

In the Matter Of:
Quasar Science vs Colt Intl. Clothing

IPR2023-00613

KEVIN BAXTER

April 10, 2024



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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
QUASAR SCIENCE LLC,
Petitioner, Case: IPR2023-00613
vs. U.S. Patent No.
COLT INTERNATIONAL 10,411,582
CLOTHING, INC. D/B/A COLT Case: IPR2023-00614
LED, U.S. Patent No.
Patent Owner. 10,566,895

Virtual Zoom Deposition of
Kevin Baxter
April 10, 2024
At 4:00 p.m.

Reported by LeShaunda Cass-Byrd, CSR, RPR



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2 On behalf of Petitioner:

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7 On behalf of Patent Owner:

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11 Also Present:

12 Ken Fisher, Expert for Colt
13 Fred Holmes, Expert for Quasar
14 Fred Fellmeth, In-house counsel for Petitioner
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EXAMINATION OF KEVIN BAXTER,

By Mr. Ward

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DEPOSITION EXHIBITS

EXHIBIT	DESCRIPTION	PAGE
Exhibit 2047	Declaration of Kevin Baxter	13



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KEVIN BAXTER,
having been first duly sworn, was examined and
testified as follows:
EXAMINATION
BY MR. WARD:
Q. Good afternoon, Mr. Baxter.
Can you please state your full name and
address for the record.
A. It's Kevin Cotton Baxter. I live at
5932 West 31st Street in Tulsa, Oklahoma 74107.
Q. Thank you. And can I call you Kevin?
A. Yes. Of course.
Q. Great. Kevin, my name is Trenton Ward, and
I'm an attorney with the law firm of Greenberg
Traurig, and I represent petitioner Quasar Sciences in
these matters.
And, Kevin, do you understand that you are
here for a deposition in connection with two what we
call IPR proceedings, those are inter-partes review
proceedings?
Just so we make sure we get the case
numbers correct, I'm going to read it to you. It's
Case Number IPR 2023-613 and IPR 2023-614.
Do you understand that you are for a
deposition in this case?



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1 A. Yes. Yes, I do.

2 Q. Okay. Great.

3 And, Kevin, do you understand that you are
4 under oath today?

5 A. I do.

6 Q. And this means that you have sworn to tell
7 the truth as if you were in a courtroom with the judge
8 and a jury, correct?

9 A. Correct.

10 Q. Is there any reason why you cannot testify
11 truthfully and accurately today?

12 A. No.

13 Q. Kevin, before we begin, I want to ask you
14 whether or not you are represented by an attorney in
15 this matter.

16 A. No. I -- I have been hired just purely as
17 an expert witness and a jury witness.

18 Q. Okay. And who was it that hired you,
19 Kevin?

20 A. David Hoffman.

21 Q. Have you signed an engagement agreement
22 with Mr. Hoffman?

23 A. I don't believe so.

24 Q. He hired you. So how is it that he hired
25 you?



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1 A. Verbally.

2 Q. You understand that Mr. Hoffman is
3 representing Colt International Clothing, correct?

4 A. I do.

5 Q. And so you understand Mr. Hoffman is not
6 your lawyer?

7 A. Correct.

8 Q. Kevin, have you been deposed previously?

9 A. Yes, I have.

10 Q. Okay. I gather from your expression it was
11 a wonderful experience.

12 A. Well, two of them were divorces. So, yeah.

13 Q. So you've had two depositions for divorce
14 proceedings.

15 Any other depositions?

16 A. Yeah. I think a couple of others. One was
17 before Congress, and one was the -- we had a federal
18 case with the FTC in Washington D.C. regarding patent
19 litigation.

20 Q. Okay. Let's start with the first one. You
21 said you were before Congress. Tell me about what
22 that was.

23 A. Yes. It was an investigation back in the
24 late '90s, I guess.

25 Q. And what did the investigation relate to?



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1 A. I was a witness to shipments of articles to
2 Nicaragua.

3 Q. Okay.

4 A. Yes.

5 Q. And then there was a patent litigation
6 matter. What was that matter?

7 A. That was for Litepanels. We had just sold
8 to Vitec, and we had about 50 Chinese companies
9 copying our products. And so I just pretty much
10 receive on that case.

11 (Reporter Clarification.)

12 BY MR. WARD:

13 Q. And what year would that have been, Kevin?

14 A. '88. '89. I can't remember. I don't
15 remember the year. It might have been -- yeah, it
16 might have been even as late as 1990. I mean,
17 2000- -- 2009. So 2008 or 2009.

18 Q. Okay. So you said this occurred after the
19 acquisition of Litepanels by Vitec?

20 A. Yeah. It started before, I believe, and --
21 or at least the wheels were rolling at that time, and
22 then the actual case went through (inaudible).

23 COURT REPORTER: I didn't hear you.

24 Your voice was trailing off again.

25 THE WITNESS: I was saying it was



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1 probably 2008 or 2009.

2 BY MR. WARD:

3 Q. And, Kevin, in that particular matter,
4 Litepanels was the patent owner and they were
5 asserting those patents against alleged infringers?

6 A. Yes.

7 Q. And in what capacity were you deposed?

8 A. I was CTO then, and they just asked some
9 technical questions about how about we did things.

10 Q. And were you listed as an inventor on any
11 of the patents that were asserted in that matter,
12 Kevin?

13 A. Yes, I was.

14 Q. Were you also deposed in your capacity as a
15 patent inventor?

16 A. I suppose I was. Yes, I was.

17 Q. Okay. Thank you for that, Kevin.

18 It sounds like you are fairly familiar with
19 this format and what we are going to be doing today.

20 I do want to just kind of lay the ground
21 work for the rules for this proceeding for deposition
22 for the PTAB, which are somewhat unique.

23 Have you participated in a deposition in a
24 PTAB proceeding previously?

25 A. No, I don't believe so. Not like this. So



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1 I -- I think it was always an initial -- an initial
2 type thing, and so -- where this one I had a
3 declaration. I have not done a patent.

4 Q. Okay. Yeah. Well, I'm going to be asking
5 you about that declaration and also other documents
6 related to the IPR proceeding, and I will share on the
7 screen, to the extent that I will be asking you
8 questions about one of the exhibits to the IPR.

9 The court reporter is here to transcribe
10 everything you and I say, so it's important that we
11 try not to talk over each other, which I will tell you
12 I will -- it will happen. It's, you know, just sort
13 of the nature of our conversations, as I know you're
14 familiar with.

15 But I will try and do my best to make sure
16 I wait for you to answer a question before I assist,
17 and if you do the same for me, that will be great.
18 But likely, we will step on each other's toes at
19 points, but I will try and avoid that if I can.

20 Does that sound good?

21 A. It is my nature. I will probably step on
22 yours.

23 Q. Okay. Yeah. All right.

24 Kevin, I'd ask that when I ask a question,
25 if you don't understand a question, could you ask for



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1 clarification?

2 A. Yes.

3 Q. Okay. So with that understanding then, if
4 you answer a question, can I assume that you
5 understood my question?

6 A. Yes.

7 Q. Okay. When I'm asking questions today,
8 from time to time, Mr. Hoffman may state an objection,
9 but unless Mr. Hoffman instructs you not to answer,
10 you are generally required to answer a question.

11 Is that understood?

12 A. Understood.

13 Q. And in order for Ms. Byrd to have a good
14 record of our conversation today, I'll suggest to you
15 that you try and avoid nonverbal answers or uh-uhs
16 (negative) and etc. And it will likely happen as
17 well, and no problem if it does. Just a reminder to
18 try and give us a verbal response, yes or no, when you
19 are answering questions.

20 Does that sound good?

21 A. Yes.

22 Q. And, Kevin, we are limited on time today,
23 but if you need a break, it's not a problem at all.
24 Let me know. My typical cadence for a deposition is
25 to break around an hour or so, but let me know if you



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1 need a break.

2 I will ask that if I have an open question,
3 that you finish the question, finish answering the
4 question before we go on the break. But otherwise,
5 just let me know if you need one.

6 Sound good?

7 A. That is good.

8 Q. Kevin, what did you do to prepare for the
9 deposition today?

10 A. I basically reread my declaration.

11 Q. Okay. Did you do anything else?

12 A. I spoke briefly to Dave Hoffman.

13 Q. Did you speak to anyone else?

14 A. No.

15 Q. And did you review any other documents?

16 A. No.

17 Q. And what is it that you discussed with
18 Mr. Hoffman?

19 A. Just how to behave during a deposition, how
20 to not cut each other off, how to think about it
21 before you answer.

22 Q. Okay. Because we're doing this virtually,
23 Kevin, have you done a virtual deposition previously?

24 A. I have not. This is new to me.

25 Q. Well, you'll find that the one nice thing



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1 is that when we are done, just hit end, and you are at
2 home. So --

3 A. I like that.

4 Q. That is the benefit.

5 Because this is a virtual deposition, just
6 a couple of things that I want to go over with you to
7 have an understanding.

8 So where are you currently --

9 A. I'm in my family room in my house.

10 Q. Okay. And what documents do you have
11 available to you?

12 A. Only -- only my declaration.

13 Q. Okay. So no other papers or other
14 materials?

15 A. No.

16 Q. Okay. Tell me about whether you are using
17 a laptop or a desktop.

18 A. I'm using a laptop.

19 Q. Using a laptop. Okay.

20 What windows other than the Zoom window are
21 on your screen?

22 A. No. I only have Zoom.

23 Q. Okay. Great.

24 Do you have any other electronic devices,
25 like another computer or phone --



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1 A. I have a cell phone, but it's silenced and
2 turned face down.

3 Q. Thank you.

4 So, Kevin, what I would ask, just for your
5 understanding, it's not a problem if you get a phone
6 call or a text, that you need to answer during the
7 deposition here today. Just let me know.

8 But I would ask that if you receive a
9 communication, if you could let me know that you've
10 received a communication.

11 A. Absolutely. I -- I am not going to take
12 any calls.

13 Q. Okay. So with those rules in mind, is
14 there any reason why you would be unable to give full,
15 truthful testimony here today, Kevin?

16 A. There is nothing to keep me from that.
17 (Petitioner Exhibit 2047 was marked for
18 identification.)

19 BY MR. WARD:

20 Q. Okay. Well, I want to begin by sharing on
21 the screen what has previously been marked as patent
22 owner's Exhibit 2047 from IPR 2023-613.

23 And it is not surprisingly, Kevin, a copy
24 of your declaration. So let me know if you are able
25 to see on the screen.



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1 A. I am.

2 Q. Do you see in the bottom right-hand corner,
3 this is labeled Exhibit 2047?

4 A. Yes.

5 Q. And what we're looking at is the first
6 page, and it says "Declaration of Kevin Baxter."
7 Do you see where it notes the case number
8 as 2023-613?

9 A. I do.

10 Q. Okay. Taking a look at this declaration,
11 in addition to the declaration that is entered on your
12 behalf in the other IPR, 2023-614, and I used a
13 software tool to do a comparison to, and it didn't
14 appear that there were any substantive differences
15 between those.

16 Would you agree that there are no
17 substantive difference between your declarations in
18 the two proceedings?

19 A. That is correct.

20 Q. Okay. Thank you.

21 So looking at the front page of
22 Exhibit 2047, there are two parties that are listed
23 here. The first is Quasar Science. That is what is
24 referred to in the PTAB matter as the petitioner. And
25 the second is Colt International Clothing,



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1 Incorporated, d/b/a LED.

2 Kevin, is it okay during our discussion
3 today if I just use the term "Colt" to refer to those
4 two entities?

5 A. That would be fine.

6 Q. Okay. How do you know Colt, Kevin?

7 A. They -- I saw them briefly. I left the
8 motion picture industry in 2015, and I think I saw
9 them about that time at a trade show, something like
10 that, and it was around 2015. But I basically had
11 already left the motion picture at that time and went
12 into the sports light industry. So it was very --
13 very little. I -- just a glancing -- you know, a
14 glancing view of what they -- they were offering.

15 Q. Do you remember what that trade show was
16 then?

17 A. It -- it may have been NAB, or it may have
18 been the Cine Gear. I can't -- I can't remember.
19 It's been about ten years.

20 Q. And you said you saw them in a trade show.
21 Did you see --

22 A. Or their prod- -- I saw their products. I
23 saw their product.

24 COURT REPORTER: Other what?

25 THE WITNESS: Product.



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1 BY MR. WARD:

2 Q. And how is it that you saw their product,
3 Kevin?

4 A. I was just walking around, and I saw -- I
5 saw it, the Bi-Color LED fluorescent tube, and it
6 worked.

7 Q. Had you purchased equipment from Colt?

8 A. No.

9 Q. Have you used Colt equipment?

10 A. No.

11 Q. Kevin, when were you first asked by Colt to
12 assist on these IPRs?

13 A. A couple of months ago, I think.

14 Q. So a couple of months ago. Is that 2023?

15 A. It would -- I think it was this year. I
16 think it was during 2024 was the first that I was
17 asked to do this.

18 Q. And who -- who asked you?

19 A. Ken Fisher, initially.

20 Q. And who is Ken Fisher?

21 A. He was a former business partner of mine at
22 Litepanels, and he said he was working on this, and he
23 wanted my help as an expert witness. First, it wasn't
24 even that. It was, he asked my opinion about
25 something, and I gave him enough information and he



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1 said, hey, I would like you to be a witness on this
2 (inaudible).

3 (Reporter Clarification.)

4 THE WITNESS: He asked me to be a
5 witness after, you know, I had given him
6 some advice and some opinions about --
7 about the technology.

8 BY MR. WARD:

9 Q. Were you working for Litepanels at that
10 time, Kevin?

11 A. No. I quit working for Litepanels in 2014.

12 Q. And so your last employment with Litepanels
13 was in 2014?

14 A. July of 2014.

15 Q. And have you been engaged by Litepanels as
16 a consultant since then?

17 A. No.

18 Q. Have you had any relation with Litepanels
19 or individuals at Litepanels since then?

20 A. Yes. Rich Rosen was head of engineering as
21 I was leaving. And he and I have consulted on various
22 things. He left Litepanels, and I helped him with
23 some of his things after he left.

