



Samson S45

INSTALLATION MANUAL

AVE-S45-001-IM

1. PRODUCT INFO

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

Environmentally Friendly

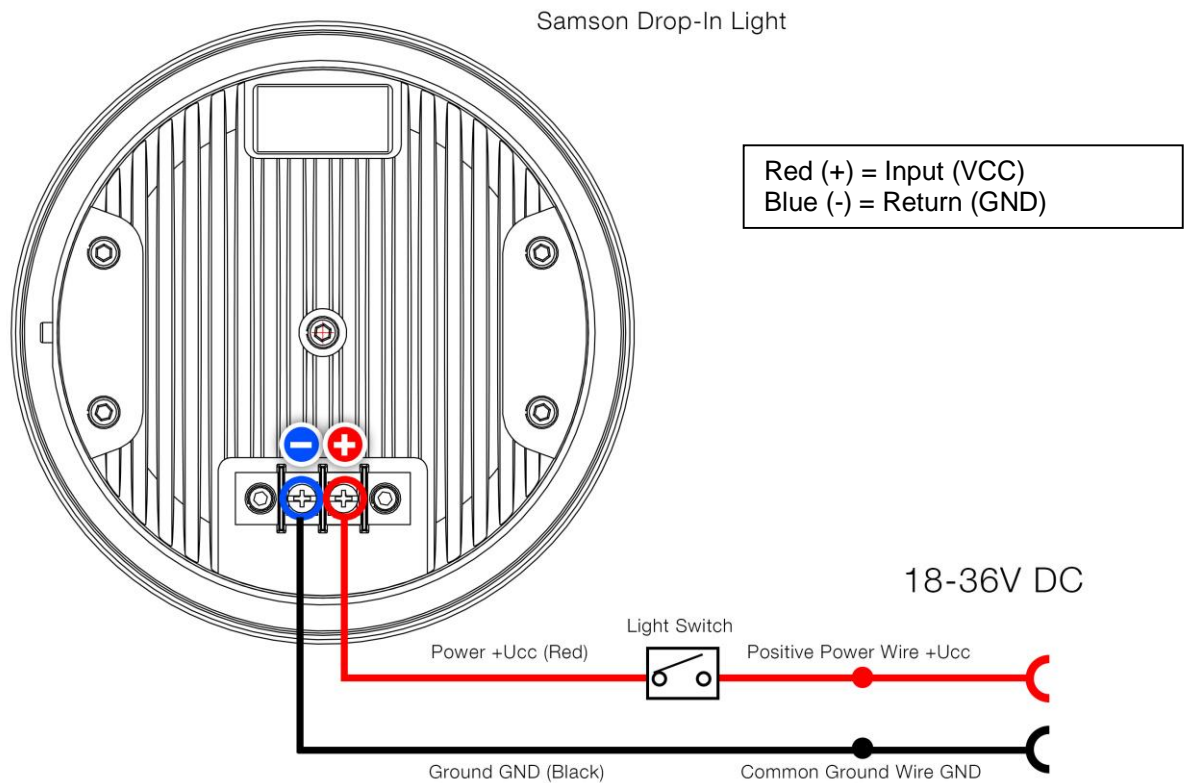
The Samson uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally-friendly technology helps reduce power consumption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

MAIN FEATURES:

- Aveo PowerOptimizer™ advanced LED power supply and controller
- ON/OFF function only

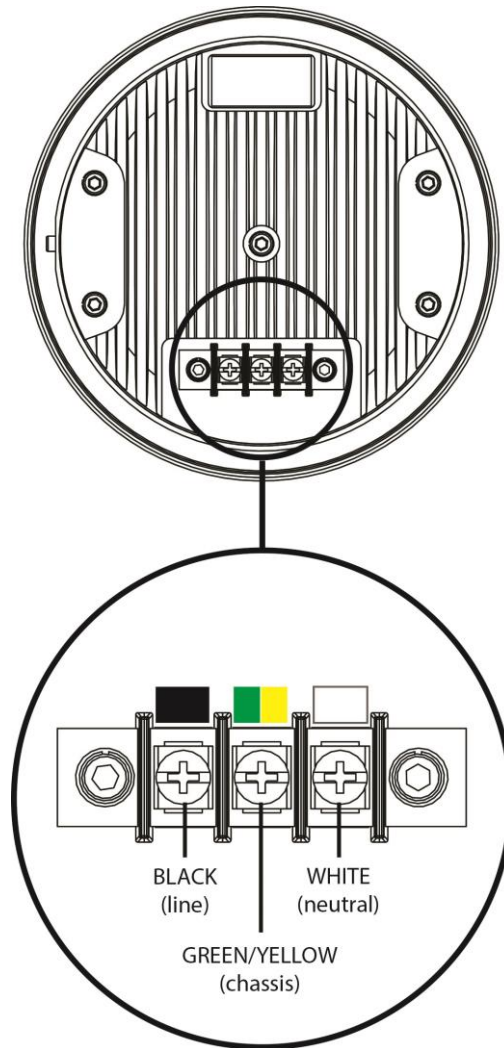
2. WIRING

DC version



Recommended wire AWG size: **18**

AC version



3. TECHNICAL SPECIFICATION

DC version

Light characteristics: Landing Light or 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 per LED: 1.25A
- b. Output power: 168W
- c. Input power: 200W +/- 5%
- d. Input current: 7.15A @28V +/- 5%
11A @18V +/- 5%
5.5A @36V +/- 5%

