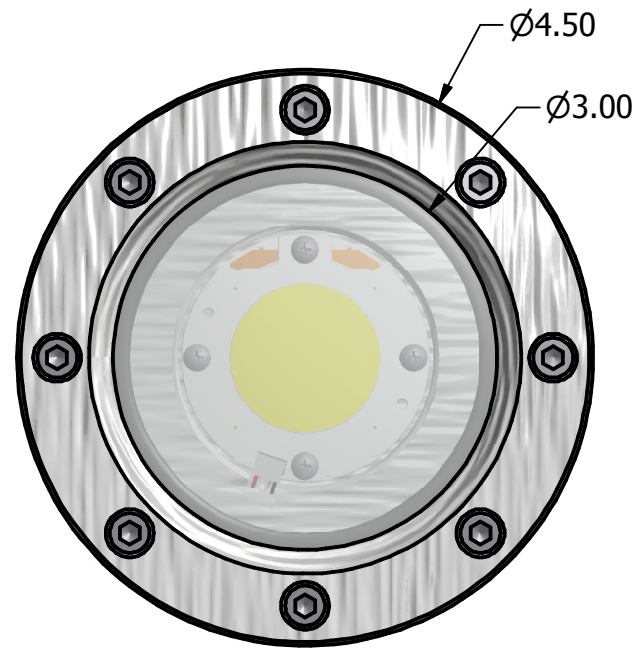
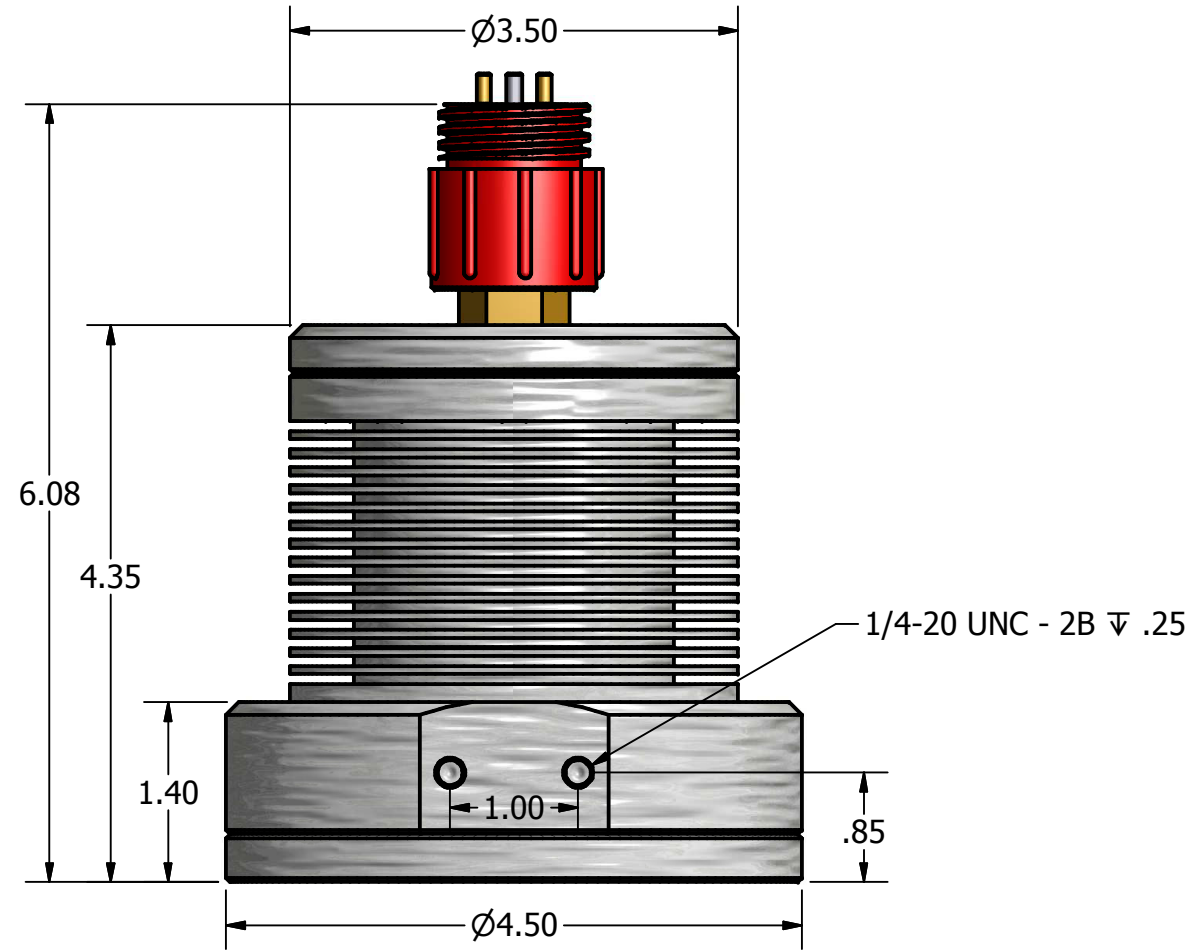


REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR



WEIGHT: 3.55 LBS
HOUSING MATERIAL: 7075-T6 ALUMINUM
LENS: BOROSILICATE GLASS

DRAWN CLR	9/11/2015	PSUBS		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		PSUBS 10K Lumen LED Light		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED Assembly	REV 1
		SCALE	SHEET 1 OF 1	

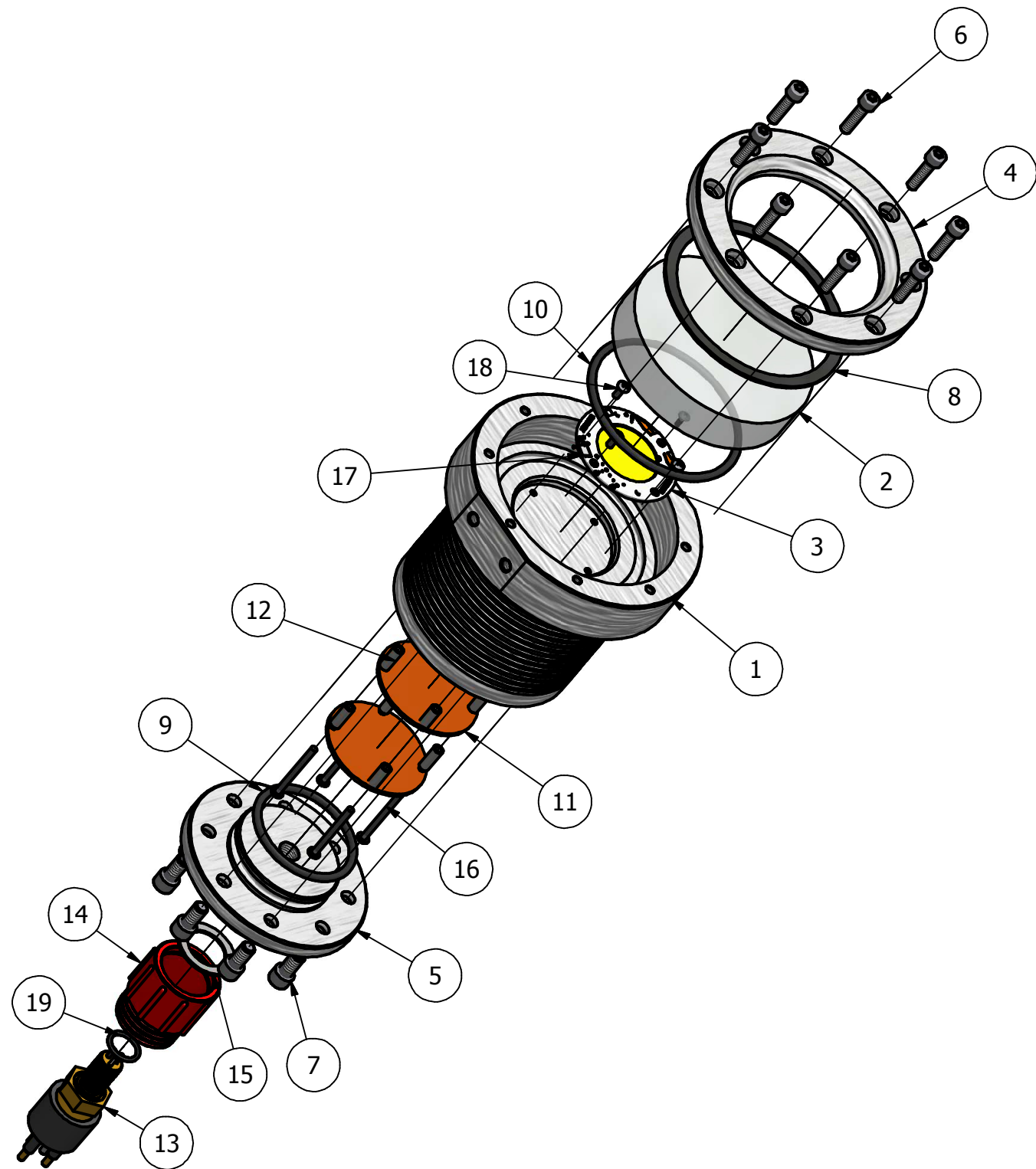
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3

