

APPENDIX “F”

TECHNICAL SPECIFICATIONS & PRODUCT CUT SHEETS

OCC Fixture Specifications

Fixture# 1 DELRAY LIGHTING #RMH4070.A30.UE.MC4.RP.CM.SPII

4" Vertical Cone Retro System, Single Lamp Down light for 70 watt Par 30, 40° beam spread, protected ceramic metal halide lamp. Retrofit kit shall have a self – flanged, 30° reflector cone with low iridescent clear Alzak haze finish. Retro system shall include all appropriate mounting clips, oversize trim ring, universal voltage, solid state programmed start, 3 year warranted electronic ballast, and a 4" remodel pan designed to fit the existing aperture. System shall be U.L, classified for use with the Convention Center's existing down lights. Retro system shall be by Delray Lighting or prior approved equal.

Fixture# 2 DELRAY LIGHTING #RMH4039.A30.UE.MC4.RP.CM.SPII

4" Vertical Cone Retro System Single Lamp Down light for 39 watt Par 30, 40° beam spread, protected ceramic metal halide lamp. Retrofit kit shall have a self – flanged, 30° reflector cone with low iridescent clear Alzak haze finish. Retro system shall include all appropriate mounting clips, oversize trim ring, universal voltage, solid state programmed start, 3 year warranted electronic ballast, and a 4" remodel pan designed to fit the existing aperture. System shall be U.L, classified for use with the Convention Center's existing down lights. Retro system shall be by Delray Lighting or prior approved equal.

Fixture# 3 DELRAY LIGHTING #RV6157.A30.UE.MC4.OT6.QC.UNV.EL.STL.RP

6" Vertical Cone Retro System, Single Lamp Down light for 57 watt CFL Triple Tube. Retrofit kit shall have a double – ellipse, self – flanged, 30° reflector cone with low iridescent clear Alzak haze finish. Furnish with earthquake proof 5° twist lock sockets that will allow the CFL Triple Tube lamp to be removed with a pole changer specifically designed for use with the 57 watt CFL lamp. Retro system shall include all appropriate mounting clips, oversize trim ring, universal voltage, solid state programmed start, 5 year warranted electronic ballast, and a 6" remodel pan designed to fit the existing aperture. System shall be U.L, classified for use with the Convention Center's existing down lights. Contractor shall deliver to the Oregon Convention Center two each CFL pole changer fittings for this fixture type. Retro system shall be by Delray Lighting or prior approved equal.

Fixture# 4 GKA #GKA-226-REF-SPII.277V

Existing Elliptipar Tungsten Fixture #4511-P Large Wall Wash Fixture to be removed and Retrofit to 2 x 42 watt CFL Triple Tube with U.L. listing. Must be CEE approved; meet Energy Star Ratings and ARRA requirements.

Fixture# 5 LSGC #SOLR38CWNFL

Cool White, Lumen Output 830, Power Consumption 15 watts, Efficacy 55.3 (lm/w), Color Temperature 4700K, CRI 75, Center Beam 2486, Rated Life 50,000 70% Lumen Maintenance, Housing Anodized, Socket E26 Edison Base, Beam Spread Narrow Flood 30°, Operating Temperature -40°C to 45°C, Voltage 120VAC @ 60 Hz, Weight 1 lb, 9.8oz, Warranty 5 year, Standards UL1993, E320663, UL Certified, Environment Damp.

Fixture# 6 DELRAY LIGHTING #RV4142.A30.MC4.D3.OT4.STL.RP

4" Vertical Cone Retro System, Single Lamp Down light for 42 watt CFL Triple Tube lamp. Retrofit kit shall have a double – ellipse, self – flanged, 30° reflector cone with low iridescent clear Alzak haze finish. Furnish with earthquake proof 5° twist lock sockets that will allow the CFL Triple Tube lamp to be removed with a pole changer specifically designed for use with the 42 watt CFL lamp. Retro system shall include all appropriate mounting clips, oversize trim ring, universal voltage, solid state programmed start, 5 year warranted Advance Mark X electronic ballast, and a 4" remodel pan designed to fit the existing aperture. System shall be U.L, classified for use with the Convention Center's existing down lights. Contractor shall deliver to the Oregon Convention Center two CFL pole changer fittings for this fixture type. Retro system shall be by Delray Lighting or prior approved equal.

Fixture# 7 Nora 5000 Series #NTM-5617/100

Ceramic Metal Halide, ED17 Reflector Deep drawn one-piece steel socket cup and reflector Shroud, White 100watt, tempered safety shield, heat resistant Teflon coated wire lead, high strength stainless steel electrical contacts, one or two circuit track capable. Integral .90 high power factor electronic solid state Type 1 ballast, LM79 tested.