Chromaticity: Cool White, Color shade 1C0

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

Viewing Angle: 12° Landing (symetrical)

40° x 20° Taxi (asymetrical)

Low temperature slope start: -55°C (-67°F)

Ambient temperature: -55°C...+85°C (-67°F...+185°F)

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 per LED: 0.85A
- 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 (symmetrical)
 40° x 20° Taxi (asymmetrical)

Low temperature slope start: -55°C (-67°F)
Ambient temperature: -55°C...+85°C (-67°F...+185°F)
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 – 3 contacts
 Programmable Soft-Start, less than 50mS;

Part number: AVE-S45MATSNA-TDS Landing
 AVE-S45MATSNT-TDS Taxi

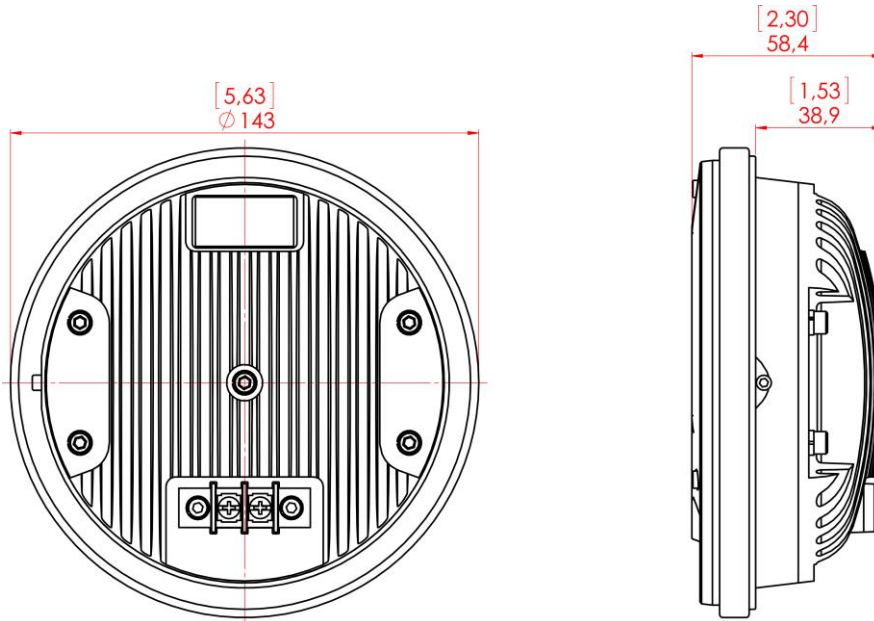
Serial number: A00-YYMM-xxxxx

Weight: less than 1.93 pounds (874 g)

Useful life: not less than 30.000.0 aircraft flight hours.

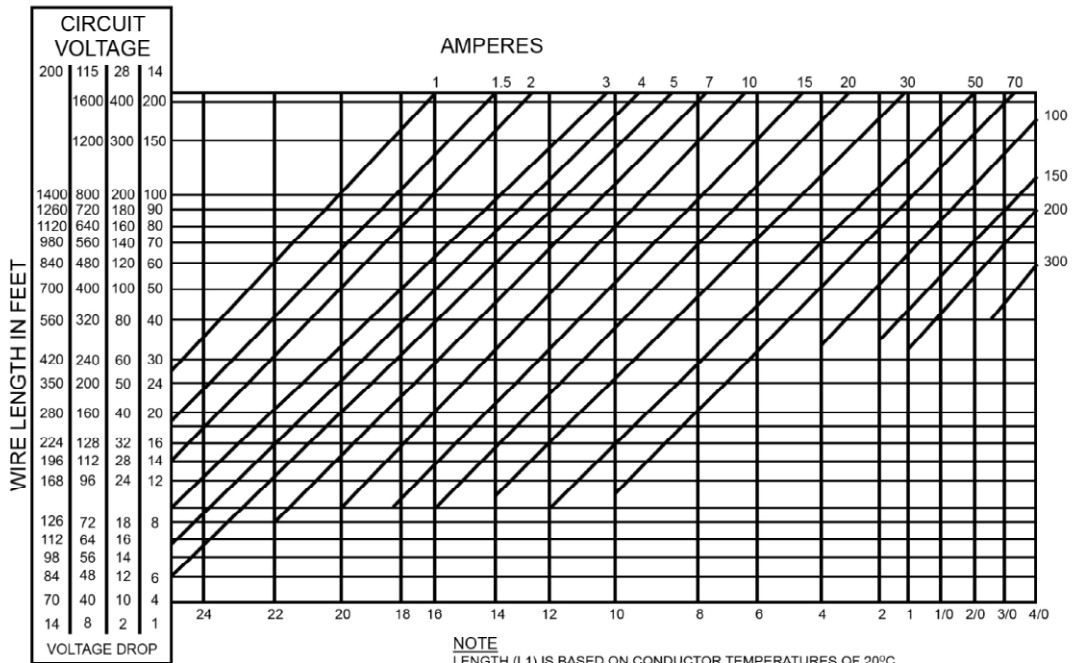
Dimension: D=5.63 inch [143mm], H= 2.30 inch [58.4mm].