2

1

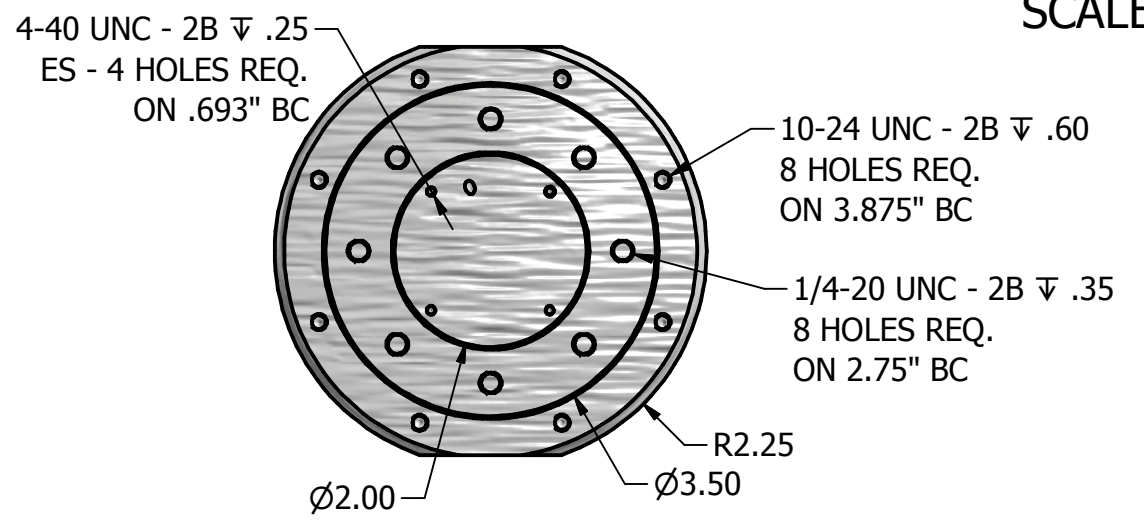
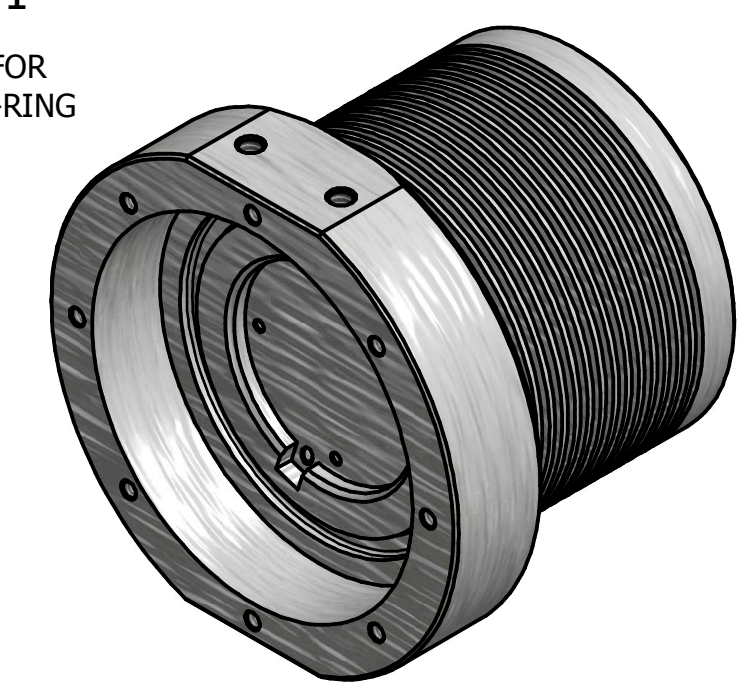
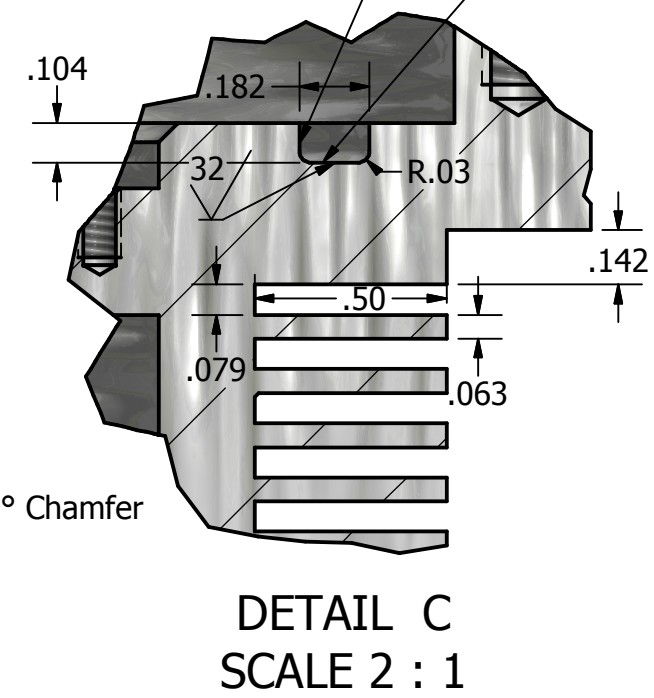
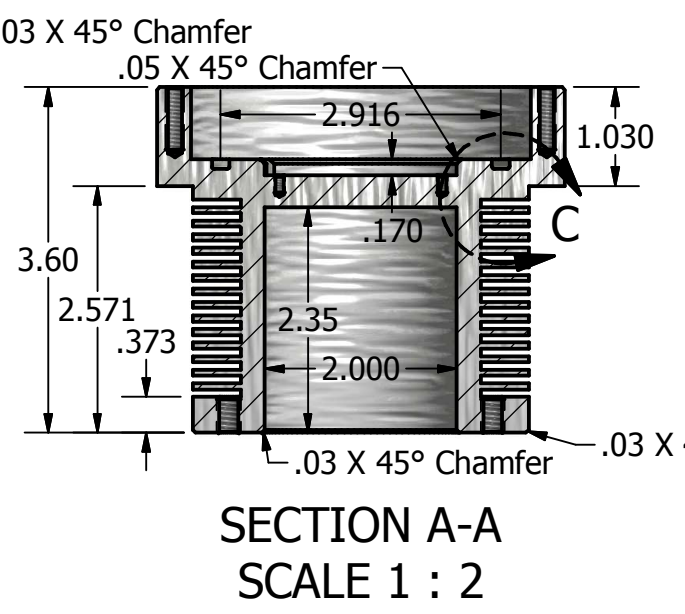
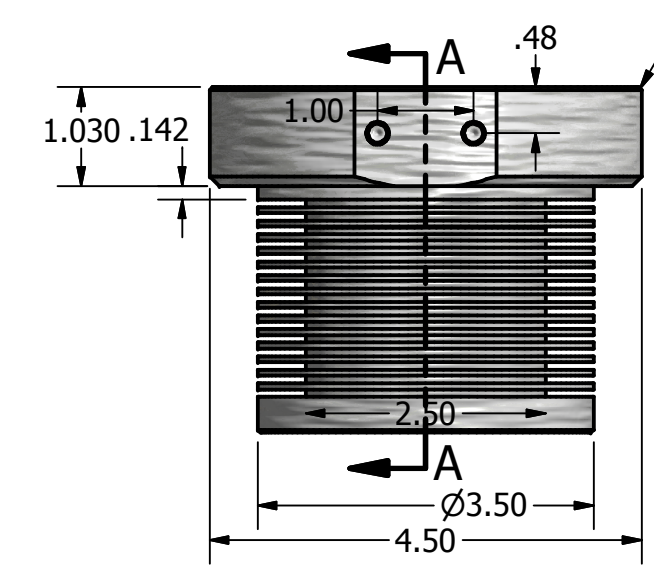
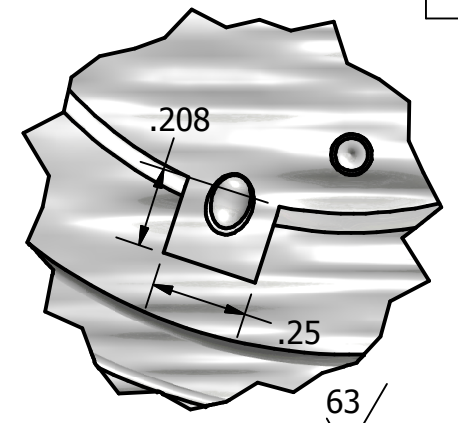
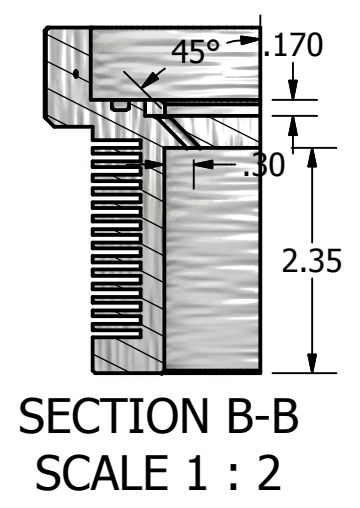
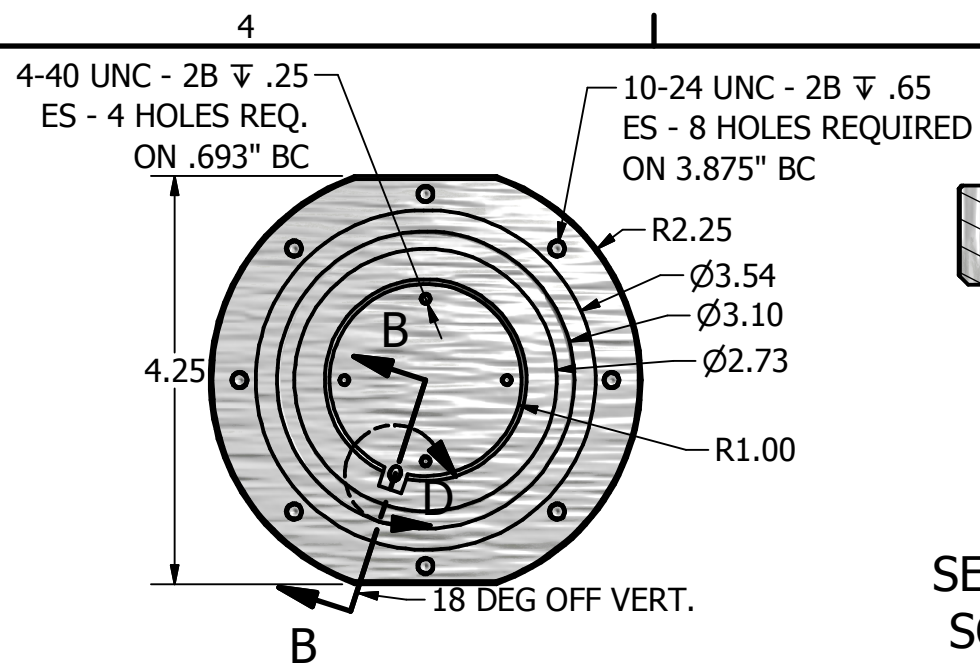
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-01	Main Body Housing
2	1	LED-02	Heat-Resistant Borosilicate Glass
3	1	Vero 29 LED Array	Bridglux Vero 29 LED Array
4	1	LED-03	Retaining Ring
5	1	LED-04	Housing Cap
6	8	No. 10 - 24 UNC - 3/4 HS HCS	Hexagon Socket Head Cap Screw
7	8	1/4 - 20 UNC - 1/2 HS HCS	Hexagon Socket Head Cap Screw
8	1	LED-05	Lens Gasket
9	1	LED-06	O-Ring for Housing Cap - Dash 2-224
10	1	LED-07	Front Lens O-Ring - Dash no. 232
11	2	LED-08	Printed Wiring Board (PWB)
12	8	LED-09 (McMaster-Carr 92320A699)	PWB Standoff 18-8 Stainless Steel Unthreaded Spacer, 3/16" OD, 1/2" Length
13	1	BH3M	SubConn BH3M circular Bulkhead Connector
14	1	DLSA M	DLSA-M Locking Sleeve
15	1	DLSA Ring	DLSA Locking Sleeve Ring
16	4	No. 4 - 40 - 1 1/4	Cross Recessed Pan Head Machine Screw - Type IA
17	1	Digi-Key Part Number WM9591-ND	2 Pin Wiring Pico EZMATE 6" 28 AWG
18	4	No. 4 - 40 - 1/4	Cross Recessed Pan Head Machine Screw - Type I
19	1	LED-10	BulkHead Connector O-ring, Dash 2-014, 1/16 Width

DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		LED Light Assembly Exploded View		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED Assembly Exploded	REV 1
		SCALE	SHEET 1 OF 1	

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	Initial	9/10/2015	CLR



MATERIAL 7075-T6 ALUMINUM
WEIGHT 1.969 lbs

DRAWN CLR	9/10/2015	Redus Engineering		
CHECKED CLR	9/10/2015			
QA		TITLE		
MFG CLR	9/10/2015	Main Body Housing		
APPROVED CLR	9/10/2015	SIZE B	DWG NO LED-01	REV 1
		SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-01	Main Body Housing

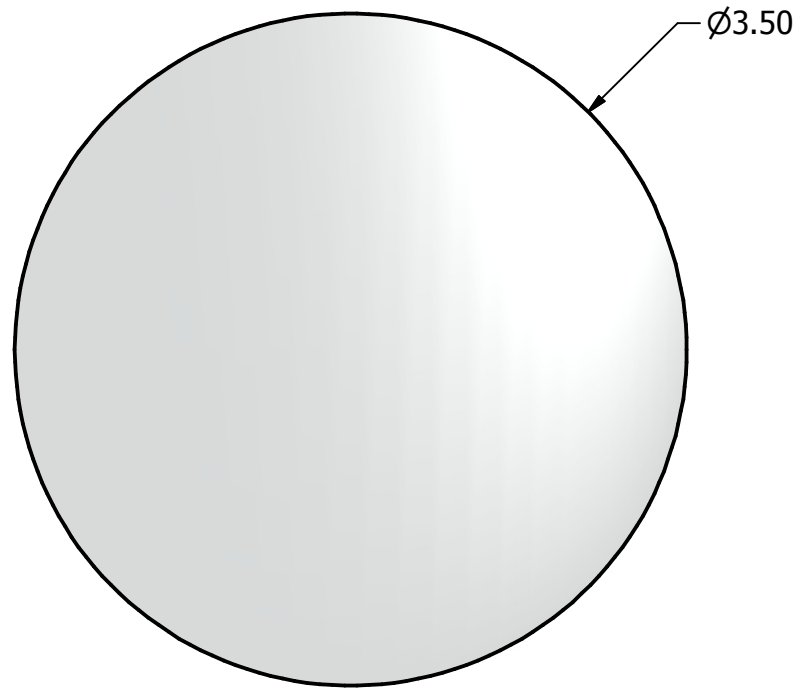
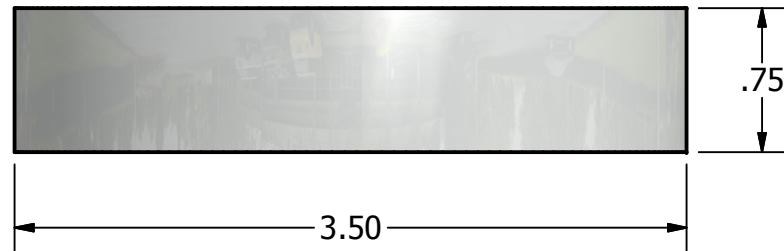
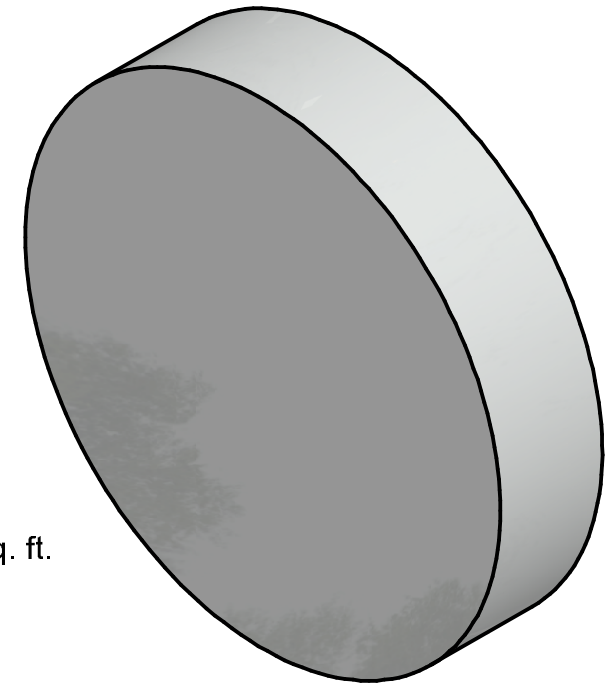
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