24 Q. Did you disclose this engagement on behalf
25 of Colt to Litepanels?



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1 A. You have to ask me that again. I don't
2 understand.

3 Q. Sure.

4 Have you disclosed your engagement in these
5 IPR proceedings on behalf of Colt to Litepanels?

6 A. No. I did talk to Fred Fellmeth about
7 another matter a couple of weeks ago or a week ago
8 and -- but this was not part of any discussion.

9 Q. So you have not identified your relation to
10 these IPRs to the individuals associated with
11 Litepanels?

12 A. No.

13 Q. Kevin, are you familiar with Quasar
14 Science, the petitioner?

15 A. Only recently.

16 Q. And when was that?

17 A. When this all came up. When I was first
18 consulted by Ken Fisher, the Quasar name was
19 mentioned. It was a -- it was purely -- an
20 acquisition of Vitec had this problem, and I really
21 hadn't followed the Vitec story after I left too much,
22 so I think it wasn't until this became much more
23 formal and I was hired as an expert witness that I saw
24 their name for the first time.

25 Q. So are you familiar with any Quasar Science



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1 products?

2 A. No. I've seen -- I turned on the website
3 one time. I just looked at a picture, and that is
4 close enough.

5 Q. Are you familiar with any individuals
6 employed by Quasar Science?

7 A. Not that I know of.

8 Q. Are you in contact with any individuals
9 that are still employed by Litepanels, or otherwise
10 consulting for Litepanels?

11 A. No.

12 Q. Okay. Kevin, I want to move down to the
13 signature page of your declaration here, just to
14 verify.

15 So I'm showing on the screen now what is
16 page 23 of Exhibit 2047, and I see that there is a
17 signature there.

18 Do you recognize the signature, Kevin?

19 A. Yes. That is my sloppy signature.

20 Q. It looks better than mine.

21 And what was the date when you signed this,
22 Kevin?

23 A. February 3rd.

24 Q. And who drafted this declaration, Kevin?

25 A. Ken Fisher helped me as a -- almost as a



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1 secretary, and then I did the -- I did some of the
2 final editing on it.

3 Q. So Mr. Fisher created the first draft?

4 A. He had a draft. I don't know that it
5 was -- I can't tell you how much ended up in this
6 final draft.

7 Q. So what was your process in drafting it?
8 You received an initial --

9 A. I --

10 Q. -- and made comments; is that correct?

11 A. I -- I would change things and --
12 basically, I changed everything at least once, and in
13 the end, you know, it was just -- it was just editing.

14 Q. And did you use a word processing tool to
15 make those edits?

16 A. I did.

17 Q. And how many rounds of edits do you recall
18 making?

19 A. I think five.

20 Q. And was Mr. Fisher involved in making those
21 edits?

22 A. Certainly -- I mean, I would sometimes yes
23 and sometimes no. Sometimes he just looked at what I
24 said and then had questions and -- I'd never done a
25 deposition like this before, so he was helping me with



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1 the structure.

2 Q. So you said that you changed almost every
3 portion of the declaration from its first draft?

4 A. Yes.

5 Q. And did anyone other than Mr. Fisher assist
6 in preparing the declaration?

7 A. Not that I know of.

8 Q. I want to just move down to Appendix A.
9 It's on the next page of Exhibit 2047, that page 24,
10 and continues on to page 25 of Exhibit 2047.

11 Kevin, I'm interested to know about your
12 educational background. So could you describe to us
13 your educational background after high school.

14 A. I started -- I thought I was going to be an
15 architect, and I went to Oklahoma State University
16 that had an architecture school, but it was within the
17 engineering college. And so I took basically,
18 engineering for two years. I never got to take one
19 architecture class, and so I changed majors at that
20 time and wanted to be in advertising.

21 So from there, I did teach at LEU briefly
22 as a photography instructor while I was going to
23 school. I went to Phillips University first. I
24 applied to go to a school in California, a photography
25 school, but they had a year and a half waiting time,



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1 so I took advertising classes at Phillips University
2 in Enid, and part of that was an exchange program
3 where we went to -- I went to Folkhögskola School in
4 Sweden where we studied art and photography and
5 architecture, as well as the Soviet Union. And so we
6 studied art and architecture in the Soviet Union.

7 At the end of that, I went to California to
8 go to Brooks Institute where I received my bachelor of
9 science degree. I was started working at that point.
10 During school, I was working for George Lucas in 1978,
11 and then Steven Spielberg moved in with us, so we
12 were -- 1980 I was working for Steven Spielberg, all
13 while going to school.

14 And then I graduated from Brooks, and I
15 took computer science classes while I was going to
16 Brooks also, at (Audio Distortion). So I had a
17 computer science, so I was doing all that. And that
18 was the end of my college education.

19 Q. So, Kevin, I see at the bottom of page 25
20 of Exhibit 2047, you list Oklahoma City, engineering,
21 1978 to 1980.

22 A. Yes.

23 Q. What type of engineering program was that?

24 A. I think I screwed up the date on that.
25 That was '75 to '76. Definitely screwed that up.



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1 Q. And the '78 to '80 would be associated with
2 the Brooks Institute?

3 A. Yes. Probably was moving things around
4 there.

5 Q. I'm sorry, back to my first question there.
6 What type of engineering program were you
7 in?

8 A. It was -- it was everything -- everything
9 from physics to, you know, thermal dynamics, you name
10 it. It was top to bottom, computer science. It was
11 all the engineering. But it's basically all the
12 engineering you take before you go into a specialty,
13 like electrical engineering, or something like that.
14 We had electrical engineering classes, but they just
15 gave us a little bit of everything.

16 Q. Did you receive a bachelor's degree from
17 Oklahoma State?

18 A. No, I did not.

19 Q. You did receive a bachelor of science in
20 photographic illustration from Brooks Institute,
21 though, correct?

22 A. That is correct. And a minor in color
23 technology.

24 Q. And that would be associated with your
25 October 1981 date there?



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1 A. Yes. Yes.

2 Q. Okay. I would like to ask you, Kevin,
3 about your professional experience. Sounds like we
4 heard a little of that in your earlier description.
5 But you started out, as you show on page 25 of
6 Exhibit 2047, as a professional photographer, correct?

7 A. That is correct. And it was actually
8 before that because I worked, like I say, in the movie
9 business for both Lucas and Spielberg until I
10 graduated, and then I became a professional
11 photographer in Tulsa in 1981.

12 And then I stayed at that. I was actually
13 hired by an advertising agency, and I did that for one
14 year. I worked for the advertising agency. We had
15 the oil bust hit, so I lost my job. So I went into
16 business for myself, and then stayed as an advertising
17 photographer until 1990.

18 But at the same time Fisher Productions was
19 formed somewhere around 1986, and I started doing
20 part-time with Fisher, slowly, gradually, moving from
21 Oklahoma to California. It was kind of a
22 back-and-forth arrangement.

23 Until 1990, I moved to California full
24 time. I quit my advertising photography job --
25 profession, I should say, and worked full time as a



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1 lighting technician and a manufacturer of lighting
2 equipment at Fisher Productions.

3 Q. And what is Fisher Productions,
4 Incorporated, Kevin?

5 A. It was a lighting company that mostly did
6 automotive television commercials. I don't know if
7 you are old enough to remember, but when Lexus first
8 came out with -- all those commercials came out, that
9 was us. That was -- we lit the best car commercials
10 in the world.

11 Q. What did your role as CTO, what were your
12 duties and obligations?

13 A. I manufactured the equipment, and I oversaw
14 maintenance of the equipment, and I went out as a
15 technician and generally was the lead technician for
16 the company.

17 Q. And does Fisher Productions still exist?

18 A. I don't believe so.

19 Q. And when did you leave Fisher Productions?

20 A. I left around 2004.

21 Q. And why did you leave, Kevin?

22 A. We had invented a technology called --
23 well, it was a gunshot detection technology, and we
24 merged with a company called ShotSpotter. And it
25 worked out, it was six or seven months, maybe eight



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1 months, I worked for ShotSpotter.

2 (Reporter Clarification.)

3 THE WITNESS: ShotSpotter, all one
4 word, S-H-O-T-S-P-O-T-T-E-R, a Delaware
5 corporation.

6 BY MR. WARD:

7 Q. And on page 25 under ShotSpotter you say:
8 "Larger IP to contributor to present."

9 What do you mean by that?

10 A. I am the main inventor on 14 of their
11 patents.

12 Q. Are you still engaged with ShotSpotter?

13 A. No.

14 Q. When did you first join Litepanels?

15 A. I want to say May of 2005, we had -- we had
16 been -- we had been doing it as a d/b/a of Fisher
17 Lighting -- of Fisher Productions, and we were just
18 contributing our time. But I think around May of
19 2005, there was two individuals, Rudy Pohlert and
20 myself, were basically hired and formed the company as
21 a true separate corporation. And I stayed with
22 them -- I stayed with Litepanels until July of 2018.

23 Q. As a founder of Litepanels, do you have an
24 owner percentage of that company?

25 A. I did. One-sixth.



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1 Q. Do you still have any ownership or equity
2 in Litepanels?

3 A. No, I don't.

4 Q. And what was your reason for leaving
5 Litepanels?

6 A. Well, it's kind of like we had this
7 beautiful baby, and you took care of the baby, you
8 loved the baby. But unfortunately, the baby grew up
9 and would become Charles Manson. It was -- we sold
10 the company, and we stayed on. And they killed off
11 customer service. They killed off the innovation
12 portion and just -- I'm an innovator, I'm an inventor.
13 I -- I always move forward, and they weren't moving
14 forward, so I -- I opted out.

15 Q. How long were you with Litepanels after the
16 acquisition?

17 A. It would have been six years, something
18 like that. Five and a half years.

19 Q. Did you -- were you involved in any patent
20 applications that were filed on behalf of Litepanels?

21 A. Every one.

22 Q. So every Litepanel patent application that
23 was filed, you were listed as at least one of the
24 inventors?

25 A. Until I left.



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1 Q. I want to move to the next page of your
2 declaration, Kevin. It's page 26 of Exhibit 2047. It
3 provides a list of patents, and you titled it "Named
4 Inventor on the Following Patents."

5 How many total patents have you been listed
6 as a named inventor on, Kevin?

7 A. Well, there is a lot more than this because
8 these are the ones that relate to LEDs or lighting for
9 the motion picture industry. I have done quite a few
10 others. I think I've got 45 -- no, 35 form filings
11 going right now. I've got probably at least a couple
12 dozen others other than these.

13 Q. Kevin, I have been a patent attorney for
14 over 20 years. Few individuals that I talk to would
15 have many as patents as you do. So kudos to you for
16 that.

17 I want to ask you specifically about one of
18 these patents, and I've highlighted it with my cursor
19 on the screen. It's U.S. Patent Number 7,972,022.
20 The title is Stand-Mounted Light Panel for Natural
21 Illumination in Film, Television or Video.

22 Do you remember that patent, Kevin?

23 A. Barley. It's been -- it's been a long time
24 since I have seen that.

25 MR. WARD: What I'm going to do now,



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1 David, I'm going to e-mail you, co-counsel,
2 and to the court reporter here, a document
3 that has been labeled as exhibit --
4 Petitioner's Exhibit 1022. And I'm going
5 to share that exhibit on screen, it's a
6 copy of the patent, and just ask questions
7 about it.

8 David, let me know when you
9 successfully get that e-mail.

10 MR. HOFFMAN: Not yet. This was
11 not -- Trent, this was not filed yet in the
12 IPR, is it?

13 MR. WARD: No.

14 MR. HOFFMAN: Okay.

15 Okay. I have it now.

16 BY MR. WARD:

17 Q. Okay. So, Kevin, what I'm sharing on
18 screen is a document that's previously been marked.
19 You see down here in the right-hand corner is
20 Exhibit 1022 to IPR 2023-613. It is U.S. Patent
21 Number 7,972,022.

22 And do you see on the left-hand side over
23 here, a list of inventors where it lists you, Kevin
24 Baxter, as an inventor?

25 A. Yes.



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1 Q. Do you recall this patent?

2 A. Vaguely. We had probably 12 continuations
3 out of the initial disclosure, so they kind of blur
4 together. There are real differences in the claims
5 regarding the disclosure.

6 Q. Okay. Just for references sake, while we
7 are discussing it here, you will see the patent ends
8 in the number 022.

9 Is it okay if I refer to this as the '022
10 patent?

11 A. Yes.

12 Q. The list of inventors, it looks like there
13 are three other inventors identified.

14 Can you tell me about those individuals?

15 A. Rudy Pohlert and Pat Grosswendt had a
16 lighting business, Contrast Lighting I believe it was
17 called, and they were customers of Fisher Light. And
18 they were regular customers of Fisher Light, and they
19 knew that we had a lot -- we didn't have just the
20 Fisher Light. We had many specialty lighting pieces
21 of equipment from different inventors. We had lights
22 all over the world. We had them in Japan and France
23 and England and Germany and New Zealand.

24 And individuals that had just a little
25 light of some kind, they decided to come to us and let



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1 us send it out in the world because they didn't have
2 the bandwidth to do it themselves. And so it became
3 part of our -- we were a specialty lighting company
4 already.

5 And so Pat and Rudy and Ken and I all kind
6 of got to know each other really well. And they came
7 to Ken and said, hey, we want you to look at this new
8 light that we have been playing with, and they had
9 some -- they came up with a green light, and it was
10 LED based. And we looked at it, and I looked at it,
11 and I immediately saw a problem. And Fred came in,
12 and he's an electrical engineer, and he saw a problem.
13 And we solved the problem for them.

14 And in doing so, they said, hey, how about
15 we -- we all work together. And so we formed this
16 company. Yeah. And that is how it all started.
17 Those were the -- I was working for Ken Fisher, and
18 Pat and Rudy came in.