4. TECHNICAL DRAWING



*dimensions in mm [inches]

5. WIRING CHART



NOTE
LENGTH (L1) IS BASED ON CONDUCTOR TEMPERATURES OF 20°C
TO DETERMINE LENGTH (L2) AT HIGHER CONDUCTOR TEMPERATURE USE FORMULA
WHERE T2 - ESTIMATED CONDUCTOR TEMPERATURE °C

WIRE SIZE

VOLTAGE DROP CHART
INTERMITTENT FLOW AT 20°
TIN-PLATED MIL-W-27759
CONDUCTOR

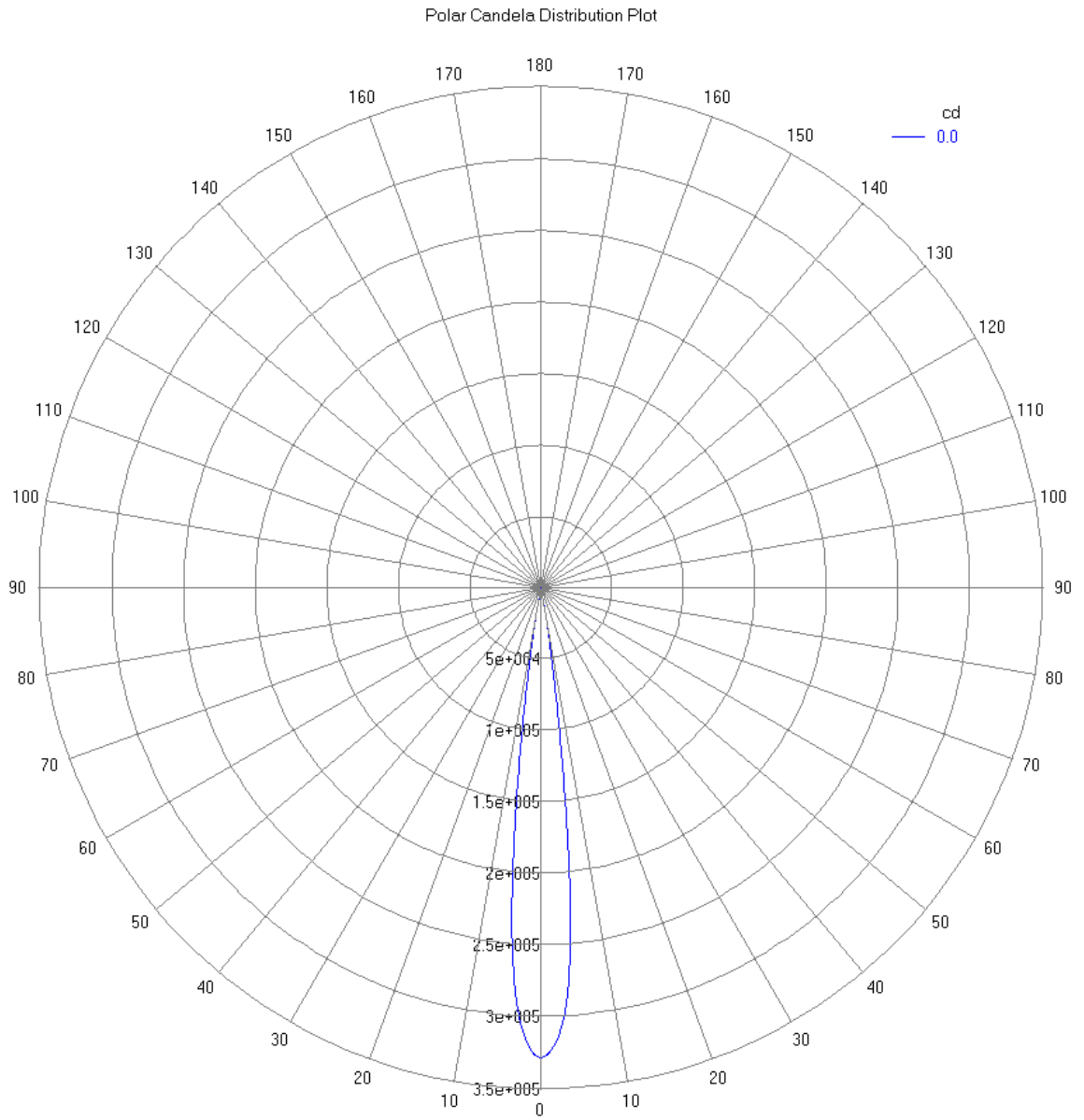
6. CARE AND CLEANING OF YOUR AVEO ENGINEERING AVIATION LIGHTS

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.