McMASTER-CARR PN: 8475K81

Material Borosilicate
 Glass Shape Disc
 Color Clear
 Maximum Temperature 500° F
 Machine With Glass-Cutting Tools
 Material Condition Tempered
 Diameter 3 1/2"
 Diameter Tolerance ±0.015"
 Thickness 3/4"
 Thickness Tolerance ±0.031"
 Nominal Density 0.08 lbs./cu. in.
 Modulus of Elasticity 63 KN/mm2
 Knoop Hardness 418 KHN100
 Thermal Conductivity @ 212° F 1.2 Btu/hr. × in./sq. ft.
 Coefficient of Thermal Expansion 18.1 × 10-7/° F
 Refractive Index 1.472

Chemical Composition

Silicon Dioxide (SiO2) 70-87%
 Boron Trioxide (B2O3) 1-20%
 Sodium Oxide (Na2O) 0-15%
 Potassium Oxide (K2O) 0-8%
 Aluminum Oxide (Al2O3) 1-8%

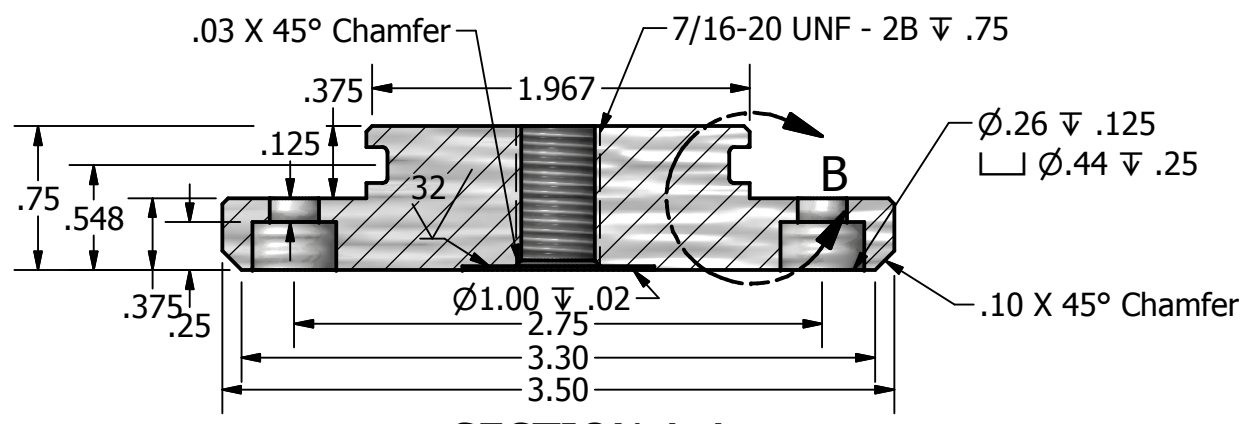


MATERIAL Borosilicate Glass
 WEIGHT 0.568 lbs

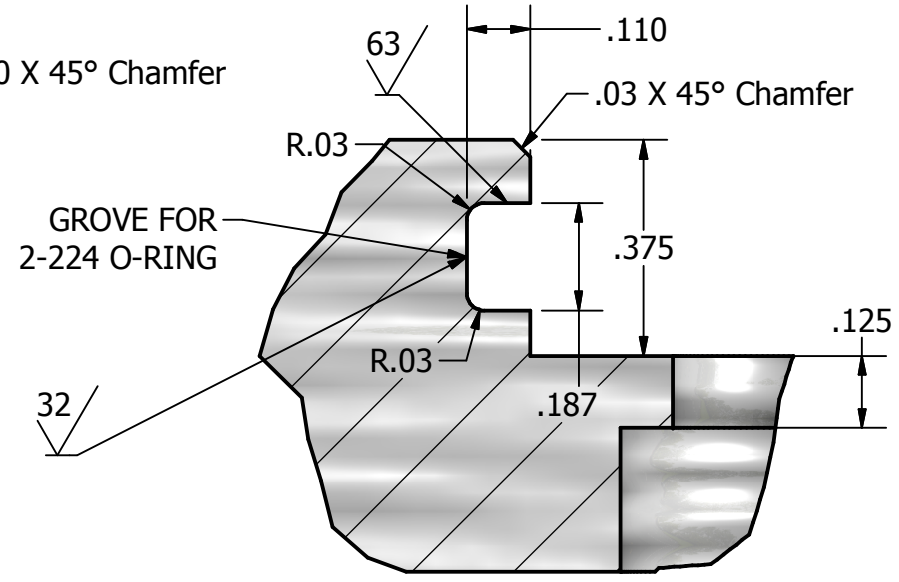
DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Lens		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED-02	REV 1
		SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-02	Heat-Resistant Borosilicate Glass

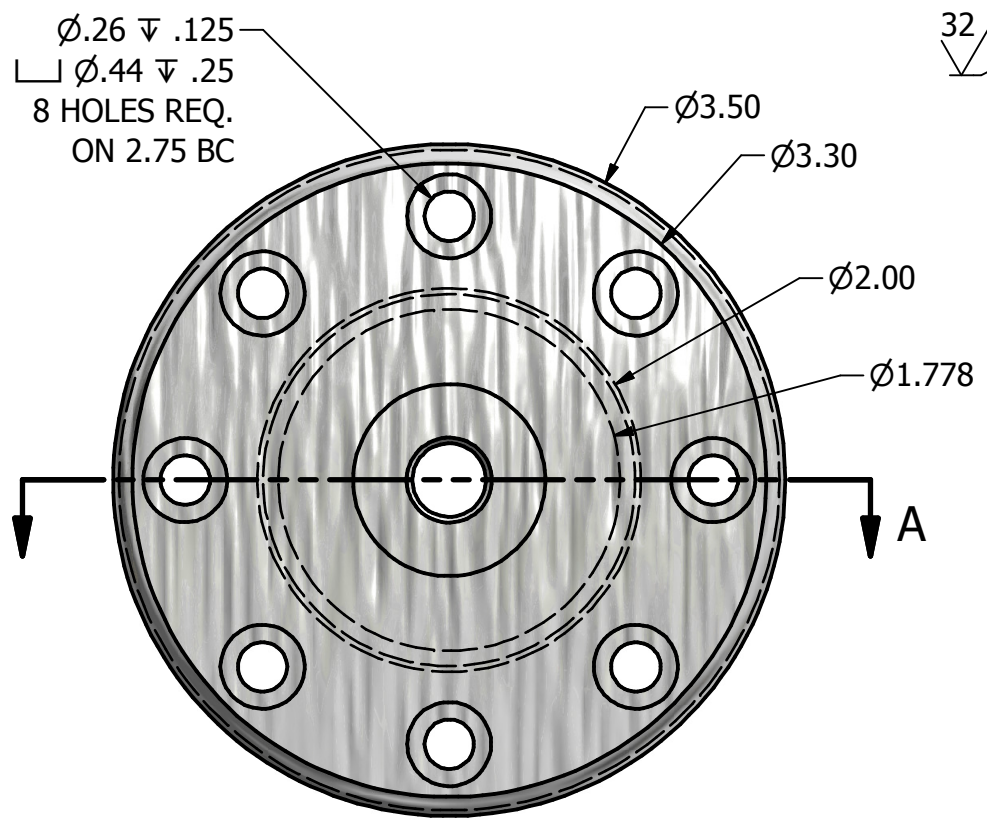
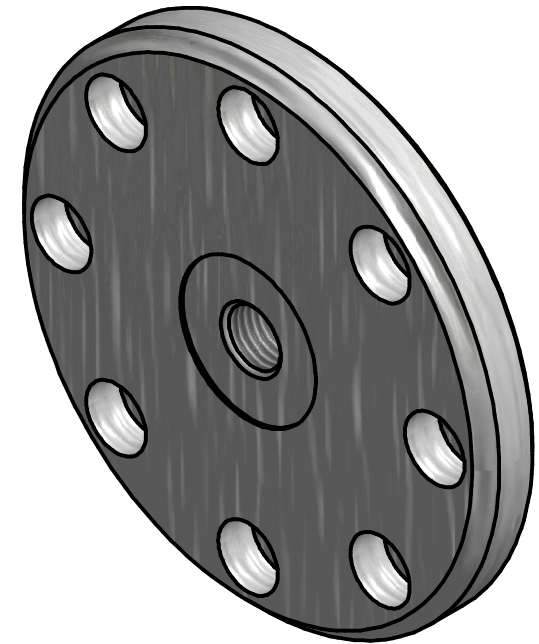
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR



SECTION A-A
SCALE 1 : 1



DETAIL B
SCALE 3 : 1



MATERIAL 7075-T6 ALUMINUM
WEIGHT 0.421 lbs

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-04	Housing Cap

DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Housing Cap		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED-04	REV 1
		SCALE	SHEET 1 OF 1	