Fixture# 8 Neptun Light #IX-18200-M5UNV

With 6' 3-wire cord set and 15 amp, 277 volt twist lock plug (NEMA L7-15P), Aluminum Reflector, Black Powder Coated Housing, to directly replace existing Hollophane Prismatic Reflector.

Specification of 200Watt Induction Lighting System Kits:

Heat and impact resistant tempered clear glass lens, concealed continuous gasket seals against harmful dust, dirt, moisture and insects, Aluminum housing coated outside with electro coat black paint, Aluminum reflector polished and anodized inside, Vented Reflector Cavity, Cast Aluminum Ballast box equipped with two directional leveling hanging system.

Ballast shall be: Type 1 Outdoor fully encapsulated in non-corrosive enclosure in flexible heat conducting compound, provided with integral Surge Suppression Protection, Universal Input Voltage 100-300VAC, 50/60Hz, shall operate with Input Voltage variation of +/- 20% System shall have safety feature built-in to ballasts box and hanging system ballast replacement.. Instant ON flicker-free Cold Start and Hot Re-Start (Qualified Laboratory Tests Results shall be provided) Operating Range of + 85C to - 40C NEMA wattage label complies with ANSI: C136.2, C136.10, C136.14, C136.15, and C136.3.

10 year limited system warranty on the fixture, lamp and Ballast. Manufacturer shall provide a warranty agreement directly with the Oregon Convention Center to be signed and dated upon product shipment.

Induction High Bay fixture shall be Neptun Light #IX-18200-M5UNV, or prior approved equal. Manufacturer wanting to submit an alternate must submit for prior approval, 5 days prior to bid due date, certifying that they meet or exceed the specification minimums as stated herein. A complete working sample of the **"200Watt Induction Lighting System Kits"** that they are proposing, may be required, prior to approval. Samples must be 120Volt with a six foot cord and plug.

Performance of 200Watt Induction System Kits:

Light Correlated Color Temperature shall be 4600K to 5000K and CRI above 82 (Qualified Laboratory Tests Results shall be provided)

Input Power Quality shall have High Power Factor (.98 Min) and Low THD (10% max)

Total Power Input shall be 205 Watts Maximum.

Ballast Internal power loss shall be below 9 Watts.

Absolute Lumen Output of the system kit shall be not less than 15600.

Minimum Photopic Lumen Output of the Light Source shall be not less than 17425.

Minimum Scotopic Lumen Output of the Light Source shall be not less than 30750.

Photometric System Efficacy shall be not lower than 0.9.

Lumen Maintenance shall be 90% after 50,000 hours.

Light Source Rated life shall be at least 100,000 hours.

Light Source Current Crest Factor (CCF) shall be less than 1.4

Operation frequency of the system shall be 233-250 kHz.

Country of Manufacture:

System components shall be substantially manufactured (> 50%)

within the United States including but not limited to the Lamp, ballast, housing components and frame, optical covers / lens, packaging and all printed material.

Product components shall be assembled together to a finished product within the U.S.A and products shall have label "Assembled in U.S.A."

Labels / Certification:

Each product must be U.L.

Existing Equipment						Proposed Equipment					
Item	Location Area/Room	Existing Equipment	Measure Description	Watts per Fixture	Fixture Quantity	Fixture #	Equipment Brand	Model Number	Measure Description	Watts per Fixture	Fixture Quantity
1	Exhibit Halls	Metal Halide, 400 watts	HALL A	461	128	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	128
2	Exhibit Halls	Metal Halide, 400 watts	Hall A1	461	128	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	128
3	Exhibit Halls	Metal Halide, 400 watts	A1 / B Corridor	461	16	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	16
4	Exhibit Halls	Metal Halide, 400 watts	Hall B	461	120	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	120
5	Exhibit Halls	Metal Halide, 400 watts	B / C Corridor	461	16	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	16
6	Exhibit Halls	Metal Halide, 400 watts	Hall C	461	256	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	256
7	Exhibit Halls	Metal Halide, 400 watts	C / D Corridor	461	32	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	32
8	Exhibit Halls	Metal Halide, 400 watts	Hall D	461	256	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	256
9	Exhibit Halls	Metal Halide, 400 watts	D / E Corridor	461	16	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	16
10	Exhibit Halls	Metal Halide, 400 watts	Hall E	461	128	8	Neptun Light Inc.	IX-18200-M5UNV	Induction	205	128
40	D Lobby	Incandescent	E Downs	250	10	3	Delray Lighting, Inc.	RV6157.A30.UE.MC4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	10
41	D Lobby	Metal Halide, 70 watts	Downs	95	28	2	Delray Lighting, Inc.	RMH4039.A30.UE.MC4.CM.SPII	39w Par 20 w/o Remodel Pan	45	28
42	E Lobby	Metal Halide, 70 watts	Downs	95	32	2	Delray Lighting, Inc.	RMH4039.A30.UE.MC4.CM.SPII	39w Par 20 w/o Remodel Pan	45	32
43	E-LOBBY	Incandescent	E-DOWNS	250	12	3	Delray Lighting, Inc.	RV6157.A30.UE.MC4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	12
44	F Lobby	Metal Halide, 70 watts	Downs	95	31	2	Delray Lighting, Inc.	RMH4039.A30.UE.MC4.CM.SPII	39w Par 20 w/o Remodel Pan	45	31