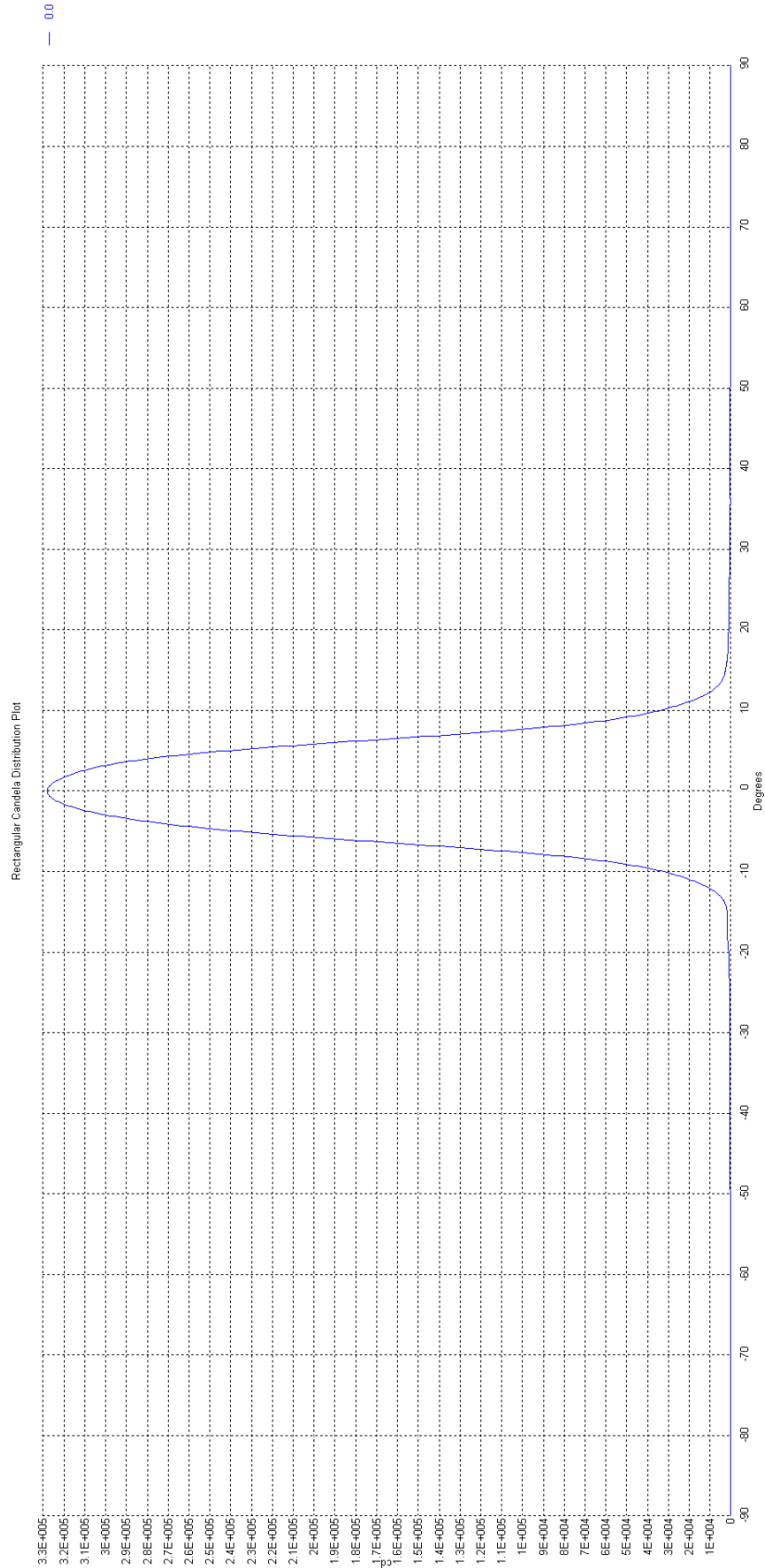
Annex 1

- Samson Drop-In Landing DC - Polar Candela Distribution



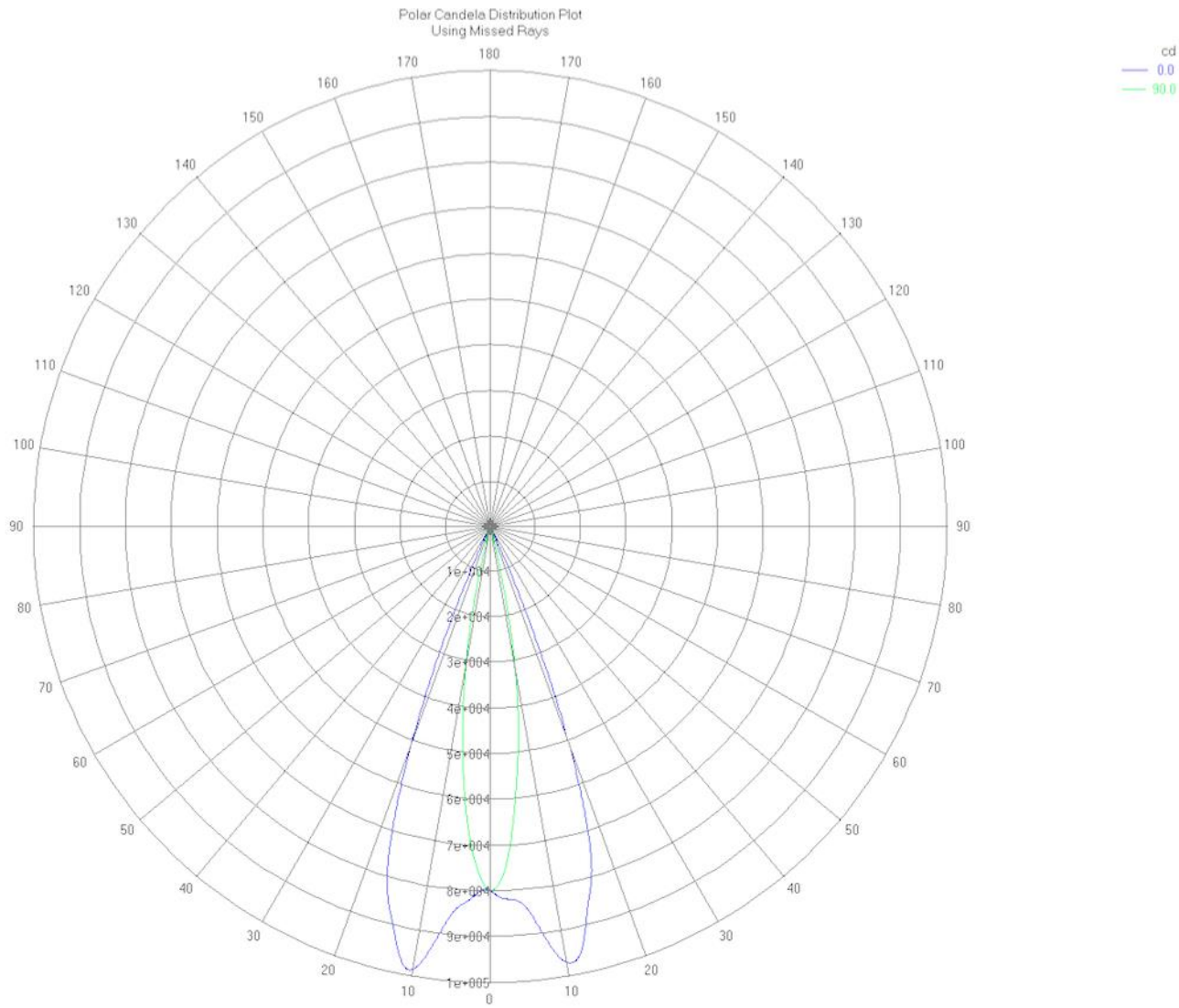
Annex 2