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

.05 Compressed
.0625 Uncompressed



SECTION A-A
SCALE 1 : 1

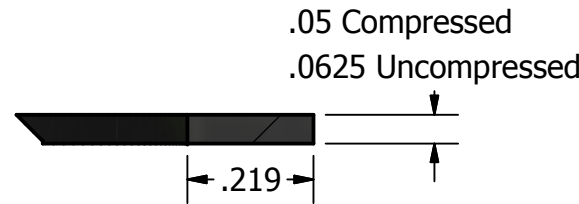
Neoprene Spring Rubber
1/16" Thickness, 4" Wide x 36" Long, 70A
Durometer

McMaster-Carr PN 8630K42

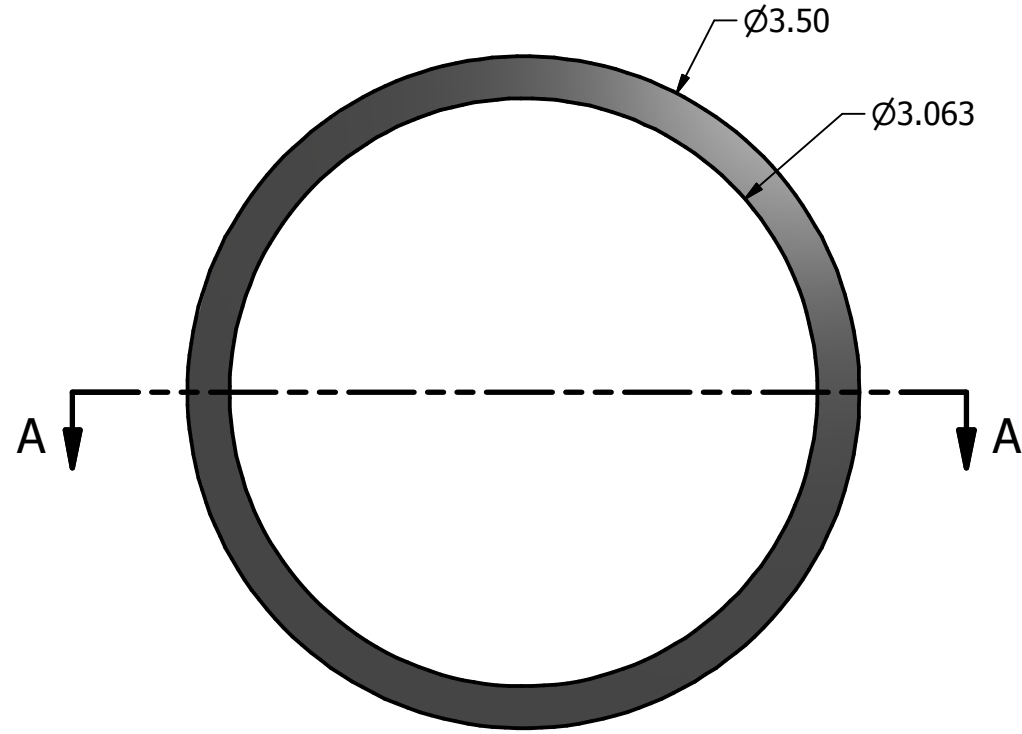
Thickness 1/16"
Thickness Tolerance ±0.016"
Color Black
Temperature Range -30° to 200°

FTensile Strength 1700 psi
Additional Specifications
Sheets-Smooth Finish 4" Wd. x 36" Lg. Use indoors and outdoors

RoHS Compliant
Neoprene blended with elastomeric fillers produces this hard, resilient material that bends yet resists breaking.
Meet ASTM D2000 BC. Width tolerance is ±3/8" for sheets up to 24" wide and +1" for 36" wide sheets. Length tolerance is ±1/8" for 6" and 12" lengths and +1" for 36" lengths. Durometer hardness is 70A (hard) . Durometer tolerance is ±5.



DETAIL B
SCALE 3 : 1



MATERIAL Neoprene Spring Rubber
WEIGHT 0.004 lbs

DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Lens Gasket		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED-05	REV 1
		SCALE	SHEET 1 OF 1	

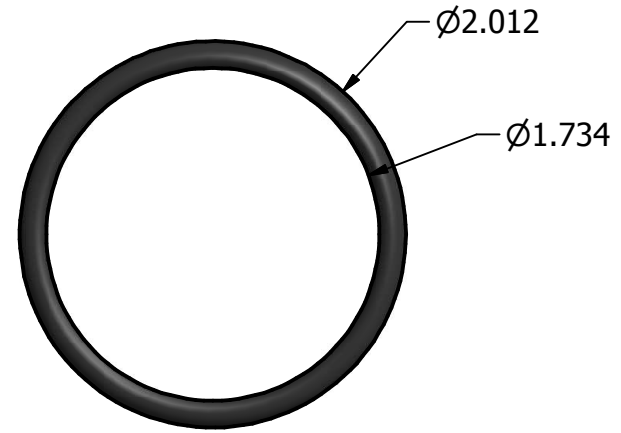
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-05	Lens Gasket

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

Buna-N Multipurpose O-Ring
1/8 Fractional Width, Dash Number 224
McMaster Carr PN 9452K62

Material: Buna-N
 Durometer A70 (Medium)
 Dash No. 224
 Fractional Width 1/8
 Actual Width 0.139"
 Fractional Size ID 1 3/4 OD 2
 Actual Inch Size ID 1.734" OD 2.012"

Specifications Met:ASTM D2000/SAE J200, SAE AS568
 Temperature Range-20° to 250° F
 Color: Black
 RoHS:Compliant
 All O-rings meet ASTM D2000. Inch O-rings are sized to the SAE standard AS568.



DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED				
QA		TITLE		
MFG		Housing Cap O-ring, Dash no. 2-224		
APPROVED		SIZE B	DWG NO LED-06	REV 1
		SCALE	SHEET 1 OF 1	

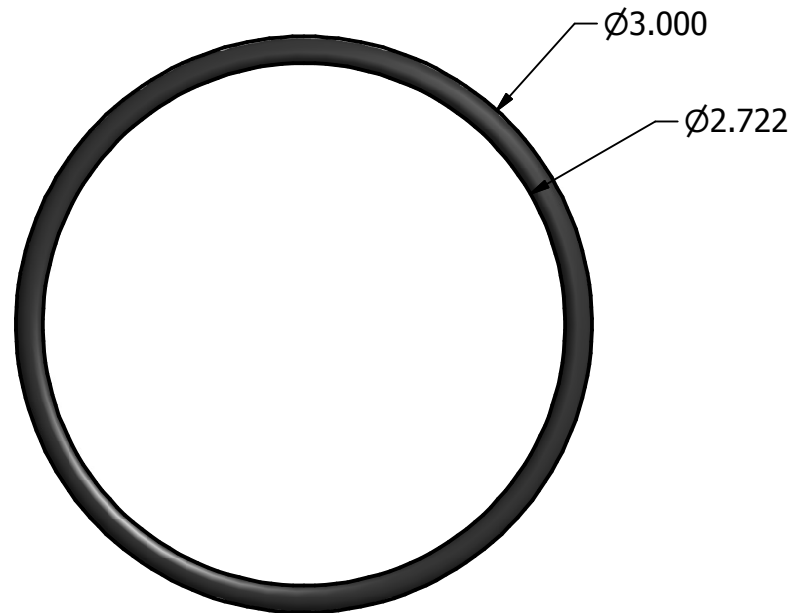
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-06	O-Ring for Housing Cap - Dash 2-224

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

McMaster Carr PN 9452K161

Dash No. 232

Material: Buna-N
 DurometerA: 70 (Medium)
 Fractional Width: 1/8
 Actual Width: 0.139"
 Fractional Size ID 2 3/4 OD3
 Actual Inch Size ID2.734" OD3.012"
 Specifications Met: ASTM D2000/SAE J200, SAE AS568
 Temperature Range: -20° to 250° F
 Color: Black
 RoHS: Compliant
 All O-rings meet ASTM D2000.
 Inch O-rings are sized to the SAE standard AS568.

