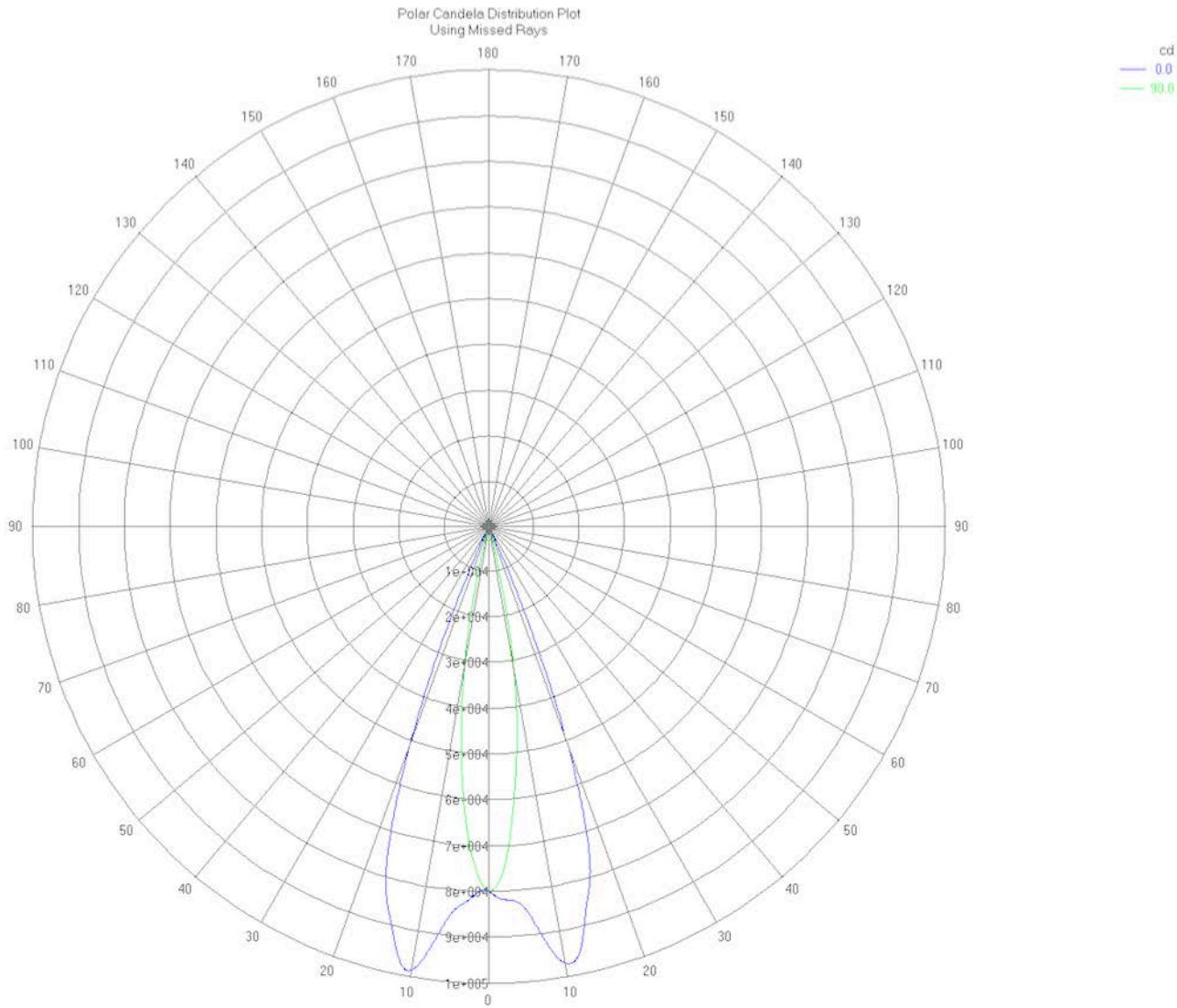
# Annex 2

## – Samson Drop-In Landing DC - Rectangular Candela Distribution



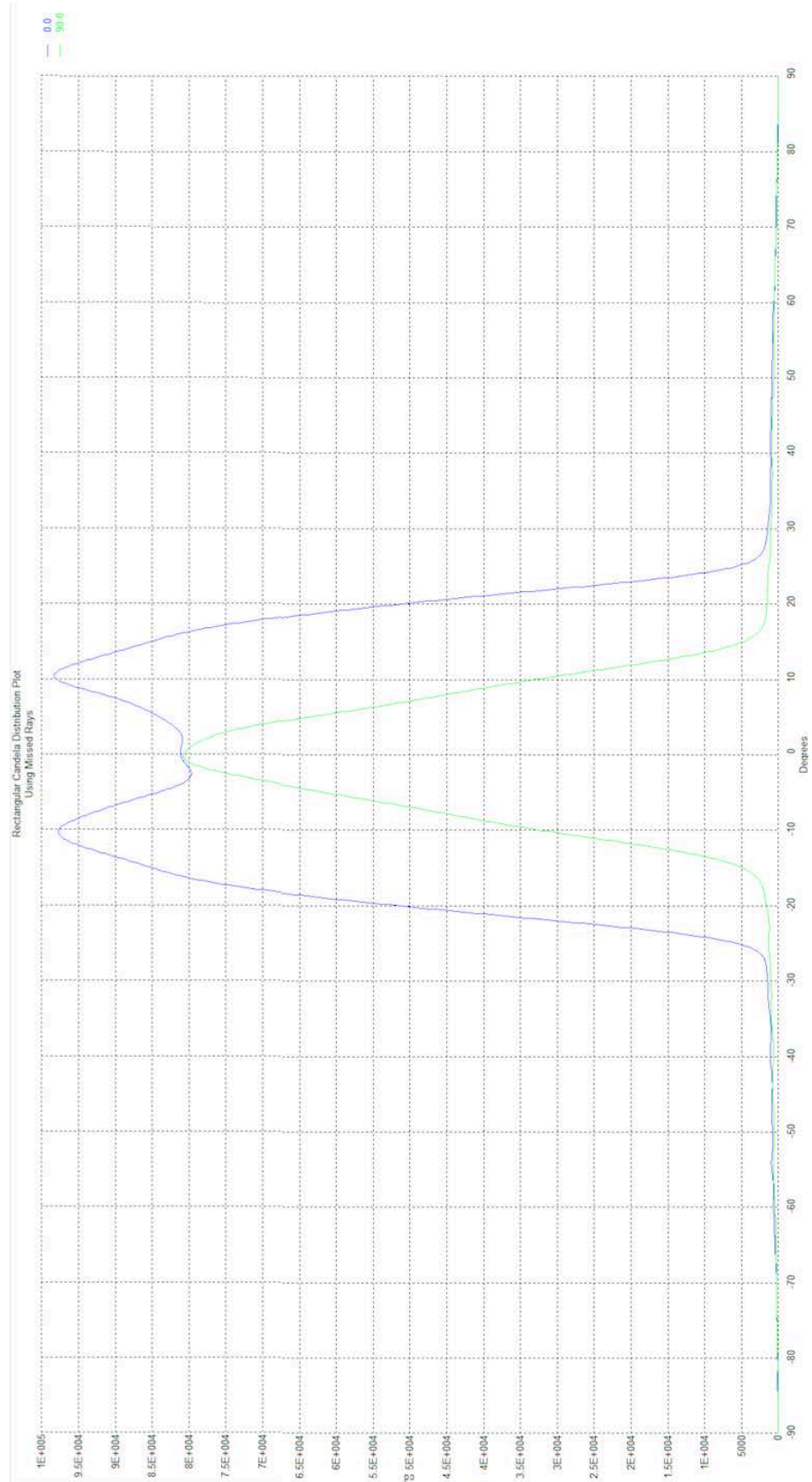