19 Q. And, Kevin, you said that Fred solved the
20 problem. Which Fred are you talking about?

21 A. Fred Holmes was hired by Fisher Productions
22 as a consultant since somewhere around 1992 or '93,
23 somewhere around there. And he came in to help Fisher
24 Productions with the computers and circuit boards and
25 things like that.



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1 Q. And so was there a specific problem that he
2 assisted in solving?

3 A. It was cumbersome. We were always evolving
4 our software. We were controlling hundreds of lights
5 individually with dimmers and what have you, and he
6 was helping with all of that.

7 Q. And is he -- on this first page of the '022
8 patent lists the assignee as Litepanels. Is it your
9 understanding that this patent was assigned to
10 Litepanels?

11 A. That is correct.

12 Q. And also, you will see in the middle of the
13 page, it lists the filing date as March 30th of 2009.
14 Does that sound correct to you?

15 A. Well, again, we had a dozen continuations,
16 so I cannot remember when this continuation was filed.
17 I -- it doesn't seem incorrect to me, but I don't
18 remember.

19 Q. Would you agree that based upon the
20 indication of the date of patent at the top right-hand
21 portion of July 5th, 2011, that this patent would have
22 issued in 2011?

23 A. That is about right.

24 Q. Okay. I want to move down to column 15 of
25 this patent. And I want to point out to you the



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1 paragraph that starts at line 22. And I will try and
2 make it bigger, Kevin. You can tell me when you
3 are --

4 A. I can see.

5 Q. Let me see if I can try and make it a
6 little bigger here to kind of help you out a little
7 bit.

8 So this is -- I'm at line 22 of column 15,
9 and the '022 patent says: "Figure 7 is a more
10 detailed diagram of a light segment 792 (e.g. an
11 array) as may be used, for example, in connection with
12 the lighting frame 302 shown in Figure 4. The light
13 segment 792 may correspond to each of the individual
14 light segments 306 shown in Figure 4, and the various
15 light elements (i.e., LEDs) 790 in Figure 7 may
16 correspond to the individual low power lamps 305 shown
17 in Figure 3. Figure 7 illustrates a straight row of
18 LEDs 790 as may comprise the lighting segment 790."

19 And in conjunction with that, Kevin, I
20 would like to show you Figure 7 as well, so I'm going
21 to scroll up and show on screen Figure 7.

22 And this is the figure that was associated
23 with that previous description that I was reading. Do
24 you recognize this particular Figure 7?

25 A. Vaguely, yes.



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1 Q. Okay.

2 A. It's been a while.

3 Q. So based on this disclosure in the '022
4 patent, would you agree that LEDs were used in
5 lighting frames at least as early as 2011?

6 MR. HOFFMAN: Objection, scope, form.

7 THE WITNESS: I don't know about the
8 language. This was written by Chris
9 Vandermen, a patent attorney, and he didn't
10 really use language that we use in the
11 business. So I'm confused by some of the
12 terms.

13 BY MR. WARD:

14 Q. Would you agree that what is shown in
15 Figure 7 here is an illustration of LEDs on a lighting
16 frame?

17 MR. HOFFMAN: Objection --

18 THE WITNESS: No.

19 They are on the circuit board.

20 BY MR. WARD:

21 Q. So would you agree what is shown in
22 Figure 7 is LEDs arranged on a circuit board?

23 MR. HOFFMAN: Objection, scope.

24 THE WITNESS: I would have to refer
25 back, but I don't know.



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1 BY MR. WARD:

2 Q. Okay. Let's take a look back then at the
3 associated disclosure in column 15.

4 Column 15, in describing Figure 7, it says:
5 "The light segment 792 may correspond to each of the
6 individual light segments 306 shown in Figure 4, and
7 the various light elements (i.e., LEDs) 790 in
8 Figure 7 may correspond with the individual power
9 lamps 305 shown in Figure 3. Figure 7 illustrates a
10 straight row of LED 790 as may comprise lighting
11 segment 790."

12 So, Kevin, would you agree that what is
13 disclosed here is a row of LEDs on a lighting fixture?

14 MR. HOFFMAN: Objection, scope,
15 mischaracterization.

16 THE WITNESS: I would not say that.
17 I would say it's a row of LEDs. The rest
18 is ambiguous.

19 BY MR. WARD:

20 Q. So you would say that this is a row of LEDs
21 for a lighting fixture?

22 A. Yes.

23 MR. HOFFMAN: Objection, scope.

24 THE WITNESS: Yes, I do think it
25 would be a row of LEDs for a lighting



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1 fixture, poor lighting. I don't go beyond
2 that.

3 BY MR. WARD:

4 Q. I want to want move over a column here, and
5 I am now in column 16 of the '022 patent. And I want
6 to move down to line 34. I will make it big enough
7 and somewhat readable for you, Kevin. Can you read
8 that?

9 A. Yes.

10 Q. Okay. So starting here at line 34, it
11 says: "In a preferred embodiment, the bi-color
12 lighting apparatus uses light elements of two
13 different colors, which (unlike red, green, and blue)
14 are separated by a relatively small difference in
15 their shift or color balance."

16 And then continuing down to line 44, it
17 was: "In a preferred embodiment, as will be
18 described, the bi-color lighting apparatus uses lamp
19 elements having daylight and tungsten hues (for
20 example, 5200 kelvin and 3200 kelvin color
21 temperatures, respectively). Other bi-color
22 combinations may also be used and, preferably, other
23 combinations of colors which are closely in hue or
24 otherwise complementary in nature."

25 Kevin, in view of this disclosure would you



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1 agree that it discloses the use of two different
2 colors of LEDs, one with 5200 K and 3200 K?

3 MR. HOFFMAN: Objection, scope.

4 THE WITNESS: Do I answer?

5 BY MR. WARD:

6 Q. Yes.

7 A. Sure. This was an example. I don't know
8 that we ever did exactly this or it was intended to be
9 exactly this. We used a variety of different LEDs
10 around 5200 kelvin, going as high as 6000. We went
11 down to 5000. The 3200, we actually went lower
12 sometimes. We'd go 3500 and lower. So there is --
13 this is in a range of what we would do, what we were
14 attempting to do.

15 Q. Kevin, would you agree that as of 2011, it
16 was known to use different LEDs to create a bi-color
17 lighting apparatus?

18 MR. HOFFMAN: Objection, scope.

19 THE WITNESS: It is correct that
20 we -- our product had been out for three
21 years by that time, and it was widely known
22 in the industry what bi-color meant.

23 BY MR. WARD:

24 Q. And what did bi-color mean, Kevin?

25 A. It meant daylight or warm light or anywhere



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1 in between.

2 Q. And you said there was a product that
3 existed for a few years.

4 What was that product?

5 A. It was called the Litepanels 1x1 Bi-Color.

6 Q. And did it use LEDs?

7 A. It did.

8 Q. And did it use different LEDs to generate
9 daylight and tungsten light?

10 A. It did.

11 Q. So a lighting apparatus with different LEDs
12 for tungsten and daylight was known as of 2011,
13 correct?

14 A. Correct.

15 Q. I want to move down to the next column,
16 it's column 17 of the '022 patent, line 20. It says:
17 "Figure 33 is a diagram of an embodiment of a lighting
18 effects system 3300 having at least two different lamp
19 element colors. As illustrated in Figure 33, the
20 lighting effects system 3300 comprises a lighting
21 frame mounting surface 3302 having a plurality of lamp
22 elements 3305 which, in this example, include daylight
23 LEDs 3304 and tungsten LEDs 3303, although different
24 lamp elements and/or different colors could be chosen.

25 "The lighting effects system 3300 further



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1 comprises various control electronics for controlling
2 the illumination provided by the lamp elements 3305.
3 In particular, the lighting effects system 3300
4 comprises an intensity control adjustment 3342, an
5 intensity control circuit 3345, a ratio control
6 adjustment 3341, and a ratio control circuit 3346?

7 "The intensity control adjustment 3342 and
8 ratio control adjustment 3341 may each be embodied as,
9 e.g., manual control knobs, dials, switches, or other
10 such means, or alternatively may be embodied as a
11 digital key pad, a set of digital buttons, or the
12 like?"

13 I would like to show you as well, Kevin,
14 the associated figure that is being referenced here,
15 Figure 33.

16 You can see that on the screen. So
17 Figure 33 associated with the disclosure that I've
18 just read illustrating a lighting frame mounting
19 surface having daylight LEDs and tungsten LEDs.

20 In view of this disclosure, Kevin, would
21 you agree that as of at least 2011, it was known to
22 have a lighting frame mounting structure with both
23 daylight LEDs and tungsten LEDs?

24 A. I -- I agree, yes. That's true.

25 Q. Kevin, can you remember what type of



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1 mounting surface would have been used for this
2 embodiment?

3 A. In the case of Litepanels, we used a
4 fiberglass circuit board covered with copper on both
5 sides.

6 Q. And would there have been a cover over the
7 LEDs?

8 A. They were -- it was inside of a housing,
9 perforated housing.

10 Q. So was there a diffusion cover to diffuse
11 the light?

12 MR. HOFFMAN: Objection.

13 THE WITNESS: We could add diffusion
14 separately to the fixture, to the outside
15 of the fixture. There was no diffusion in
16 the original, as-manufactured fixture.

17 BY MR. WARD:

18 Q. Okay. Thank you. I want to move now to
19 the patent at issue in IPR 2023-613. I'm going to
20 share on the screen that patent.

21 Kevin, what I'm showing on the screen now
22 is Petitioner's Exhibit 1001. You see the label down
23 here in the bottom right-hand corner. At the top
24 right-hand portion of the page, you see that this is
25 listed as U.S. Patent Number 10,411,582.



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1 Do you see that, Kevin?

2 A. I do.

3 Q. Is it okay if I refer to this as '582
4 patent?

5 A. Yes.

6 Q. Okay. Can you determine who is listed as
7 the inventor for the '582 patent?

8 A. I'm not sure how you say his -- is that
9 Guillermo? I don't know how to pronounce his name. I
10 can see it.

11 Q. Okay. I believe his name is --

12 A. It's a little fuzzy, so --

13 Q. Yeah, sorry. So listed here on the '582
14 patent, Exhibit 1001, the inventor is listed as
15 Guillermo Macias.

16 Do you understand Guillermo Macias to be
17 the inventor of the '582 patent, Kevin?

18 A. I do.

19 Q. And do you know Mr. Macias?

20 A. No. I don't think I've ever met him.

21 Q. So have you had any communication with
22 Mr. Macias?

23 A. No.

24 Q. Have you developed any products with
25 Mr. Macias?



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1 A. No.

2 Q. Have you developed any products with Colt
3 International Clothing listed as the assignee?

4 A. No.

5 Q. Have you invested, made any investments in
6 Colt International Clothing?

7 A. No.

8 Q. Do you have any monetary interest in Colt
9 International Clothing?

10 A. No. Except for the fact that they are
11 paying me to be here today.

12 Q. And are you billing them on an hourly rate,
13 Kevin?

14 A. Yes.

15 Q. Do you have any other financial
16 consideration for your representation?

17 A. No.

18 Q. In Exhibit 1001, scrolling down, and I'm
19 showing on the screen now column 1 of the '582 patent.

20 Are you able to see that column 1 text,
21 Kevin?

22 A. Yes.

23 Q. In column 1, there is a title -- a heading,
24 I should say, for the background of the invention
25 there at line 15. There is also at line 25, a



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1 subheading for "Description of the Related Art." And
2 it is in this section which the inventor can describe
3 the prior art to a patent. Is that your
4 understanding, Kevin?

5 MR. HOFFMAN: Objection.

6 THE WITNESS: I -- I don't know. The
7 related art, you usually talk about the
8 industry or the -- not just prior art but
9 the industry in general, including prior
10 art.

11 BY MR. WARD:

12 Q. And would you agree that that description
13 is associated with what is known in the industry at
14 that time, Kevin?

15 MR. HOFFMAN: Objection to scope.

16 THE WITNESS: I really haven't
17 been -- I was not told to study this patent
18 at all. I -- I looked at it briefly enough
19 just to know the field that we are talking
20 about, but I had not even read through it.

21 BY MR. WARD:

22 Q. As an individual with 40-plus patents,
23 Kevin, do you understand that the background section
24 is the section where --

25 A. Oh, yes, I do understand the background and



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1 what it means.

2 Q. And what does that mean, Kevin?

3 A. Generally, it is the field that you are
4 talking about. And I think they've done a decent job
5 there of explaining the field of their invention.

6 Q. So would you agree this is a description of
7 what is known in the art at the time?

8 MR. HOFFMAN: Objection, scope.

9 THE WITNESS: Well, it's incomplete,
10 but it's -- because they don't talk about
11 being in the movie business.

12 BY MR. WARD:

13 Q. But in your patents, not in the one we are
14 looking at now, but in your patents, did you describe
15 your invention in the background section?

16 A. Yes. Not in the invention. We talked
17 about background, the field -- we talked about the
18 motion picture industry.

19 Q. Right. So you talked about what was known
20 in the industry in the background section, correct?

21 A. To some degree.

22 Q. In column 2 of the '582 patent, which I
23 will enlarge on the screen now, in column 2, line 2,
24 in the background section, it states: "The two most
25 frequently used and desired color temperature ranges



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1 in the lighting industry for stage and set lighting
2 have been found to be 3050 to 3300 K for tungsten
3 (warm white) and 5400 to 5600 K for daylight white.
4 These ranges represent ideal color temperature ranges
5 for producing ideal lighting for TV, photography and
6 film studio scenarios."

7 So as of the filing of the '582 patent,
8 would you agree with that statement, Kevin?

9 MR. HOFFMAN: Objection, scope.

10 THE WITNESS: Partially. I guess the
11 word "ideal" is the question because it's
12 actually a greater range than that. But I
13 can live with ideal, but it's incomplete.

14 BY MR. WARD:

15 Q. Would you agree with the characterization
16 that the most frequently used and desired color
17 temperature ranges are warm white and daylight white?