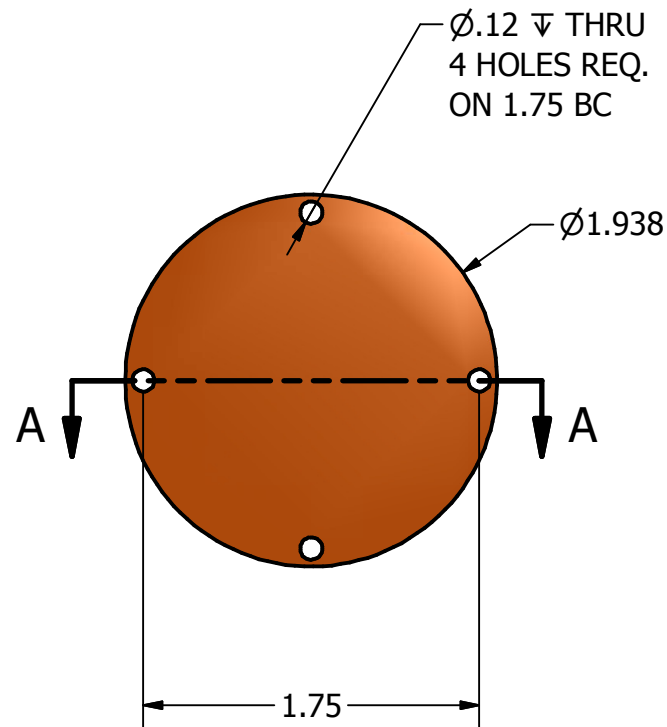
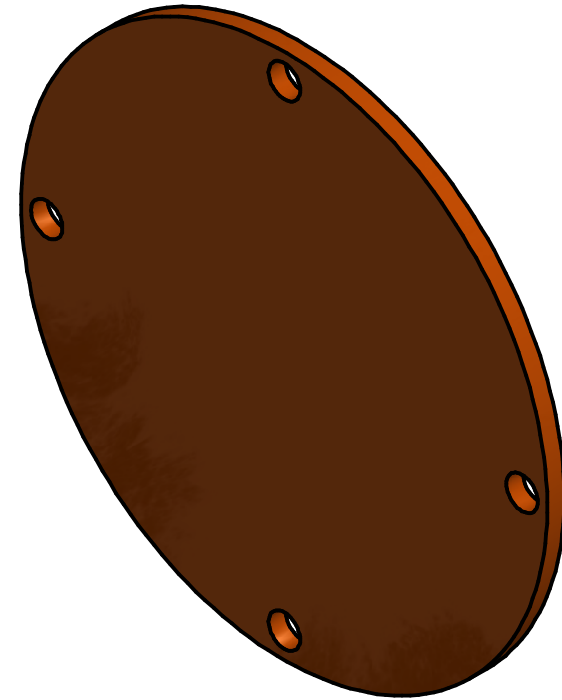
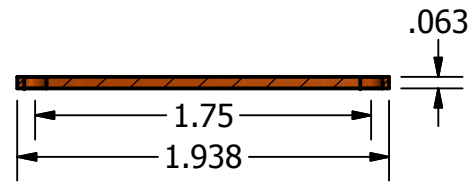


DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Front Lens O-Ring, Dash No. 232		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED-07	REV 1
		SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-07	Front Lens O-Ring - Dash no. 232

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

This is a placeholder for the PWB to be designed by Ken Martindale



DRAWN Ken Martindale	9/11/2015	PSUBS		
CHECKED				
QA		TITLE		
MFG		Printed Wiring Board		
APPROVED		SIZE B	DWG NO LED-08	REV 1
		SCALE	SHEET 1 OF 1	

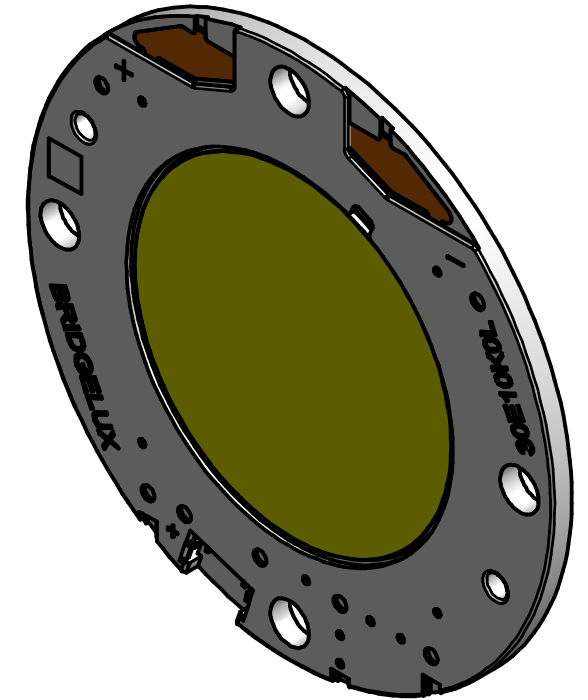
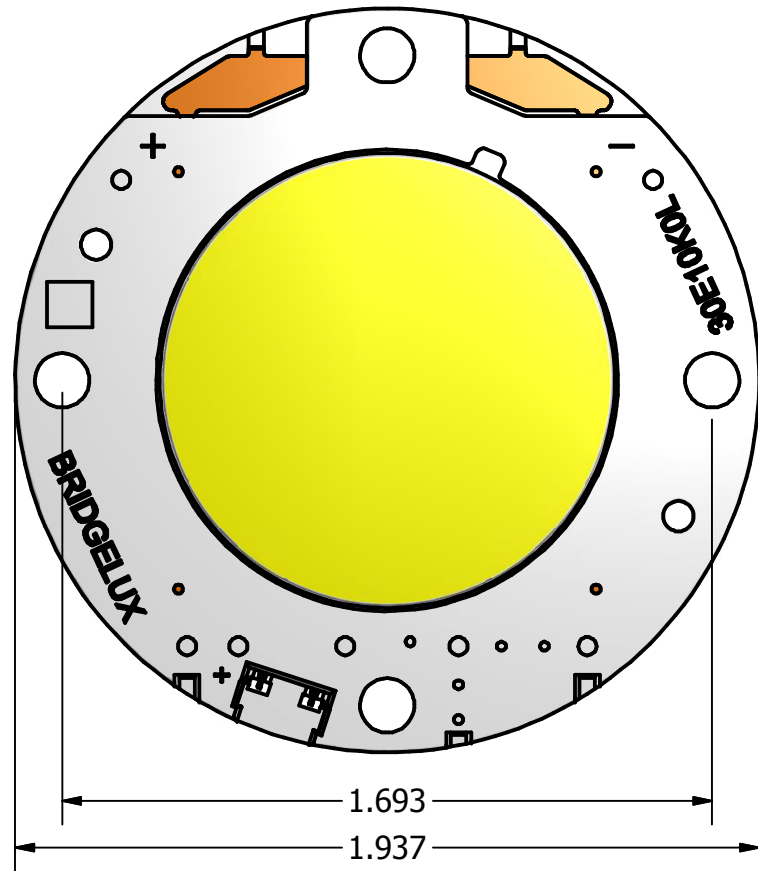
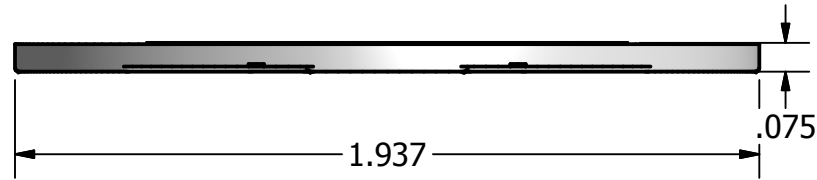
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	LED-08	Printed Wiring Board (PWB)

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

Digikey PN. 976-1277-ND
Mfg Bridgelux
Mfg PN BXRC-50C10K0-24

Product Family: Vero 29
Standard Package: 10 Category

Typ: Chip On Board (COB)
Color: White, Cool
CCT (K) : 5000K 4-Step MacAdam Ellipse
Configuration: Round
Flux @ Current/Temperature : Test 10032 lm (Typ)
Current: Test 2.1A
Temperature: Test 85°C Voltage: Forward (Vf) (Typ) 36.8V
Lumens/Watt @ Current: Test 130 lm/W
Current Max: 4.2A
CRI (Color Rendering Index) : 70
Viewing Angle: 120°
Features: With Connector
Size / Dimension: 49.20mm Diameter
Height: 1.90mm
Light Emitting Surface (LES) : 29.20mm Diameter
Lens Type: Flat
Online Catalog: Vero 29 Array Series



DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Vero 29 LED Array		
APPROVED CLR	9/11/2015	SIZE B	DWG NO BXRC-50C10K-24	REV 1
		SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BXRC-50C10K-24	Vero 29 LED Array

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

Connector specifications

Mfg: Subconn

Mfg. PN: BH3M

Voltage rating: 600 V AC rms

3 pin connector rating: 10 A per pin (max 30 A per connector)