– Samson Drop-In Landing DC - Rectangular Candela Distribution



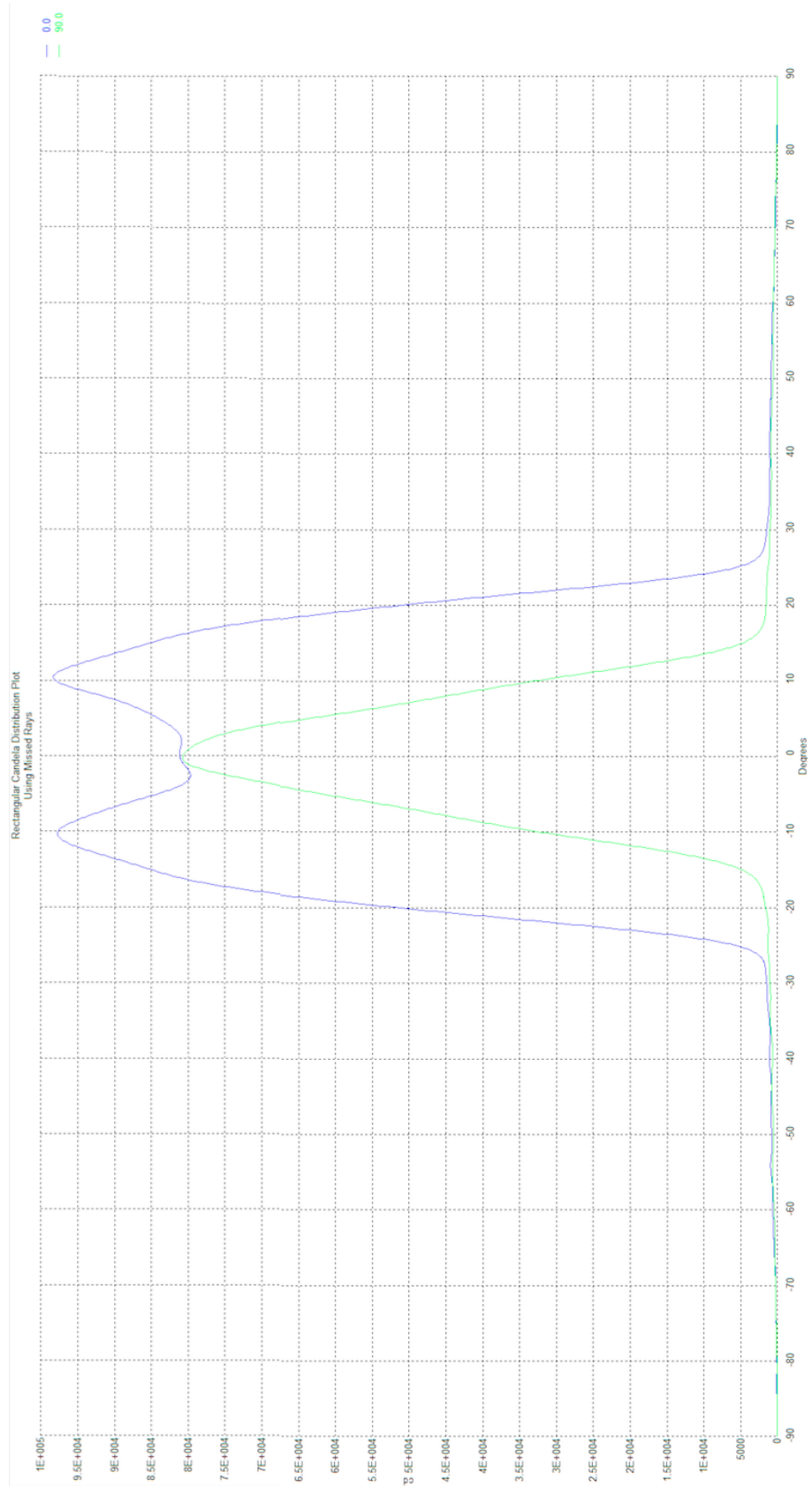
Annex 3

– Samson Drop-In Taxi DC - Polar Candela Distribution