### Annex 3

- Samson Drop-In Taxi DC - Polar Candela Distribution



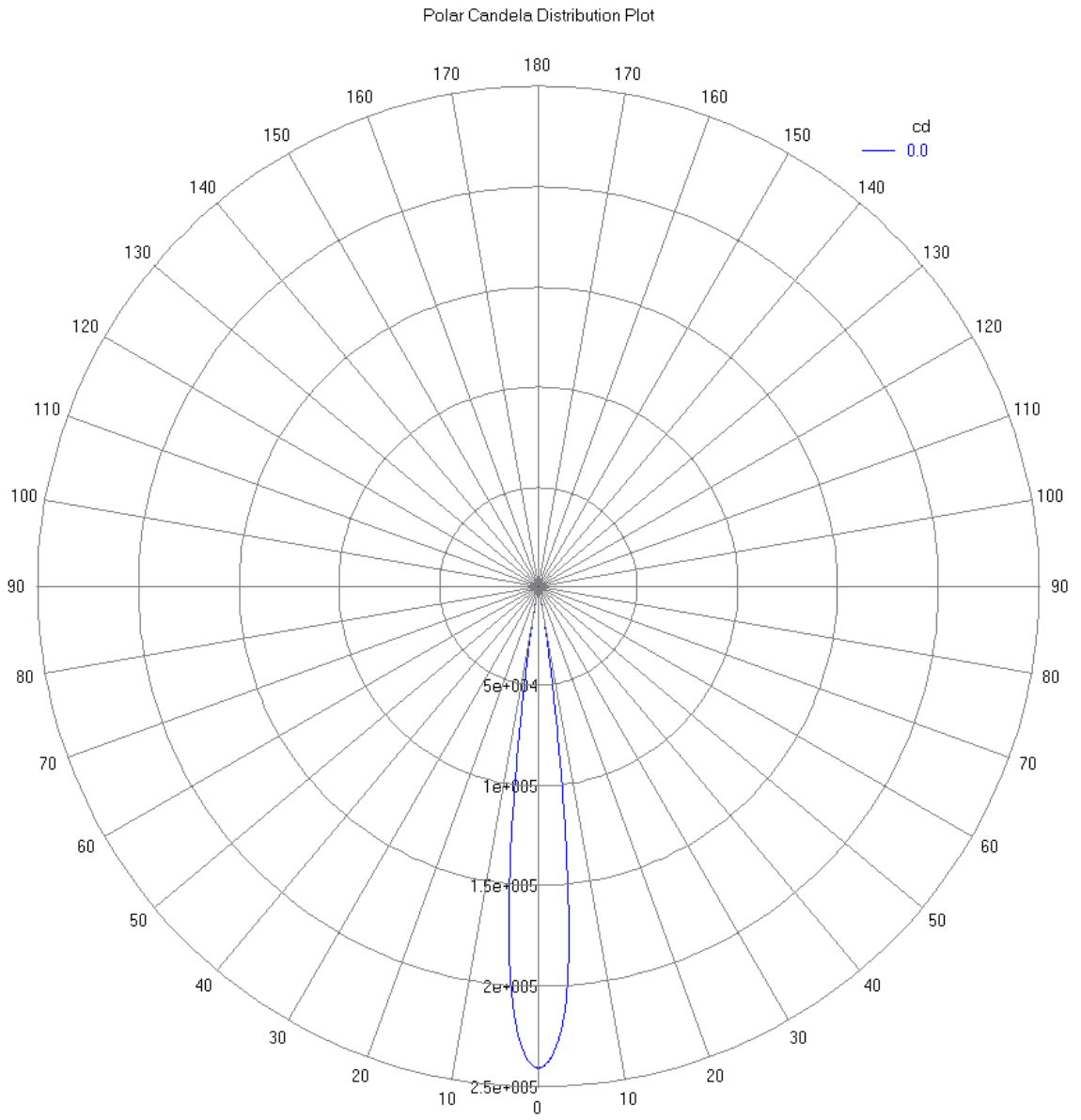
# Annex 4

– Samson Drop-In