Insulation resistance: > 200 Mohm

Contact resistance: < 0.01 ohm

Wet matings: > 500

Temperature rating (water) : - 4 to 60°C, 25 to 140°F

Temperature rating (air) : - 40 to 60°C, - 40 to 140°F

Storage temperature rating: - 40 to 60°C, - 40 to 140°F

Depth rating: 1,400 bar, 20,000 psi

Depth rating PEEK: 300 bar, 4,350 psi

Material specifications

Connector body: Chloroprene rubber

Bulkhead body: Brass, stainless steel, titanium, anodised aluminium or PEEK

Contacts: Gold plated brass UNS - C36000

Location pin: Stainless steel AISI 303

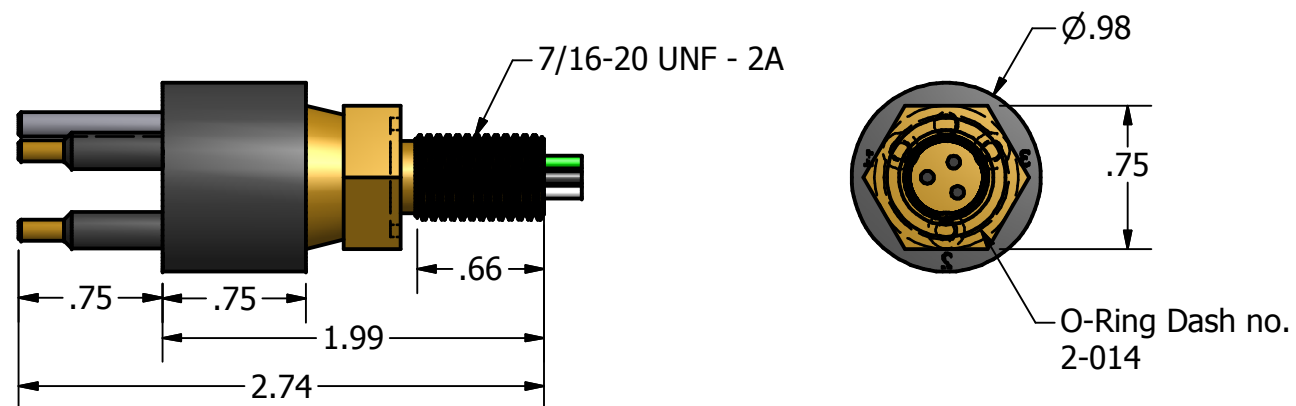
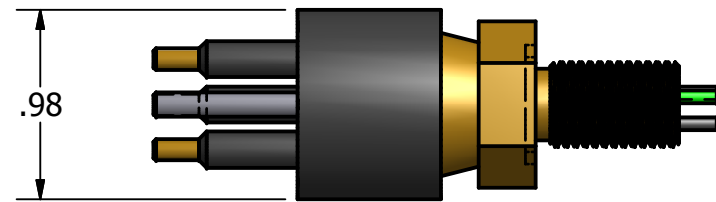
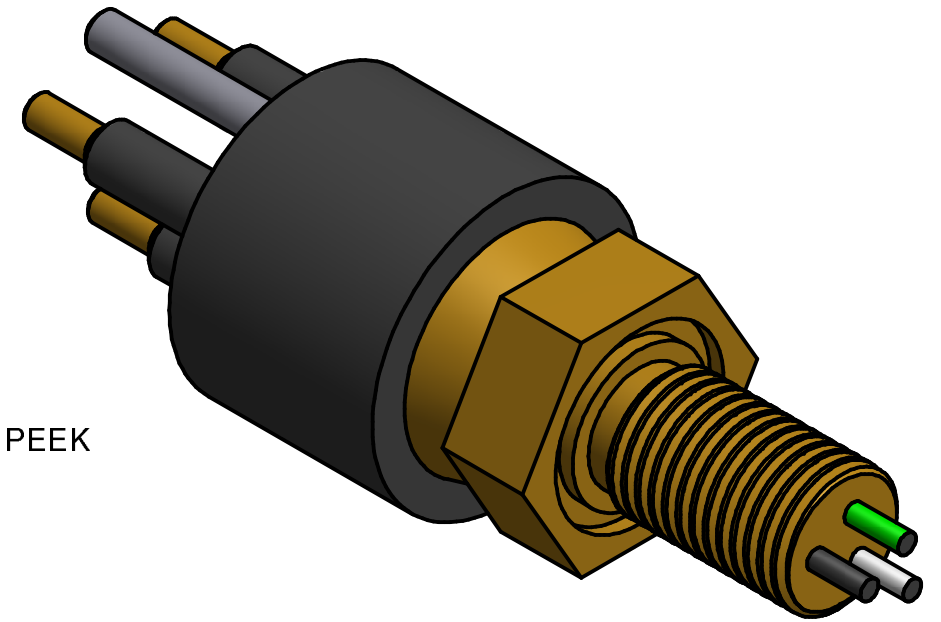
O-rings: Nitrile

Locking sleeves: POM

Snap rings: Stainless steel AISI 302

3 conductor inline cable (60 cm, 2 ft) : 16 AWG 1.34 mm² chloroprene rubber

Bulkhead leads (30 cm, 1 ft) : 18 AWG 1.0 mm² coloured PTFE

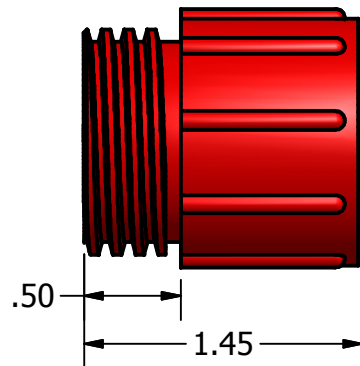
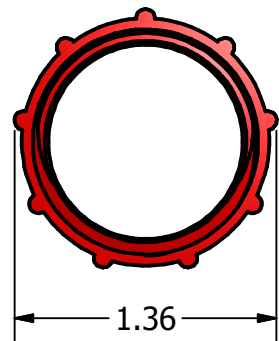
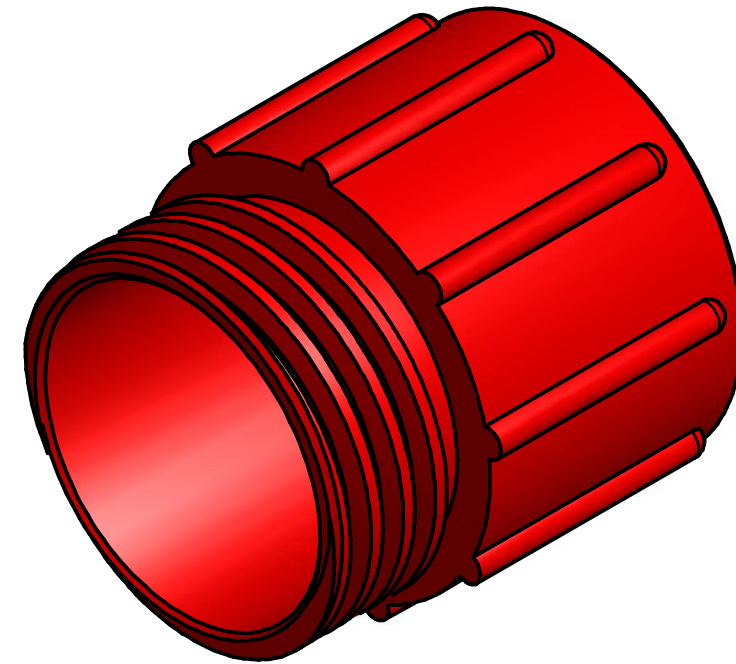
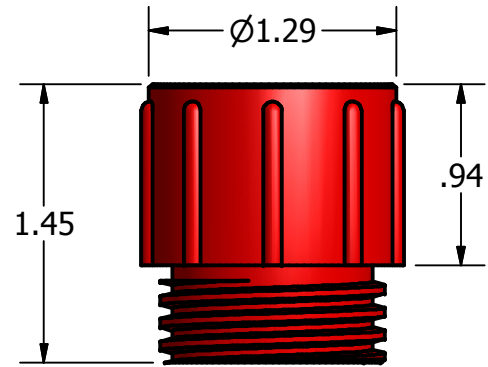


DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE SubConn Circular Bulkhead Connector - BH3M		
MFG		SIZE B	DWG NO LED BH3M	REV 1
APPROVED CLR	9/11/2015	SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BH3M	SubConn BH3M circular Bulkhead Connector

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL	9/11/2015	CLR

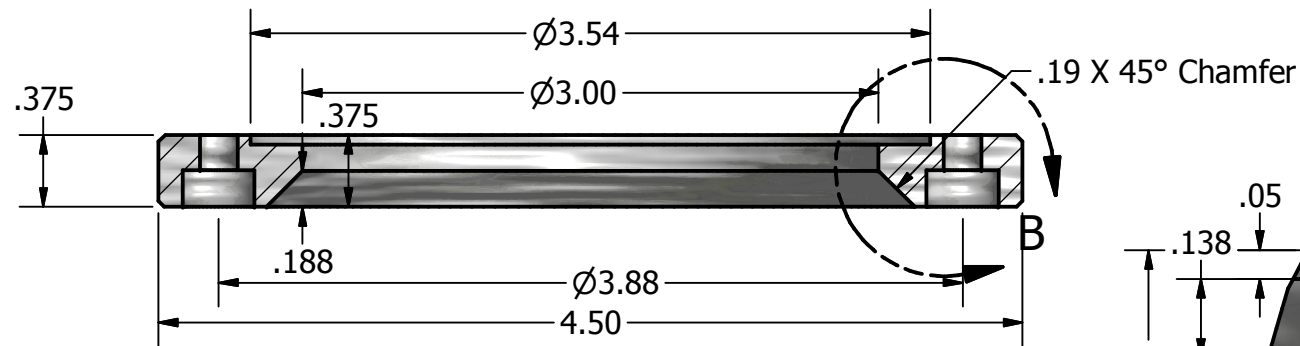
Mfg: SubConn
Mfg. PN: DLSA-M
Locking sleeves: POM
Snap rings: Stainless steel AISI 302