Existing Equipment						Proposed Equipment					
Item	Location Area/Room	Existing Equipment	Measure Description	Watts per Fixture	Fixture Quantity	Fixture #	Equipment Brand	Model Number	Measure Description	Watts per Fixture	Fixture Quantity
45	PDX Ballroom Lobby	Metal Halide, 70 watts	Downs	95	96	2	Delray Lighting, Inc.	RMH4039.A30.UE MC4.CM.SPII	39w Par 20 w/o Remodel Pan	45	96
46	Pre A Entry	Incandescent	Downs	250	23	2	Delray Lighting, Inc.	RMH4039.A30.UE MC4.RP.CM.SPII	39w Par 20	45	23
47	Pre A Entry	Incandescent	E Downs	250	3	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	3
48	Pre C Entry	Incandescent	Downs	250	23	2	Delray Lighting, Inc.	RMH4039.A30.UE.MC4.RP.CM.SPII	39w Par 20	45	23
49	Pre C Entry	Incandescent	E Downs	250	3	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	3
50	King Lobby	Incandescent	E Downs	500	6	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	6
51	Holladay Lobby	Incandescent	E Downs	500	6	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	6
52	OR Ballroom Lobby	Incandescent	E Downs	250	10	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	10
53	F Lobby	Incandescent	E Downs	250	12	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	12
54	King Lobby	Incandescent	Art Lights	90	16	5	Lighting Science Group Corporation	SOLR38CWNFL	LED Par 38	14	16
55	Holladay Lobby	Incandescent	Art Lights	90	16	5	Lighting Science Group Corporation	SOLR38CWNFL	LED Par 38	14	16
56	KING LOBBY	Incandescent	Downs	500	70	1	Delray Lighting, Inc.	RMH4070.A30.UE MC4.RP.CM.SPII	70w Par 30	78	70
57	HOLLADAY LOBBY	Incandescent	Downs	500	70	1	Delray Lighting, Inc.	RMH4070.A30.UE MC4.RP.CM.SPII	70w Par 30	78	70
58	OR BALLROOM LOBBY	Incandescent	Downs	250	88	1	Delray Lighting, Inc.	RMH4039.A30.UE MC4.RP.CM.SPII	39w Par 20	45	88

Existing Equipment						Proposed Equipment					
Item	Location Area/Room	Existing Equipment	Measure Description	Watts per Fixture	Fixture Quantity	Fixture #	Equipment Brand	Model Number	Measure Description	Watts per Fixture	Fixture Quantity
59	OR BALLROOM LOBBY	Incandescent	Wall Wash	300	27	4	Elliptipar	GKA-226-REF-SPII 277V	Tungsten Wall Wash	52	27
60	PDX BALLROOM LOBBY	Incandescent	E Downs	250	27	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	27
61	PDX BALLROOM LOBBY	Incandescent	Art / Stairs	90	26	5	Lighting Science Group Corporation	SOLR38CWNFL	LED Par 38	14	26
62	PRE A	Incandescent	Pipe Light	1000	38	7	Nora Lighting	NTM-5617/100	Ceramic Metal Halide	132	38
63	PRE A	Incandescent	Wall Wash	300	31	4	Elliptipar	GKA-226-REF-SPII 277V	Tungsten Wall Wash	52	31
64	PRE B	Incandescent	Pipe Light	1000	14	7	Nora Lighting	NTM-5617/100	Ceramic Metal Halide	132	14
65	PRE C	Incandescent	Pipe Light	1000	38	7	Nora Lighting	NTM-5617/100	Ceramic Metal Halide	132	38
66	PRE C	Incandescent	Wall Wash	300	31	4	Elliptipar	GKA-226-REF-SPII 277V	Tungsten Wall Wash	52	31
67	PRE D/E	Metal Halide, 100 watts	Hi Downs	142	21	1	Delray Lighting, Inc.	RMH4070.A30.UE MC4.RP.CM.SPII	70w Par 30	78	21
68	PRE D/E	Incandescent	E Downs	250	4	3	Delray Lighting, Inc.	RV6157.A30.UE.M C4.OT6.QC-UNV-EL.STL.RP	57w Triple Tube	57	4
69	PRE D/E	Metal Halide, 70 watts	Downs	95	10	2	Delray Lighting, Inc.	RMH4039.A30.UE MC4.CM.SPII	39w Par 20 w/o Remodel Pan	45	10