Taxi DC - Rectangular Candela Distribution



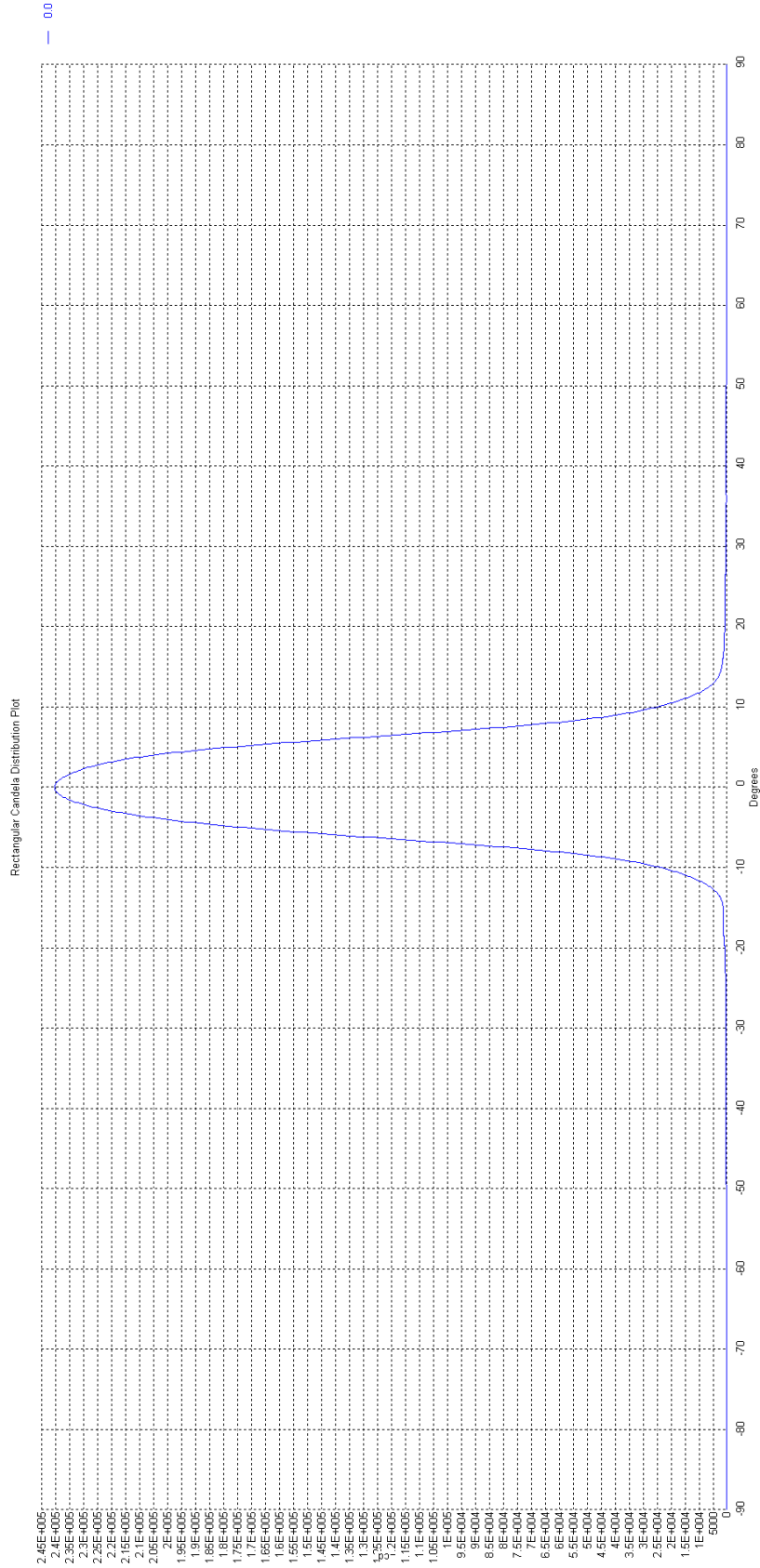
# Annex 5

- Samson Drop-In Landing AC - Polar Candela Distribution