18 MR. HOFFMAN: Objection, scope.

19 THE WITNESS: That is generally one
20 of the two most frequently used.

21 BY MR. WARD:

22 Q. Moving down to line 36 of the background
23 section, it states: "There are two primary types of
24 LED lighting used to create white light. One is to
25 use individual LEDs that emit three primary colors



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1 (red, green, and blue) and mix the colors to form
2 white light. The other is to use a phosphor material
3 to convert monochromatic light from a blue or
4 ultraviolet LED to a broad-spectrum white light, also
5 referred to as phosphor based LEDs."

6 Would you agree that as of the filing of
7 the '582 patent in May of 2013, that it was known to
8 use LEDs to create white light in the way described?

9 A. It was not desirable to use RGB, but it was
10 known.

11 Q. What was the desirable way to create white
12 light within LED?

13 A. Well, phosphor-based LEDs basically produce
14 most of the wavelengths that we associate with white
15 light. RGB can make any color in the world, but it
16 can make only one color at one time.

17 Q. What does the term broad-spectrum white
18 light mean to you, Kevin?

19 MR. HOFFMAN: Objection, scope.

20 THE WITNESS: I would say it is
21 visible light, not lacking huge holes in
22 its spectrum.

23 BY MR. WARD:

24 Q. And what do you mean by "huge holes"?

25 A. Well, every light makes wavelengths at



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1 certain places, and sometimes almost no light in other
2 places, that we would normally associate with daylight
3 or with incandescent light. And so if they have a
4 hole, there are colors that don't render properly.
5 And so we always associate broad-spectrum with as
6 close as possible to true daylight, like you get from
7 the sun or from incandescent bulbs.

8 Q. The next paragraph in the background
9 section here states: "In order to match the tubular
10 form of a fluorescent bulb, arrays of LEDs may be
11 placed within a tube having the same form factor as a
12 fluorescent lamp, such as a T8 or T12 size fluorescent
13 bulb. One such bulb is made by Dialight, and it's
14 called DuroSite."

15 Were you familiar with the DuroSite
16 products, Kevin?

17 A. Yes, vaguely. They were never accepted
18 very well, so very vaguely.

19 Q. You are familiar that there was a DuroSite
20 LED tube product?

21 A. Yes.

22 Q. Did you ever see that product?

23 A. I saw them in trade shows and never in
24 practice.

25 Q. Were there other similar bulbs at that time



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1 similar to the DuroSite LED tube?

2 A. I think so. There was a guy came around
3 trying to get us -- from Litepanels -- to take on his
4 fluorescent shaped bulb in around 2009 or 2010, and
5 you know, it wasn't very good either, so...

6 Q. And who was that guy, Kevin?

7 A. I don't know. It was a friend of Pat
8 Grosswendt's, and I just saw it for a matter of a
9 couple of minutes. He was demonstrating it.

10 Q. So you came to the Litepanels facility to
11 do a demo of the product?

12 A. That is correct.

13 Q. And do you remember what type of light that
14 it provided?

15 MR. HOFFMAN: Objection, scope.

16 THE WITNESS: It was a daylight
17 ballast bulb, the best I remember.

18 BY MR. WARD:

19 Q. And his goal was for Litepanels to further
20 develop this product?

21 A. Or -- or have us maybe sell -- you know,
22 sell through us or something. I don't remember. It
23 was -- I was more interested in the technology, and I
24 wasn't really part of that discussion about what he
25 wanted to do.



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1 Q. Was there any -- were you involved in any
2 determinations as to whether or not to incorporate
3 that product?

4 A. Yeah. I basically said, we are not doing
5 to do. It looked terribly faulty. Just the idea of a
6 fluorescent bulb, it didn't have enough surface area.
7 It had overheating problems. It had -- would have
8 dielectric issues. It would have a whole lot of
9 problems that I just felt like were too risky, and as
10 CTO, I strongly advised against it.

11 COURT REPORTER: Strongly advised --
12 I didn't hear the last word. Strongly
13 advised?

14 THE WITNESS: I strongly advised that
15 we didn't -- we didn't pursue it.

16 BY MR. WARD:

17 Q. The next sentence, Kevin, in the background
18 section here states: "For example, in size T8, the
19 bulb in one form uses SMD LEDs in a four foot long
20 tube and provides 1500 Lumens of Natural White light,
21 using 17 Watts, 300 LEDs, with 90 volts to 277 volts,
22 and is ETL/UL Approved."

23 Do you know what SMD LEDs are?

24 A. Yes, I do, surface mount.

25 Q. And so what was your understanding to be



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1 described with this sentence?

2 A. I would suppose that it a fluorescent
3 shaped bulb that has surface mounted LEDs inside of
4 it, and the tube is four feet long. It looks like
5 it's going to use about 15 -- it's 17 watts of power,
6 but you generally get about 90 lumens per watt. So,
7 yeah, those numbers work out of right. And then it's
8 powered. And it's using 300 of those LEDs, so that
9 means that they are something in -- you know, they are
10 tiny little -- they are very small sub light LEDs, and
11 the whole thing runs on basically U.S. power.

12 Q. And what is meant by T8 or T12 size
13 fluorescent bulb?

14 A. Well, T8 is about an inch in diameter. T12
15 is about an inch and a half in diameter. They are the
16 standard sizes that are used around the world.

17 Q. So there's a standard for a fluorescent
18 bulb size described by T8 or T12?

19 A. Yes. They are generalized in the sense of
20 they're connectors. The actual diameter of the bulbs
21 vary quite a bit, depending on the make and model and
22 what have you. But generally, the connectors were
23 somewhat -- I won't say universal, but they were -- I
24 think there was more specification to the connectors
25 than the size of the -- of the bulb.



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1 Q. Kevin, in view of this statement, in order
2 to match the tubular form of a fluorescent bulb,
3 arrays of LEDs may be placed within a tube having the
4 same form factor as a fluorescent lamp such as T8 or
5 T12 size fluorescent bulb. Would you understand that
6 statement to indicate that it was known to place LEDs
7 in a fluorescent tube form T8 or T12 as of May of
8 2013?

9 A. There were mono bulbs that couple.

10 Q. And what do you mean by "mono bulbs"?

11 A. Well, monochromatic or, you know, single
12 color, single white daylight bulbs at that -- in 2013.

13 Q. And what would have been examples of those,
14 Kevin?

15 A. Dialight. There was, like I said, a guy
16 that brought one in. Those were out there. They were
17 in the market.

18 Q. Do you recall any others other than those
19 two?

20 A. I -- I don't. It's surprising that
21 Kino Flo never did this. That is their whole business
22 was based on fluorescent bulbs and the housings and
23 all of the stuff that goes with it. And they would be
24 the number 1 suspect for something like this, and they
25 didn't do it. So these are the only two that I can



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1 kind of remember at the time.

2 MR. WARD: Okay. We have been going
3 for about an hour now, Kevin. If you want,
4 we can take a break.

5 THE WITNESS: If you like.

6 MR. WARD: Why don't we take a break
7 and go off the record.

8 (Recess taken.)

9 BY MR. WARD:

10 Q. Kevin, I want to now share on the screen
11 page 8 of your declaration.

12 I'm sharing page 10 of Exhibit 2047, which
13 is your declaration, Kevin.

14 A. Yes.

15 Q. And in paragraph 41 you referenced an LEDs
16 Magazine article. A screen shot of it appears in your
17 declaration in paragraph 41, and you can see at the
18 bottom, it gives a caption citation. It says:
19 "Exhibit 2050, LEDs Magazine, June 2014, page 4."

20 Do you see that reference?

21 A. I do.

22 Q. So, Kevin, what I would like to do now is
23 I'm going to share on the screen that particular
24 exhibit, which is Exhibit 2050 in the IPR proceeding.
25 Do you see down here at the bottom right-hand portion



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1 I'm showing you Exhibit 2050, correct?

2 A. I'm sorry. Yes. Yes.

3 Q. This is an article from LEDs Magazine.
4 It's entitled "Are LED retrofits that work with an
5 existing ballast a good idea?"

6 And in this article, the second paragraph
7 states this. I'm going to read it to you. And let me
8 enlarge it so you will be able to see. It states:
9 "What prompted this column, you ask? Recent product
10 announcements confirm a trend toward the concept.
11 Lunera Lighting has announced LED lamps designed to
12 work with compact fluorescent and metal-halide
13 ballasts," citing page 16. "Cree recently announced
14 LED tubes that work with existing ballasts, following
15 similar announcements from others including Philips
16 Lighting and Luxul Technology," and provides an HTTP
17 site.

18 Were you familiar with Lunera Lighting
19 providing LED tube lamps in this time frame, Kevin?

20 A. Not them, per se. There were others.

21 Q. In addition to the others that you
22 previously mentioned, who were those others?

23 A. There were hundreds of them in -- in China.

24 Q. Do you remember Cree providing LED tubes at
25 this time?



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1 A. I don't, but it wouldn't surprise me. But
2 I don't remember them specifically.

3 Q. And how about Philips Lighting?

4 A. I don't remember them either, but it
5 wouldn't surprise me. I mean, they are the biggest
6 lighting companies -- you know, Philips is the biggest
7 in the world, so it wouldn't surprise me.

8 Q. So when you say there are hundreds of
9 Chinese manufacturers providing LED tubes at this
10 time, how are you aware of that?

11 A. I went yearly to the Guangzhou light show.
12 It's the largest lighting trade show in the world.
13 Makes Vegas look puny. And at that time, there was a
14 big frenzy of making fluorescent tubes.

15 Q. And when you say "at that time," what year
16 are you talking about?

17 A. I want to say around 2014 or '15, somewhere
18 in that range.

19 Q. Were you aware of the LED tubes existing in
20 the 2013 time frame?

21 A. Very few, just those few that we previously
22 spoke about. But it was a crescendo. In China, it's
23 like a school of fish. When one person does it, the
24 next year 50 people do it, the next year a hundred
25 people do it, and then the next year you are back down



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1 to ten of them because they all went broke. But this
2 was during that crescendo time when everybody got on
3 the bandwagon.

4 Q. Kevin, I want to share with you now a
5 patent owner exhibit, which is Exhibit 2045. In the
6 bottom right-hand portion down here you will see this
7 is Colt International Clothing Exhibit 2045.

8 Do you see that?

9 A. I see that.

10 Q. And this is a printout of a Mac Tech web
11 page from the Wayback Machine is indicated at the top
12 of the exhibit. The date provided is 2014.

13 Were you aware of Mac Tech LED tubes at
14 this time?

15 A. Not that I recall.

16 Q. So you were not aware that Mac Tech was a
17 provider of LED tubes at this time?

18 A. I can't remember the company. I never --
19 my memory fails me on that. I might have known them.
20 I don't recall.

21 Q. The statement that is made on the web page
22 here, it says: "Mac Tech LED Lighting is the next
23 stage of evolution of LED lighting allowing you to
24 save on equipment, power, and air conditioning."

25 Would you understand this statement to be



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1 about the benefits of LED tube lighting?

2 MR. HOFFMAN: Objection, scope.

3 THE WITNESS: I don't know that it
4 relates to LED tubes.

5 MR. WARD: Okay. I want to show you
6 now -- and, David, I'm going to send around
7 another newly stamped exhibit,
8 Exhibit 1023.

9 David, you can let me know when you
10 receive that exhibit.

11 MR. HOFFMAN: Okay. Just one moment.

12 Not yet.

13 Okay, I did.

14 BY MR. WARD:

15 Q. Okay. I'm going to share on the screen
16 what has been marked as Petitioner's Exhibit 1023.

17 Kevin, what I'm sharing on the screen is
18 Petitioner's Exhibit 1023. It's a four-page press
19 release from B&M Lighting. It's titled "B&M Lighting
20 and Universal Studios Partner on Mac Tech LED
21 Lighting." And the press release is dated June 3rd of
22 2011.

23 Do you see that on the exhibit?

24 A. I do.

25 Q. The opening statement on the first page



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1 here states: "B&M Lighting and Universal Studios
2 announce an evolutionary new lighting product,
3 Mac Tech LED. Using specially developed LED lighting
4 tube technology, B&M Lighting has created four product
5 lines that use 30 percent to 70 percent less power
6 than conventional lighting, offer consistent color
7 temperatures at both daylight and tungsten and are
8 lightweight for easy load-in and strike. Universal
9 Studios Set Lighting is the exclusive rental agent."

10 Were you aware of B&M Lighting at this
11 time?

12 A. No, I don't believe so.

13 Q. Were you aware of the Mac Tech LED
14 products?

15 A. Yes. Yes, a little bit. But they were not
16 very well accepted. So again, I think I saw them in
17 trade shows and, you know, things like that, but not
18 in practice out in the sets. They weren't used.

19 Q. And do you recall seeing Mac Tech displayed
20 at a trade show?

21 A. There were so many knock-offs afterwards,
22 I -- I can't recall them specifically, no.

23 Q. Are you familiar with B&M Lighting company?

24 A. No.

25 Q. This second page of the Exhibit 1023, the



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1 first paragraph states: "'Working closely with
2 experienced film and television professionals, we've
3 spent almost two years developing high output LED
4 chips,' said Ray Wolffe, President, B&M Lighting.
5 'Using Mac Tech LED, a production can use only Edison
6 plugs and stingers, utilize 50K hour bulbs and save on
7 air conditioning because the LED tubes run cool.'"

8 In view of that statement, what would you
9 understand to be described here?

10 MR. HOFFMAN: Objection, scope.

11 THE WITNESS: Well, pardon my French,
12 but bullshit. At that time, I would say it
13 was almost impossible to have a 50,000-hour
14 life on a world fluorescent type bulb.
15 They had heat problems. And so those are
16 the kind of things that -- just outrageous
17 statements that got the industry in
18 trouble.

19 BY MR. WARD:

20 Q. And why is it that that would not have been
21 impossible at that time, Kevin?

22 A. Well, because I can compare the product --
23 my most popular product used 40 watts of power, and it
24 had 288 inch -- square inches of copper a quarter inch
25 away from the LED, and there was no dielectric layer



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1 to buffer that heat. It all went out.

