

2/22/2015

Highbay Fluorescent - Six Lamp Flat Profile Design

Highbay Fluorescent



Applications

Warehouse	Gymnasium
Manufacturing Facility	Cafeteria
	Auditorium

Features

- Easy access to wiring compartment & ballast
- Access plate provides access to electrical wiring with-out the need to open the fixture
- Knock-outs for easy electrical wiring and assembly
- Factory Installed Occupancy Sensor option
- Factory Installed Emergency ballast option
- Lamp Installation option available
- Multiple power cord set options, (voltage, length, gage)
- Pendant mount kit provides a top J-box to simplify HID retrofit installations. Can be used with a hook or rigid conduit and fasteners (Fixture must be specified with "J" option)
- Door and lens kit options available
- Choice of 86% Standard Specular Aluminum Reflector, 95% Specular Enhanced Aluminum Reflector, 95% Enhanced Specular Aluminum Enhanced Performance or 91% White Reflector
- Heavy Duty pre-painted steel construction
- Factory Installed Wireguard option
- Custom configurations available
- Can be easily mounted by a single person
- Suspended or Pendant mounting insures a quick painless install
- Chain and V-Clip Hanging option
- Wire cable hanging option.
- UL Listed for Damp Locations

Specifications subject to change without notice.

Project:

Catalog#:

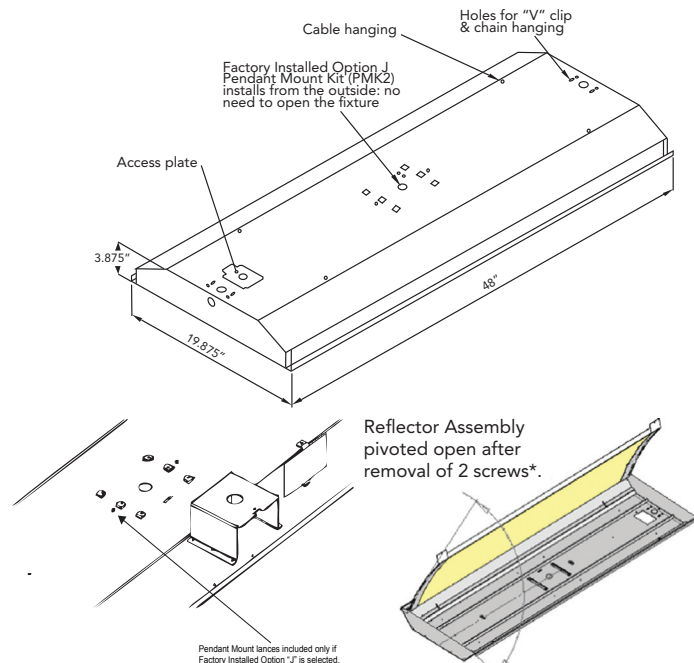
Approved by:

Description

HFA1 series high-bay fluorescent fixture is a great energy saving alternative to traditional HID high-bay fixtures. This fixture operates six lamps and as a standard feature comes equipped with Howard ballasts.

Benefits

- Energy Saving Compared to HID systems
- Exceptional Color Rendering
- High System Efficacy
- Long Lamp Life
- Instant On/Re-strike Capability
- Howard Ballast and Howard Lamp as a system is covered by Howard Industries Warranty
- Quality Lamp holders
- Computer Designed Reflectors
- System Designed, Approved, Manufactured, and Tested by Howard Industries in Mendenhall Mississippi.
- Compliant with Safety and performance standards.



*Optional: 1/4 turn fasteners offer toolless access to the ballast compartment without removing lamps. Simply rotate the two 1/4 turn fasteners. See Factory Installed Option Q for more information.