# Annex 6

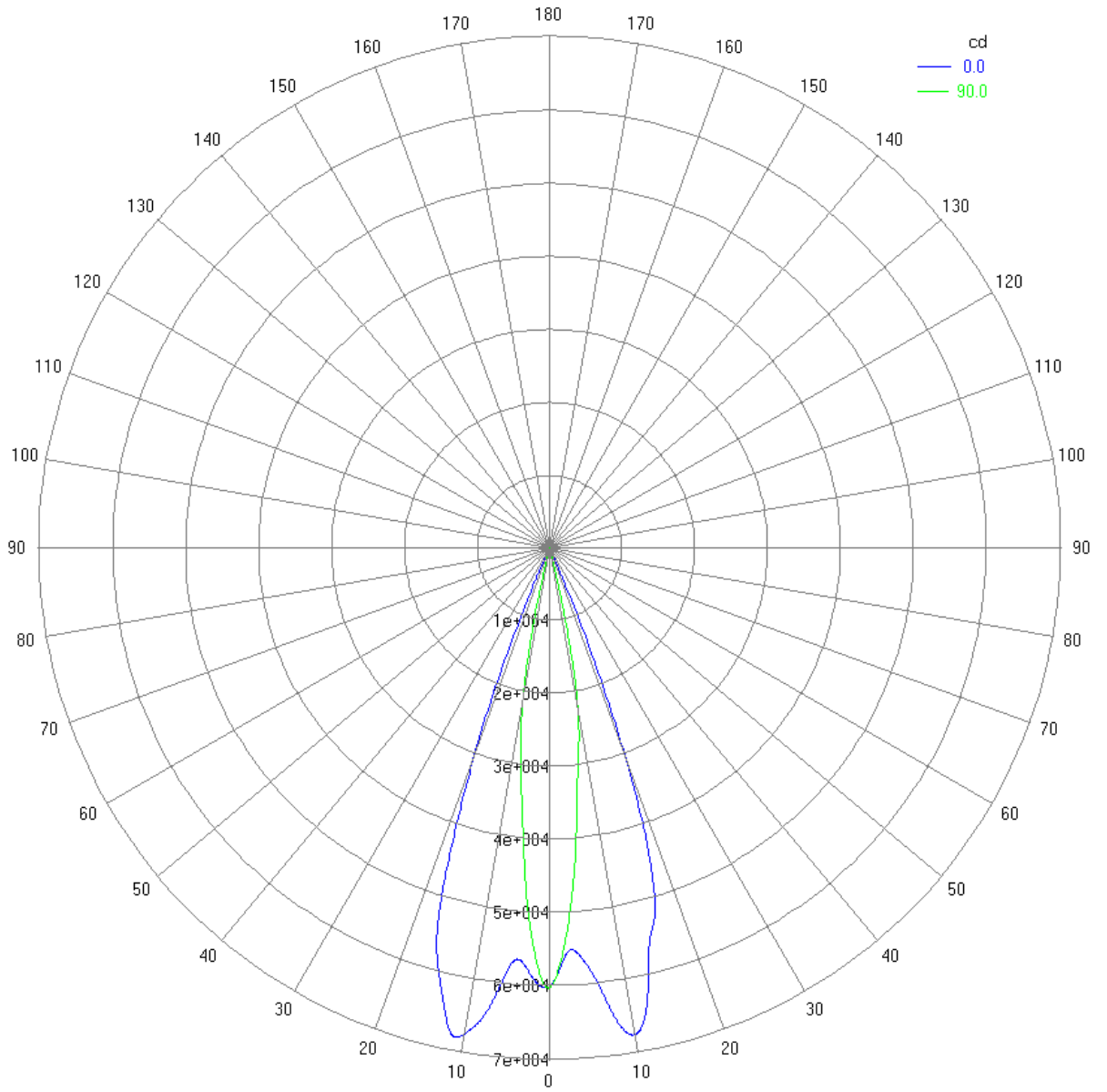
## – Samson Drop-In Landing AC - Rectangular Candela Distribution



# Annex 7

## - Samson Drop-In Taxi AC - Polar Candela Distribution

Polar Candela Distribution Plot



# Annex 8

– Samson Drop-In Taxi AC - Rectangular Candela Distribution