2 These things had maybe 60 square inches of
3 aluminum, not copper. The heat has to go through the
4 dielectric. And that means that those LEDs, if
5 they've got 20 or so watts of power in there, they are
6 going to overheat the luxu, and they won't get 2,000
7 hours. And I have that the LED were spec'ed for
8 50,000 hours. I don't know any that were at that time
9 realistically. That was not a made-up fact. They
10 were more like 20 to 30,000 in response. So that is a
11 big revenue, vary accrual. So I just look it as a
12 sales machine.

13 Q. Kevin, I want to move down to the page 4 of
14 Exhibit 1023. It is the fact sheet that provides the
15 features for the Mac Tech LED products. And the
16 second feature that is listed is: "Consistent colors
17 temperatures of both daylight and tungsten and almost
18 zero percent green at 93 CRI."

19 Was that a known feature set for an LED
20 tube at the time?

21 MR. HOFFMAN: Objection.

22 THE WITNESS: Well, they sold -- at
23 that time they did not sell bi-color, they
24 sold either a daylight or a tungsten
25 because you don't -- you just would pick



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1 the type that you needed.

2 93 CRI was very difficult at that
3 time, very difficult, and very inefficient.
4 It was very -- was this 2011 you said, I
5 think?

6 BY MR. WARD:

7 Q. Yeah. The date of the press release is
8 June 2011.

9 A. Yeah. Back then, you would really be
10 fighting a brightness problem at 93 CRI. There was a
11 company called Intematix. They came out with
12 efficient red phosphors that changed everything around
13 2012, 2013. But in 2011, these things would have been
14 very dark. They wouldn't -- they wouldn't be very
15 bright at all. And if they were bright, that means
16 they would be generating a ton of heat, and they would
17 be killing themselves. So, you know, I don't --
18 again, I just think it's a sales machine. It's fun.
19 It's not --

20 Q. Do you disagree that it was -- would you
21 say it was not known at that time to have an LED tube
22 with a tungsten light capability above 93 CRI?

23 MR. HOFFMAN: Objection.

24 THE WITNESS: Tungsten was easier to
25 get to 93 because it started out as a warm



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1 phosphor to begin with. But the daylight
2 was very difficult to get to 93 CRI at that
3 point in time.

4 BY MR. WARD:

5 Q. The fourth bullet point, Kevin, states:
6 "30 percent to 70 percent less power than equivalent
7 conventional lighting."

8 Was that known for LED tubes in 2011?

9 MR. HOFFMAN: Objection.

10 THE WITNESS: I think so. I think
11 it's actually -- this is where they might
12 have actually undersold it a little bit. I
13 think it's actually more efficient than
14 they're saying there.

15 BY MR. WARD:

16 Q. One of the other bullet points it lists, it
17 states: "Low heat output."

18 Was that known for an LED tube in 2011?

19 MR. HOFFMAN: Objection -- sorry,
20 I'll withdraw that.

21 THE WITNESS: I think LED products in
22 general were known for low heat output. I
23 don't know that this unit really was low
24 heat output. It's such a concentrated heat
25 source with such a small area for LED



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1 tubes.

2 BY MR. WARD:

3 Q. Let me make sure I understand, Kevin. You
4 are saying that LED tubes were known for low heat
5 output; is that correct?

6 MR. HOFFMAN: Objection,
7 mischaracterization.

8 THE WITNESS: I agree,
9 mischaracterization is true. LED products
10 in general were known for heat output --
11 low heat output. But -- but I believe that
12 fluorescent tube shaped LED fixtures
13 actually ran pretty darn hot.

14 BY MR. WARD:

15 Q. And why is that?

16 A. They just don't have enough square inches,
17 and they have to try so hard. They're pumping light
18 through diffusion. They're -- like you said, they had
19 a dielectric layer that keeps the LEDs from shorting
20 out when they're up against the aluminum heatsink.
21 And it's just a -- it's a bad mix.

22 Q. Kevin, I want to show you now what has been
23 marked in these matters as Exhibit 1005. I'm sharing
24 on the screen now Petitioner's Exhibit 1005. In the
25 top right-hand portion of the first page, you will see



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1 that this is U.S. patent number 7,350,936 and the
2 listed inventor was Ducharme.

3 Kevin, is it okay if I refer to this patent
4 as the Ducharme patent?

5 A. Of course.

6 Q. And you see the date of the patent listed
7 in the top right-hand portion is April 1 of 2008.

8 Do you see that?

9 A. I do.

10 Q. And, Kevin, would you agree that this
11 Ducharme patent issued prior to Mr. Macias's May 2013
12 patent filings?

13 A. Yes.

14 Q. I want to turn to column 5 of the Ducharme
15 patent. Column 5, line 18, it states: "Another
16 embodiment comprises a lighting fixture to be used in
17 a lamp designed to take fluorescent tubes, the
18 lighting fixture having at least one component
19 illumination source (often two or more) such as LEDs
20 mounted on a mounting and having a connector on the
21 mounting that can couple to a fluorescent lamp and
22 receive power from the lamp."

23 Kevin, in view of this statement, would you
24 agree that a LED tube with a fluorescent form factor
25 is known as of the filing of this patent in 2008?



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1 A. I don't know.

2 MR. HOFFMAN: I'm sorry. Objection
3 to the scope.

4 Go ahead. You can answer.

5 THE WITNESS: I don't know. I -- I
6 had not seen a fluorescent bulb until 2009.
7 So at this time I wouldn't know.

8 BY MR. WARD:

9 Q. So when this patent was filed -- and I'm
10 just going to go back up to refresh you as to the --
11 it was issued in 2008, filed earlier, but at least
12 issued in 2008.

13 So looking again at this disclosure,
14 column 5, where the reference says, "Another
15 embodiment comprises a lighting fixture used in a lamp
16 designed to take fluorescent tubes, a lighting fixture
17 having at least one component illumination source such
18 as LEDs mounted upon a mounting," would you understand
19 this to be disclosing a LED tube in a fluorescent form
20 factor?

21 MR. HOFFMAN: Objection, scope.

22 THE WITNESS: I -- I just can't have
23 an opinion. I don't -- I would have to
24 read the whole thing to figure out what
25 they are really going after there. I don't



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1 know.

2 BY MR. WARD:

3 Q. Okay. I'm happy to let you read whatever
4 portion of the reference you want to add the proper
5 context, Kevin.

6 A. Yeah. Hold on.

7 (Witness reviews document.)

8 I think so. I think they are talking about
9 LEDs in a fluorescent tube.

10 Q. So you would agree that what is disclosed
11 in the Ducharme patent is an LED tube in a fluorescent
12 form factor, correct?

13 MR. HOFFMAN: Objection.

14 THE WITNESS: I think so.

15 BY MR. WARD:

16 Q. I want to move down to a later column,
17 column 28.

18 Let's see, column 28, line 53, the Ducharme
19 patent states this: "A high-quality LED-based light
20 may be configured to replace the fluorescent tube. In
21 one embodiment, a replacement high-quality LED light
22 source useful for replacing fluorescent tubes would
23 function in an existing device designed to use
24 fluorescent tubes."

25 Kevin, in view of those statements, do you



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1 understand the Ducharme patent is disclosing an LED
2 tube to be used as a retrofit for a fluorescent tube?

3 MR. HOFFMAN: Objection, scope.

4 THE WITNESS: The best of my
5 understanding, yes.

6 BY MR. WARD:

7 Q. Okay. What I'm going to -- I'm going to
8 quickly read through. There is a description of two
9 figures here, Figure 28 and Figure 29. So I want to
10 read the disclosure. I'm going to also show you those
11 figures.

12 First, with respect to Figure 28, it says:
13 Figure 28 shows a typical fluorescent lighting fixture
14 or other device configured to accept fluorescent
15 tubes."

16 And let me just scroll up quickly and show
17 you Figure 28.

18 We see here what is described in the
19 Ducharme patent as the typical fluorescent tube you
20 see here in 28?

21 A. Yes.

22 Q. And it identifies that is prior art, so
23 this is what would have existed prior to this Ducharme
24 patent, correct?

25 A. Yes.



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1 Q. Moving back down to column 29, there is a
2 description of the Figure 29. And I think it would
3 probably be most helpful if -- I'm going to read this
4 disclosure at column 29, line 16, but I want to do
5 that while we are all viewing Figure 29, so I just
6 want to follow along with the -- with the disclosure.
7 So give me a moment here.

8 A. Can you zoom in just a little.

9 Q. Yeah. Actually, I'm going to read the
10 disclosure, but I'm going to show you Figure 29 so you
11 can follow along with the disclosure.

12 So column 19, line 16, this is how the
13 Ducharme patent describes what we are seeing now as
14 Figure 29. It says: "Figure 29 shows one embodiment
15 of a lighting fixture according to this disclosure
16 which could be used as a replacement fluorescent tube
17 in a housing such as the one in Figure 28."

18 So we saw the prior art in Figure 28, the
19 fluorescent tube, and now Ducharme is describing the
20 replacement.

21 It says: "The lighting fixture may
22 comprise, in one embodiment, a variation of lighting
23 fixture (5000) in Figures 5a and 5b. The lighting
24 fixture can comprise a bottom portion (1101) with a
25 generally rounded underside (1103) and a generally



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1 flat connection surface (1105). The lighting fixture
2 also comprises a top portion (1111) with a generally
3 rounded upper portion and a generally flat connection.
4 The top portion (1111) will generally be comprised of
5 a translucent, transparent, or similar material
6 allowing light transmission and may comprise a filter
7 similar to filter (391)."

8 So it's referencing this as being the top
9 portion, and it states that this would generally be
10 comprised of a translucent, transparent or other
11 similar material allowing light transmission.

12 The Ducharme patent goes on to say that:
13 "The flap connection surfaces (1105) and (1115) can be
14 placed together to form a generally cylindrical
15 lighting fixture and can be attached by any method
16 known in the art."

17 And then it says: "Between top portion
18 (1111) and bottom portion (1101) is lighting fixture
19 (1150)."

20 Kevin, do you see -- you can see my cursor.
21 Do you see what is designated as 1150?

22 A. Yes.

23 Q. The Ducharme patent says that lighting
24 fixture 1150 comprises generally rectangular mounts of
25 1153. So referencing role 1153 is identifying this



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1 generally rectangular mounting.

2 And it's true for at least one component
3 illumination source such as LED 1155, where it says at
4 least one LED 1155 as we see on Figure 29, there are
5 multiple LEDs on the surface of 1155.

6 Would you understand this disclosure,
7 Kevin, to be disclosing LEDs on a supporting
8 structure?

9 MR. HOFFMAN: Objection, scope and
10 compound.

11 THE WITNESS: It -- it roughly
12 appears so.

13 BY MR. WARD:

14 Q. The Ducharme patent goes on to say: "The
15 strips generally have the component LEDs in a sequence
16 that separates the colors of the LEDs if there are
17 multiple colors of the LEDs but such an arrangement is
18 not required. The lighting fixture will generally
19 have lamp connectors for connecting the fixture to the
20 existing lamp couplers. The LED system may also
21 include a control circuit for 2510," which is shown
22 here in Figure 29. This circuit may convert the
23 ballast voltage into D.C. for the LED operation. The
24 control circuit (2510) may control the LEDs (1155)
25 with constant D.C. voltage."



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1 In view of that disclosure, Kevin, would
2 you understand that the Ducharme references disclosing
3 a LED control circuit to control the LEDs on the
4 supporting structure?

5 MR. HOFFMAN: Objection, scope and
6 compound.

7 THE WITNESS: Yeah. It's getting a
8 bit much to follow, but I do believe
9 their -- their attempt was to have a chip
10 that controlled LEDs.

11 BY MR. WARD:

12 Q. In view of this disclosure, Kevin, would
13 you understand this disclosure of Ducharme to
14 generally be disclosing an LED tube to be provided in
15 a fluorescent tube form factor?

16 A. I think it's probably closer to a heat
17 pump. There is no heatsink on it. I think it's -- it
18 would die in minutes. There is no connection. There
19 are air holes in the bottom, but there is no heatsink.
20 There is no conduction to the outside of the housing.
21 It's just -- it's incomplete. There is a disclosure
22 there, but it's a very incomplete bulb.

23 Q. And where do you see those holes indicated?

24 A. On the -- on the part, what is it, 1103,
25 maybe that's -- I don't know if it's 1103 or if it's



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1 1101. But that is not -- there is no flat surface to
2 conduct the one from the back of this circuit board.
3 And it's not a viable invention.

4 Q. I want to direct your attention to another
5 portion of disclosure here, Kevin, at column 11,
6 line 54. Column 11 of the Ducharme patent at line 54,
7 it says: "Figure 4 shows an exploded view of one
8 embodiment of a lighting fixture of the present
9 invention. The depicted embodiment comprises a
10 substantially cylindrical body section (362), a
11 lighting module (364), a conductive sleeve (368), a
12 power module (372), a second conductive sleeve (374),
13 and an enclosure plate (378).

14 "It is to be assumed that the lighting
15 module and the power module contain the electrical
16 structure and software of lighting fixture (300), a
17 different power module and lighting fixture (300) as
18 known to the art, or as described in U.S. patent
19 application serial number 09/215,624, the entire
20 disclosure of which is herein incorporated by
21 reference.

22 "Screws (382), (384), (386), (388) allow
23 the entire apparatus to be mechanically connected.
24 Body section (362), conductive sleeves (368) and (374)
25 and enclosure plate (378) are preferably made from a



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1 material that conducts heat such as aluminum."

2 Kevin, in view of this disclosure, again,
3 is Ducharme talking about the use of aluminum as a
4 heat conductive material?

5 MR. HOFFMAN: Objection, scope and
6 compound.

7 THE WITNESS: Well, they say that
8 that is the material. That is fine. But
9 there is no connection. It's only on the
10 edges. And it would die. It would die
11 quick.