Highbay Fluorescent - Six Lamp Flat Profile Design

Project:	
Catalog#:	
Approved by:	

Ordering Information

Model Family	Reflector	No. of Lamps	Lamp Type/ Wattage ⁽¹⁾	CRI/CCT					Ballast	Input Volts	Factory Installed Options	Cordset Options (see customer service for other cordset options)	T B A	Pack.
HFA1	E	6	32	A					SE	MV	000	00	0	I
HFA1	E: Enhanced Specular Aluminum (95%) F: Enhanced Specular Enhanced Performance (95%) A: Specular Aluminum (86%) W: White reflective (91%)	6	T8 Lamps 28: F28T8 32: F32T8 T5 Lamps 28:F28T5 54: F54T5HO	CRI	CCT	High Lumen	T8	T5	SE: SBF High Eff ⁽²⁾ HE: HBF High Eff ⁽²⁾ LE: LBF High Eff ⁽²⁾ P8: PRS T8 ⁽²⁾ PS: PRS T5	MV: 120-277v AX: 480-277 ⁽³⁾ MV: 120-277v HV: 347-480v (T5HO)	000: No FIOs A: Occ Sensor ⁽⁴⁾ B: Emergency Ballast ⁽⁵⁾ C: Door W/Lens & Safety Cable ⁽⁶⁾ D: Door W/Lens ⁽⁶⁾ G: Wireguard I: Special Wiring Instructions J: J-box config. ⁽⁷⁾ T: Toggle switch bi-level lighting control ⁽⁸⁾ Q: Quarter Turn Fasteners ⁽⁹⁾ W: Gymnasium wire guard door and lens ⁽¹⁰⁾	00: Standard Disconnect 01: 6’ SJT 18/3, no plug 02: 10’ SJT 18/3, no plug 03: 6’ SJT 18/3 L5-15, twist lock 120v 04: 10’ SJT 18/3 L5-15twist lock 120v 05: 6’ SJT 18/3 5-15non twist lock 120v 06: 10’ SJT 18/3 5-15non twist lock 120v 07: 6’ SJT 18/3 L7-15 twist lock 277v 08: 10’ SJT 18/3 L7-15 twist lock 277v 09: 6’ SJT 7-15 non twist lock 277v 10: 10’ SJT 7-15 non twist lock 277v 11: 16/3, no plug spec len 12: 16/4, no plug spec len 16: 16’ SJT 18/3 7-15, non twist lock 277v 17: 18/3, no plug spec len 18: 6’ STW L8-20, twist lock 480v 19: 10’ STW L8-20, twist lock 480v 20: 16’ SJT 18/3 L5-15, twist lock 120v 21: 16’ SJT 18/3 L5-15, twist lock 277v	I: Single B: Bulk	

(1) Lamp installation available.

(2) High Efficiency ballasts are CEE Listed.

(3) Step-down autotransformer. Allows hook-up of standard MV ballast to 480v.

(4) Occupancy Sensors should be used with programmed rapid start ballasts for maximum lamp life

Standard Occupancy Sensor requires neutral wired fixtures (ex. -120v or -277v).

For phase-to-phase voltage applications (240v) advise Customer Service at time of request.

(5) Please specify Emergency Ballast (120-277v only) lumen requirements at time of request.

(6) Standard acrylic prismatic, pattern 12, 0.100" thick. Call for options.

(7) Unless otherwise specified, fixture will include field installed J-box. Supply wires will exit the center of the fixture, not the access plate. J-box can be installed without entering the fixture.

(8) Allows for separate control of two ballasts through simple "toggling" of a standard wall switch.

Recommend use of programmed rapid start ballast with this control.

(9) 1/4 Turn Fasteners for tool-less access to ballast compartment. Does not require lamp removal.

(10) Gymnasium wire guard with door and lens is a rough service option that provides 3 inches of space between wire guard and lens offering additional protection in a gymnasium application. This option is best ordered with factory installed lamps.

SE	Standard Ballast Factor High Efficiency Instant Start T8 Ballast
HE	High Ballast Factor High Efficiency Instant Start T8 Ballast
LE	Low Ballast Factor High Efficiency Instant Start T8 Ballast
PS	Program Rapid Start T5 Ballast
P8	Program Rapid Start High Efficiency T8 Ballast

Sample Ordering Number:

HFA1 E 6 32 A SE MV 000 00 I

HFA1 Series Highbay Fluorescent

Enhanced Specular Aluminum Reflector

6-lamps (none installed)

F32T8 Standard Ballast Factor High Efficiency Ballast

Multi-volt (120-277v)

No Factory Installed Options

No Cordset

Single Packaging

RAPID SHIP MODELS

AVAILABLE FOR NEXT DAY SHIPMENT

- HFA1A632AHMV0000000I
- HFA1A654APSMV0000000I
- HFA1E632AHMV0000000I
- HFA1E654APSMV0000000I



Specifications subject to change without notice.