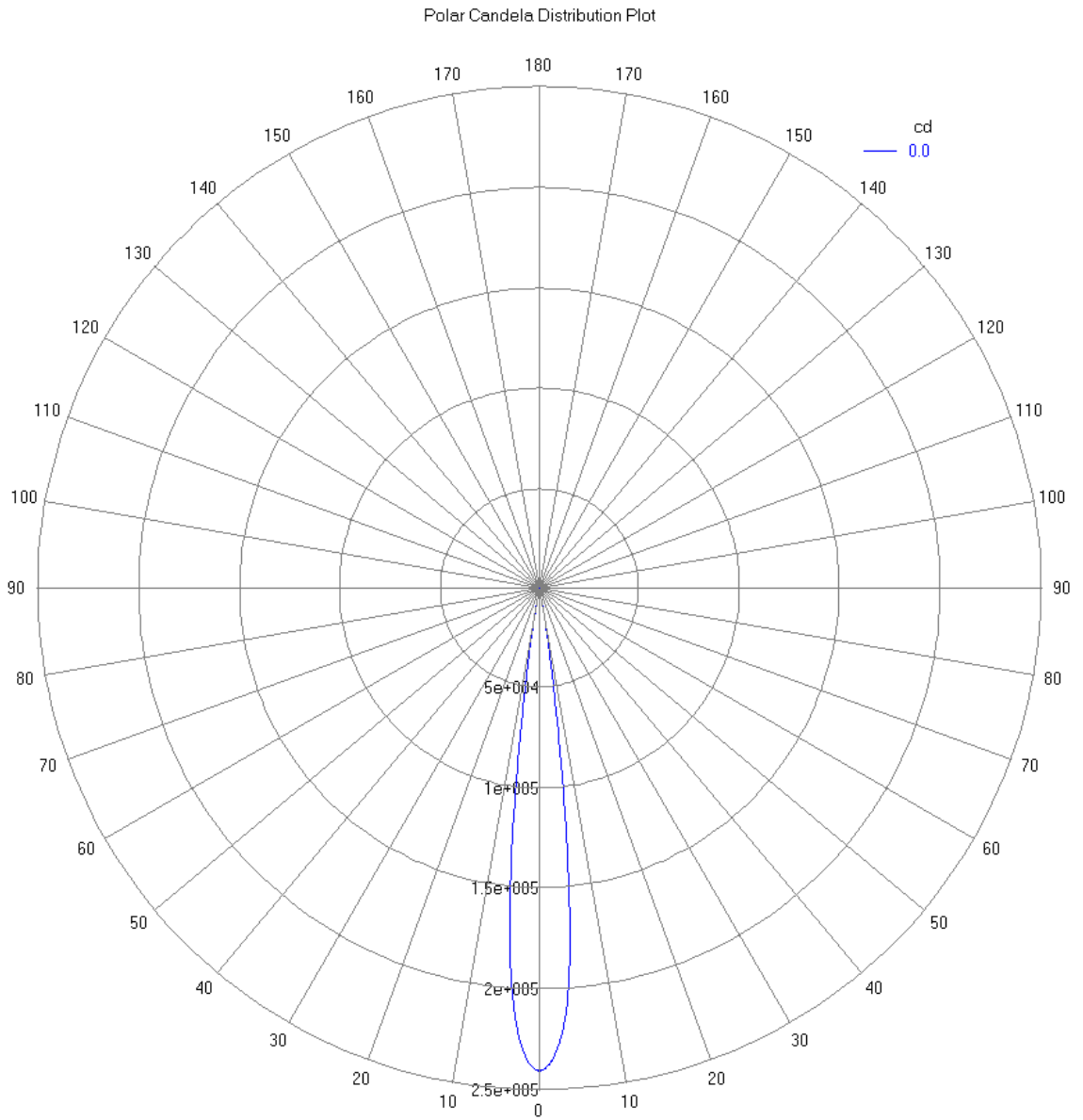
Annex 4

– Samson Drop-In Taxi DC - Rectangular Candela Distribution



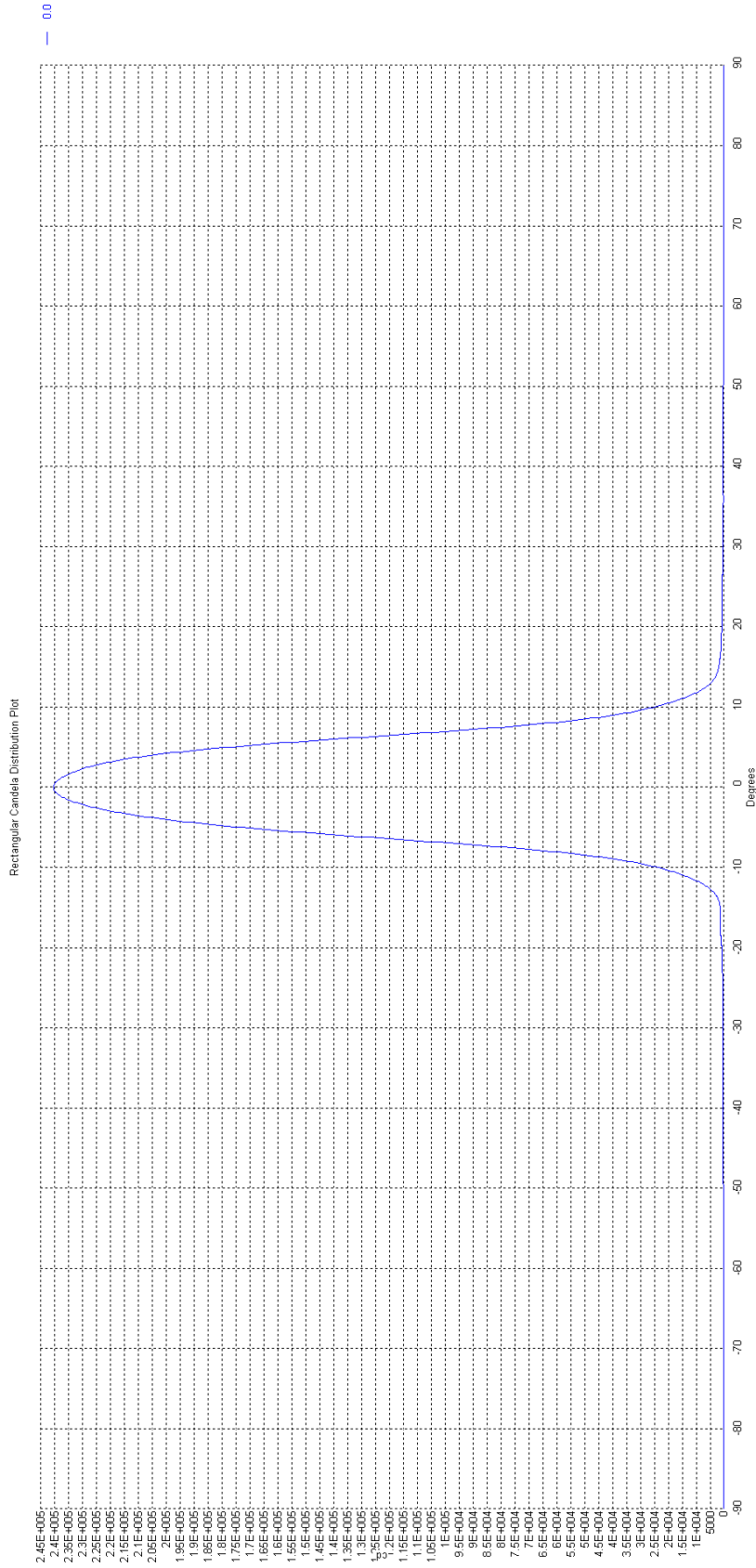
Annex 5