12 BY MR. WARD:

13 Q. And why would it die quickly, Kevin?

14 A. There is -- there is not a good conduction
15 path from the LEDs on the circuit board to the back
16 housing. Just touching on the edges almost doesn't
17 connect -- conduct at all. You would have to have
18 something flat behind the LEDs adequately to get the
19 heat pools out of that circuit board. It would die in
20 minutes.

21 Q. I want to move now back to your
22 declaration, and I'm going to share that on the
23 screen.

24 Looking now at your declaration,
25 paragraph 20, where it states: "During the 2009 to



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1 2014 time frame, I was the chief technical officer at
2 Litepanels."

3 Furthermore, in the next paragraph,
4 paragraph 21, you say: "In and around 2009 to 2010, I
5 evaluated the viability of creating four foot LED tube
6 lighting systems specifically intended for the film
7 and television lighting industry," which you refer to
8 as the evaluation in quotations there.

9 Who asked you to perform this evaluation,
10 Kevin?

11 A. Well, no one. As CTO, I was always looking
12 for good ideas for the company, and I tried to -- you
13 know, the most power we could probably put into an LED
14 tube shaped structure was about 20 watts, and that
15 amount of light done at motion picture qualities would
16 probably be less than a regular fluorescent tube, and
17 that wasn't adequate.

18 At the time, Kino Flo was using regular
19 fluorescent tubes, and they were overdriving them to
20 about double normal brightness. And so this would be
21 less than a third as bright as the industries need.
22 And so I looked at that, and the thermals got in the
23 way. That was the main thing. And there was just no
24 way to go beyond 20 watts without real thermal issues,
25 and that would make for a really problematic product.



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1 Q. But, Kevin, as part of your role as the
2 chief technical officer for Litepanels, you were
3 engaged in performing these types of evaluations,
4 generally?

5 A. Yes.

6 Q. Do you remember performing other than
7 Litepanels?

8 A. Many times.

9 Q. And what were those?

10 A. We looked at competitors' products.
11 Several times we had -- we had a patent fight with a
12 guy, I can't think of his name now, and he did
13 something equally stupid. He had star -- I think
14 there were aluminum star packages, and his heatsink
15 was plastic. And so it was like putting on a
16 person -- you know, it was -- it was the exact
17 opposite of what he should have been doing. They
18 would have been better naked in the air than on --
19 mounted up against a piece of plastic. And I remember
20 we looked at that product.

21 I looked at competitive products from
22 several -- especially later, not so much in the 2009,
23 2010 area, but ongoing until I left we were evaluating
24 competitors' products back in.

25 Q. And how did you deliver your conclusions



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1 when conducting these evaluations?

2 A. Well, generally, I spoke to someone else
3 who was either -- at one time it was Fred Holmes. He
4 was an electrical engineer, and I would point out --
5 we had -- we would do thermostats. We would get a
6 thermostat and put it on parts and just prove that,
7 you know, this looks bad, let's try it. And we would
8 try it, and it would just look -- you know, the
9 temperature would tell us everything that we needed to
10 know.

11 And later, it was Rich Rosen. I would talk
12 with Rich Rosen and show him what the competition was
13 doing, what they were doing right and what they were
14 doing wrong.

15 Q. Did you keep notes on your evaluations?

16 A. No. That is -- generally, it was a real
17 quick look. I mean, generally, you knew within a
18 moment of what the problem was, and then all you had
19 to do was check it and show the other guy and, it's
20 like, yeah, we are not doing that. And it was -- it
21 was just -- it was not formal at all. It was really
22 seat-of-the-pants, just really -- it's easy to see a
23 problem.

24 Q. Did you have issues --

25 A. It's hard to find good stuff. Okay? It's



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1 hard to find the good stuff. But the problems were
2 easy to find.

3 Q. Did you have issues where you were asked
4 to -- or new products came up that you had already
5 evaluated and determined that you were not going to
6 pursue?

7 A. It was actually my product at the time.
8 NASA wanted to use our main plus on the Space Station,
9 and it was designed to be convectively cooled. And we
10 did simulations, we did tests, and we determined that
11 it would -- it would fail in space, eventually. And
12 it costs \$10,000 a pound to send one of these up to
13 the station and on the space shuttles. And so -- but
14 they were -- they were dogged, and they were
15 determined to put this stuff up in space. And so I
16 got them to write us a letter to relieve us of
17 liability of it dying because there was no convection
18 in outer space.

19 Well, it turned out there was a ton of fans
20 in the Space Station, and they were blowing so hard,
21 it's as good as convection, but we didn't know that at
22 the time. The design parameters said that there was
23 no convection. That was -- and I just looked at that
24 and said, oh, our product is going to fail. It's
25 going to die. And so that was probably one time when



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1 I failed -- or, you know, I suspected my product would
2 fail. And they are still up there. They are still
3 working, so...

4 Q. And specifically at paragraph 22, it's on
5 the screen here, you say: "The evaluation
6 specifically covered designing LED tubular lighting
7 fixtures, including the unique design challenges
8 therein."

9 Did anyone assist you with this evaluation?

10 A. No. It went on for a long period of time.
11 I was going to China, and I was seeing a lot of
12 extrusions for this process, for doing exactly this.
13 And -- and so the 50 people or so that were making
14 extrusions were selling to 50 other companies on top
15 of that. You know, so there was hundreds of companies
16 making this stuff.

17 And I would see these lights in China, and
18 I would ask them, well, how much power do you have?
19 And everybody, the T8s were limited to about 10 or 15
20 watts, and the T12s were all limited to about 20 watt.
21 So just knowing the efficiency of LEDs, there was just
22 no way of getting past the thermal challenge at that
23 time. It's just we couldn't -- I couldn't make a
24 viable case for it. This kind of went on for actually
25 a couple of years as opportunities arose.



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1 Q. Did you create any prototypes then?

2 A. I tested some prototypes. I tested some
3 sections. I did small pieces. Because people would
4 give me samples, say, oh, here is the best -- here is
5 the best heatsink, you know. And so they would give
6 me a little section, and I would bring it back to the
7 states. And I tried to fill them, and they never got
8 good results.

9 Q. So you tested the products that were
10 created by other companies?

11 A. Not -- just extrusions. Extrusions. We
12 were trying to -- they were not doing a good job on
13 engineering. A lot of it, the people would put stuff
14 together and not have a thermal paste. So it's -- you
15 know, you put -- you put something up against a
16 heatsink, it doesn't mean the heat is not going to get
17 transferred. You have to have conductivity of pace or
18 something to get it through there. And they were not
19 doing that, so I thought, I'll do my own test with
20 these extrusions, and I never got the results.

21 Q. And how did you go about arriving at those
22 results? What sort of tests were you performing?

23 A. Well, we put -- we put a heat source on
24 there. Usually it was just on an LED. We would put a
25 resistor with a particular power, and we would -- you



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1 know, we'd close it up, and we'd put the cover on it,
2 and we would run it. Usually it takes 45 minutes to
3 do a true thermal cycle. That is where you -- no
4 more -- if you have 45 minutes, you have convection
5 air, you generally don't have any change after that.
6 So we would do 45 minutes, and I'd go over with a
7 thermal sensor, and we would measure temperatures
8 around and next to the resistor or in the outside
9 case, what have you.

10 Q. So, Kevin, did you create records of these
11 tests?

12 A. They don't exist anymore if they did. It
13 was just notes. It was never -- it was always just --
14 I kind of knew it was going to fail, so it wasn't
15 really a big deal. It was kind of like, we are going
16 to try this and -- and I don't believe there is
17 records exist on that period.

18 Q. Kevin, you talk about in paragraph 23, you
19 reference the time frame. You talk about 2009 to
20 2013.

21 So is this an issue that came up multiple
22 times during the 2009 to 2013 period?

23 A. Yeah. Well, every time I'd go to try that,
24 you know, I saw a different heatsink that I thought
25 was better than the one I had seen before or something



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1 like that or a new way of mounting LEDs. Certainly
2 these had a thermal pad on them as opposed to an
3 electrical pad. So there were three pad parts. And
4 we tried that. You know, I kept trying as many
5 possibilities as I could to -- and we were -- I was
6 testing multiple things at once.

7 But generally, it was after one of my trips
8 to China that I would come back with a sample or
9 something and try.

10 Q. And how did you communicate to your
11 Litepanel counterparts that this was not worth
12 pursuing?

13 A. Well, usually, I would -- I would just tell
14 them the results, or they would come over and look at
15 the results, and they would go, yeah, it's the same
16 old, same old. And it was kind of that was -- it was
17 really pretty -- very informal.

18 Q. So you never would have sent an e-mail to
19 anyone saying, we are not pursuing an LED tube?

20 A. I don't believe so. I don't believe so. I
21 can't remember -- I never spent that much effort, to
22 be honest. It was just never worth it because it
23 never panned out. I don't think anybody ever expected
24 it to work.

25 Q. And you reference that "we" had



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1 discussions. Other than Fred Holmes, who would have
2 been involved in discussions?

3 A. Rich Rosen maybe. Later there was a couple
4 of other engineers. But mostly, it would be Fred at
5 that time. Or I would just, you know -- we have --
6 one of the partners, Pat Grosswendt, was not
7 technically savvy, and he would ask me questions about
8 this stuff, and I would just kind of go off on him and
9 say, this is just a really bad idea. So it was more
10 verbal with Pat and Fred.

11 Q. You state, as I mentioned in paragraph 22
12 of your declaration: "The evaluation specifically
13 covered designing LED tubular lighting fixtures,
14 including the unique design challenges therein."

15 And you go on to state in paragraph 23:
16 "As the CTO with a focus on LED lighting technology,
17 who actually assessed in 2009 to 2010, the viability
18 or nonviability of LED tubular lighting systems in the
19 film and TV industry, offers insights that I believe
20 are indicative of the prevailing opinions and beliefs
21 of typical lighting equipment designers, i.e.,
22 designer POSITA as defined above working in the film
23 and TV industry circa 2009 to 2013, the, quote, time
24 frame. I believe the evaluation results also apply
25 beyond the time frame, i.e. through 2013 and later."



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1 What do mean by "2013 and later," Kevin?

2 A. Well, I was always looking. You know, I
3 kept waiting for a good example, you know, or a good
4 technology.

5 So this was a period -- around 2013, was a
6 period where the dielectrics were radically improving,
7 and the chip design, the surface mount chip itself was
8 being designed with very low thermal resistance to it,
9 and so things were getting easier. But still, I could
10 never try a good enough way to do anything like this,
11 so -- and really by '13, I had kind given up on that.
12 The company was -- I was no longer head of
13 engineering. Rich Rosen had taken over. So I was
14 really taking more of a backseat in '13, and I don't
15 believe I did any in '14 at all of those kind of
16 evaluations.

17 Q. You say: "I believe the evaluation results
18 also apply beyond the time frame."

19 Would you believe that those results apply
20 to current day?

21 A. Well, I really haven't paid it much
22 attention, and so -- I mean, I've always got my eye
23 open because I see these products, I see what Colt has
24 done. They did it somehow. I don't know how they did
25 it, but it looks good, works good. You know, people



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1 are using them. So I guess I -- I guess even now, you
2 know, I am always excited for new technology, and I
3 can always learn something.

4 So that is -- I think that is what I meant
5 with, you know, past 2013. It's just -- I'm always
6 doing stuff. I design great big lights right now. So
7 my whole world is thermal. I'm always looking for a
8 thermal solution.

9 Q. So, Kevin, in the 2009 to 2013 time period,
10 in that four-year time period, is there any
11 documentation or material evidence to support that
12 this evaluation was performed?

13 MR. HOFFMAN: Objection, compound.

14 THE WITNESS: Yeah. I -- I don't. I
15 don't even have access to e-mails anymore.
16 I don't have anything. I don't have -- I
17 don't -- there is not -- I can -- I can
18 assure there is not. Most all this has
19 always been inadvertently. Does it work?
20 No, it doesn't work. See, okay, we are
21 done. It's literally 30 seconds kind of
22 conversations.

23 BY MR. WARD:

24 Q. There are no documents or evidence to
25 support that the evaluation was performed then, true?



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1 MR. HOFFMAN: Objection,
2 mischaracterization, asked and answered.

3 THE WITNESS: I think -- I think even
4 the Litepanels, they don't even have an R&D
5 department anymore. So there is nothing
6 left.

7 BY MR. WARD:

8 Q. Paragraph 25 of your declaration, Kevin,
9 you say: "Litepanels, as an Emmy award winning
10 developer of LED-based lighting systems for the film
11 and television industry, had the technical capability
12 to develop and manufacture a full range of four foot
13 LED tube lights starting at least as early as 2009.
14 More specifically, at the time of the evaluations,
15 Litepanels had the technical capability to build,
16 No. 1, single-color LED tube versions, e.g., single
17 tubes with either 5600 K cool white or 3200 K warm
18 white LEDs, collectively single color or mono color."

19 Kevin, in the 2009 to 2013 time frame,
20 would you agree that it was known to provide a single
21 tube with either a 5600 cool white or 3200 K warm
22 white?

23 A. Well, the guy that came in 2009 showed me
24 one, so that was the first instance I knew it to be
25 done. I just couldn't make it bright enough.



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1 Q. And do you remember what that guy's name
2 was or the company he was --

3 A. I don't remember. He was a gaffer, I
4 think. He just came around trying to sell -- or sell
5 to us or sell through us.

6 Q. Was he an American?

7 A. I believe so. Yes.

8 Q. So he was an American citizen and spoke
9 English?

10 A. Yes.

11 Q. And you remember him to be a gaffer in your
12 industry?

13 A. It seemed like that's what he was, but I
14 can't be sure. I didn't really talk to him. He was
15 trying to sell another guy at Litepanels, and I just
16 don't remember who he was. And I was looking at the
17 technology.

18 Q. So, Kevin, when you say, "Litepanels had
19 the technical capability to build the single color LED
20 tube," you are saying that you had the capability and
21 could have built the tube at that time as early as
22 2009, correct?

23 A. Absolutely.

24 Q. You go on to say that: "Litepanels had the
25 technical capability to build, No. 2, two colored



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1 models, e.g. single tubes containing both 5600 cool
2 white and 3200 K warm white LEDs, collectively,
3 bi-color."