Howard Lighting Products | 580 Eastview Drive | Laurel, MS 39443

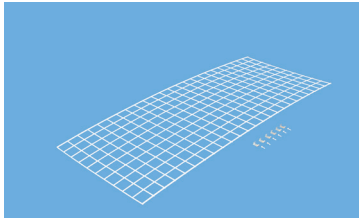
(toll free) 800.956.3456 | (direct) 601.422.0033 | (fax) 601.422.1652

www.HowardLightingProducts.com

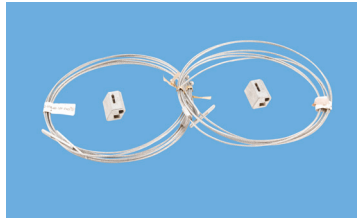
2/22/2015

Project:	
Catalog#:	
Approved by:	

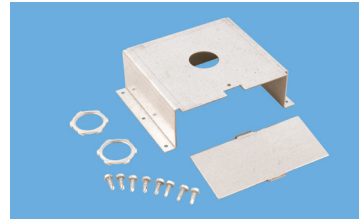
Field Installed Options Ordering



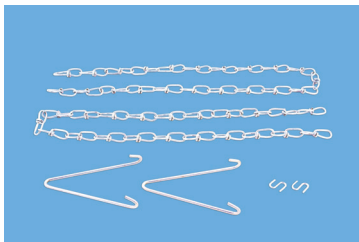
HFA1-WG
Wire Guard



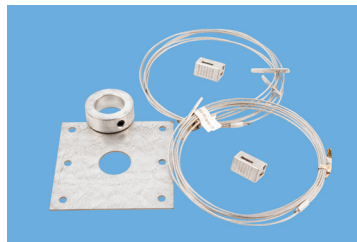
HFA-WCH
Wire Cable Hanging Kit
(2 pcs per kit)



HF-PMK2
Pendant Mount Kit
with 1.0" diameter through hole



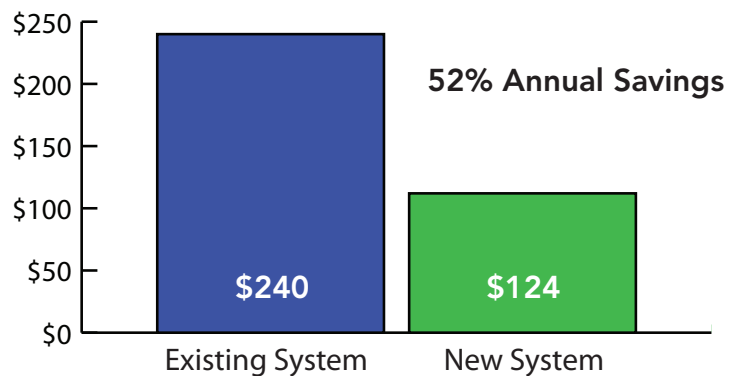
HF-2CV (2 foot)
HF-3CV (3 foot)
Hanging Chain & V-clips



HF-SK1
Stabilizer Kit
(Hub, color and wire cable)

Energy Cost Estimator

		Existing System		New System	
		400W MH Highbay		HFA1E632ASE High Eff Standard BF Fluorescent Highbay	
Hours burned per year	4368	Number of Fixtures	1	Number of Fixtures	1
Cost per kWh\$	0.12	Watts per Fixture (existing system)	458	Watts per Fixture (new system)	222
Energy Cost Estimation		Energy used per year (existing system)	\$240	Energy used per year (new system)	\$116
		Energy saving per year (per fixture)		\$124.00	