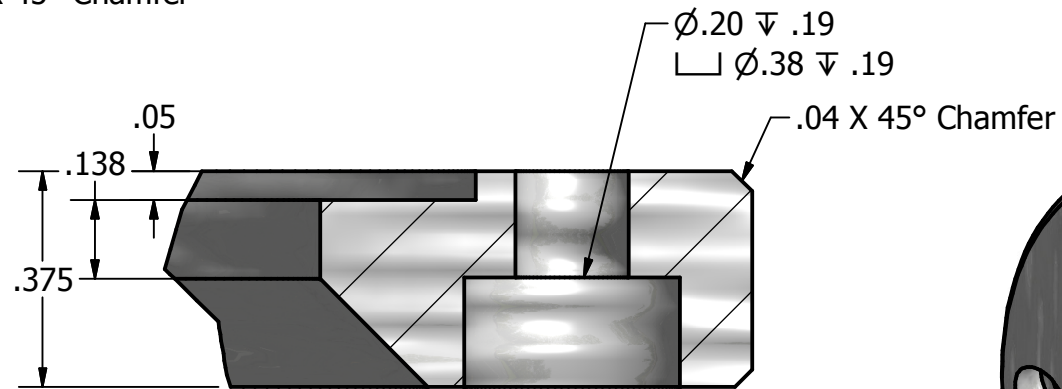
DRAWN Cliff	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG		Locking Sleeve DLSA-M		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED DLSA-M	REV 1
		SCALE	SHEET 1 OF 1	

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	DLSA M	DLSA-M Locking Sleeve

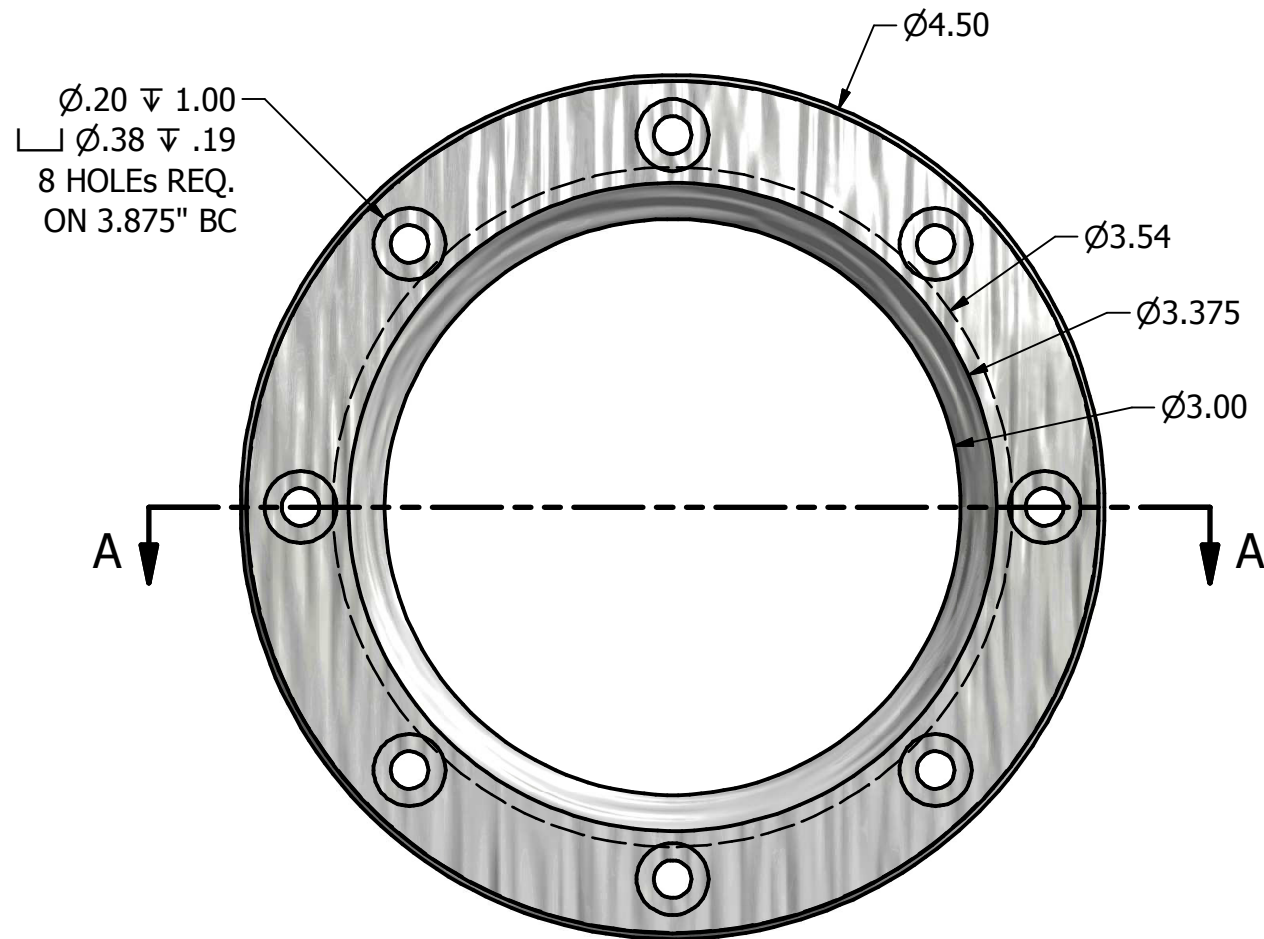
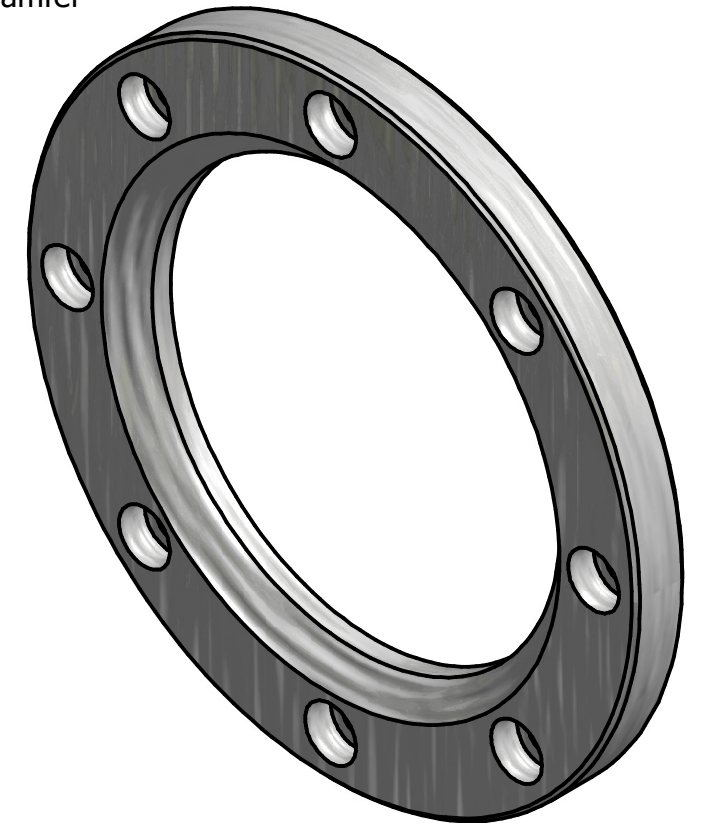
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	Initial	9/11/2015	CLR



SECTION A-A
SCALE 1 : 1



DETAIL B
SCALE 3 : 1



MATERIAL 7075-T6 ALUMINUM
WEIGHT 0.282 lbs

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	LED-03	Retaining Ring

DRAWN CLR	9/11/2015	Redus Engineering		
CHECKED CLR	9/11/2015			
QA		TITLE		
MFG CLR	9/11/2015	Retaining Ring		
APPROVED CLR	9/11/2015	SIZE B	DWG NO LED-03	REV 1
		SCALE	SHEET 1 OF 1	