4 A. Yes.

5 Q. In view of that statement --

6 A. Yes. We perfected bi-color, and we
7 certainly had the ability to make the tube. We just
8 couldn't make it bright enough, so it was
9 counterintuitive to go forward with -- when you don't
10 have enough -- a light that is as bright as the
11 competitor's.

12 Q. So you knew how to make the bi-color at
13 that time in 2009, correct?

14 A. Yes. We did. We had bi-color for two
15 years by then.

16 Q. And tell me what that would have looked
17 like, Kevin?

18 A. It was a 1x1. A 1x1 -- it was a Litepanels
19 1x1 Bi-Color is what it was called.

20 Q. Would you have had the capability to build
21 a two-color LED tube at that time?

22 A. Yes.

23 Q. And what would that have looked like?

24 A. It would have been about 20 watts. It
25 would have looked -- you know, it would have looked



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1 like -- it would have been half aluminum on the
2 backside, and it would have been diffusion on the
3 front side and traditional connectors on the ends.

4 Q. And would it have contained two different
5 sets of LEDs?

6 A. It would have contained the two sets. It
7 would have contained 3200 kelvin and 5600 kelvin
8 electronics.

9 Q. And the electronics would have allowed you
10 to select between driving the tungsten LEDs or the
11 daylight LEDs, right?

12 A. Crossfade. Crossfade we call it, because
13 it would be variable.

14 Q. What do you mean by "crossfade," Kevin?

15 A. 10 percent of one, 90 percent of the other,
16 and that way you could bury the color anywhere between
17 3200 and 5600.

18 Q. You also say it had capability to switch
19 between those --

20 A. You can go 100 percent, or you can go
21 anything in between.

22 Q. And did you attempt to create that product
23 at that time?

24 A. Only through my task to prove that it
25 wouldn't work.



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1 Q. You were testing other people's products,
2 though, correct?

3 A. Well, I was testing sample pieces of
4 extrusions and what have you.

5 Q. What do you mean by the term extrusion,
6 Kevin? Explain that to me.

7 A. Well, what I found in the Guangzhou light
8 show was extrusions, and extrusions are both aluminum
9 and plastic. And so the diffuser was extruded, and
10 the aluminum base was extruded. And the only thing
11 you had to do was take a circuit board with some
12 thermal paste on it and stick it down on there, and
13 you would have what was effectively -- you know, you
14 could get 20 watts out there. It might run a little
15 hot, but it would be an acceptable product for the
16 general -- the general public, except it would cost a
17 fortune back then. The LEDs were still very expensive
18 then. But you would have a nice 20 watt product --

19 Q. Do you recall -- Kevin, do you recall
20 testing a bi-color extrusion?

21 A. No. No. Never did. In fact, rarely LEDs.
22 It was usually resistors. We used resistors instead
23 of LEDs as heat sources because sometimes the LEDs
24 would fail. You know, they were running so hot, so it
25 made sense to use resistors which didn't burn.



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1 Q. Did Litepanels manufacture any of the
2 extrusions you tested?

3 A. Never.

4 Q. You never tested a board that would have
5 been manufactured by Litepanels?

6 A. You just asked two different things. So
7 can you clarify.

8 Q. Certainly. I'm just trying understand,
9 Kevin, what it was that you were testing.

10 Did you test a physical component that
11 Litepanels themselves created?

12 A. We had pieces of circuit boards left over
13 from things, and I would mount those on to an
14 extrusion, a piece of an extrusion. I would put a
15 resistor on it. I would put -- I would glue a thermal
16 sensor on it. Then I would close all of it, and we
17 would power it to the same power as an LED would use,
18 and it would generate the same heat. And then I would
19 measure the temperature after 45 minutes, after what's
20 state -- thermal statement 45 minutes.

21 Q. And did you have any varying results? Did
22 your results of those tests vary in any way?

23 A. A little bit. There were certain things,
24 aluminum core circuit boards helped a great deal.
25 There were certain LEDs, like I say, later in 2013



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1 range, they came out with these three-pad LEDs where
2 the center pad was -- you could connect it directly to
3 a heatsink, and there was similar technologies that
4 matched that for aluminum core circuit boards. And so
5 consequently, you could put all of that together to
6 get a little better -- a little better performance.
7 But it was never -- it was never a 50 percent or
8 100 percent improvement. It was just small
9 differences.

10 Q. I want to move to paragraph 29 of your
11 declaration, Kevin. Paragraph 29, you state that --
12 in the last sentence here, you say: "This need for
13 reliability would have been inherently understood by a
14 POSITA at the time of the invention, as light emitting
15 diodes (LEDs), unlike their fluorescent tungsten
16 counterparts, are extremely sensitive to heat."

17 What do you mean by that, Kevin?

18 A. Well, lights are rarely used just by
19 themselves. And generally, they are up against
20 something. Generally, they have a diffusion wrapped
21 around them or over them. They have -- or a color
22 correction along -- you know, Litepanels' products
23 were pretty darn good, but even they occasionally had
24 a little bit of green or a little bit of magenta, and
25 you'd put filter on them. Well, it's just the nature



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1 of the LEDs that were being manufactured at that time.

2 And so invariably, you would have black
3 lamp or filters or diffusion, and that would be like
4 choking a product. And they choked our products. I
5 can tell you my one (Audio Distortion) everywhere
6 where constantly, you know, you'd go out and sit and
7 you'd see what they're doing, and it was like, oh, my
8 God, they are going to kill.

9 And it didn't, but it was because -- only
10 because we didn't believe the data sheets from the LED
11 companies. We way over-engineered it for really bad
12 conditions because that is how they were being used.
13 They were in hot rooms with thousands and thousands of
14 watts of other heat coming in, and then putting them
15 up against things. They're putting a board over it, a
16 cardboard up against it or a filter and they're
17 choking it.

18 And that is just how -- that is the nature
19 of motion picture lighting. That is why it has to be
20 so right. And that is why -- that is why we didn't
21 see household type fixtures or volts, volts, come into
22 the movie industry. They flicker. They didn't have
23 the thermals. You know, they didn't have the color.
24 They had all kinds of problems.

25 And so motion picture equipment is



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1 uniquely -- you couldn't have a regular engineer to
2 say, yeah, come invent something for me, you know,
3 engineer something for me for the motion picture
4 industry. He could design it for the general public.
5 He wouldn't design it for high -- he wouldn't be
6 thinking about flicker, you know, how it's going to
7 react in a camera shutter. He is not going to be
8 thinking about brightness. And he's not going to be
9 thinking about using it in a bad way. He is going to
10 make the fixture nice and cool. But that is not how
11 they get used, and that's the big difference with film
12 equipment.

13 Q. So, Kevin, are you saying that the quality
14 of the LED -- the quality of the diode itself, the
15 light emitting diode, was less at this time in 2013
16 then in later years?

17 A. Not the (inaudible).

18 COURT REPORTER: I'm sorry, can you
19 repeat that.

20 THE WITNESS: The LED diode has
21 hardly improved in the last five, six
22 years. The packaging of the LED has
23 improved.

24 BY MR. WARD:

25 Q. And how is that? How has the packaging



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1 improved?

2 A. Both in efficiency and in thermal
3 management, the thermal conductivity, those two things
4 have happened.

5 Q. And tell me how those --

6 A. Well, because you have to have a
7 dielectric. The dielectric is something that allows
8 heat to conduct through but not electricity. And the
9 thinner you make that dielectric, the better it
10 conducts heat. But at some point, you are going to --
11 the voltage is going to jump through, and so you have
12 to juggle those two. And they're constantly coming up
13 with different materials, and they've got some great
14 ones now, that make it a little bit easier. And
15 they've made the LEDs such that they capture all light
16 comes out of not just the top. So they've improved --
17 the efficiency really hasn't gone up that much in the
18 last five years. It's just packaging.

19 Q. And so when you say in the last five years,
20 so that would be 2019 is around the time it was
21 packaging improvement?

22 A. I don't see hardly anything other than
23 packaging improvements since 2019. You are not seeing
24 real gains in lumens per watt or anything like that.

25 Q. Kevin, in paragraph 30 there on the page,



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1 you say: "Thus, when employing LEDs for film and
2 television lighting purposes, highly effective thermal
3 management of the LED emitters is required."

4 And how does one go about achieving highly
5 effective thermal management of LED emitters?

6 A. Well, you know, it's multifold. You
7 shorten the mechanical path. You can eliminate -- if
8 you can eliminate the dielectric, you know, and you
9 use as many LEDs as you can to spread them out, and
10 hopefully you have the biggest area possible to cool
11 from. And those are -- those are the quick easy ways.
12 Beyond that, it's hard. You use special materials.
13 You use copper instead of aluminum.

14 Q. Kevin, are you aware of the evolution of
15 the circuit board material for LED lighting changing
16 from fiberglass to aluminum to have better heat
17 dispersion?

18 MR. HOFFMAN: Objection.

19 THE WITNESS: I use copper in my
20 sports lights, so it's 50 percent better
21 than aluminum. So, yes, absolutely.

22 BY MR. WARD:

23 Q. And do you recall whether or not fiberglass
24 was the primary circuit board material at this time in
25 2013?



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1 A. '13 we started having -- there were
2 aluminum circuit boards in 2013.

3 Q. Kevin, in paragraph 32 of your declaration,
4 you say: "Proper thermal management becomes far more
5 challenging if the LEDs are packed in narrow tubes
6 with other heat-sensitive electronics, such as
7 heat-producing LED drivers. Such thermal problems are
8 further amplified when the narrow width circuitry
9 becomes encased with an outer diffusion cover needed
10 to blend the light output from the individual LEDs,
11 which further blocks and restricts airflow. This
12 creates a detrimental heat trap for LED electronics."

13 Kevin, how are these issues addressed?

14 MR. HOFFMAN: Objection to form.

15 THE WITNESS: I -- I didn't address
16 it. I never came up with a product. I
17 couldn't do it.

18 BY MR. WARD:

19 Q. And how was it that those that were
20 successful were able to address those issues?

21 A. I don't know. I have never -- I have never
22 seen inside one. I've never heard how they do it.

23 Q. Are you aware, Kevin, of the
24 miniaturization of surface mount LEDs with improved
25 thermal connections?



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1 MR. HOFFMAN: Objection, scope.

2 THE WITNESS: Yes, I do. The best
3 ones right now are about a millimeter
4 square. They call it packages or something
5 like that. They have a name for it. But
6 they are shrinking down to one millimeter
7 now.

8 BY MR. WARD:

9 Q. And would that have been useful in
10 addressing these thermal issues that you identified in
11 paragraph 32?

12 A. Not --

13 MR. HOFFMAN: Objection to scope.

14 THE WITNESS: Not without changing
15 other things, the dielectric layers. The
16 small LEDs means you can use a lot more of
17 them, which would make them a little more
18 efficient. You might get a few more
19 percent, you know, light out of them for a
20 given total system input. But you still
21 have to get the heat through the
22 dielectrics, through to the heatsink, in as
23 short path as possible. And you are still
24 limited by 60 square inches or so of
25 available real estate on your aluminum



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1 heatsink. So it's -- I still don't -- to
2 this day I couldn't do it.

3 BY MR. WARD:

4 Q. Kevin, would you agree that aluminum PCBs
5 with smaller surface mount packages address some of
6 the thermal issues?

7 A. They start --

8 MR. HOFFMAN: Objection --

9 THE WITNESS: They start -- they
10 start to. They start to address some of
11 issues but not the worst one.

12 BY MR. WARD:

13 Q. And what is the worst one?

14 A. The size of the heatsink and dielectrics.

15 Q. And talk to me about the heatsink itself.
16 Is there a minimum size that is needed for the
17 heatsink?

18 A. Well, like I say, my -- my Litepanels
19 products have six inches of copper, exposed copper for
20 convection cooling. The best you can hope for is
21 about one and a half square inches for the -- for a
22 tube-like product, a full T12. That is one-fourth of
23 what I was used to experiencing as safe. So it's
24 counterintuitive to think that would ever -- you can
25 gain a few percent here or there with different



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1 tricks, but we are talking 4X, and that is an enormous
2 amount. And then -- and then you take bi-color.
3 Well, now you've got half the area available to get
4 heat through a dielectric into the heatsink. You've
5 made it probably, you know, six times worse than my
6 products that I trusted. That is just -- that is
7 too -- that is too many times more dangerous to me
8 than heat. That is a death trap for LEDs.

9 Q. Kevin, do you understand that bi-color LED
10 tubes are now common in the market?

11 A. I think so. I -- from what I've read and
12 seen on -- at least on their websites. I have not
13 seen a lot of them on set. They are still -- they are
14 still kind of lacking as far as their overall use on
15 the set.

16 Q. And when you say "on their websites," whose
17 websites are you talking about?

18 A. I looked at Colt's, and I looked at the
19 Quasar -- whatever you call -- Quasar. Yeah, Quasar.
20 I looked at both of those, and they -- you know, they
21 show them on set, but I -- I have asked some of my
22 friends. You know, you are out there every day, you
23 are out there every day, do you see any of that? You
24 know, everything is a very striking order, or what
25 have you, these different lights that are out there,



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1 the Vortexes and stuff. These lights are not really
2 used that much in the industry.

3 Q. Have you heard of any of the bi-color LED
4 tubes that are on the market having the thermal issues
5 that you've identified?

6 A. I haven't, that I -- because, again, they
7 are not hardly out there. That's one of the things is
8 they're not really in full use like other traditional
9 motion picture lights are. So it's hard to get a read
10 on there. My friends and my coworkers have not used
11 them.

12 Q. Are you aware of a thermal failure for a
13 bi-color light tube?

14 A. No, not at all.

15 Q. I want to move now to paragraph 36 of your
16 declaration. You state: "Moreover, when single tube
17 lights are employed in film and TV lighting, they are
18 commonly positioned vertically. The vertical
19 orientation of thermal dynamics of narrow tube lights
20 are completely different from conventional LED
21 replacing in the tube industry.