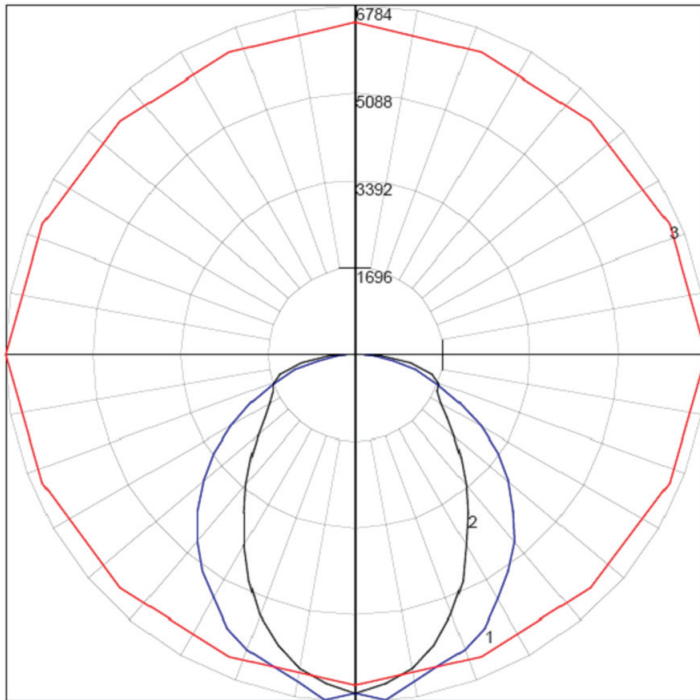


Howard Industries provides this tool to examine the potential impact of lighting decisions. This tool provides an ESTIMATE only. The analysis of this tool does not warrant or guarantee the actual costs or savings that will be realized as the analysis suggested. You can find the full version of this cost saving tool at the Howard Lighting Website—www.howardlightingproducts.com. Click "Cost of Ownership Calculator".
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Specifications subject to change without notice.

2/22/2015

Highbay Fluorescent

Photometric Data - 6 Lamp T8 (HFA1E632)
Candela Polar Plot


HFA1E632
 Test Report: HFA1E632.ies
 Spacing Criteria (0-180): 1.26
 Spacing Criteria (90-270): 0.92
 Spacing Criteria (Diagonal): 1.14

Maximum Candela = 6783.91

Located at Horizontal Angle = 0, Vertical Angle = 5
 #1 = Vertical Plane Through Horizontal Angles (0-180) Through Max Cd.
 #2 = Vertical Plane Through Horizontal Angles (45-225)
 #3 = Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

Project:	
Catalog#:	
Approved by:	

Luminaire Efficiencies*

Reflector Type	T8
Enhanced Specular	91%
Specular	85%
White	86%

*Luminaire efficiency is the ratio of light output emitted by the luminaire to the light output emitted by its lamps.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fix
0-30	4562.84	26.20	28.90
0-40	7094.96	40.80	44.90
0-60	11757.00	67.60	74.50
0-90	15786.34	90.70	100.00
0-180	15786.34	90.70	100.00

Luminance Data (cd/Sq.m)

Angle In Degrees	Average 0-deg	Average 45-deg	Average 90-deg
45	10437	6669	6175
55	9835	5974	6401
65	8714	6262	8420
75	7399	8056	8930
85	5706	5575	5847