- Samson Drop-In Landing AC - Polar Candela Distribution



Annex 6

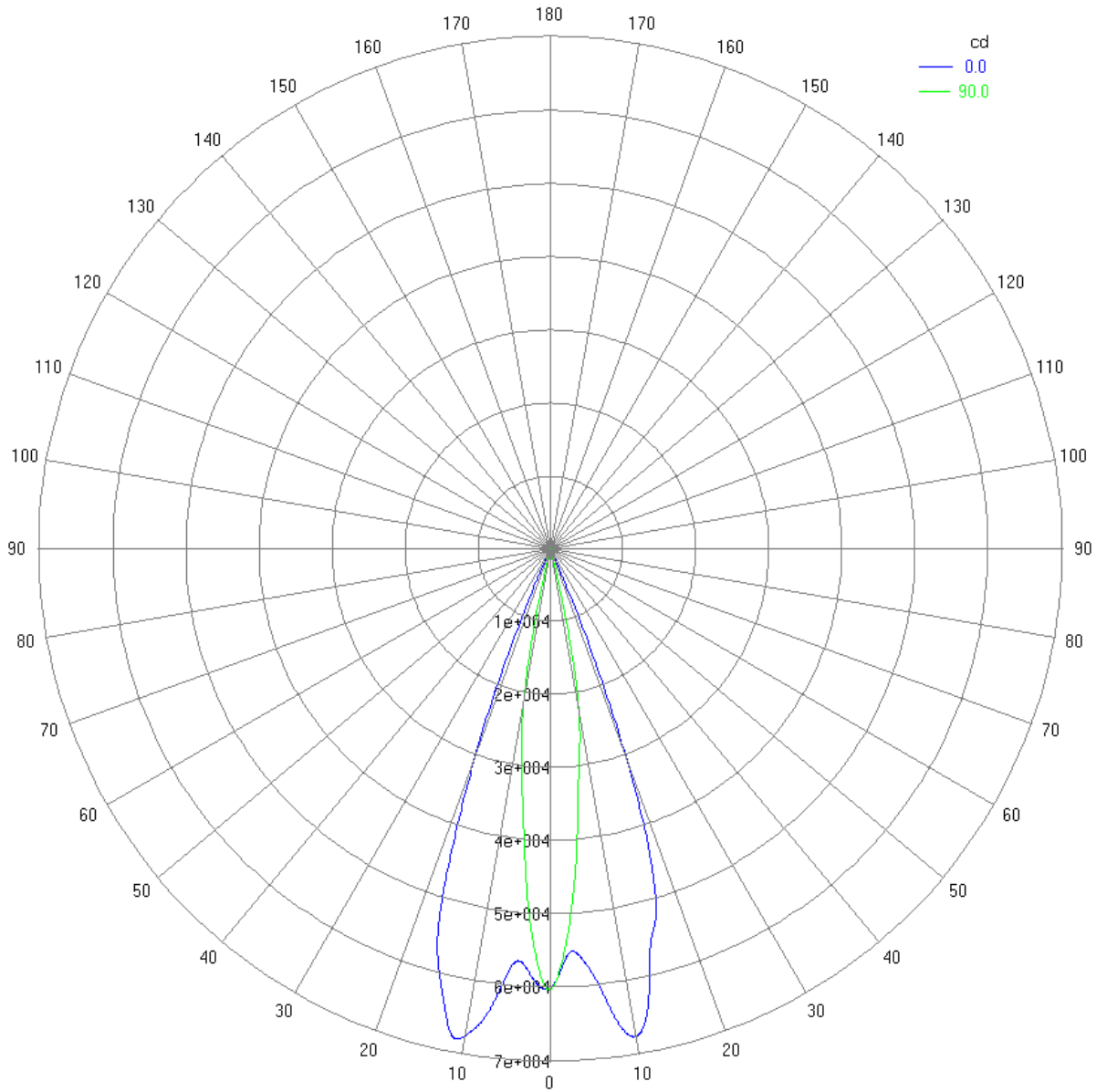
– Samson Drop-In Landing AC - Rectangular Candela Distribution



Annex 7

- Samson Drop-In Taxi AC - Polar Candela Distribution

Polar Candela Distribution Plot



Annex 8

– Samson Drop-In Taxi AC - Rectangular Candela Distribution