22 Specifically, the heat emitted from LEDs at
23 the bottom of the tube is drawn upwards and absorbed
24 by the LEDs at the top of the tube when positioned
25 vertically?"



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1 Can you describe to me what it is that you
2 identifying here about the position of the lighting?

3 A. It's a heat chimney. When you take a light
4 and put it vertically, the air up here is heated
5 before it even gets the chance to go to the heatsink.
6 So the LEDs at the bottom are one temperature, and the
7 higher you go up, the hotter they get. They are
8 ingesting heat from the lower LEDs.

9 And that can cause all kinds of problems.
10 The forward voltages of the LEDs change. And at that
11 point, you might actually burn out the LEDs at the top
12 from both heat and from a different current level than
13 the LEDs at the bottom. And, of course, your color is
14 going to change. It changes the color of the glue
15 diode, which in turn changes the color coming through
16 the phosphors, but then the phosphors state here, it
17 all changes. And the brightness changes, and you get
18 a color shift.

19 And it happens over time. So you start out
20 with a cold volt. You do your readings. You are
21 ready to shoot. And 15, 20 minutes later, you've got
22 a completely different brightness and a completely
23 different color. And you are trying to cut the scene
24 together, and you've got two different colors.

25 Q. Isn't the purpose of the chimney, Kevin, to



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1 dissipate heat? In other words, it would help with
2 heat dissipation to have the high color tube in the
3 vertical orientation?

4 A. A chimney --

5 MR. HOFFMAN: Objection --

6 THE WITNESS: A chimney does not
7 reduce heat. It -- it affects -- it causes
8 convection. And convection is great if
9 it's cool. But you've got a convection at
10 the bottom, and you've got a convection at
11 the top, but the temperatures of that
12 convective air is completely different.

13 We had -- I had this problem at
14 Litepanels. We made a light that was four
15 by four feet, and the ones at the top got
16 hot from all of the ones at the bottom, and
17 we decided not to sell that product.

18 BY MR. WARD:

19 Q. Kevin, I want to move now to paragraph 65
20 of your declaration. Paragraph 65 states: "As chief
21 technical officer of Litepanels, I was personally
22 responsible for the CRI fidelity of the LEDs used in
23 our lighting systems, and I was constantly frustrated
24 with the disparity between the CRI values advertised
25 and their actual performance that I personally



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1 experienced as Litepanels and rarely got the CRI
2 advertised during the time frame."

3 Paragraph 66, you say: "Additionally, in
4 the pursuit of high-quality broad-spectrum LED
5 lighting with a superior CRI, LED manufacturers
6 deployed a combination of different phosphors directly
7 on top of blue LED emitters. However, a notable
8 challenge arising due to heat sensitivity of these
9 phosphors, certain phosphors are more susceptible to
10 heat, leading to distinct color reactions when exposed
11 to excess heat. This phenomenon manifests some colors
12 dropping out sooner than others, e.g., resulting in
13 overall color shifts and a loss of high CRI, a
14 consequence of the detrimental impact of heat on
15 phosphors."

16 Kevin, I want to ask, are you familiar with
17 MacAdam's binning?

18 A. Yes.

19 Q. And what is that?

20 A. It's a system of binning that came out, I
21 don't know, it must have been 2012 was -- they had
22 really simple binning before that. So there wasn't
23 binning before Nichia. And then they came out, and
24 they had like seven bins, and they were gigantic bins.

25 Which means the color within a bin could



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1 vary a great deal, and then as it got more
2 sophisticated, they started doing bins in a much
3 smaller fashion. You could really get the color
4 temperature. You could pick your deviation away from
5 the black body line. And then they had bins on bins,
6 so they also had bins for voltage. They had -- then
7 the blue dye, it's a blue dye actually had quite a
8 variance in those.

9 So you started out by binning your blue
10 dye. Then you would make a LED, and you would try and
11 have a target for a particular area that it would be
12 like a shotgun, and it would go everywhere. But then
13 they used robots and, you know, photometers to read
14 them, and maximum and brightness. So they had bins
15 for brightness. They had bins for color. And then
16 they had bins for the deviation off of the black line.

17 Q. And is that a way, Kevin, to address the
18 issues that you identified in paragraphs 65 and 66 of
19 your declaration?

20 A. It -- it helped, but there was two things
21 going on. Again, everybody was trying to match the
22 leaders, and whether it was a little less or the high
23 power leads or Nichia, they had these great data
24 sheets, and everybody tried to match the data sheet,
25 even though it was complete falsification in this



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1 direction a lot of times, that the lifetimes -- it was
2 more than just phosphors and what have you. There
3 was -- there was complete -- I had no faith in any
4 data sheet up until about 2012.

5 And at that point, they all had to come to
6 Jesus. They all had to get -- they had to tell the
7 truth and -- because they were just getting caught in
8 lies.

9 And so there was this moment where all of a
10 sudden all the bogus data sheets all cleaned up, and
11 so you kind of knew, oh, crap, I've got a thermal
12 management problem, or, oh, I'm not getting the bin
13 that I think I really am getting, and, oh, I didn't
14 realize I was getting different voltages.

15 And so there is many kinds of bins, many,
16 many kinds of bins. And it doesn't necessarily solve
17 all the problems, but at least it can -- it can make
18 one problem go away, you know, it can minimize them.

19 Q. Kevin, I'm going to share on screen now
20 paragraph 81 from your declaration. You state: "I
21 have been informed that since 2013, Colt LED has
22 successfully designed and commercialized a warm and
23 cool white bi-color version of the LED core tube
24 system to the film and TV market, including operating
25 at or above 20 watts being input to one half of the



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1 LEDs at a time and producing over 1,000 lumens in a
2 four foot T12 tube with low green bias under 5 points
3 and a CRI of 90."

4 So, Kevin, how long after 2013 did Colt LED
5 successfully design its tube?

6 A. I don't know. It was after -- it was --
7 you know, this -- it's after that. So I was informed,
8 you know, a few weeks ago or a few months ago of this.
9 I didn't -- I didn't know it. I mean, I'd seen stuff,
10 but I didn't -- you know, and I assumed everybody has
11 gone over 90 CRI in lumens now. It was very uncommon
12 in 2013, but it's become almost a requirement -- it is
13 a requirement at this time.

14 Q. When was the first time you recall seeing a
15 bi-color LED tube that could meet the specifications
16 identified in paragraph 81?

17 A. 2018 maybe, something around there.

18 Q. And which product was that; do you recall?

19 A. I don't remember. It was at a trade show,
20 and they were spouting, you know, the specs, and I am
21 like, wow, you did it.

22 Q. It's your understanding that in 2013, a
23 Colt bi-color tube did not produce the specifications
24 identified in paragraph 81?

25 MR. HOFFMAN: Objection,



1 mischaracterization.

2 THE WITNESS: I have no idea.

3 BY MR. WARD:

4 Q. You are not aware of Colt having a bi-color
5 LED tube in 2013 to meet these specifications?

6 MR. HOFFMAN: Objection --

7 THE WITNESS: I was unaware of the
8 existence of Colt in 2013.

9 COURT REPORTER: Counsel, did you
10 object?

11 MR. HOFFMAN: Yes. Objection,
12 mischaracterization.

13 Did you hear the witness's answer?
14 Because I didn't.

15 COURT REPORTER: Yeah, can you repeat
16 your answer, please.

17 THE WITNESS: I was unaware of the
18 existence of Colt in 2013.

19 BY MR. WARD:

20 Q. So, Kevin, you say here, paragraph 79:
21 "Within the specialized area of film and TV lighting,
22 my evaluation showed the LED core tube system was
23 likely to fail. Therefore, we, Litepanels,
24 deliberately chose not to proceed. A POSITA at the
25 time of Colt's invention would have made the same



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1 decision."

2 When did you change your mind with respect
3 to that evaluation, Kevin, that it would not be likely
4 to fail?

5 A. Well, it was --

6 MR. HOFFMAN: Objection.

7 THE WITNESS: -- it was ongoing. If
8 you remember, my answers from before were
9 similar to this. I decided in 2009 that we
10 weren't going to do it, but I kept an open
11 mind, you know. And every time I'd go to a
12 trade show and I saw some new extrusion or
13 product that I thought could improve the
14 results, I would try it. So it went on for
15 three or so, almost four years I thought.
16 I kept looking, at least. So it wasn't
17 just one big drop of the hammer. It was
18 beginning of 2009 all the way through 2012
19 or going into 2013.

20 MR. WARD: Okay. We have gone a
21 little over an hour now, Kevin. So why
22 don't we take a break, just a quick break,
23 unless someone needs a longer break. We'll
24 come back at 30 minutes after the hour.
25 Sound good?



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1 MR. HOFFMAN: Okay.

2 MR. WARD: Okay. Off the record.

3 (Recess taken.)

4 BY MR. WARD:

5 Q. Kevin, you indicated that you have not seen
6 significant use of bi-color LED tubes on commercial
7 image recording set; is that correct?

8 A. I call them high end, you know, motion
9 pictures and high end advertising, which has really
10 been the core of my experience and my exposure. And
11 my friends, my former employees, they are small
12 production stuff all over the world, that I am sure
13 they use it. But it's not -- it's not mainstream
14 stuff.

15 Q. So in your experience, you are not aware of
16 a high demand for bi-color LED tubes in the
17 mainstream?

18 A. No --

19 MR. HOFFMAN: Foundation, scope.

20 THE WITNESS: Not to my knowledge.

21 BY MR. WARD:

22 Q. Kevin, I want to ask you -- I just have a
23 few questions remaining, and I want to ask you, Kevin,
24 about -- go back to the patent at issue, and I'm going
25 to share on scene Exhibit 1001. And this is the '582



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1 patent that is the patent at issue in IPR 2023-613.

2 And as we discussed earlier, do you recall,
3 Kevin, that Guillermo Macias is listed as the sole
4 inventor on the '582 patent?

5 A. Yes.

6 Q. And do you understand, Kevin, that was
7 Mr. Macias the inventor of tungsten LEDs?

8 MR. HOFFMAN: Objection, scope.

9 THE WITNESS: I believe Nichia was
10 invention of tungsten LEDs.

11 (Reporter clarification.)

12 THE WITNESS: Nichia, N-I-C-H-I-A.

13 BY MR. WARD:

14 Q. Do you understand Mr. Macias to be the
15 inventor of daylight LEDs, Kevin?

16 MR. HOFFMAN: Objection.

17 THE WITNESS: No. It was Nakamura at
18 Nichia.

19 BY MR. WARD:

20 Q. Do you understand Mr. Macias to be the
21 inventor of LED tube lighting in a T8 form factor?

22 A. No.

23 Q. Do you understand Mr. Macias to be the
24 inventor of LED tube lighting in a T12 form factor?

25 A. No.



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1 Q. Do you understand Mr. Macias to be the
2 inventor of a bi-color LED tube light that has both
3 tungsten LEDs and daylight LEDs?

4 MR. HOFFMAN: Objection, scope.

5 THE WITNESS: I don't know.

6 BY MR. WARD:

7 Q. Were you aware of a bi-color LED tube prior
8 to mid 2013?

9 A. No.

10 Q. Do you understand Mr. Macias to be the
11 inventor of a bi-color LED tube with tungsten LEDs and
12 daylight LEDs?

13 MR. HOFFMAN: Objection to scope,
14 form.

15 THE WITNESS: It would be speculative
16 to know if he is the inventor or if he is
17 just an inventor.

18 BY MR. WARD:

19 Q. And what would be the difference in those?

20 A. More knowledge.

21 Q. What do you mean "more knowledge"?

22 A. Well, if you can show me somebody else who
23 had that exact same thing in a design for motion
24 pictures and all of its qualities, before this date,
25 then maybe. But -- but as is, this is the best I



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1 know. I don't know who invented what when, except
2 that he -- he filed for this at that date. But I
3 don't know if in front of you. I'm not aware of any
4 knowledge that they are. But I also don't -- I just
5 don't -- I don't know what I don't know.

6 Q. And what do you understand that Mr. Macias
7 invented in the '582 patent?

8 A. He put bi-color with the -- more than a
9 thousand lumens, very high CRI. And the electronics
10 inside do the crossfading, and that is pretty amazing.

11 Q. And, Kevin, how do you understand
12 Mr. Macias was able to address the thermal issues that
13 you have identified?

14 A. I have no idea. I really don't. I have
15 not seen inside one or -- I haven't even seen good
16 close-ups to one. So I have no idea how he managed
17 it.

18 MR. WARD: Thank you, Kevin. I have
19 no further questions.

20 MR. HOFFMAN: Okay. I would like to
21 take a break for maybe five minutes.

22 (Recess taken.)

23 MR. HOFFMAN: I have no questions.

24 MR. WARD: Yeah, I would like a
25 rough, and I also would like Kevin to read



1 and sign. Regular delivery.

2 MR. HOFFMAN: The rough. The
3 transcript itself, no. We may order it
4 later. But just the rough for now. Also,
5 I would like to reserve for the witness to
6 read and sign.

7 (Deposition adjourned at 6:43 p.m.)
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REPORTER'S CERTIFICATE

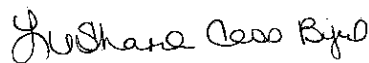
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That the testimony of the witness, the questions
propounded, and all objections and statements made at
the time of the examination were recorded
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That the foregoing is a true and correct
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I further certify that I am not a relative or employee
of any attorney or the parties, nor financially
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I declare under penalty of perjury under the laws
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Dated this April 22, 2024.



LESHAUNDA CASS-BYRD, CCR-B-2291, RPR



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Reference No.: 11077916

Case: Quasar Science vs Colt Intl. Clothing

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I declare under penalty of perjury that I have read the entire transcript of my Deposition taken in the captioned matter or the same has been read to me, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the DEPOSITION ERRATA SHEET hereof, with the understanding that I offer these changes as if still under oath.

Kevin Baxter

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_____, 20____ before me,

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(Print Name) _____ Notary Public,

in and for the State of _____



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