Coefficients of Utilization - Zonal Cavity Method

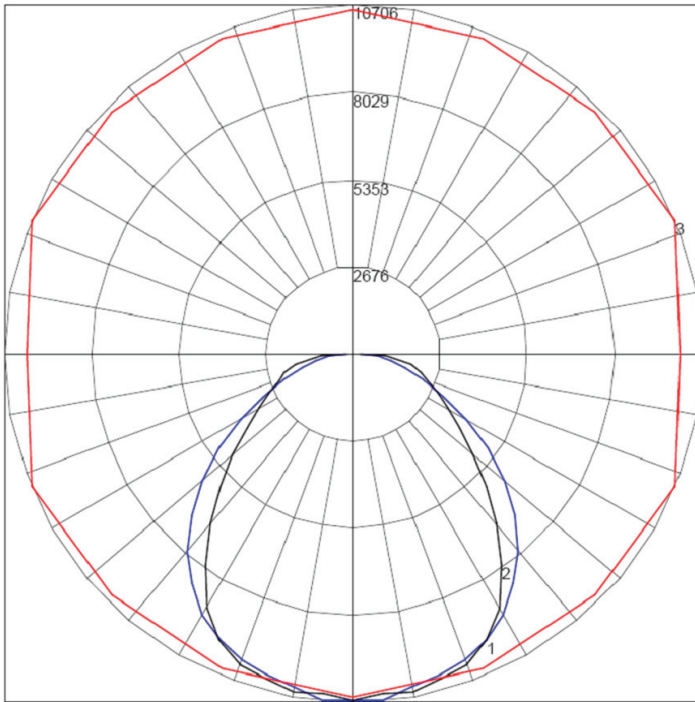
Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	108	108	108	108	105	105	105	105	101	101	101	97	97	97	93	93	93	91
1	98	93	89	85	95	91	87	84	87	84	81	83	81	78	80	78	76	74
2	89	81	74	69	86	79	73	68	76	71	66	73	68	65	70	66	63	61
3	81	71	63	57	78	69	62	56	67	60	55	64	59	54	62	57	54	51
4	74	63	55	48	72	62	54	48	59	53	47	57	51	47	55	50	46	44
5	68	56	48	42	66	55	48	42	53	46	41	52	46	41	50	45	40	38
6	63	51	43	37	61	50	42	37	48	41	36	47	41	36	45	40	36	34
7	59	46	38	33	57	46	38	33	44	37	32	43	37	32	42	36	32	30
8	55	42	35	29	53	42	34	29	41	34	29	39	33	29	38	33	29	27
9	51	39	32	27	50	39	31	27	38	31	26	37	31	26	36	30	26	24
10	48	36	29	24	47	36	29	24	35	29	24	34	28	24	33	28	24	22

Specifications subject to change without notice.

2/22/2015

Highbay Fluorescent

Photometric Data - 6 Lamp T5 (HFA1E654)
Candela Polar Plot


HFA1E654
 Test Report: HFA1E654.ies
 Spacing Criteria (0-180): 1.24
 Spacing Criteria (90-270): 1.14
 Spacing Criteria (Diagonal): 1.28

Maximum Candela = 10705.7

Located at Horizontal Angle = 22.5, Vertical Angle = 5
 #1 = Vertical Plane Through Horizontal Angles (22.5-202.5) Through Max Cd.
 #2 = Vertical Plane Through Horizontal Angles (45-225)
 #3 = Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

Project:	
Catalog#:	
Approved by:	

Luminaire Efficiencies*

Reflector Type	T5
Enhanced Specular	94%
Specular	89%
White	89%

*Luminaire efficiency is the ratio of light output emitted by the luminaire to the light output emitted by its lamps.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fix
0-30	8287.54	27.6	29.3
0-40	13181.73	43.9	46.6
0-60	21818.65	72.7	77.1
0-90	28314.35	94.4	100.00
0-180	28314.35	94.4	100.00

Luminance Data (cd/Sq.m)

Angle In Degrees	Average 0-deg	Average 45-deg	Average 90-deg
45	17720	13944	12116
55	16537	11505	11614
65	15128	10678	12356
75	12791	12044	15723
85	8439	11387	11511

