Subject: Hi
Posted by DÃƒÂ¼sentrieb on Wed, 06 Jul 2011 16:53:49 GMT
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As a new member in the forum I would like to introduce myself to the community: Coming from an electronics industry background I am a hobby inventor with a main focus on lighting applications. ShapeWays was a clear recommendation in the recent issue of the German c't-magazine on 3D print services. Since I am not familiar with CAD at all, I am looking for a 3Dcad designer, who could help me to get some prototypes into the pipeline.
Anyone here?

Subject: Re: Hi
Posted by denali3ddesign on Wed, 06 Jul 2011 19:36:14 GMT
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Welcome to Shapeways, Hans! What kind of projects are you looking to make?

Please check your PM.

Subject: Re: Hi
Posted by DÃƒÂ¼sentrieb on Thu, 07 Jul 2011 06:15:32 GMT
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Thanks Marcus,

for your instant reply!

if you go by the European Patent Office weblink:

http://worldwide.espacenet.com/publicationDetails/originalDocument?CC=DE&NR=202010014444U1&KC=U1&FT=D&date=20110317&DB=EPODOC&locale=en_EP

you can see part D in the drawing, which should be an exponentially cone shaped mirror, to deflect a spot light beam into all circular directions to replace a light bulb in a screen luminaire. That is what I need - if possible in various horn hights and exponential shapes but all with 55mm outer diameter. Since it is just for optical purpose with no mechanical stress, the thinnest metal

with outer glossy relective surface (silver or gold) would do.

Best regards

Hans

Subject: Re: Hi
Posted by denali3ddesign on Thu, 07 Jul 2011 13:59:41 GMT
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Ok, so you just need the reflector? That's not too hard.

Shapeways metals except for polished Silver(expensive!) don't have the glossy reflective surface that you need, but perhaps you could order Frosted Ultra Detail and add a thin metallic coating. I'm not really familiar with that process though.

Subject: Re: Hi
Posted by DÃƒÂ¼sentrieb on Thu, 07 Jul 2011 14:14:58 GMT
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What about thin stainless steel with glossy gold or silver coating?

Subject: Re: Hi
Posted by denali3ddesign on Thu, 07 Jul 2011 14:21:34 GMT
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It still has roughness from the printing layers, the surface finish is nowhere near the quality found in most light reflectors. See here for closeup photos http://www.shapeways.com/materials/stainless_steel_finishes# finishingpricing1 It may very well work for your purposes though.

Subject: Re: Hi
Posted by DÃƒÂ¼sentrieb on Thu, 07 Jul 2011 14:42:48 GMT
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Thanks Marcus for the link: Yes glossy gold plating looks just fine (however polishing would only be needed on the outside).
Do you know if glossy silver plating is also available?

Subject: Re: Hi
Posted by denali3ddesign on Thu, 07 Jul 2011 15:18:53 GMT
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No, no silver as plating on stainless steel, just as a solid silver print that is polished.

Actually, you could polish also the stainless yourself if you need it smoother than Shapeways' process.

Subject: Re: Hi
Posted by electrobloom on Fri, 29 Jul 2011 12:04:46 GMT
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Hi, I would imagine that the surface finish is very important so 3D printing wouldn't be the best process to use. I'd try spinning initially and then stamping if you have the volume.

Subject: Re: Hi
Posted by DÃƒÂ¼sentrieb on Mon, 01 Aug 2011 11:00:57 GMT
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Yes Mark,

finish needs to be a highly reflective exponentially shaped hollow horn/cone with 54mm outer edge diameter (with flat collar extention to 60mm) and 36mm round tip depth. Since this is still in the demo prototype phase there is no volume behind yet. The initial challenge is to find the best exponentiality to take care of a most even circular light distribution from a deflected spot lamp beam. With a spot beam diagram (see attached JPG) this could be evaluated in 2D and then just rotated into 3D at minimal sheet thickness as there is no mechanical stress in the spot-deflector application (except for the polishing process of the outer surface). So I agree that sheet stamping

should be the method of choice for mass production but spinning probably inferior to 3D printing in laser sintered stainless steel with polishing of the outer surface and gold plating finish. Could you agree to that or do you have any other ideas? Any comment with hands-on expertise is welcome.

Best regards

Hans (HansWDiesing@aol.de)

File Attachments

1) SpotDiagramm.JPG, downloaded 41 times

Subject: Re: Hi
Posted by electrobloom on Tue, 02 Aug 2011 09:36:53 GMT
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Hi,
I would be tempted to spin this part as the chuck could be made to accurately reflect the profile you need while compensating for the thickness of sheet metal. A quick polish would be all that's required to finish the reflector.

3D printing the part in stainless would be more experimental and would be worth a try but you'll have to file and polish the surface back to get a decent finish which will mean making the part slightly thicker than required to get an accurate surface.

Another alternative would be to do an Objet print in plastic and then get that plated to give you a reflective surface. I'm not sure how much heat you're dealing with in the final assembly but this could work for prototyping.

Mark.

Subject: Re: Hi
Posted by stop4stuff on Tue, 02 Aug 2011 09:48:36 GMT
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Hi Hans,

Another thing to consider, Shapeways stainless is a bronze infused powdered stainless procedure, rather than direct metal laser sintering, There is a fair amount of work invloved getting SW stainless to a mirror finish.

Paul