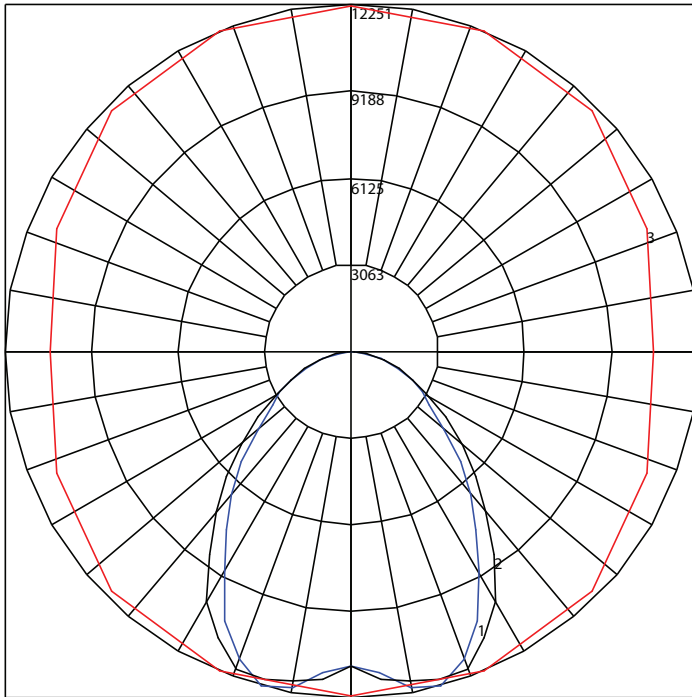
Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	112	112	112	112	110	110	110	110	105	105	105	100	100	100	96	96	96	94
1	102	97	93	89	99	95	91	88	91	88	85	87	85	82	84	82	80	78
2	93	85	78	72	90	83	77	72	80	74	70	76	72	68	74	70	67	65
3	85	75	67	60	82	73	66	60	70	64	59	68	62	58	65	61	57	55
4	78	66	58	51	75	65	57	51	63	56	50	60	54	50	58	53	49	47
5	72	59	51	45	70	58	50	44	56	49	44	54	48	43	53	47	43	41
6	66	54	45	39	64	53	45	39	51	44	39	49	43	38	48	42	38	36
7	62	49	41	35	60	48	40	35	47	40	34	45	39	34	44	38	34	32
8	57	45	37	31	56	44	36	31	43	36	31	42	35	31	40	35	30	29
9	54	41	33	28	52	41	33	28	39	33	28	38	32	28	37	32	28	26
10	50	38	31	26	49	38	30	26	37	30	25	36	30	25	35	29	25	24

Specifications subject to change without notice.

2/22/2015

Highbay Fluorescent

Photometric Data - 6 Lamp T5 (HFA1F654)
Candela Polar Plot


HFA1F654

Test Report: HFA1F654.ies

Spacing Criteria (0-180): 1.30

Spacing Criteria (90-270): 1.18

Spacing Criteria (Diagonal): 1.30

Maximum Candela = 12250.6

Located at Horizontal Angle = 67.5, Vertical Angle = 15

1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (45 - 225)

3 - Horizontal Cone Through Vertical Angle (15) (Through Max. Cd.)

Project:

Catalog#:

Approved by:

Luminaire Efficiencies*

Reflector Type

T5

Enhanced Performance

94%

*Luminaire efficiency is the ratio of light output emitted by the luminaire to the light output emitted by its lamps.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fix
0-30	9319.82	31.1	33.2
0-40	14747.32	49.2	52.5
0-60	23756.17	79.2	84.6
0-90	28094.87	93.6	100.00
0-180	28094.87	93.6	100.00

Luminance Data (cd/Sq.m)

Angle In Degrees	Average 0-deg	Average 45-deg	Average 90-deg
45	16251	11863	10043
55	15345	8834	7305
65	13222	6354	6211
75	9564	4225	3508
85	3279	636	618

Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	111	111	111	111	109	109	109	109	104	104	104	100	100	100	96	96	96	94
1	103	99	95	92	100	97	94	91	93	90	88	89	87	85	86	84	83	81
2	94	87	81	77	92	86	80	76	82	78	74	79	76	72	76	73	71	69
3	87	77	70	65	84	76	69	64	73	68	63	71	66	62	68	64	61	59
4	80	69	62	56	78	68	61	55	66	59	55	64	58	54	62	57	53	51
5	74	62	54	49	72	61	54	48	59	53	48	58	52	47	56	51	47	45
6	68	56	48	43	67	56	48	43	54	47	42	52	46	42	51	46	42	40
7	63	51	44	38	62	51	43	38	49	43	38	48	42	37	47	41	37	35
8	59	47	39	34	58	46	39	34	45	39	34	44	38	34	43	38	34	32
9	55	43	36	31	54	43	36	31	42	35	31	41	35	31	40	34	30	29
10	52	40	33	28	51	40	33	28	39	32	28	38	32	28	37	32	28	26

Specifications subject to change without notice.